

# **Office of Procurement Services**

# FIRE ALARM SYSTEM REPLACEMENT

at

# SOUTHWARK ELEMENTARY SCHOOL

Located at

# 1835 S 9TH STREET, PHILADELPHIA, PA 19148

EC: Bid No. NG10644; Contract No. 2640.001-E

Issued for Bid: FRIDAY, APRIL 25, 2025

Volume 1 of 1

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The School District of Philadelphia Board of Education

### **INVITATION TO BID**

### FIRE ALARM SYSTEM REPLACEMENT AT SOUTHWARK ELEMENTARY SCHOOL 1835 S 9TH ST PHILADELPHIA, PA 19148

Sealed Proposals are invited for the following Contract(s) in connection with the above project (the Project), with plans and specifications prepared by the Architect/Engineer

Electrical Construction......Bid No. NG10644; Contract No. 2640.001-E

SCHEDULE OF DATES					
ISSUED FOR BID	FRIDAY, APRIL 25, 2025				
MANDATORY SITE VISIT	WEDNESDAY, APRIL 30, 2025 AT 10:00A.M				
RFIS DUE	FRIDAY, MAY 9, 2025 AT 3:00P.M.				
BID OPENING	THURSDAY, MAY 22, 2025 AT 2:00P.M.				

Bid documents may be obtained on or after the "ISSUED FOR BID" date above by download from the <u>Oracle Supplier Portal</u>.

NOTE: WHETHER YOU ARE A SUPPLIER, CHARTER SCHOOL, GOVERNMENT AGENCY, OR OTHER ENTITY THAT DOES BUSINESS WITH THE SCHOOL DISTRICT, YOU MUST USE THE NEW PORTAL.

SUPPLIERS, AND THAT INCLUDES CONSTRUCTION CONTRACT BIDDERS FOR CAPITAL <u>PROGRAMS PROJECTS</u>, WILL USE THE PORTAL TO RESPOND TO BIDS AND RFPS, RECEIVE PURCHASE ORDERS AND AGREEMENTS, SEND/REVIEW INVOICES, AND VIEW PAYMENTS.

VISIT <u>www.philasd.org/finance/#sdpvendors</u> TO FIND INSTRUCTIONS ON REGISTERING AND A LINK TO THE PORTAL.

Due to restrictions in place for COVID-19, including practicing personal distancing, the School District has decided to conduct the opening of the bids virtually through a live stream until further notice.

ALSO NOTE THAT CONTRACTORS MUST CONFORM TO THE COVID-19 PRECAUTIONS PLAN (Attached to Division 01-General Requirements) in the performance of the work.

Bidders are required to comply with social distancing and other CDC and Department of Health mitigation measures when delivering bids.

### BIDS ARE TO BE SUBMITTED ELECTRONICALLY USING THE ORACLE VENDOR PORTAL; HOWEVER, ORIGINAL, SIGNED AND SEALED COPIES OF <u>BID BONDS</u> MUST BE HAND-DELIVERED BY A REPRESENTATIVE OF THE BIDDER TO THE OFFICE OF PROCUREMENT SERVICES TO THE ADDRESS BELOW, WHERE A RECEIPT WILL BE ISSUED, AT OR BEFORE THE TIME SCHEDULED FOR THE BID OPENING.

Bid Bonds will be received until the "Bid Opening" date and time above at the following address:

The School District of Philadelphia Office of Procurement Services 440 North Broad Street,3<sup>rd</sup> Floor, Portal A, Suite 310 Philadelphia, PA 19130-4015

All proposals received will be opened and read aloud by live video stream on the "Bid Opening" date and time above.

The link to the live bids can be found at: <u>https://philasd-org.zoom.us/j/87464629484?pwd=HmdVrj5SW4CMWo5JyKnSVXYJ6rIRzv.1</u>

(If not available when this Invitation to Bid is issued, it will be made available prior to the bid opening.)

### NOTE: A <u>MANDATORY SITE VISIT</u> WILL BE CONDUCTED ON THE "SITE VISIT" DATE ABOVE.

# Only one (1) representative per contractor; face masks must be worn, and social distancing maintained.

Prospective bidders are strongly urged to review the Bidding Documents.

For a bid to be accepted, Bidders must be prequalified prior to bidding by the School District of Philadelphia in accordance with Paragraph 4 of the Instructions to Bidders.

Each Proposal shall be accompanied by either a certified check or a surety company's bid bond, in an amount of not less than 10% of the Proposal amount, which check or bond shall be payable to The School District of Philadelphia as payee or obligee. (BID PROCESSING FEE WAIVED FOR THIS PROJECT)

**NOTE:** ALL INQUIRIES (RFIS) REGARDING THE DRAWINGS AND SPECIFICATIONS MUST BE SUBMITTED IN WRITING TO Kaaliyah Fratarcangeli (kfratarcangeli@philasd.org) no later than the "RFIs DUE" date above.

All responses will be issued by addendum.

THE LOW BIDDER FOR EACH PRIME CONTRACT IS REQUIRED TO PARTICIPATE IN A VIDEO OR LIVE POST-BID CONFERENCE TO REVIEW AND CONFIRM ITS BID. THE EXACT TIME FOR THE VIDEO POST-BID CONFERENCE WILL BE CONFIRMED AT THE BID OPENING.

SEE ATTACHED AGENDA AND QUESTIONNAIRE FOR THE DE-SCOPE MEETING.

END OF DOCUMENT 00 0050

### SECTION 00 0100 - INSTRUCTIONS TO BIDDERS

### **BACKGROUND**

The Owner is The School District of Philadelphia and is referred to throughout the Contract Documents as School District and as if singular in number and neuter in gender. The Board of Education (hereinafter referred to as "Board") is the governing body of the School District of Philadelphia pursuant to the Public School Code, 24 P.S. §21-2102 and §3- 301.

### 1. INCORPORATION OF BACKGROUND; DEFINITIONS; GENERAL RULES OF CONSTRUCTION

- A. <u>Incorporation of Background</u>: The above Background is incorporated by reference into the Bidding Documents and the Contract Documents.
- B. <u>Definitions</u>: Except as expressly provided otherwise in the General Conditions of the Contract for Construction, capitalized terms have the meanings specified in Paragraph 1 of these Instructions to Bidders. Such meanings shall be applicable to both the singular and plural of the term defined. Whenever the context requires, words used in the singular shall be construed to mean or include the plural and vice versa; and pronouns of any gender shall be deemed to include and designate the masculine, feminine, and neuter genders. "Or" shall include "and/or".
  - Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the School District and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda and General Requirements issued prior to execution of the Contract.
  - 2. Definitions set forth in the General Conditions of the Contract for Construction or in other Contract Documents are applicable to the Bidding Documents.
  - 3. Addenda are written or graphic instruments issued by the School District, prior to the execution of the Contract, which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.
  - 4. A Bid is a complete and properly signed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.
  - 5. A Bidder is a person or entity that submits a Bid.
  - 6. A Sub-bidder is a person or entity that submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

- 7. School District or Owner means the School District of Philadelphia.
- 8. NOT USED
- 9. NOT USED.
- 10. NOT USED.
- 11. Architect/Engineer is the person or firm identified elsewhere in the Bidding and Contract Documents performing architectural and/or engineering design services for this project for the School District's Capital Improvement Program pursuant to architectural design services contract with the School District.
- 12. NOT USED.
- Contractor or Prime Contractor or separate Contractor means the construction 13. contractor and all its Subcontractors performing construction work, including general construction work (which shall include civil, structural, roofing, architectural, utilities, paving and landscaping), heating, ventilating and air conditioning (HVAC) work, plumbing work, and electrical work, for the Project included in the Capital Improvement Program pursuant to a single construction contract ("Prime Contract") with the School District, under the multi-prime bidding and contracts requirements of the Public School Code, 24 P.S. §7-751. Contractors or Prime Contractors or separate Contractors mean the multiple separate construction contractors and all their Subcontractors performing separate general construction work (which shall include civil, structural, roofing, architectural, utilities, paving and landscaping), heating, ventilating and air conditioning (HVAC) or mechanical work, plumbing work, or electrical work, for the Project included in the Capital Improvement Program pursuant to multiple separate construction contracts ("Prime Contracts") with the School District, or construction contractors performing additional, different or other Project work pursuant to separate construction contracts with the School District, under the multi-prime bidding and contracts requirements of the Public School Code, 24 P.S. §7-751.
- 14. Subcontractor(s) or Subconsultant(s) mean(s) any person(s), firm(s), partnership(s), corporation(s), other entities, or combination thereof, or their respective duly authorized representative(s), who has (have) or will enter into a contract or consulting agreement with the Contractor(s) to perform any Work covered by the Bidding Documents and Contract Documents.
- 15. School District Consultant(s) is(are) the pre-qualified professional consulting services firm(s) performing services, other than architectural and/or engineering design services, on the Project for the School District's Capital Improvement Program pursuant to a professional services contract(s) with the School District.
- C. <u>General Rules of Construction</u>. Except as expressly stated otherwise, all references to "Sections" or "Paragraph(s)" or "Subparagraphs" are references to Sections and Paragraphs and Subparagraphs of the Bidding Documents or Contract Documents or the

Exhibits included in the Bidding Documents or Contract Documents; and all references to Exhibit(s) are references to the Exhibits included in the Bidding Documents or Contract Documents. The indexes and table of contents and headings used in the Bidding Documents and Contract Documents are for reference and convenience only, do not in any way define, limit, describe, or amplify the provisions of the Bidding Documents and Contract Documents or the scope or intent of their provisions, are not a part of the Bidding Documents and Contract Documents, and will not enter into the interpretations of the Bidding Documents and Contract Documents.

There is no order of precedence for the Bidding Documents and Contract Documents. One portion of the Bidding Documents or Contract Documents cannot be read and interpreted as to annul another portion of the Bidding Documents or Contract Documents. Each portion of the Bidding Documents or Contract Documents must be read and interpreted as being consistent with, and not in conflict with, another portion of the Bidding Documents or Contract Documents or Contract Documents or Contract Documents or Contract Documents.

### 2. PRE-BID CONFERENCE/SITE TOUR

- A. Bidders are responsible to visit the Project site and familiarize themselves with the site conditions.
- B. A Pre-Bid Conference and Tour of the existing facilities may be scheduled for this Project at a time and place specified in the Invitation to Bid
- C. Attendance at the Pre-Bid Conference and Tour is strongly recommended for any Bidder submitting a Proposal.

### 3. **PROPOSAL RECEIPT**

Bid Proposals will be received at:

## Office of Procurement Services School District of Philadelphia, Education Center 440 N. Broad Street, 3rd Floor, Portal A, Suite 310 Philadelphia, Pennsylvania 19130

at the date and time specified in the Invitation to Bid, at which time all proposals received will be opened and read aloud at a virtual bid opening. Proposals received after time is called shall be returned.

### 4. PREQUALIFICATION; DISQUALIFICATION, SUSPENSION OR DEBARMENT

A. <u>Prequalification:</u> All Bidders wishing to be selected must be classified and prequalified prior to bidding by the School District through the Prime Construction Contractor's Classification & Pre-Qualification Application (RFQ) process.

The School District will **not** accept bids from a Bidder that has not been prequalified prior to bidding through the prequalification RFQ process.

The School District will **not** award a contract to, or enter into a contract with, a Bidder that has not been prequalified prior to bidding through the prequalification RFQ process.

B. <u>Disqualification, Suspension or Debarment of Bidders:</u> The School District shall solicit or

accept bids from and shall award contracts to or consent to subcontracting **only** with responsible bidders. Bidders, contractors, or affiliates may be disqualified, suspended or debarred as not responsible to protect the School District's and the public's interest in accordance with the standards and procedures adopted by the School District and any other applicable law.

A complete statement of Policy No. 610 entitled "Disqualification, Suspension or Debarment of Bidders" adopted January 30, 2020, as amended is incorporated herein by reference and included in the Attachments to the Contract.

### 5. BIDDER'S REPRESENTATIONS

The Bidder, by making a Bid, represents that:

- 1. The Bidder has read and understands the Bidding Documents and the Bid is made in accordance therewith.
- 2. The Bidder has read and understands the Bidding Documents or proposed Contract Documents, including Division 1 General Requirements, to the extent that such documentation relates to the Work for which the Bid is submitted, for other portions of the Project, if any, being bid concurrently or presently under construction.
- 3. The Bidder has visited the Project site, has become familiar with local conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.
- 4. The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

### 6. BIDDING DOCUMENTS

### A. Copies

- 1. Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the non-refundable deposit sum stated therein.
- 2. Bidders shall use complete sets of Bidding Documents in preparing Bids. Neither the School District nor Architect/Engineer assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 3. In making copies of the Bidding Documents available on the above terms, the School District and the Architect/Engineer do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant permission for any other use of the Bidding Documents. Bidding Documents shall be available for review only at locations indicated in the Advertisement or Invitation to Bid. The Bidding Documents shall be available for review only and not for estimating purposes.
- 4. A list of the contractors who have purchased bid documents is only available at the Philadelphia School District Office of Procurement Services, and is not available via telephone.

### B. Interpretation or correction of Bidding Documents

- 1. The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently, if any, to the extent that it relates to the Work for which the Bid is submitted, shall examine the Project site and local conditions, and shall at once report to the Architect/Engineer errors, inconsistencies or ambiguities discovered.
- 2. Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make an oral or written request, which shall reach the Architect/Engineer at least 10 calendar days prior to the date for receipt of Bids.
- 3. Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner shall not be binding and Bidders shall not rely upon them.
- 4. The Bidder shall <u>not</u> engage in pre-bid or post-bid communications or negotiations with the School District or any of its employees, agents or representatives that seek to modify or change the terms and conditions of the Bidding Documents or Contract Documents, as such pre-bid or post-bid communications or negotiations violate Pennsylvania law.

### C. Substitutions (or Equal)

Substitution requests by prospective bidders are not considered during the bidding period. Proposed substitutions of specified equipment or material are addressed at the time of required submittals by the contractor awarded the contract in question.

See General Conditions GC-4.23 SUBSTITUTIONS (OR EQUAL) for procedures and requirements.

If a bid is based on providing equipment or material other than the basis of design, whether from a named manufacturer or not, it is a substitution; and the bidder/contractor assumes the risk that its proposed substitution will be approved; if not approved, the basis of design equipment or material must be provided.

### D. Addenda

- 1. Addenda will be emailed to all who are known by the issuing office to have received a complete set of Bidding Documents.
- 2. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
- 3. No Addenda will be issued later than 5 calendar days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one that included postponement of the date for receipt of Bids.
- 4. Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge its receipt of all issued Addenda in the Bid.

### 7. BIDDING PROCEDURES

### A. Form and Style of Bids

- 1. Bids shall be submitted on forms identical to the forms included with the Bidding Documents.
- 2. All blanks on the bid form shall be filled in.
- 3. Where so indicated by the makeup of the bid form, sums shall be expressed in both words and figures, and in case of a discrepancy between the two, the amount written in words shall govern.
- 4. Interlineations, alterations and erasures must be initialed by the signer of the Bid.
- 5. Each copy of the Bid shall include the legal name of the Bidder and a statement that the Bidder is a sole proprietor, partnership, corporation or other legal entity. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a Contract. A Bid by a corporation shall further give the state of incorporation and have teh corporate seal affixed. A bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.
- 6. Bids shall be accompanied by an electronic copy of the complete bid and bid security on a thumb drive.

### B. Bid Security

- 1. Each Bid shall be accompanied by a bid security pledging that the Bidder will enter into a Contract with the School District and on the terms stated in the Bid and will furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the bid security shall be forfeited to the School District as liquidated damages, not as a penalty.
- 2. Bid Security shall be made payable to The School District of Philadelphia in the amount of ten percent (10%) of the Proposal including all additive Alternates Proposal amounts.
- 3. A certified and current copy of the Power of Attorney of the attorney-in-fact who executes the bond on behalf of the surety shall be affixed to the bond.
- 4. Bid Security shall be a certified check or bid bond issued by a surety company legally authorized to do business as a surety in the Commonwealth of Pennsylvania. Corporate sureties must appear on the current list in Treasury Circular 570 and the current Commonwealth of Pennsylvania Insurance Department Surety List, and the amount of the bid bond may not exceed the underwriting limit stated for the surety on these lists.
- 5. The bid bond shall be identical to the form included with the Bidding Documents, and any other form of bonds shall be rejected by the School District.
- 6. The Bidder shall furnish Bid security, including a Bid Bond or a certified check, that is acceptable to and approved by the School District; or the Bid of the Bidder shall be

deemed to be "non-responsive".

7. The School District will have the right to retain the bid security of Bidders to whom an award is being considered until the later of the date on which (a) the Contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.

### C. Submission of Bids

- 1. All copies of the Bid, the Bid Security, and other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name and Contract name and number, the Bidder's name, address and the designated portion of the Work for which the bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" with the project information clearly marked on the face thereof.
- 2. Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids shall be returned unopened. Bids received from Bidders that have not been prequalified prior to bidding through the prequalification RFQ process shall be returned unopened.
- 3. The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.
- 4. Oral, telephone, telegraphic or facsimile Bids are invalid and shall not receive consideration.

### D. Modification or Withdrawal of Bid

- 1. An erroneous Bid may be withdrawn by the Bidder after the Bid opening but before the Contract Award based on a Bid mistake if the Bidder requests relief in writing and presents credible supporting evidence to the School District's Operations Manager of Capital Programs or her designee, within 2 business days after the Bid opening, that the reason for the substantially lower Bid price is a clerical mistake as opposed to a judgment mistake, and is actually due to an unintentional and substantial arithmetical error or an unintentional omission of a substantial quantity of work, labor, material or services made directly in the compilation of the Bid, and the withdrawal of the Bid would not result in the awarding of the Contract on another Bid of the same Bidder, his partner, or to a corporation or business venture owned by or in which the same Bidder has a substantial interest, as required by the Withdrawal of Bids statute, 73 P.S. §1602.
- 2. No Bidder who is permitted to withdraw a Bid shall supply any material or labor to, or perform any subcontract or other work agreement for any person to whom a Contract or Subcontract is awarded in the performance of the Contract for which the withdrawn Bid was submitted, without the written approval of the School District, as required by the Withdrawal of Bids statute, 73 P.S. §1602.
- 3. After the Bidder's Bid is withdrawn pursuant to this Paragraph, the School District shall have the right to award the Contract to the next lowest responsible and responsive Bidder or to reject all bids and resubmit the Project for bidding, in accordance with the Withdrawal of Bids statute, 73 P.S. §1603. If the School District resubmits the Project for

bidding, the withdrawing Bidder shall pay the costs, in connection with the resubmission, of printing new Contract Documents, required advertising, and printing and mailing notices to prospective bidders, if the School District finds that such costs would not have been incurred but for the withdrawal of the withdrawing Bidder's Bid; and, in no event, shall the withdrawing Bidder be permitted to resubmit a bid for the Project, in accordance with the Withdrawal of Bids statute, 73 P.S. §1603.

4. Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by the Bidder by notice to the party receiving the Bids at the place designated for receipt of Bids if a receipt for the Bid is signed. Such notice shall be in writing over the signature of the Bidder or by telegram; if by telegram, written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid. Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

### 8. CONSIDERATION OF BIDS

### A. Opening of Bids

1. The properly identified Bids received on time shall be opened publicly and shall be read aloud.

### B. <u>Rejection of Bids</u>

1. The School District shall have the right to reject any or all Bids, reject a Bid not accompanied by the required Bid Security, or by other data or documents required by the Bidding Documents, or reject a Bid which is in any way incomplete or irregular, or reject a Bid from a Bidder that has not been prequalified prior to bidding through the prequalification RFQ process, or reject any or all bids when such rejection is in the best interest of the School District.

### C. Non-Responsive Bids

- 1. Any submitted Bid Proposal or Bid which is not based upon the Drawings, Specifications, or any other Bidding Documents or Contract Documents, or which contains any qualifying language, or is accompanied by any letter or memorandum that qualifies or changes the Drawings, Specifications, Conditions of the Contract (General, Supplementary or other), or any other Bidding Document or Contract Document, shall be rejected; and the Bid of the Bidder shall be deemed to be "non-responsive".
- 2. Any submitted Bid Bond or other bid security which contains any qualifying language, or is accompanied by a letter or memorandum qualifying or changing same, or contains any language or is accompanied by a letter or memorandum that qualifies or changes the Conditions of the Contract (General, Supplementary or other) or any other Bidding Document or Contract Document, shall be rejected; and the Bid of the Bidder shall be deemed to be "non-responsive".
- 3. Any language contained in a Bid Proposal, Bid, Bid Bond or other bid security, or any language, letter or memorandum accompanying a Bid Proposal, Bid, Bid Bond or other bid security, that qualifies or changes the Drawings, Specifications, Conditions of the Contract (General, Supplementary or other), or any other Bidding Document or Contract

Document shall <u>not</u>, under any circumstances, be deemed to be binding on the School District.

### D. Acceptance Of Bid (Award)

- 1. It is the intent of the School District to award a Contract to the lowest responsible and responsive prequalified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available.
- 2. The School District shall have the right to waive informalities or irregularities in a Bid received and to accept the Bid that, in the School District's judgment, is in the School District's own best interests.
- 3. The School District has up to 90 calendar days from the date of opening of bids for the Contract to award the Contract to the lowest responsible and responsive bidder, pursuant to the Public School Code, 24 P.S. §7-751.
- 4. The School District may extend the date of the Contract Award for a mutually agreed-upon time period, upon the mutual written consent of the lowest responsible and responsive bidder, which consent shall not be unreasonably withheld. 24 P.S. §7-751.
- 5. The School District has up to 120 calendar days from the date of opening of bids for the Contract to award the Contract to the lowest responsible and responsive bidder, pursuant to the Public School Code, 24 P.S. §7-751, if the award of the Contract is delayed by the required approval of another governmental agency, the sale of bonds, or the award of a grant.
- 6. If for any reason whatsoever, the School District rejects Bidder's Bid, Bidder agrees that it shall not seek to recover lost profits on work performed nor shall it seek to recover its Bid preparation costs.
- 7. The Base Bid Proposal Amounts and the Add/Deduct Alternatives Amounts, if any, shall be used in determining the lowest bid for the Contract Award in the manner set forth in Paragraph 16 of these Instructions to Bidders.

### E. Post Bid Conference

The apparent low bidder for each prime contract is required to attend a Post-Bid Conference to be held at School District Headquarters at 10:00 AM on the day after bids are opened to review and confirm its bid. A principal of the bidder or representative authorized to make binding commitments must attend the meeting.

### 9. PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND AND MAINTENANCE BOND

A. Performance Bond, a Labor and Materialmen's Bond, and a Maintenance Bond shall be required as indicated in the General Conditions of the Contract for Construction.

### 10. BUSINESS DIVERSITY POLICY; MBE/WBE PARTICIPATION REQUIREMENTS

### A. <u>Business Diversity Policy:</u>

The Board of Education has adopted a diversity policy, Policy 612: Business Diversity in the Procurement of Materials and Contracted Services ("Diversity Policy"), which relates to the solicitation and participation of Certified Minority-Owned Business Enterprises, Certified Women-Owned Business Enterprises (collectively "M/WBE"), and other Certified diverse, small, or disadvantaged businesses in School District procurements and contracts to further the School District's diversity and anti-discrimination goals. In furtherance of the Diversity Policy, the School District has the discretion to establish participation rates and ranges for Certified M/WBEs and other Certified diverse, small, or disadvantaged businesses in order to encourage meaningful participation of M/WBEs in the provision of quality goods and services to the School District.

# The complete provisions of the Business Diversity Policy of the School District of Philadelphia adopted January 30, 2020 are incorporated herein by reference and set forth in the Attachments to the Contract Documents

### B. Minority/Women-Owned Business Enterprise Participation Plan:

The Bidder shall submit with its Bid either: (i) a completed Minority/Woman-Owned Business Enterprise (MWBE) Participation Plan ("MWBE Participation Plan") that meets the Participation Range for the Contract set forth in the Anti-Discrimination Policy Notice to Bidders in the Bidding Documents and lists the names, addresses, dollar amounts and scope of work to be performed by the minority-owned business enterprises (MBEs) and woman-owned business enterprises (WBEs), or (ii) a brief narrative explaining its reasons for not submitting a MWBE Participation Plan that meets the Participation Range set forth in the Anti-Discrimination Policy Notice to Bidders in the Bidding Documents.

Submission of the MWBE Participation Plan is an element of bid responsiveness. Failure to submit a completed MWBE Participation Plan or a narrative explaining the reasons that the Participation Plan could not be met may result in the rejection of a bid.

### 11. EXECUTION OF AGREEMENT

- A. The Bidder to whom the Contract is awarded by the School District shall, within 5 calendar days after Notice of Contract Award and receipt of the Contract Documents from the School District, sign and deliver to the School District, all required copies of the School District/Contractor Agreement, a copy of which is included in the Bidding Documents.
- B. At or prior to delivery of the signed Contracts, the Bidder shall deliver to the School District the Performance Bond, the Labor and Materialmen's Bond, and the Maintenance Bond, in the forms including in the Bidding Documents, and the policies of insurance or insurance certificates as required by the General Conditions and Supplementary Conditions of the Contract for Construction. All bonds and policies or certificates of insurance shall be approved by the School District before the successful Bidder may proceed with the Work.

### 12. AS-IS CONDITION; EXAMINATION OF CONDITIONS AFFECTING WORK

A. By execution of the Contract, the successful Bidder agrees that it accepts the Project site in whatever condition it is in on the date the Contract is executed, without representation or warranty of any kind, expressed or implied, by the School District or by any other person or entity. Prior to submitting a Bid, each Bidder shall examine and familiarize itself with all existing conditions, including all applicable laws, codes, ordinances, rules and regulations that shall affect the Work. To assist in this process, the School District shall make available to any Bidder, at its offices designated in the Invitation to Bid, all of the existing conditions, studies and related material in its possession. Bidders are urged to familiarize themselves with such documents and data.

- B. Bidders shall visit the Project site and ascertain by any reasonable means all conditions that shall in any manner affect the Work. Prior to submitting a Bid, Bidders shall request in writing from the School District or Architect/Engineer, any additional information that they deem necessary in order to be fully informed so as to be able to submit their Bid. Any information referred to in this Paragraph 12 of these Instructions to Bidders and furnished to Bidders is furnished for informational purposes only and does not form any part of the Contract. The School District makes no representation as to the accuracy or completeness of the information, which is furnished, and the delivery thereof shall not be deemed to constitute such representation. It shall be the Bidder's responsibility to take such additional steps as the Bidder deems necessary to satisfy itself as to the conditions of the Project site and to include in its Bid sufficient allocations for unknown or unidentified conditions. Any information furnished shall not be legally binding on the School District under this Paragraph 12 unless issued by Addendum.
- C. The Drawings have been prepared by the Architect/Engineer on the basis of surveys and inspections of the Project site, and represent a reasonably accurate indication of the physical conditions at the Project site. This, however, shall not impose responsibility or liability therefore on the School District and shall not relieve the Bidder of the necessity for fully informing itself as to existing physical conditions. The School District makes no representation as to the accuracy or completeness of such Drawings, and the delivery or use of such Drawings shall not be deemed to constitute such a representation by the School District.
- D. By submitting a Bid Proposal, each Bidder acknowledges that there have been, or shall be, contractors or consultants that have performed or shall perform work or services on the Project site pursuant to contracts with persons or entities other than the School District. The School District shall accept no responsibility for the work or services of such other contractors or consultants. It shall be the successful Bidder's responsibility to resolve disputes and coordinate with all other contractors or consultants (whether or not the School District is party to the contract with that contractor or consultant), which have performed or are performing work or services at the Project site. Similarly, each successful Bidder shall be responsible to such other contractors or consultants, which have performed or are performing work or services at the Project site, if the Bidder's actions, errors or omissions cause any damage or delay to such other contractors or consultants.
- E. Bidders shall be responsible for being thoroughly familiar with all conditions affecting labor in the neighborhood of the Project, including but not limited to unions, incentive pay, procurement, living and commuting conditions, and wage decisions applicable to the Work. The Bidder shall assume responsibility to the School District for all costs resulting from the failure to verify all conditions affecting labor. Each Bidder shall be responsible for the maintenance and observance of sound labor practices by itself and its Subcontractors, and shall take all steps reasonably necessary to avoid labor disputes and the potential delay and disruption arising therefrom. In particular, the Bidder shall assure that the trade union affiliations of persons employed by it and its Subcontractors in the performance of the Work are compatible with the employees of other Contractors and their Subcontractors on the Project site, if any.
- F. By receipt of the Bidding Documents, each Bidder acknowledges that the School District may undertake or award other contracts while the Bidder is performing the Work. As more fully set forth in the General Conditions of the Contract for Construction, the successful Bidder shall

need to coordinate its Work with the work or services of other contractors or consultants on the Project. Each Bidder must take such coordination obligation into account in submitting its Bid.

### 13. SCHEDULE

The Bidder's attention is directed to the schedule information stated in Specifications, Division 1, General Requirements, Section 00 1300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements".

### 14. CONTRACT TIME

The Bidder's attention is directed to the dates of Substantial Completion and Final Completion and any Project milestone or interim completion dates established for this Work stated in Specifications, Division 1, General Requirements, Section 00 1300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements".

### 15. COMPLIANCE WITH LAWS

The Bidder shall comply with all federal, state and local statutes, laws, rules, regulations and ordinances, including those of any public authorities connected with the Project.

### 16. ALTERNATIVE BIDS PROCESS (Not applicable to this Contract – No Alternates)

### 17. GENERAL REQUIREMENTS

Division 01-General Requirements shall apply to the single Contract or all multiple separate Contracts on the Project.

#### 18. CONSTRUCTION PROJECT PARTNERSHIP AGREEMENT (RESERVED)

### 19. COLLECTIVE BARGAINING REQUIREMENT (RESERVED)

#### 20. TAX COMPLIANCE

### A. Tax Compliance:

It is the policy of the School District of Philadelphia ("School District") to ensure that firms, businesses and other legal entities receiving School District contracts are current in their payment of City of Philadelphia ("City") taxes and School District taxes or other indebtedness owed to the City or the School District, including but not limited to taxes collected by the City on behalf of the School District, at the time of contract award. Pursuant to SRC Resolution SRC-2 dated February 21, 2013, the School District's School Reform Commission ("SRC") has adopted a Tax Compliance of Vendors Policy which provides that generally, the SRC will not authorize the award of a School District contract to a firm, business or other legal entity that is delinquent in its payment of City or School District taxes or other indebtedness owed to the City and/or the School District at the time of contract award.

All firms, businesses and other legal entities wanting to receive a School District contract or receiving a School District contract shall comply with all of the terms and conditions of the Tax Compliance of Vendors Policy, which is set forth in detail in GC 4.25 of the General Conditions

### 21. **PREVAILING WAGES**

This contract is subject to the requirements of the Pennsylvania Prevailing Wages Act and other related statutes and regulations governing wages, hours and conditions of employment, which are set forth in detail in Article GC-7.22-WAGE RATES, HIRING PRACTICES, AND OTHER FEDERAL, STATE AND LOCAL REQUIREMENTS of the General Conditions.

The contractor is required, among other things, to comply with the Prevailing Minimum Wage Determination included in the Bidding Documents.

### 22. BID PROCESSING FEE (WAIVED FOR THIS PROJECT)

A non-refundable processing fee is required to be submitted with each bid along with all other specified bid securities. Payment is to be made by certified check or money order payable to the School District of Philadelphia. Payments to be made in accordance with the following bid processing schedule:

Amount of Bid			Amount of Processing Fee
\$10,000.00		And Less	\$0.00
\$10,001.00	То	\$100,000.00	\$10.00
\$100,001.00	То	\$300,000.00	\$30.00
\$300,001.00	То	\$500,000.00	\$50.00
\$500,001.00	То	\$1,000,000.00	\$100.00
\$1,000,001.00	То	\$2,000.000.00	\$200.00
\$2,000,001.00	То	\$3,000,000.00	\$300.00
\$3,000,001.00	То	\$4,000,000.00	\$400.00
\$4,000,001.00	То	\$5,000,000.00	\$500.00
\$5,000,001.00		And More	\$600.00

END OF SECTION 00 0100

### SCHOOL DISTRICT OF PHILADELPHIA

## MBE / WBE PARTICIPATION GOALS

### **NOTICE TO BIDDERS**

This Bid is issued under the Business Diversity Policy as adopted on January 30, 2020 by the Board of Education. A fundamental requirement of the Policy is that all contractors, vendors and consultants who contract with the District provide a full and fair opportunity for the participation of Minority and Woman-Owned firms (MWBEs) in the performance of the contract. Ranges of participation have been established that represent meaningful and substantial participation for this contract based upon the availability of bona fide MWBE firms in the Philadelphia Metropolitan Statistical Area. The range of participation is:

MWBE RANGE	30-35%
------------	--------

The Participation Form must be completed and submitted with the bid. Proposers are advised to carefully review the instructions. Failure to comply may result in disqualification.

This range of participation for this bid may be amended or adjusted.

All questions about the Business Diversity in the Procurement of Materials and Contracted Services policy and compliance requirements should be directed to **Richard Brown** in the Office of Small Business Development at (215) 400-4380 or via email through **rkbrown@philasd.org**.

# **M/WBE PARTICIPATION DOCUMENTS**

1. M/WBE Participation Plan Form Instructions

2. M/WBE PARTICIPATION PLAN

3. VENDOR COMPLIANCE ACKNOWLEDGMENT FORM

# M/WBE Participation Plan Form Instructions

# Submission and Form Completion Requirement:

The M/WBE Participation Plan Forms must be submitted with all vendor responses to the solicitation. Failure to submit and complete the appropriate M/WBE Participation Plan Forms will result in the Prime Contractor's response to this solicitation being deemed **non-responsive** and subject to disqualification

# 1. Prime Contractor Responsibilities:

- Complete Section I. ensuring all rows are filled, dated, and/or signed with the Prime Contractor's information.
- If the Prime Contractor is a certified Small Business or Minority and/or Women Owned vendor, include a copy of the valid certification. Section II. is not required should the Prime Contractor be a certified Small Business or Minority and/or Women Owned vendor.
- If the Prime Contractor is not already a certified Small Business or Minority and/or Women Owned vendor, specify the approximate percentage and/or dollar amount of the commitment to each certified MWBE subcontractor upon award on the following pages:
- Section II. "Approximate \$ amount of Subcontract" or "Subcontract % of Total Contract Amount"
- The Prime Contractor is also responsible for completing the **Procurement Vendor**

**Compliance Acknowledgement Form**, following the MWBE Participation Plan Forms.

# 2. Subcontractor Responsibilities:

- Each Subcontractor must complete **Section II.**, ensuring all sections are filled, dated, signed, *and returned to Prime to include in the original submission.*
- If a Subcontractor is a certified vendor, include a copy of the valid certification.
- Failure to complete Page II. correctly will deem the entire M/WBE Participation Plan Form and vendor response as non-responsive, subjecting the Prime Contractor's response to disqualification.

# 3. Additional Subcontractors:

- If needed, use multiple copies of **Section II.** for each additional Subcontractor.
- Multiple certified Small Business/MWBE sub-contractors can be utilized to meet the required MWBE Goal referenced within this Bid/RFP document.

# 4. Diversity Certifications:

- Include copies of all active and current Small Business and/or MWBE certifications for both the Prime Contractor and/or any Subcontractors, as applicable.
- All certifications must be current at the time of submission.

## 5. MWBE Goal Compliance:

- If the MWBE Goal cannot be met, the *Prime Contractor* must:
- Utilize **Section III** to provide an explanation and;
- Submit evidence of Best Efforts for review and compliance by the Office of Procurement Services. This includes completing the table within Section III and listing at least three (3) sub-contractors that have been contacted to meet the goal set forth as a percentage or Best Efforts.

**Note: Section III** is not required if the Prime Contractor and/or Sub-Contractor has met the requirements outlined in **Section I** and/or **Section II**.

## OFFICE OF PROCUREMENT SERVICES OFFICE OF MINORITY AND SMALL BUSINESS DEVELOPMENT

Minority/Women-Owned Business Enterprise (M/WBE) Participation Plan

# Information in this section refers to the Prime Contractor/Vendor.

Ι.

Company Nam	ie:	Federal Tax ID:										
Address:	Į						Phone Number:					
City:		State:				Zip Code:						
DBA (if applica	ble):					F	ax Numbe	er:				
Primary Conta Person:	ct				Primary Email:	Co	ntact					
Compliance Contact:					Complia Contact							
Bid/RFP Number:					:	-	RFP mission D e:	ue				
<ul> <li>Minority-Ov</li> <li>Women-Ov</li> <li>Federally C</li> <li>Small Busin</li> <li>Disabled O</li> <li>Veterans B</li> <li>Business E</li> <li>LGBT Busi</li> <li>Diversity Busines</li> </ul>	sity Business Certification to be used on this contract(s):       Check all that apply and INCLUDE a copy of the certification.         nority-Owned Business Enterprise (MBE)       Demen-Owned Business Enterprise (WBE)         oderally Certified Disadvantaged Business Enterprise (DBE)       Demen-Owned Business Enterprise (SBE)         nall Business Enterprise (SBE)       Demension         sabled Owned Business Enterprise (DSBE)       Demension         terans Business Enterprise (VBE)/Certified Service-Disabled Veterans       Demension         Usiness Enterprise (SDVBE)       Demension         Demension       Demension         Owned Business Enterprise (LGBTBE)       Demension         Owned Business Certifying Agency:											
Authorized Re Signature:	oresentativ	/e										
Print Name:												
Title:							Date:					
Certifying Agency		Certification No.										
<ul> <li>The School District of Philadelphia NON-Profit Registration Certificate</li> <li>Date certificate approved: Certificate expiration date</li> <li>Non-profit certification is renewed annually by the vendor.</li> </ul>												
For School District of Philadelphia, Office of Procurement ONLY:												
For Scho	ol District E	Emplo	oyee signature ON	LY:	5 - K - J - S - S - K - K - K -			D	ate:	5 - 1 - 1 - 1 - 1 - 1 - 1		

# II. This section pertains to the subcontractors involved throughout the entire duration of this contract. Use Section II of this form for each additional subcontractor as needed. Please include copies of all relevant certifications.

Company Nam	e:	Federal Tax ID:									
Address:							Phone	Phone Number:			
City:			St	ate:		-	Zi	p Code	:		
DBA (if applica	ble):				_	Fax	Number:	-			
Primary Contac Person:	tact				Prima Email	ry Co :	ntact				
Compliance Contact:					Comp Conta						
Description of Services Provid	led:										
Approximate \$ Subcontract:	amo	unt of			-		ntract % Contract ht:	of			
<ul> <li>Minority-Ow</li> <li>Women-Ow</li> <li>Federally C</li> <li>Small Busir</li> <li>Disabled O</li> <li>Veterans Business E</li> <li>LGBT Busir</li> <li>Diversity Bu</li> <li>None – not</li> </ul>	<ul> <li>Women-Owned Business Enterprise (WBE)</li> <li>Federally Certified Disadvantaged Business Enterprise (DBE)</li> <li>Small Business Enterprise (SBE)</li> <li>Disabled Owned Business Enterprise (DSBE)</li> <li>Veterans Business Enterprise (VBE)/Certified Service-Disabled Veterans</li> <li>Business Enterprise (SDVBE)</li> <li>LGBT Business Enterprise (LGBTBE)</li> <li>Diversity Business Certifying Agency:</li></ul>										
Authorized Rep Signature:	orese	ntative									
Print Name:											
Title:							Date:				
The School District of Philadelphia NON-Profit Registration Certificate											
Date certificate approved: Certificate expiration date: Non-profit certification is renewed annually by the vendor.											
For School District of Philadelphia, Office of Procurement ONLY:											
For School	Distri	ict Emplo	oyee signature ONLY:						_Date:_	1 - I	

THE SIGNER COMMITS TO PROVIDE SERVICES OR SUPPLIES AS DESCRIBED ABOVE AND WILL ENTER INTO A FORMAL AGREEMENT WITH THE BIDDER/PROPOSER CONDITIONED ON THE BIDDER/PROPOSER'S EXECUTION OF A CONTRACT WITH THE SCHOOL DISTRICT OF PHILADELPHIA.

### III. M/WBE CONTRACTOR GOOD FAITH EFFORTS FORM The Prime Contractor/Vendor must complete information in this section if the Prime Contractor(Vendor) proposes no diversity enterprise commitment.

RFP#: \_\_\_\_\_ Date: \_\_\_\_\_

### Project Title/Description: \_\_\_\_\_

Bidder/Applicant's Company:		
Authorized Representative:	Title:	
Address:		
Phone:	Email:	

The Bidder or Prime Contractor has the burden of demonstrating "Good Faith Efforts" to meet the diverse contracting goals. I certify that the following certified Minority/Women Business Enterprises were contacted to obtain a quote for work to be performed on the above-mentioned project/contract. List the certified firm's information: date, name, certification, contact person, contact phone number, type of work to be performed, and the estimated budgeted amount for each vendor, along with results of contact (please use the list below to indicate the result).

Date	Certified Firm Name	Firm's Certification(s)	Firm's Contract Person	Firm's Contact Phone #	Type of Work	Estimated Budgeted Amount for Certified Firm	Results (select from the list below)

To the best of my knowledge and belief, said certified Minority/Women Business Enterprise contractor(s) was/were not selected, unavailable for work on this project, or unable to provide a quote for the following reasons: Please give the appropriate reasons given by each MBE/WBE firm contacted above. See the list below of results based on the contacted certified M/WBE vendor:

- A. Firm agreed to sub-contract and will enter into a formal agreement with the bidder
- **B.** Did not have the capability/capacity to perform the work
- C. Contract too small
- D. Remote location / No presence in that area
- E. Received solicitation notices too late
- F. Did not want to work with this contractor
- G. Other (give reason)

The Prime Contractor attests that it submits the following as evidence of its good faith efforts to find and retain certified minority and women-owned business enterprises in connection with this Bid or Proposal.

Authorized Re	epresentative Si	gnature:		
Print Name:				
Title:			Date:	

# PROCUREMENT VENDOR COMPLIANCE ACKNOWLEDGEMENT FORM

The Pennsylvania Public School Code authorizes the Board to adopt policies and procedures and to make rules and regulations to manage school affairs and fiscal well-being of the District, including with respect to competitive procurements and vendor responsibility. The School District of Philadelphia requires contracted vendors to comply with the policies and procedures adopted by the Board of Education. The School District of Philadelphia will maintain comprehensive records regarding the entire scope of the procurement process, post-award compliance, and administration of the M/WBE participation and compliance adherence process.

agree to the following:

Ι.

*\_{Company Name}, do hereby acknowledge and* 

- I have read, carefully reviewed this Invitation for Bid (IFB) and understand the benchmarks and measurements to achieve diversity goals as outlined for M/WBE Participation. Board of Education Policy <u>612 Business Diversity in the Procurement of Materials and Contracted Services</u> further outlines Business Diversity Goal requirements.
- 2. I understand that the completion and submission of the M/WBE Participation Plan Form and the supplementary documentation to support if applicable is an element of responsiveness to this IFB. Failure to submit this documentation with the proposal and/or evidence of Good Faith Efforts will result in rejection of the bid.
- 3. If awarded a contract, I understand and will comply with all contract monitoring, compliance, and enforcement guidelines, including but not limited to recordkeeping and ongoing reporting on contract diversity outcomes that offer the maximum practicable opportunity for qualified and certified M/WBEs and other disadvantaged enterprises to participate throughout all phases of the contract and any subsequent contract amendment. Such as:
  - Monthly and Quarterly post-award compliance reporting via the School District of Philadelphia Oracle Supplier Compliance System to ensure that the vendor meets diversity participation commitments and other contract requirements.
  - Ongoing monitoring of prime contractors' payments to M/WBEs and other contractors utilized through payment reporting and acceptance of payments by sub-contractors.
  - Participating in ongoing training related to vendor compliance and reporting requirements.
- 4. I understand that non-compliance with vendor compliance reporting and/or diversity participation commitments throughout the life of the contract may result in any of the following events, including but not limited to: withholding of payments, contract termination, suspension, disqualification, debarment, or other sanctions and penalties for failure to comply.
- 5. I agree to conduct business with the highest levels of ethical standards and agree to comply with all applicable requirements at all times.

### **Receipt and Acknowledgement**

By signing below, I agree that I have read both this acknowledgement statement and the referenced policies in their entirety. I understand that I am subject to these policies whether or not the acknowledgement form is signed. Lack of confirmation of receipt of the acknowledgement form does not exempt a vendor or contractor from Board policy enforcement.

Company Name:			
Company Representative:			
Signature:			
Title:			
Date:			

Company's Compliance Officer:

Email Address of Company's Compliance Officer:

# **PREVAILING WAGES**

Project Name:	Southwark - Fire Alarm Replacement
General Description:	This project includes the full replacement of the existing fire alarm and fire detection systems within the Southwark Elementary School, address 1835 S 9th Street, Philadelphia, PA 19148.
Project Locality	Philadelphia
Awarding Agency:	School District of Philadelphia
Contract Award Date:	5/29/2025
Serial Number:	25-01590
Project Classification:	Building
Determination Date:	2/13/2025
Assigned Field Office:	Philadelphia
Field Office Phone Number:	(215)560-1858
Toll Free Phone Number:	
Project County:	Philadelphia County

Project: 25-01590 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	6/1/2023		\$57.84	\$43.36	\$101.20
Asbestos & Insulation Workers	5/1/2024		\$59.37	\$46.03	\$105.40
Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2024		\$36.71	\$19.13	\$55.84
Boilermakers	1/1/2023		\$51.27	\$35.30	\$86.57
Boilermakers	1/1/2024		\$52.10	\$35.72	\$87.82
Bricklayer	5/1/2023		\$47.50	\$31.61	\$79.11
Bricklayer	5/1/2024		\$48.70	\$32.11	\$80.81
Carpenter - Chief of Party (Surveying & Layout)	5/1/2023		\$60.54	\$29.27	\$89.81
Carpenter - Chief of Party (Surveying & Layout)	5/1/2024		\$62.83	\$29.27	\$92.10
Carpenter - Chief of Party (Surveying & Layout)	5/1/2025		\$65.14	\$29.27	\$94.41
Carpenter - Instrument Person (Surveying & Layout)	5/1/2023		\$52.64	\$29.27	\$81.91
Carpenter - Instrument Person (Surveying & Layout)	5/1/2024		\$54.64	\$29.27	\$83.91
Carpenter - Instrument Person (Surveying & Layout)	5/1/2025		\$56.64	\$29.27	\$85.91
Carpenter - Rodman (Surveying & Layout)	5/1/2023		\$26.32	\$20.87	\$47.19
Carpenter - Rodman (Surveying & Layout)	5/1/2024		\$27.32	\$20.87	\$48.19
Carpenter - Rodman (Surveying & Layout)	5/1/2025		\$28.32	\$20.87	\$49.19
Carpenters	5/1/2023		\$52.64	\$29.27	\$81.91
Carpenters	5/1/2024		\$54.64	\$29.27	\$83.91
Carpenters	5/1/2025		\$56.64	\$29.27	\$85.91
Cement Finishers & Plasterers	5/1/2022		\$41.97	\$32.40	\$74.37
Cement Masons	5/1/2023		\$44.20	\$32.96	\$77.16
Cement Masons	5/1/2024		\$46.70	\$32.46	\$79.16
Dockbuilder, Pile Drivers	5/1/2023		\$50.48	\$37.99	\$88.47
Dockbuilder, Pile Drivers	5/1/2024		\$52.98	\$37.99	\$90.97
Dockbuilder, Pile Drivers	5/1/2025		\$55.23	\$37.99	\$93.22
Dockbuilder, Pile Drivers	5/1/2026		\$56.98	\$37.99	\$94.97
Dockbuilder/Pile Driver Diver	5/1/2023		\$58.41	\$41.74	\$100.15
Dockbuilder/Pile Driver Diver	5/1/2024		\$61.54	\$41.74	\$103.28
Dockbuilder/Pile Driver Diver	5/1/2025		\$64.35	\$41.74	\$106.09
Dockbuilder/Pile Driver Diver	5/1/2026		\$66.54	\$41.74	\$108.28
Dockbuilder/pile driver tender	5/1/2023		\$50.48	\$37.99	\$88.47
Dockbuilder/pile driver tender	5/1/2024		\$52.98	\$37.99	\$90.97
Dockbuilder/pile driver tender	5/1/2025		\$55.23	\$37.99	\$93.22
Dockbuilder/pile driver tender	5/1/2026		\$56.98	\$37.99	\$94.97
Drywall Finisher	5/1/2023		\$41.80	\$31.76	\$73.56
Drywall Finisher	5/1/2024		\$42.25	\$32.56	\$74.81
Electricians	5/1/2023		\$68.18	\$42.97	\$111.15
Electricians	5/1/2024		\$69.58	\$45.66	\$115.24
Elevator Constructor	1/1/2023		\$66.21	\$43.64	\$109.85
Elevator Constructor	1/1/2025		\$71.85	\$45.77	\$105.65
Floor Coverer	5/1/2023		\$54.74	\$29.46	\$84.20
Floor Coverer	5/1/2024		\$56.94	\$29.46	\$86.40
Glazier	5/1/2024		\$46.68	\$29.40	\$83.30
Glazier	5/1/2023		\$40.08	\$30.02	\$85.50
Commonwealth of Pennsylvania	5/1/2024		φ46.00	φ37.50	\$85.50 Department of

Commonwealth of Pennsylvania Report Date: 2/19/2025

Project: 25-01590 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Interior Finish	5/1/2023		\$36.45	\$27.02	\$63.47
Interior Finish	5/1/2024		\$37.70	\$27.27	\$64.97
Iron Workers (Bridge, Structural, Ornamental, Precast)	1/1/2023		\$50.70	\$39.51	\$90.21
Iron Workers (Bridge, Structural, Ornamental, Precast)	7/1/2024		\$53.20	\$45.01	\$98.21
Iron Workers (Riggers)	7/1/2023		\$44.62	\$34.14	\$78.76
Iron Workers (Riggers)	7/1/2024		\$46.73	\$34.39	\$81.12
Iron Workers (Rodman/Reinforcing)	7/1/2023		\$48.29	\$34.77	\$83.06
Iron Workers (Rodman/Reinforcing)	7/1/2024		\$50.29	\$34.77	\$85.06
Laborers (Class 01 - See notes)	5/1/2023		\$36.45	\$27.02	\$63.47
Laborers (Class 01 - See notes)	5/1/2024		\$37.70	\$27.27	\$64.97
Laborers (Class 02 - See notes)	5/1/2023		\$37.95	\$27.30	\$65.25
Laborers (Class 02 - See notes)	5/1/2024		\$39.40	\$27.55	\$66.95
Laborers (Class 03 - See notes)	5/1/2023		\$36.87	\$27.25	\$64.12
Laborers (Class 03 - See notes)	5/1/2024		\$38.12	\$27.50	\$65.62
Laborers (Class 04 - See notes)	5/1/2023		\$36.87	\$27.25	\$64.12
Laborers (Class 04 - See notes)	5/1/2024		\$38.12	\$27.50	\$65.62
Laborers (Class 05 - See notes)	5/1/2023		\$36.45	\$27.02	\$63.47
Laborers (Class 05 - See notes)	5/1/2024		\$37.70	\$27.27	\$64.97
Landscape Laborer	5/1/2023		\$29.45	\$23.98	\$53.43
Landscape Laborer	5/1/2024		\$30.70	\$24.23	\$54.93
Marble Finisher	5/1/2023		\$39.52	\$29.30	\$68.82
Marble Mason	5/1/2023		\$47.20	\$31.95	\$79.15
Mason Tender, Cement	5/1/2023		\$36.87	\$27.25	\$64.12
Mason Tender, Cement	5/1/2024		\$38.12	\$27.50	\$65.62
Millwright	5/1/2023		\$51.60	\$35.81	\$87.41
Millwright	5/1/2024		\$54.67	\$35.81	\$90.48
Millwright	5/1/2025		\$57.39	\$35.81	\$93.20
Millwright	5/1/2026		\$60.20	\$35.81	\$96.01
Operators (Building, Class 01 - See Notes)	5/1/2023		\$52.20	\$32.81	\$85.01
Operators (Building, Class 01 - See Notes)	5/1/2024		\$53.36	\$33.65	\$87.01
Operators (Building, Class 01 - See Notes)	5/1/2025		\$54.52	\$34.49	\$89.01
Operators (Building, Class 01 - See Notes)	5/1/2026		\$55.67	\$35.34	\$91.01
Operators (Building, Class 01A - See Notes)	5/1/2023		\$55.20	\$33.70	\$88.90
Operators (Building, Class 01A - See Notes)	5/1/2024		\$56.37	\$34.53	\$90.90
Operators (Building, Class 01A - See Notes)	5/1/2025		\$57.52	\$35.38	\$92.90
Operators (Building, Class 01A - See Notes)	5/1/2026		\$58.68	\$36.22	\$94.90
Operators (Building, Class 02 - See Notes)	5/1/2023		\$51.95	\$32.74	\$84.69
Operators (Building, Class 02 - See Notes)	5/1/2024		\$53.11	\$33.58	\$86.69
Operators (Building, Class 02 - See Notes)	5/1/2025		\$54.27	\$34.42	\$88.69
Operators (Building, Class 02 - See Notes)	5/1/2026		\$55.43	\$35.26	\$90.69
Operators (Building, Class 02A - See Notes)	5/1/2023		\$54.97	\$33.61	\$88.58
Operators (Building, Class 02A - See Notes)	5/1/2024		\$56.13	\$34.45	\$90.58
Operators (Building, Class 02A - See Notes)	5/1/2025		\$57.29	\$35.29	\$92.58
Operators (Building, Class 02A - See Notes)	5/1/2026		\$58.44	\$36.14	\$94.58

Project: 25-01590 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Building, Class 03 - See Notes)	5/1/2023		\$47.87	\$31.53	\$79.40
Operators (Building, Class 03 - See Notes)	5/1/2024		\$49.03	\$32.37	\$81.40
Operators (Building, Class 03 - See Notes)	5/1/2025		\$50.18	\$33.22	\$83.40
Operators (Building, Class 03 - See Notes)	5/1/2026		\$51.34	\$34.06	\$85.40
Operators (Building, Class 04 - See Notes)	5/1/2023		\$47.57	\$31.44	\$79.01
Operators (Building, Class 04 - See Notes)	5/1/2024		\$48.73	\$32.28	\$81.01
Operators (Building, Class 04 - See Notes)	5/1/2025		\$49.88	\$33.13	\$83.01
Operators (Building, Class 04 - See Notes)	5/1/2026		\$51.04	\$33.97	\$85.01
Operators (Building, Class 05 - See Notes)	5/1/2023		\$45.85	\$30.93	\$76.78
Operators (Building, Class 05 - See Notes)	5/1/2024		\$47.00	\$31.78	\$78.78
Operators (Building, Class 05 - See Notes)	5/1/2025		\$48.16	\$32.62	\$80.78
Operators (Building, Class 05 - See Notes)	5/1/2026		\$49.32	\$33.46	\$82.78
Operators (Building, Class 06 - See Notes)	5/1/2023		\$44.85	\$30.65	\$75.50
Operators (Building, Class 06 - See Notes)	5/1/2024		\$46.02	\$31.48	\$77.50
Operators (Building, Class 06 - See Notes)	5/1/2025		\$47.17	\$32.33	\$79.50
Operators (Building, Class 06 - See Notes)	5/1/2026		\$48.34	\$33.16	\$81.50
Operators (Building, Class 07A- See Notes)	5/1/2023		\$63.33	\$37.68	\$101.01
Operators (Building, Class 07A- See Notes)	5/1/2024		\$64.80	\$38.61	\$103.41
Operators (Building, Class 07A- See Notes)	5/1/2025		\$66.26	\$39.55	\$105.81
Operators (Building, Class 07A- See Notes)	5/1/2026		\$67.73	\$40.48	\$108.21
Operators (Building, Class 07B- See Notes)	5/1/2023		\$63.04	\$37.59	\$100.63
Operators (Building, Class 07B- See Notes)	5/1/2024		\$64.50	\$38.53	\$103.03
Operators (Building, Class 07B- See Notes)	5/1/2025		\$65.97	\$39.46	\$105.43
Operators (Building, Class 07B- See Notes)	5/1/2026		\$67.44	\$40.39	\$107.83
Painters Class 1 (see notes)	5/1/2023		\$42.32	\$32.91	\$75.23
Painters Class 1 (see notes)	5/1/2024		\$42.97	\$34.11	\$77.08
Painters - Line Stripping	12/1/2024		\$44.12	\$27.91	\$72.03
Painters Class 4 (see notes)	5/1/2023		\$44.41	\$32.91	\$77.32
Painters Class 4 (see notes)	5/1/2024		\$45.06	\$34.11	\$79.17
Plasterers	5/1/2021		\$41.52	\$31.85	\$73.37
Plasterers	5/1/2023		\$42.97	\$32.65	\$75.62
Plasterers	5/1/2024		\$43.78	\$33.09	\$76.87
plumber	5/1/2024		\$67.53	\$38.31	\$105.84
Plumbers	5/1/2023		\$64.73	\$37.61	\$102.34
Pointers, Caulkers, Cleaners	5/1/2023		\$48.80	\$30.70	\$79.50
Pointers, Caulkers, Cleaners	5/1/2024		\$50.00	\$31.20	\$81.20
Roofers (Composition)	5/1/2023		\$42.63	\$34.62	\$77.25
Roofers (Composition)	5/1/2024		\$44.13	\$34.77	\$78.90
Roofers (Shingle)	5/1/2023		\$32.85	\$22.10	\$54.95
Roofers (Shingle)	5/1/2024		\$34.35	\$22.20	\$56.55
Roofers (Slate & Tile)	5/1/2023		\$35.85	\$22.10	\$57.95
Roofers (Slate & Tile)	5/1/2024		\$37.35	\$22.20	\$59.55
Sheet Metal Workers	5/1/2022		\$55.75	\$47.28	\$103.03
Sheet Metal Workers	5/1/2023		\$57.31	\$48.97	\$106.28

Project: 25-01590 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Sheet Metal Workers	5/1/2024		\$59.22	\$50.56	\$109.78
Sign Makers and Hangars	7/15/2022		\$30.54	\$24.35	\$54.89
Sign Makers and Hangars	7/15/2023		\$31.76	\$24.63	\$56.39
Sign Makers and Hangars	7/15/2024		\$32.32	\$25.82	\$58.14
Sprinklerfitters	1/1/2023		\$62.23	\$31.99	\$94.22
Steamfitters	5/1/2023		\$67.37	\$41.99	\$109.36
Steamfitters	5/1/2024		\$70.32	\$43.09	\$113.41
Stone Masons	5/1/2023		\$47.20	\$31.95	\$79.15
Terrazzo Finisher	5/1/2023		\$43.75	\$27.86	\$71.61
Terrazzo Grinder	5/1/2023		\$44.02	\$27.86	\$71.88
Terrazzo Mechanics	5/1/2023		\$50.26	\$29.56	\$79.82
Tile Finisher	5/1/2023		\$39.52	\$29.30	\$68.82
Tile Setter	5/1/2023		\$50.26	\$29.56	\$79.82
Truckdriver class 1(see notes)	5/1/2022		\$35.60	\$20.74	\$56.34
Truckdriver class 1(see notes)	5/1/2023		\$36.29	\$21.55	\$57.84
Truckdriver class 1(see notes)	5/1/2024		\$36.79	\$22.54	\$59.33
Truckdriver class 2 (see notes)	5/1/2022		\$35.70	\$20.74	\$56.44
Truckdriver class 2 (see notes)	5/1/2023		\$36.39	\$21.55	\$57.94
Truckdriver class 2 (see notes)	5/1/2024		\$36.89	\$22.54	\$59.43
Window Film / Tint Installer	6/1/2024		\$26.37	\$14.83	\$41.20

Project: 25-01590 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter - Chief of Party (Surveying & Layout)	5/1/2023		\$63.24	\$29.06	\$92.30
Carpenter - Chief of Party (Surveying & Layout)	5/1/2024		\$65.19	\$29.06	\$94.25
Carpenter - Chief of Party (Surveying & Layout)	5/1/2025		\$67.15	\$29.06	\$96.21
Carpenter - Chief of Party (Surveying & Layout)	5/1/2026		\$69.10	\$29.06	\$98.16
Carpenter - Instrument Person (Surveying & Layout)	5/1/2023		\$54.99	\$29.06	\$84.05
Carpenter - Instrument Person (Surveying & Layout)	5/1/2024		\$56.69	\$29.06	\$85.75
Carpenter - Instrument Person (Surveying & Layout)	5/1/2025		\$58.39	\$29.06	\$87.45
Carpenter - Instrument Person (Surveying & Layout)	5/1/2026		\$60.09	\$29.06	\$89.15
Carpenter - Rodman (Surveying & Layout)	5/1/2023		\$43.99	\$22.41	\$66.40
Carpenter - Rodman (Surveying & Layout)	5/1/2024		\$45.35	\$22.41	\$67.76
Carpenter - Rodman (Surveying & Layout)	5/1/2025		\$46.71	\$22.41	\$69.12
Carpenter - Rodman (Surveying & Layout)	5/1/2026		\$48.07	\$22.41	\$70.48
Carpenter	5/1/2023		\$54.99	\$29.06	\$84.05
Carpenter	5/1/2024		\$56.69	\$29.06	\$85.75
Carpenter	5/1/2025		\$58.49	\$29.06	\$87.55
Carpenter	5/1/2026		\$60.19	\$29.06	\$89.25
Cement Masons	5/1/2023		\$43.20	\$32.91	\$76.11
Dockbuilder, Pile Drivers	5/1/2023		\$50.48	\$37.99	\$88.47
Dockbuilder, Pile Drivers	5/1/2024		\$52.98	\$37.99	\$90.97
Dockbuilder, Pile Drivers	5/1/2025		\$55.23	\$37.99	\$93.22
Dockbuilder, Pile Drivers	5/1/2026		\$56.98	\$37.99	\$94.97
Dockbuilder/Pile Driver Diver	5/1/2023		\$58.41	\$41.74	\$100.15
Dockbuilder/Pile Driver Diver	5/1/2024		\$61.54	\$41.74	\$103.28
Dockbuilder/Pile Driver Diver	5/1/2025		\$64.35	\$41.74	\$106.09
Dockbuilder/Pile Driver Diver	5/1/2026		\$66.54	\$41.74	\$108.28
Dockbuilder/pile driver tender	5/1/2023		\$50.48	\$37.99	\$88.47
Dockbuilder/pile driver tender	5/1/2024		\$52.98	\$37.99	\$90.97
Dockbuilder/pile driver tender	5/1/2025		\$55.23	\$37.99	\$93.22
Dockbuilder/pile driver tender	5/1/2026		\$56.98	\$37.99	\$94.97
Electric Lineman	5/30/2022		\$59.17	\$31.48	\$90.65
Electric Lineman	5/29/2023		\$60.48	\$32.77	\$93.25
Electric Lineman	6/3/2024		\$62.07	\$33.96	\$96.03
Iron Workers (Bridge, Structural, Ornamental, Precast)	1/1/2023		\$50.70	\$39.51	\$90.21
Iron Workers (Bridge, Structural, Ornamental, Precast)	7/1/2024		\$53.20	\$45.01	\$98.21
Iron Workers (Riggers)	7/1/2023		\$44.62	\$34.14	\$78.76
Iron Workers (Rodman/Reinforcing)	7/1/2023		\$48.29	\$34.77	\$83.06
Laborers (Class 01 - See notes)	5/1/2022		\$36.30	\$27.20	\$63.50
Laborers (Class 01 - See notes)	5/1/2023		\$37.55	\$27.45	\$65.00
Laborers (Class 01 - See notes)	5/1/2024		\$38.80	\$27.65	\$66.45
Laborers (Class 02 - See notes)	5/1/2022		\$36.50	\$27.20	\$63.70
Laborers (Class 02 - See notes)	5/1/2023		\$37.75	\$27.45	\$65.20
Laborers (Class 02 - See notes)	5/1/2024		\$39.00	\$27.65	\$66.65
Laborers (Class 03 - See notes)	5/1/2022		\$36.50	\$27.20	\$63.70
Laborers (Class 03 - See notes)	5/1/2023		\$37.75	\$27.45	\$65.20

# BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 25-01590 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 03 - See notes)	5/1/2024		\$39.00	\$27.65	\$66.65
Laborers (Class 04 - See notes)	5/1/2022		\$31.10	\$27.20	\$58.30
Laborers (Class 04 - See notes)	5/1/2023		\$32.35	\$27.45	\$59.80
Laborers (Class 04 - See notes)	5/1/2024		\$33.60	\$27.65	\$61.25
Laborers (Class 05 - See notes)	5/1/2022		\$37.15	\$27.20	\$64.35
Laborers (Class 05 - See notes)	5/1/2023		\$38.40	\$27.45	\$65.85
Laborers (Class 05 - See notes)	5/1/2024		\$39.65	\$27.65	\$67.30
Laborers (Class 06 - See notes)	5/1/2022		\$37.20	\$27.20	\$64.40
Laborers (Class 06 - See notes)	5/1/2023		\$38.40	\$27.45	\$65.85
Laborers (Class 06 - See notes)	5/1/2024		\$39.70	\$27.65	\$67.35
Laborers (Class 07 - See notes)	5/1/2022		\$37.05	\$27.20	\$64.25
Laborers (Class 07 - See notes)	5/1/2023		\$38.30	\$27.45	\$65.75
Laborers (Class 07 - See notes)	5/1/2024		\$39.55	\$27.65	\$67.20
Laborers (Class 08 - See notes)	5/1/2022		\$36.80	\$27.20	\$64.00
Laborers (Class 08 - See notes)	5/1/2023		\$38.05	\$27.45	\$65.50
Laborers (Class 08 - See notes)	5/1/2024		\$39.30	\$27.65	\$66.95
Laborers (Class 09 - See notes)	5/1/2022		\$36.65	\$27.20	\$63.85
Laborers (Class 09 - See notes)	5/1/2023		\$37.90	\$27.45	\$65.35
Laborers (Class 09 - See notes)	5/1/2024		\$39.15	\$27.65	\$66.80
Laborers (Class 10- See notes)	5/1/2022		\$36.80	\$27.20	\$64.00
Laborers (Class 10- See notes)	5/1/2023		\$38.05	\$27.45	\$65.50
Laborers (Class 10- See notes)	5/1/2024		\$39.30	\$27.65	\$66.95
Laborers (Class 11 -See Notes)	5/1/2022		\$36.70	\$27.20	\$63.90
Laborers (Class 11 -See Notes)	5/1/2023		\$37.95	\$27.45	\$65.40
Laborers (Class 11 -See Notes)	5/1/2024		\$39.20	\$27.65	\$66.85
Laborers (Class 12 -See Notes)	5/1/2022		\$38.40	\$27.20	\$65.60
Laborers (Class 12 -See Notes)	5/1/2023		\$39.65	\$27.45	\$67.10
Laborers (Class 12 -See Notes)	5/1/2024		\$40.90	\$27.65	\$68.55
Laborers (Class 13 -See Notes)	5/1/2022		\$40.43	\$27.20	\$67.63
Laborers (Class 13 -See Notes)	5/1/2023		\$41.65	\$27.45	\$69.10
Laborers (Class 13 -See Notes)	5/1/2024		\$42.93	\$27.65	\$70.58
Laborers (Class 14 -See Notes)	5/1/2022		\$36.55	\$27.20	\$63.75
Laborers (Class 14 -See Notes)	5/1/2023		\$38.25	\$27.45	\$65.70
Laborers (Class 14 -See Notes)	5/1/2024		\$39.50	\$27.65	\$67.15
Laborers Utility (PGW ONLY) (Flagperson)	5/1/2022		\$30.17	\$19.18	\$49.35
Laborers Utility (PGW ONLY) (Flagperson)	5/1/2024		\$32.67	\$19.63	\$52.30
Laborers Utility (PGW ONLY)	5/1/2022		\$37.20	\$19.18	\$56.38
Laborers Utility (PGW ONLY)	5/1/2024		\$39.70	\$19.63	\$59.33
Landscape Laborer	5/1/2023		\$29.03	\$23.80	\$52.83
Landscape Laborer	5/1/2024		\$30.28	\$24.05	\$54.33
Millwright	5/1/2023		\$51.60	\$35.81	\$87.41
Millwright	5/1/2024		\$54.67	\$35.81	\$90.48
Millwright	5/1/2025		\$57.39	\$35.81	\$93.20
Millwright	5/1/2026		\$60.20	\$35.81	\$96.01

## **BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES**

Project: 25-01590 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2023		\$52.20	\$32.81	\$85.01
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2024		\$53.36	\$33.65	\$87.01
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2025		\$54.52	\$34.49	\$89.01
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2026		\$55.67	\$35.34	\$91.01
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2023		\$55.20	\$33.70	\$88.90
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2024		\$56.37	\$34.53	\$90.90
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2025		\$57.52	\$35.38	\$92.90
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2026		\$58.68	\$36.22	\$94.90
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2023		\$51.95	\$32.74	\$84.69
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2024		\$53.11	\$33.58	\$86.69
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2025		\$54.27	\$34.42	\$88.69
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2026		\$55.43	\$35.26	\$90.69
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2023		\$54.97	\$33.61	\$88.58
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2024		\$56.13	\$34.45	\$90.58
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2025		\$57.29	\$35.29	\$92.58
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2026		\$58.44	\$36.14	\$94.58
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2023		\$47.87	\$31.53	\$79.40
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2024		\$49.03	\$32.37	\$81.40
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2025		\$50.18	\$33.22	\$83.40
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2026		\$51.34	\$34.06	\$85.40
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2023		\$47.57	\$31.44	\$79.01
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2024		\$48.73	\$32.28	\$81.01
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2025		\$49.88	\$33.13	\$83.01
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2026		\$51.04	\$33.97	\$85.01
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2023		\$45.85	\$30.93	\$76.78
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2024		\$47.00	\$31.78	\$78.78
Operators Class 05 - See Notes (Building, Heavy, Highway) Commonwealth of Pennsylvania	5/1/2025		\$48.16	\$32.62	\$80.78

Commonwealth of Pennsylvania Report Date: 2/19/2025

## BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 25-01590 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2026		\$49.32	\$33.46	\$82.78
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2023		\$44.85	\$30.65	\$75.50
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2024		\$46.02	\$31.48	\$77.50
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2025		\$47.17	\$32.33	\$79.50
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2026		\$48.34	\$33.16	\$81.50
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2023		\$63.33	\$37.68	\$101.01
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2024		\$64.80	\$38.61	\$103.41
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2025		\$66.26	\$39.55	\$105.81
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2026		\$67.73	\$40.48	\$108.21
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2023		\$63.04	\$37.59	\$100.63
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2024		\$64.50	\$38.53	\$103.03
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2025		\$65.97	\$39.46	\$105.43
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2026		\$67.44	\$40.39	\$107.83
Painters - Line Stripping	12/1/2024		\$44.12	\$27.91	\$72.03
Painters Class 2 (see notes)	2/1/2023		\$48.82	\$32.09	\$80.91
Painters Class 2 (see notes)	2/1/2024		\$49.57	\$33.34	\$82.91
Painters Class 2 (see notes)	2/1/2025		\$50.85	\$33.91	\$84.76
Painters Class 3 (see notes)	2/1/2023		\$59.78	\$32.13	\$91.91
Painters Class 3 (see notes)	2/1/2024		\$60.53	\$33.38	\$93.91
Painters Class 3 (see notes)	2/1/2025		\$61.81	\$33.95	\$95.76
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2022		\$64.57	\$40.28	\$104.85
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2023		\$67.37	\$41.68	\$109.05
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2024		\$70.32	\$42.93	\$113.25
Truckdriver class 1(see notes)	5/1/2022		\$35.45	\$20.74	\$56.19
Truckdriver class 1(see notes)	5/1/2023		\$36.14	\$21.55	\$57.69
Truckdriver class 1(see notes)	5/1/2024		\$36.64	\$22.54	\$59.18
Truckdriver class 2 (see notes)	5/1/2022		\$35.55	\$20.74	\$56.29
Truckdriver class 2 (see notes)	5/1/2023		\$36.24	\$21.55	\$57.79
Truckdriver class 2 (see notes)	5/1/2024		\$36.74	\$22.54	\$59.28

## BID PROPOSAL FORM OF FIRE ALARM SYSTEM REPLACEMENT AT SOUTHWARK ELEMENTARY SCHOOL

## Bid No. NG-10644; Contract No. 2640.001-E: ELECTRICAL Construction

TO:	The School District of Philadelphia Board of Education	OWNER
	Office of Capital Programs The School District of Philadelphia 440 North Broad Street Third Floor - Suite 371 Philadelphia, PA 19130-4015	ADDRESS
FRO	M:	CONTRACTOR ADDRESS
		CITY/STATE CONTACT NAME PHONE NO.

## BASE CONTRACT PROPOSAL:

1. Having become completely familiar with the local conditions affecting the cost of Work at the place where Work is to be executed, and having carefully examined the site conditions as they currently exist, and having carefully examined the Bidding and Contract Documents prepared for this project, together with any Addenda to such Bidding and Contract Documents as listed hereinafter, the Undersigned hereby proposes and agrees to provide all labor, materials, plant, equipment, transportation and other facilities as necessary and/or required to execute all of the Work described by the Contract Documents for the above cited Contract for the lump sum consideration of:

\_\_\_\_\_Dollars (\$\_\_\_\_\_\_), said amount being hereinafter referred to as the Base Proposal Amount. Base proposal Amount includes Alternates, Unit Prices or Allowances listed below, if applicable.

## BID ALTERNATES (Not applicable to this Contract) ALLOWANCES (Not applicable to this Contract) UNIT PRICES (Not Applicable to this Contract)

#### ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA:

2. The Undersigned acknowledges receipt of the following Addenda (list by number and date appearing on Addenda):

Addendum No.	Date	Addendum No.	Date
		<u> </u>	

## TIME OF COMPLETION:

3. The Undersigned agrees to Substantially Complete all Work under this Contract within the time periods specified in Division 1, General Requirements, Section 00 1300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements".

#### INSURANCE:

4. All Bidders are instructed to refer to Article GC-11 of the General Conditions. All Contractors or Subcontractors bidding Work on the Project shall include in their bids the costs of Workers Compensation and Employer's Liability Insurance, Commercial General Liability Insurance, Automobile Liability Insurance, Excess Umbrella Liability Insurance (Commercial Umbrella Liability Insurance) and any other types of insurance identified in Division 1- General Requirements, Section 01200 (or 01 1200) entitled "Special Insurance Requirements".

## LIQUIDATED DAMAGES:

5. Upon failure by the Contractor to achieve Substantial Completion within the time specified in Article GC-8 of the General Conditions from the Date of Commencement as set forth in the Notice to Proceed, the Contractor shall pay to the School District, as liquidated damages and not as a penalty, the sum of One Thousand

Dollars (\$1,000.00) per day for each consecutive calendar day of delay until such time as Substantial Completion of the Work is achieved.

6. In addition, the Contractor shall be responsible for and pay for the cost of completion of construction of the Work, as well as for any and all additional charges of the School District, Architect/Engineer, other Project Contractors, and any other Consultants to the School District relating to the Contractor's failure to achieve Substantial Completion on a timely basis, including, but not limited to, delay damages, disruption damages, acceleration costs or expenses, investigative expenses, consulting fees, experts' fees, and attorneys' fees.

7. The Contractor and the School District agree that the amounts so fixed herein as liquidated damages are reasonable forecasts of just compensation for the harm that will be caused to the School District by the Contractor's breach.

## GENERAL STATEMENT

8. The Undersigned declares that the person or persons signing this Proposal is/are fully authorized to sign on behalf of the firm listed and to fully bind the firm listed to all the Proposal's conditions and provisions thereof.

9. It is agreed that the Undersigned has complied or will comply with all requirements of local, state, and federal laws, and that no legal requirement has been or will be violated in making or accepting this Proposal, in awarding the Contract to it and/or in prosecution of the Work.

10. Bid Security in the amount of ten percent (10%) of the Base Bid, plus all additive Alternates Proposal amounts, is attached hereto and made a part hereof, without endorsement, in the sum of \_\_\_\_\_\_ Dollars (\$\_\_\_\_\_\_), which shall become the property of the School District in the event the Contract and Performance Bond and Labor and Materialmen's Bond are not executed within the time set forth, as liquidated damages.

11. The Undersigned further agrees within five (5) calendar days from date of Notice of Acceptance of this Proposal or Contract award, to sign and deliver to the School District, all required copies of the School District/Contractor Agreement, the Performance Bond, the Labor and Materialmen's Bond, and the Maintenance Bond, in the forms included in the Bidding Documents, and the policies of insurance or insurance certificates as required by the General Conditions. In case the undersigned fails or neglects to deliver within the specified time the School District/Contractor Agreement, the Performance Bond, the Labor and Materialmen's Bond, and the Maintenance Bond, and the insurance policies or certificates, all as aforesaid, the undersigned shall be considered as having abandoned the Contract, and the Bid Bond accompanying this Proposal shall be forfeited to the School District by reason of such failure on the part of the undersigned, as liquidated damages and not as a penalty.

12. The Undersigned further agrees that the Bid Security may be retained by the School District and shall remain with the School District until the School District/Contractor Agreement has been signed and delivered to the School District and the Performance Bond, the Labor and Materialmen's Bond, and the Maintenance Bond, and insurance policies or certificates have been made and delivered to the School District.

Respectfully submitted this \_\_\_\_\_day of \_\_\_\_\_, 202\_.

## Individual Proprietorship or Partnership

If Contractor is an individual proprietorship or is a partnership, sign here:

(Trade Name of Firm)

By: \_\_\_\_\_\_ By: \_\_\_\_\_ (SEAL) (Witness) (Owner or Partner)

## Corporation

If Contractor is a corporation, sign here:

(Name of Corporation)

ATTEST:

By: \_\_\_\_\_\_ By: \_\_\_\_\_\_ By: \_\_\_\_\_ (President or Vice President)

(SEAL)

(CORPORATE SEAL)

Signature by anyone other than the President or Vice President and the Secretary or Treasurer of the Corporation must be accompanied by a power of attorney, executed by the proper corporate officers under the corporate seal indicating authority to execute this Bid.

#### BID BOND

#### THE SCHOOL DISTRICT OF PHILADELPHIA BOARD OF EDUCATION

Alternates Proposal amounts), lawful money of the United States of America, for the payment of which sum to the said School District, its successors and assigns, will and truly to be made, we do bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Sealed with our seals and dated the \_\_\_\_\_ day of \_\_\_\_\_, in the year of our Lord, two thousand and \_\_\_\_\_\_ (20\_).

WHEREAS, the Principal proposes to do and perform all work and to furnish the articles, supplies, equipment and material in exact accordance with Contract No.\_\_\_\_\_\_\_ of THE SCHOOL DISTRICT OF PHILADELPHIA, at the price or prices bid by the said Principal.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if the proposal of the Principal as set forth in the aforementioned contract is accepted by THE SCHOOL DISTRICT OF PHILADELPHIA, the Principal will, within five (5) calendar days after notice to the Principal of the award, enter into a written contract with THE SCHOOL DISTRICT OF PHILADELPHIA to perform all work and to furnish all articles, supplies, equipment and material, at the price or prices offered in the said proposal, in exact accordance with the aforesaid contract and will give a performance bond and a labor and materialmen's bond both executed by acceptable surety, each in an amount equal to the contract price, the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns jointly and severally, to pay to THE SCHOOL DISTRICT OF PHILADELPHIA in the event that the Principal shall not enter into such contract and/or give the required bonds within five (5) calendar days after notice of award of contract, the difference in money between the amount of the Bid of the Principal and the amount for which THE SCHOOL DISTRICT OF PHILADELPHIA either contracts with another party to perform said work and furnish said articles, supplies, equipment and material under the terms of the contract, or the amount which said School District pays out of its own funds in performance of said work and in obtaining said articles, supplies, equipment and material, if either last mentioned amount be in excess of the amount of said Bid, it being understood and agreed that in the event of any of the aforementioned defaults by the Principal, THE SCHOOL DISTRICT OF PHILADELPHIA shall have full power and authority to purchase such articles, supplies, material, equipment, tools and machinery and to employ such workers as in its opinion may be required; if payment is made as aforesaid by the Principal and the Surety, then this obligation to be void, otherwise to remain in full force and effect.

And we do, for ourselves and each of us, our and each of our heirs, executors, administrators, successors and assigns, hereby authorize the General Counsel of The School District of Philadelphia, or any other attorney, to appear for us, or either of us, in any suit or suits brought upon the above obligation, and, in our name or in the name of either of us, to confess judgment in favor of the said School District in the sum named in this bond, with full authority in such General Counsel and/or other attorney, to sign an agreement for entering, in any competent court, an amicable action or actions and to confess judgment therein. Judgment may be entered as above provided upon a copy of this obligation and warrant of attorney, certified by the Secretary of the School Reform Commission to be a true and correct copy, without the necessity of filing the original, any rule of court, custom or practice, to the contrary notwithstanding and each judgment entered under the authority hereby conferred shall be a final judgment, without right of appeal, certiorari, writ of error, exception or objection to the same, or the right to file a motion or rule to strike off, or open or stay execution of the same. We, acting for ourselves and each of us, and as stated at head of this paragraph, hereby waive all errors and imperfections whatsoever in the entering of said judgment or judgments, or in any process therein, it being understood, however, that said School District on any default, shall restrict its assessment of damages to those stated in the above condition of this obligation.

If Contractor is an individual proprietorship or is a partnership, sign here:

(Trade Name of Firm) By: \_\_\_\_\_ By: \_ By: (Witness) Name: Title: If Contractor is a corporation, sign here: (Name of Corporation) ATTEST: By: \_\_\_\_\_(President or Vice President) By: (Secretary or Treasurer) (CORPORATE SEAL) Surety to sign below: (Name of Surety) By: \_ By: \_\_\_\_\_ (SEAL) Name: (Witness as to Surety) Title:

(CORPORATE SEAL)

# **DESCOPE AGENDA AND QUESTIONNAIRE**

#### THE SCHOOL DISTRICT OF PHILADELPHIA

OFFICE OF CAPITAL PROGRAMS 440 NORTH BROAD STREET, 3RD FLOOR PHILADELPHIA, PENNSYLVANIA 19130-4015

TELEPHONE (215) 400-4730

FAX (215) 400-4731

## POST BID SCOPE REVIEW CONFERENCE

FIRE ALARM SYSTEM REPLACEMENT

AT

SOUTHWARK ELEMENTARY SCHOOL

1835 S 9TH STREET, PHILADELPHIA, PA 19148

BID NO: NG10644 SDP CONTRACT NO: 2640.001-E

## ELECTRICAL PRIME CONTRACT

Contractor	
Bid Amount	
Meeting Date	
SDP Design Project Manager	
SDP Contracts Representative	
Construction Project Manager	
Contractor Representative	
Design Consultant	

The purpose of this meeting is to review the Project with the selected Bidding Contractor to ensure that the submitted bid has included all aspects of Project scope and schedule. Should the Contractor find that any aspect of the Project is not included in the submitted bid, they should indicate as such at this time.

## **Questions for Bidding Contractor – Contractor to Provide Response**

- 1. Have you included all labor, material, means and methods as required to complete fully the work as shown in the contract documents in a safe, timely and workmanlike manner?
- 2. Do you understand that contract documents are diagrammatic in nature and do not necessarily indicate or describe all of the work required for a complete and full performance of the work?
  - 3. Do you understand that you are responsible to verify all field conditions and dimensions and complete all layouts for the installation of the work?
- 4. Have you included any costs or contingencies associated with the Environmental Coordination (Specification 01 1100) requirements for the project?
  - 5. Have you included costs for testing, inspections and/or certifications as required by the contract documents and will you cooperate with testing and/or inspection agencies?
  - 6. Are you aware that you are responsible for site safety for the entire duration of the project, including erection of environmental containment, protection of property and separation of occupied areas? All sidewalks, entrances, exits and stairways, shall be safely maintained.
  - 7. Have you included contingencies in the project schedule to allow for schedule coordination with the School District and on-site personnel?
- 8. Are you aware that the project scope includes (but is not limited to) the following items? Bid Documents take precedence over this list and it should be understood that this list is a broad stroke of the required construction items and does not cover the totality of the construction scope.

#### **Summary of Work:**

- 9. Are you aware that you are responsible to repair or replace to SDP's satisfaction any building or site elements damaged during the project, including any yard or sidewalk paving damaged during the work?
- 10. Are you aware of the Phasing Plan? (Input Phasing Schedule if required)
- 11. Are you aware of the project scheduling and completion dates?

## Substantial completion of all the Work by:

## **Final Completion:**

- 12. Have you carefully reviewed the contract drawings, general or supplementary conditions, specifications and/or site conditions, and all items of coordination in order to deliver the intended project to the owner at the base contract price?
- 13. Are you aware of any discrepancies or inconsistencies with the contract drawings? General, or supplementary conditions, specifications and/or site conditions that will prevent you from delivering the intended project to the owner at the base contract price?
- \_\_\_\_\_ 14. Do you confirm that you or a representative of your company attended the Mandatory site walk through and that you are familiar with the existing site conditions?
- \_\_\_\_\_ 15. Are you aware and do you accept that your responses to the questions raised shall become part of the Contract?
- \_\_\_\_\_16. Did you receive the following Addendum
- 17. Are you aware that certified payroll is required to be submitted to e-builder on a weekly basis, and that hard copies are required on a monthly basis?
- 18. Do you have any questions regarding the Project or the Contract?

## SCHOOL DISTRICT/CONTRACTOR AGREEMENT

**THIS CONTRACT**, executed this \_\_\_\_\_ day of \_\_\_\_\_, 202\_, by and between The School District of Philadelphia, party of the first part, hereinafter called "Owner", and

party of the second part, hereinafter called "Contractor."

WHEREAS, the Owner has advertised for proposals as required by law and has awarded the Contract No.\_\_\_\_\_\_ (hereinafter called the "Contract"), for certain work (hereinafter called the "Work") described below, to the Contractor, who was the lowest responsible and responsive prequalified bidder, subject to the successful bidder complying with the Public Works Contractors' Bond Law of 1967;

**WHEREAS**, the Contractor has given Performance, Labor and Materialmen's, and Maintenance Bonds to the Owner with sufficient surety in the sums determined by said Owner, which bonds are attached hereto;

WHEREAS, the Owner has retained \_\_\_\_\_as the Architect/Engineer for the Project;

**NOW, THEREFORE, THIS CONTRACT WITNESSETH**: That for, and in consideration of the mutual promises, covenants, and agreements by each of the parties hereto made, and intending to be legally bound hereby, the parties hereto do covenant, promise and agree as follows:

FIRST: Time of Commencement and Completion. The Contractor agrees to begin the Work contemplated by this Contract on the date of Notice to Proceed, and to complete the Work to the satisfaction and approval in every respect, of the Owner in accordance with the specific dates and subject to the terms and conditions set forth in the Conditions of Contract. The Contractor further agrees that if it shall fail to complete the Work in accordance with the specific dates and the terms and conditions set forth in the Conditions of Contract and Division 1, General Requirements, 01 1300 entitled "Time of Completion, Milestones and Phasing or Sequencing Section Requirements", then the Contractor shall pay to the Owner or agrees to a deduction from any funds due said Contractor from said Owner the daily sum stipulated in the Bid Proposal Form and Paragraph GC-8.5 of the General Conditions of Contract for each and every calendar day thereafter until such Work shall be completed, not as a penalty but as liquidated damages, and the Contractor shall also be responsible and pay for the cost of completion of construction of the Work, as well as for any and all additional costs incurred by the Owner relating to the failure of the Contractor to complete the Work in accordance with the foregoing, including without limitation, compensation for additional services for the Architect/Engineer and any other Consultants to the Owner relative to the Contractor's failure to complete the Work in accordance with the foregoing.

**SECOND**: <u>The Work</u>. The Contractor shall perform all the Work required by the Contract Documents for \_\_\_\_\_\_ (the "Project").

**THIRD**: <u>Contract Sum</u>. The Owner agrees, in consideration of the completion by the Work, pay the Contractor the Contractor of the to sum of Dollars (\$ ), payment to be made as set forth in Paragraph GC-9.2 of the General Conditions of Contract, provided, however, that deductions from or additions to said sum to be paid will be made under the circumstances and upon

the basis set forth in the Conditions of Contract. It is agreed that, if by reason of alterations in the Drawings or in the character of the Work to be performed under the Contract, the quantity of Work to be performed shall be increased or decreased, additions to or deductions from the Contract Sum shall be made in the manner set forth in the Conditions of Contract and as agreed to in writing by the Owner and further that the Owner shall have no liability for and the Contractor shall have and make no claims for loss of anticipated profits if the quantities of any items or Work actually ordered to be done shall be less than those set forth in the Specifications or be entirely omitted. Modification or changes of this Contract shall not be made except by written instrument, duly authorized by the Owner as provided more fully in the Conditions of Contract.

**FOURTH**: <u>Final Payment</u>. Final Payment, constituting the entire unpaid balance of the Contract Sum, shall be paid by the Owner to the Contractor upon Final Completion of the Work, the Contract fully performed, and the Architect/Engineer having issued a final Certificate for Payment which approves the final payment due the Contractor.

**FIFTH**: <u>Contract Documents.</u> The Contract Documents consist of this School District/Contractor Agreement, Invitation to Bid, Instructions to Bidders, Bid Proposal Form and Contractor's Bid, Contractor's Minority/Woman-Owned Business Enterprise (MWBE) Participation Plan, Performance, Labor and Materialmen's and Maintenance Bonds, Conditions of Contract (General, Supplementary and other), Plans and Specifications, the Drawings described in said Plans and Specifications (the signature of the Contractor on one set, which set has been retained by the Owner), all Addenda issued prior to execution of the School District/Contractor Agreement, all Modifications issued after execution of the School District/Contractor Agreement, Release, and all other prints, papers, documents, and forms attached hereto or referred to herein. Such documents are hereby incorporated into and made part of the Contract to the same extent as if they were fully set forth herein.

**SIXTH**: <u>No Liens</u>. The Contractor will not at any time suffer or permit any lien, attachment or other encumbrance, under any laws of this State or any other State, or the Federal Government, by any persons to be put or remain on the building or premises, into or upon which any Work is done or materials are furnished under this Contract for such Work or materials, or by any reason or any other claim or demand against the Contractor. The Contractor will not put any materials on said building to which he has not obtained absolute title. Any such lien, attachment, or other encumbrance, or claims of a third party, until it is removed, shall preclude any and all claim or demand or any payment whatsoever under or by virtue of this Contract, and in the event that same is not removed, the Owner may remove the same at the expense, including legal fees, of the Contractor.

**SEVENTH**: <u>Waiver</u>. The Mechanics' Lien Law, Act of August 24, 1963, P.L. 1175, No. 497 (49 P.S. §1303(b)), prohibits the filing of mechanics' liens on School District construction projects. The Contractor agrees to waive and does hereby waive and relinquish all rights to a lien upon the real estate hereinabove described and the building to be erected thereon in accordance with the terms of the Contract. The Contractor also expressly agrees that no lien shall attach to the real estate, building, structure, or any other improvement of the Owner, either on behalf of the Contractor herein or on behalf of all subcontractors, mechanics, journeymen, laborers, materialmen, or persons performing labor upon or furnishing materials and machinery for such property or improvement of said Owner through the Contractor, and the Contractor does hereby expressly waive all rights to any such lien under the laws of the Commonwealth of Pennsylvania for and on behalf of themselves and all other such persons furnishing labor and materials as aforesaid in any form or manner whatsoever for the erection, construction, and completion of the building or other installation. It is further agreed that the Contractor shall furnish to the Owner a Labor and

Materialmen's Bond for the Contract that guarantees payment for labor, materials, equipment, machinery, and services provided by subcontractors, mechanics, journeymen, laborers, materialmen, or persons performing labor upon or furnishing materials and machinery for such property or improvement of said Owner through the Contractor.

**EIGHTH**: <u>Remedy of Defects</u>. The Contractor covenants and agrees to remedy without cost to the Owner, any defect in the Work which may develop within one (1) year from the date of letter of acceptance from the Owner for the Work performed under this Contract or such longer time period as specified in the Contract Documents. The Maintenance Bond hereto attached and made a part hereof shall provide a guarantee in the sum of ten per cent (10%) of the total Contract Sum of the Work done, for the correction and remedy of such defects.

**NINTH**: <u>Miscellaneous Provisions</u>. Terms used in this Contract that are defined in the Conditions of Contract shall have the meanings set forth in the Conditions of Contract. The Contract Documents, which constitute the entire agreement between the Owner and the Contractor, are listed in Article Fifth and, except for Invitation to Bid, Bid Proposal Form, Contractor's Minority/Woman-Owned Business Enterprise (MWBE) Participation Plan, Performance, Labor and Materialmen's and Maintenance Bonds, Addenda issued prior to execution of this Agreement, Modifications issued after execution of this Agreement, and Release are enumerated as follows:

- 1. Instructions to Bidders.
- 2. Contractor's Bid.
- 3. School District/Contractor Agreement, dated \_\_\_\_\_, 201\_.
- 4. Conditions of Contract General and Supplementary.
- 5. Plans and Specifications Labeled "\_\_\_\_\_" in the

Office of the Owner, \_\_\_\_\_, 201\_.

**IN WITNESS WHEREOF**, the parties hereto have executed this Contract the day and year aforesaid written.

## THE SCHOOL DISTRICT OF PHILADELPHIA

By:

President, Board of Education

EXAMINED AND APPROVED:

Dawn Chism Simms, Senior General Counsel Attorney for The School District of Philadelphia

## CONTRACTOR: If Contractor is an Individual:

Witness:

By: _		
	Name:	

By: \_\_\_\_\_\_Name:

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

If Contractor is an Individual Proprietorship or a Partnership:

(Trade Name of Firm) Witness: By: \_\_\_\_\_ (SEAL) Name: By: \_\_\_\_\_ Name: Address: \_\_\_\_\_ If Contractor is a Corporation: (Name of Corporation) ATTEST: \_\_\_\_\_ (SEAL) BY: \_\_\_\_\_ By: \_\_\_ Name: Name: (Secretary or Treasurer) (President or Vice President) Address: \_\_\_\_\_

#### MODIFICATION: GRANT CONTRACTS; GRANT FUNDING

Pursuant to Paragraph **FIFTH**, <u>Contract Documents</u>, of the <u>SCHOOL DISTRICT/</u> <u>CONTRACTOR AGREEMENT</u> and <u>GENERAL CONDITIONS</u>, GC-1.1.1, of the Contract, the Parties have agreed to the following modifications to the terms, covenants, and conditions set forth elsewhere in this Contract:

a. **School District Receipt of Grant.** After the School District's and the Contractor's execution of the Contract, the School District and the Contractor acknowledge and agree that (i) the School District may receive a Grant from any source, including the United States of America ("Federal Grant"), the Commonwealth of Pennsylvania ("State Grant"), the City of Philadelphia ("City Grant"), including any department or agency or authority thereof, or from any private charity or corporation that governs the Work under the Contract, and (ii) the School District may elect, in its sole discretion, to use funds from a Federal Grant, State Grant, City Grant or a Grant from a private charity or corporation to pay for the Work of the Contractor under the Contract. If the School District pays for any of the Work of the Contractor under the City of America, the Commonwealth of Pennsylvania, the City of Philadelphia, including any department or agency or authority thereof, or from any private charity or corporation, then the Contract with funds received by the School District as a Grant, or on any other terms, from any source, including any department or agency or authority thereof, or from any private charity or corporation, then the Contractor shall comply with the terms of the applicable Grant Contract. The School District shall give the Contractor a copy of the Grant on request by the Contractor.

b. **Federal Grant; State Grant.** In addition to any terms of the applicable Federal Grant or State Grant, the Contractor shall comply with the provisions set forth in Subparagraphs (1) and (2) below if the School District uses funds from a Federal Grant or State Grant to pay for Work of the Contractor under the Contract.

(1) Contractor Requirements. The Contractor shall abide by the Federal Grant-Funded Agreements Contractor Requirements and/or Pennsylvania Department of Education Contractor Requirements (collectively the "Contractor Requirements"), as applicable, which are available at <u>https://www.philasd.org/generalcounsel/forms/grant-funded-contracts-federal-and-pde-terms/</u> and hereby incorporated into and made a part of the Contract to the same extent as if it were attached hereto. The School District reserves the right, in its sole discretion, to update these requirements, from time to time, without notice provided to the Contractor, whenever the federal government or the Commonwealth of Pennsylvania modify the Contractor Requirements. The School District and the Contractor, by execution of the Contract, acknowledge their consent to the incorporation of the Contractor Requirements into the Contract.

(2) Federal Programs; Federal Funding. The Contractor acknowledges and agrees that the School District makes payment of the Contract Sum under the Contract to the Contractor with federal funds. Accordingly, the Contractor acknowledges and agrees that it constitutes a contractor for federal program purposes, as provided in applicable federal program rules and regulations. As provided in the General Conditions, Article GC-9 PAYMENTS AND COMPLETION, and Paragraph GC-9.12, payments to and performance by the Contract remain subject to audit by local and federal auditors.

c. **Execution of Written Amendment to the Contract.** After the School District's and the Contractor's execution of the Contract, the source of the Grant, including the United States of America, the Commonwealth of Pennsylvania, the City of Philadelphia, including any department or agency or authority thereof, or any private charity or corporation, may require the School District and the Contractor to agree to comply with, observe and perform certain terms, conditions, covenants, agreements, obligations and provisions of the applicable Grant Contract on the Project, and to include these terms, conditions, covenants, agreements, obligations and provisions in their Contract on the Project. If the source of the Grant, including the United States of America, the Commonwealth of Pennsylvania, the City of Philadelphia, including any department or agency or authority thereof, or any private charity or corporation, requires the School District and the Contractor to agree to comply with, observe and perform certain terms, conditions, covenants, agreements, obligations and provisions of the applicable Grant Contract on the Project, and to Pennsylvania, the City of Philadelphia, including any department or agency or authority thereof, or any private charity or corporation, requires the School District and the Contractor to agree to comply with, observe and perform certain terms, conditions, covenants, agreements, obligations and provisions of the applicable Grant Contract on the Project, and to include these terms, conditions, covenants, agreements, obligations and provisions of the applicable Grant Contract on the Project, and to include these terms, conditions, covenants, agreements, obligations and provisions of the applicable Grant Contract on the Project, and to include these terms, conditions, covenants, agreements, obligations and provisions of the applicable Grant Contract on the Project, and to include these terms, conditions, covenants, agreements, obligations and provisions of the applicable Grant Contract on th

provisions in their Contract on the Project, then the School District and the Contractor shall execute a written Amendment to the Contract that sets forth the required terms, conditions, covenants, agreements, obligations and provisions of the applicable Grant Contract on the Project, and indicates their agreement to comply with these required terms, conditions, covenants, agreements, obligations and provisions of the applicable Grant Contract on the Project.

d. **Audits: Access; Inspection.** In supplementation and not in limitation of any other right of audit, access or inspection (see Article GC-9 PAYMENTS AND COMPLETION, and Paragraph GC-9.12), the Contractor shall permit access by the School District, the Commonwealth of Pennsylvania, the City of Philadelphia, the United States Department of Education, Inspectors General, the Comptroller General of the United States of America, or any of their authorized representatives, to any documents, papers, or other records which are pertinent to the Contract in order to make audits, examinations, excerpts, and transcripts.

e. **Compliance with Grant.** If the School District pays for all or any portion of the Work with funds received by the School District as grants or under any other terms and conditions from any source, including the United States of America, the Commonwealth of Pennsylvania, the City of Philadelphia, or any department or agency of said governments, or from any public or private charitable trust or corporation, then the Contractor shall comply with the terms of the applicable grant agreement, contract, or trust indenture, as the case may be, in carrying out the Work, and the School District shall comply with the terms of said grant agreement, contract, or trust indenture, as the case may be, in carrying out the Work, and the school District shall comply with the terms of said grant agreement, contract, or trust indenture, as the case may be, in making any payment or payments hereunder to the Contractor. The Contractor shall not take any action or omit to act if such act or omission would cause a breach or default under any such grant agreement, contract, or trust indenture.

f. **Timely Submission of Invoices.** If the School District pays any of the Contract Sum from federal government or Commonwealth of Pennsylvania grant funds, the Contractor shall bill the School District for any outstanding Contract Sum payments owed to the Contractor within ten (10) business days after the end of the Term (see, Section **FIRST**, <u>Time of Commencement and Completion</u>, of the School District/Contractor Agreement). In the event the Contractor does not bill the School District for the balance of any Contract Sum within said ten (10) day period, the School District reserves the right to withhold payment of the balance of the Contract Sum to the Contractor based upon the loss of federal government or Commonwealth of Pennsylvania funds caused by the Contractor's delay, in which event the School District shall have no liability to the Contractor for said balance of the Contract Sum.

## **MODIFICATION AND SUPPLEMENTS**

Pursuant to Paragraph **FIFTH**, <u>Contract Documents</u>, of the <u>SCHOOL DISTRICT/</u> <u>CONTRACTOR AGREEMENT</u> and <u>GENERAL CONDITIONS</u>, GC-1.1.1, of the Contract, the Parties have agreed to the following modifications and supplements to the terms, covenants, and conditions set forth elsewhere in this Contract.

a. *M/WBE Commitments and Requirements.* In supplementation of the Contractor's other covenants set forth in this Contract, the Contractor covenants and agrees to carry out fully and faithfully its commitments set forth in this Contract concerning utilization of M/WBEs; see Exhibits "A" and "B" to this Contract. The Contractor's M/WBE participation covenant shall equal at least \_\_\_\_\_\_ percent (%) or \_\_\_\_\_\_ dollars (\$) of the Compensation under this Contract.

b. **Proposed Contract Documents.** Exhibit "A", **Minority and Woman-Owned Business Enterprise Participation Plan**, and Exhibit "B", **Non-Discrimination and Compliance with Diversity Policy**, to this Contract are expressly included and enumerated as proposed Contract Documents under Section 00 0100, **INSTRUCTIONS TO BIDDERS**, Paragraph 1. B. 1.

c. Contract Documents. Exhibit "A", Minority and Woman-Owned Business Enterprise Participation Plan, and Exhibit "B", Non-Discrimination and Compliance with Diversity Policy, to this Contract are expressly included and enumerated as Contract Documents under the SCHOOL DISTRICT/ CONTRACTOR AGREEMENT, Paragraph FIFTH and Paragraph NINTH.

d. **Order of Precedence.** There is no order of precedence for the Bidding Documents and Contract Documents. One portion of the Bidding Documents or Contract Documents cannot be read and interpreted as to annul another portion of the Bidding Documents or Contract Documents. Each portion of the Bidding Documents or Contract Documents, including Exhibit "A", **Minority and Woman-Owned Business Enterprise Participation Plan**, and Exhibit "B", **Non-Discrimination and Compliance with Diversity Policy**, to this Contract, must be read and interpreted as being consistent with, and not in conflict with, another portion of the Bidding Documents or Contract Documents.

## **EXHIBIT A**

## Minority/Woman-Owned Business Enterprise Participation Plan

See attached Minority//Woman-Owned Business Enterprise Participation Plan (MWBE Participation Plan).

## **EXHIBIT B**

## Non-Discrimination and Compliance with Diversity Policy

The Parties have agreed to following terms, covenants and conditions with respect to MWBEs in connection with this Contract and the Work.

#### a. Non-Discrimination and Compliance with Diversity Policies.

- The Contractor, for itself, its directors, officers, agents, employees and Subcontractors, i. covenants and agrees that it shall not discriminate against or intimidate any employee or other Person on account of age race, color, sex, sexual orientation, handicap, disability, religious creed, ancestry, national origin, gender identity, marital status, genetic information, or Vietnam-era or any other veteran status. The School District operates as an equal opportunity employer under Applicable Law; the Contractor shall likewise operate in all respects as an equal opportunity employer under Applicable Law. The School District shall not do business with any Person that unlawfully discriminates on the basis of age, race, color, sex, sexual orientation, handicap, disability, religious creed, ancestry, national origin, gender identity, marital status, genetic information, or Vietnam-era or any other veteran status, or any other impermissible ground in hiring, promotion, subcontracting or procurement practices. The Contractor shall include the first three sentences of this Section 9.a., with appropriate adjustments for the identity of the parties, in any Subcontracts that it executes and delivers. If the School District has selected the Contractor pursuant to a public solicitation or through a request for proposals or comparable process and the Contractor submitted a plan describing the participation of minority-owned, womenowned or disadvantaged businesses as part of the solicitation or the RFP, then the Contractor shall comply with its Participation Plan, as set forth in this Contract.
- ii. The Board of Education has adopted a diversity policy, Policy 612: Business Diversity in the Procurement of Materials and Contracted Services ("Diversity Policy"), which relates to the solicitation and participation of Certified Minority-Owned Business Enterprises, Certified Women-Owned Business Enterprises (collectively "M/WBE"), and other Certified diverse, small, or disadvantaged businesses in School District procurements and contracts to further the School District's diversity and antidiscrimination goals. In furtherance of the Diversity Policy, the School District has the discretion to establish participation rates and ranges for Certified M/WBEs and other Certified diverse, small, or disadvantaged businesses in order to encourage meaningful participation of M/WBEs in the provision of quality goods and services to the School District.
- iii. The Contractor shall ensure that Certified M/WBEs and Certified diverse, small or disadvantaged businesses have a meaningful and substantial opportunity to participate in the performance of the Contract. The Contractor covenants, represents and warrants that the Contractor, its Subcontractors and partners commit to adhering to anti-discrimination laws and policies, diversity goals and workforce management practices that promote Meaningful and Substantial Participation of Certified M/WBEs and other Certified disadvantaged business enterprises throughout the Term of the Contract. If the Contractor has submitted a plan describing the participation of Certified M/WBEs and other Certified diverse, small, or disadvantaged businesses ("Participation Plan") as part of a public solicitation, Request for Proposal, or as required by School District policies, then the Contractor shall comply with its

Participation Plan. The Contractor's Participation Plan shall be attached to this Contract and made a part hereof. The commitments made by the Contractor in the Participation Plan are material representations that the School District relies upon in awarding and entering into this Contract.

- iv. The Participation Plan must demonstrate that the participation of Certified M/WBEs and other Certified diverse, small, or disadvantaged businesses constitutes Meaningful and Substantial Participation in the Work, the Contract and any subsequent amendment. Participation shall be measured in terms of actual dollars received for work performed or services provided by Certified M/WBEs and other Certified diverse, small, or disadvantaged businesses and the Contractor's workforce management practices. The Contractor shall take good faith actions to achieve the Diversity Policy in conformity with Board of Education policies, including but not limited to submitting a Participation Plan.
- v. The Contractor shall not increase or decrease the percentages of Work, scope of Work, or dollar amounts for any Certified M/WBE and other Certified diverse, small, or disadvantaged businesses set forth in the Participation Plan without the written approval of the School District. If the requested change is approved, the Contractor shall promptly submit a revised Participation Plan for School District approval. The Parties shall incorporate the revised Participation Plan in this Contract by amendment.
- vi. In addition to and not in derogation of the available rights and remedies under subsection 20.c., the School District may, if the Contractor breaches this Section 10, pursue suspension or debarment in conformity with the procedures set forth in the Diversity Policy.
- vii. In addition to and not in derogation of any reporting requirements set forth in subsection 1.h., when required by the Diversity Policy or the Participation Plan, as applicable, the Contractor shall keep appropriate records and periodically report to the School District regarding the use of Certified M/WBEs and other Certified diverse, small, or disadvantaged businesses.

#### b. Definitions

- *i. Certified.* "Certified" means a contractor certified by a certifying agency approved by the School District at the discretion of Procurement Services.
- *ii. Control.* "Control" means, for purposes of determining whether a business is a Minority-owned Business Enterprise or Women-owned Business Enterprise, that the minority group member owners or women owners: (1) possess and exercise the legal authority and power to manage business assets, goodwill and daily operations of the business; and (2) actively and continuously exercise this managerial authority and power in determining the policies and directing the operations of the business.
- iii. Diversity Policy. "Diversity Policy" means Policy 612: Business Diversity in the Procurement of Materials and Contracted Services and 612 Administrative Procedure as adopted by the Board of Education on January 30, 2020, by its Board Action Item Number 1 and any subsequent revision adopted by the Board of Education.
- iv. Meaningful and Substantial Participation. "Meaningful and Substantial Participation" means a participation level for the Contractor that meets or exceeds the targeted ranges of participation established for a bid or proposal, which reflects the availability of bona fide M/WBEs in the Philadelphia Metropolitan Statistical Area for work of the nature of the Work set forth in this Contract.
- v. *Minority-owned Business Enterprise (MBE) or Women-owned Business Enterprise (WBE).* An entity certified as a Minority-owned Business Enterprise (MBE) or Women-

owned Business Enterprise (WBE) by a third-party certification agency recognized by the School District.

vi. *M/WBEs*. A Minority -owned Business Enterprise or Women-owned Business Enterprise.

#### THE SCHOOL DISTRICT OF PHILADELPHIA BOARD OF EDUCATION

## Know all Men by these presents

That we,						Princ	ipal, and .					
		, a corporatio	n existing u	under and	by virtue of the l	aws of the State of	of		, Surety,	are jointly ar	nd severally h	neld
and	firmly	bound	unto	the	SCHOOL	DISTRICT	OF	PHILADELPH	A in	the	sum	of
								) lawful mon				
One Hu	ndred Perc	ent (100%) o	f the Cont	ract Sum,	to be paid to the	e said School Dist	trict, its su	ccessors or assign	s, to which	payment, we	II and truly to	) be
								, successors and a				
								and each of our hei				
and assigns and confess judgment in favor of said School District, its successors and assigns, against us and each of us, our and each of our heirs, executors,												
administ	rators and a	issigns, toget	her with an	attorney's	commission of t	wenty per cent (20	0%), besid	es costs of suit, wit	h release of	f errors and v	vaiver of all la	aws
for stay of	of execution	and exemption	on.									

WHEREAS, the above Principal entered into a certain contract of even date herewith with the School District of Philadelphia, a copy of which contract is attached hereto and incorporated herein.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall and do well and truly in all respects comply with all of the provisions, terms, conditions and covenants contained and set forth in the aforesaid contract and in the specifications and plans that are expressly referred to in the aforesaid contract, and in the supplemental bulletins, if any were issued to supplement, add to, delete from or change the aforesaid contract and/or specifications and plans, and shall and do save, protect, guarantee and indemnify the School District of Philadelphia of, from and against all loss, damage and expense (including delay damages, liquidated damages and consequential damages) by reason of Principal's failure for any cause whatsoever to comply with the aforesaid contract and with the specifications and plans that are expressly referred to in the aforesaid contract, and with the supplemental bulletins, if any, then this Obligation to be void; otherwise to be and remain in full force, virtue and effect.

It is understood and agreed that no change, extension of time, alteration, deduction or addition to the provisions, terms, conditions and covenants of the aforesaid contract or specifications or plans or supplemental bulletins, if any, and no change, extension of time, alteration, deduction or addition in the work to be done or material to be supplied thereunder, shall, in any manner affect the obligation of the Principal and Surety on this bond and the suretyship of this bond shall be taken as covering all such matters and all liability by reason thereof. The Surety does hereby waive notice of any such change, extension of time, alteration, deduction or addition to the terms of the contract, specifications, plans and supplemental bulletins. It is further understood and agreed that in the sole discretion of the School District of Philadelphia, the Surety may be required to perform and carry out the provisions of the aforesaid contract in the event of breach by the Principal.

WE FURTHER AGREE, that if, in the opinion of the said School District, any default shall happen on the part of the said Principal we will pay all loss occasioned thereby, and that the ascertained amount thereof, which shall be determined by the Board of Education of said School District, and of the truth of which oath or affirmation shall be made by the President of the said Board of Education or by any member thereof, shall be final, binding and conclusive upon us, and that execution may forthwith issue against us for the amount of said default. The Surety also agrees to perform this obligation promptly upon a declaration by the said School District that such performance is required pursuant to the terms of this Obligation.

This Obligation incorporates by reference Public Works Contractors' Bond Law of 1967; provided, however, that in the event of any inconsistency or ambiguity in the meaning of this Obligation and the said Public Works Contractors' Bond Law of 1967, the express terms of this Obligation shall govern and control.

If Contractor is an individual proprietorship or is a partnership, sign here  $\downarrow$ 

Witness:		
lf	Contractor is a corporation, sign here $\downarrow$	
(Corporate Seal)		
		(Name of Corporation)
Attest:	Bv:	
(Secretary or Treasurer)	,	(President or Vice-President)
Witness as t		

#### THE SCHOOL DISTRICT OF PHILADELPHIA BOARD OF EDUCATION

## Know all Men by these presents

That we,	 	Principal, and	 	 				
, a corporation					and se	everall	y held	and
firmly bound unto the SCHOOL							•	
, , , , , , , , , , , , , , , , , , ,	 	<b>C (1) (1) (1) (1) (1)</b>	 ~	 	 	•		

WHEREAS, the above Principal entered into a certain contract of even date herewith with the School District of Philadelphia, a copy of which contract is attached hereto and incorporated by reference herein.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal and his Subcontractors, if any, shall promptly pay or cause to be paid to any and every person, co-partnership, association, and corporation all sums of money which are or shall become due for all material (as defined in the accompanying specifications) furnished and labor supplied or performed in the prosecution of the work contemplated in the attached contract documents, whether or not the said material or labor enter into and become component parts of the work or improvement contemplated, and shall likewise pay for all machinery employed on or about such work or improvement, and shall comply with the provisions of the Public School Code of 1949, its amendments and supplements, and if the Principal (if a foreign corporation) shall file with the School District of Philadelphia a certificate from the Department of Revenue of the Commonwealth of Pennsylvania evidencing the payment in full of all bonus taxes, penalties, and interest, and a certificate from the Bureau of Unemployment Compensation of the Department of Labor and Industry of the Commonwealth of Pennsylvania evidencing the payment of all unemployment compensation contributions, penalties and interest due to the Commonwealth of Pennsylvania by the Principal, or by any foreign corporation which is a Subcontractor under the contract documents attached to this bond, or for which liability has accrued against the Principal and/or any of its foreign corporate Subcontractors, but the time for payment has not arrived, then this Obligation to be null and void; otherwise to be and remain in full force and effect.

The Commonwealth of Pennsylvania for bonus taxes, penalties and interest, and for unemployment compensation contributions, penalties and interest, as set forth in the preceding paragraph, and every person, co-partnership, association, or corporation who, whether as Subcontractor or otherwise, has furnished material (as defined in the accompanying specifications) or performed labor (whether or not said material or labor enter into and become component parts of the work or improvement contemplated) or furnished machinery in the prosecution of the work contemplated in the attached contract documents, and who has not been paid therefore, may sue in assumpsit on this Bond in the name of the School District of Philadelphia, for his, her, their, or its use, and prosecute the same to final judgment for such sum or sums as may be justly due him, her, them, or it, and have execution thereon. The terms and conditions for suit on this Obligation by claimants are set forth in the Public Works Contractors' Bond Law of 1967, which is incorporated herein by reference; provided, however, that in no event shall the School District of Philadelphia be liable for the payment of any costs or expenses of any suit or other proceeding for the enforcement of the rights of claimants hereunder. In the event of any inconsistency or ambiguity between the terms of this Obligation and the terms of the Public Works Contractors' Bond Law of 1967, the terms of the Public Works Contractors' Bond Law of 1967 shall control and govern.

Proof satisfactory to the Board of Education, School District of Philadelphia, shall be furnished that written notice of the delivery of the material (as defined in the accompanying specifications) of the performance of the labor and/or furnishing of the machinery was given to the above named Principal and Surety herein.

The Surety shall not be relieved from liability by reason of any change in the work to be done or material (as defined in the accompanying specifications) to be supplied or by any waiver by the Obligee of any default of the Principal. The suretyship of this Bond shall be taken as covering all such matters and all liability by reason thereof.

If Contractor is an individual proprietorship or is a partnership, sign here $\downarrow$	
Witness:	(Seal)
	(Trade Name of Firm)
	Signature of Owner or Partner)
If Contractor is a corporation, sign here $\downarrow$	
(Corporate Seal)	
	(Name of Corporation)
Attest:	Ву:
(Secretary or Treasurer)	(President or Vice-President)
(Surety sign below) $\downarrow$	
Witness as to Surety	

FORM A.E.C.S. - 105 - LABOR AND MATERIALMEN'S BOND - SCHOOL DISTRICT OF PHILADELPHIA (7-19)

#### THE SCHOOL DISTRICT OF PHILADELPHIA BOARD OF EDUCATION

## Know all Men by these presents

WHEREAS, the above Principal entered into a certain contract of even date herewith with the School District of Philadelphia, a copy of which contract is attached hereto and incorporated herein.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall remedy without cost to the School District of Philadelphia any defects in the work under the aforesaid contract which develop during a period of one (1) year from the date of final completion and acceptance of the work performed under the aforesaid contract, then this Obligation to be void; otherwise to be and remain in full force, virtue and effect. The School District of Philadelphia, or its successors having jurisdiction in the premises, shall determine in its sole discretion whether there exists one or more defects, which is caused by defective, inferior or substandard materials or workmanship, which is the subject of this Obligation, and whether such defects have been satisfactorily remedied.

WE FURTHER AGREE, that if, in the opinion of the said School District, if the said Principal has not remedied all defects as aforedescribed, we will pay all loss occasioned thereby, and that the ascertained amount thereof, which shall be determined by the Board of Education of said School District, and of the truth of which oath or affirmation shall be made by the President of the said Board of Education or by any member thereof, shall be final, binding and conclusive upon us, and that execution may forthwith issue against us for the ascertained amount. The Surety also agrees to perform this obligation promptly upon a declaration by the said School District that such performance is required pursuant to the terms of this Obligation.

It is understood and agreed that no change, extension of time, alteration, deduction or addition to the provisions, terms, conditions and covenants of the aforesaid contract or specifications or plans or supplemental bulletins, if any, and no change, extension of time, alteration, deduction or addition in the work to be done or material to be supplied thereunder, shall, in any manner affect the obligation of the Principal and Surety on this bond and the suretyship of this bond shall be taken as covering all such matters and all liability by reason thereof. The Surety does hereby waive notice of any such change, extension of time, alteration, deduction or addition to the terms of the contract, specifications, plans and supplemental bulletins. It is further understood and agreed that in the sole discretion of the School District of Philadelphia, the Surety may be required to perform and carry out the provisions of the aforesaid contract with respect to the remedy of the defects as aforedescribed.

This Obligation incorporates by reference Public Works Contractors' Bond Law of 1967; provided, however, that in the event of any inconsistency or ambiguity in the meaning of this Obligation and the said Public Works Contractors' Bond Law of 1967, the express terms of this Obligation shall govern and control.

If Contractor is an individual proprietorship or is a partnership, sign here  $\downarrow$ 

Witness:		(Seal) (Trade Name of Firm)
		(Seal)
If Contractor is a corpo		(Signature of Owner or Partner)
(Corporate Seal)		
		(Name of Corporation)
Attest:	Ву:	
(Secretary or Treasurer)	(Surety sign below)	(President or Vice-President)
Witness as to Surety		

## FORM OF RELEASE

#### KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned

contractor,

(hereinafter called "Contractor"), under a certain Contract, No.\_\_\_\_\_\_ for alterations, improvements, renovations or repairs to the\_\_\_\_\_\_

, in Philadelphia, Pennsylvania for and in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration to us in hand paid, the receipt of which is hereby acknowledged, and the parties hereto intending to be legally bound hereby, do hereby release and forever discharge the School District of Philadelphia, its officers, commission members, board directors, employees, agents, consultants and representatives (hereinafter collectively referred to as "Owner"), from any and all actions, causes of action, claims and demands which the undersigned may now have, or might or could hereafter have, by reason of any matter or thing arising out of, under or in connection with, or relating to, the performance by the undersigned of said Contract and the work performed and/or materials furnished under or in connection therewith, and release, waive and forever relinguish unto the Owner all liens, demands and claims, or other encumbrances or restrictions whatsoever, which we now have, or might or could hereafter have, against the Owner or on or against the Owner's certain lot or tract of land and all buildings and structures thereon erected, SITUATED in the City of Philadelphia, Commonwealth of Pennsylvania and briefly and generally described as the premises located at in the City of Philadelphia.

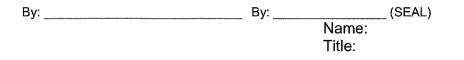
The Contractor hereby irrevocably authorizes and empowers any Attorney of any Court of Common Pleas of the Commonwealth of Pennsylvania to appear for Contractor in any of the said Courts of Common Pleas as Attorney for Contractor and, in Contractor's name, mark satisfied of record at the cost and expense of Contractor any and all claims or claim, liens or lien, filed by or for Contractor against the Owner or the buildings, improvements, lot of ground or any part thereof and for such act or acts this shall be good and sufficient warrant and authority, and a reference to the Court, Term and Number in which and where this instrument shall have been filed shall be sufficient exhibit of the authority herein contained to warrant such action, and the Contractor does hereby remise and release Owner of and from any and all manner of errors, defects and imperfections whatsoever in entering such satisfaction or in anywise touching or concerning the same.

IN	WITNESS	WHEREOF,	we	have	executed	under	seal	this	Release	on
the_	Long Laboration		_ day	of		,	202_	, and	intend to	be
lega	ally bound he	ereby.								

NAME OF CONTRACTOR

WITNESS:

RELEASE FORM PAGE 1 of 5



RELEASE FORM PAGE 2 of 5

#### **AFFIDAVIT - INDIVIDUAL**

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF PHILADELPHIA

: SS.

\_\_\_\_\_\_, being duly sworn according to law deposes and says that he is over twenty-one (21) years of age and resides at \_\_\_\_\_\_\_; that his annual income is in excess of \$10,000; that he is not engaged as a member of or subject to the military or naval service of the United States of America or its allies, within the provisions of the Soldiers and Sailors Civil Relief Act as amended; that he entered into the transaction evidenced by the Contract, dated \_\_\_\_\_\_, \_\_\_\_202\_\_\_, executed by him, as Contractor, and The School District of Philadelphia, as Owner, and executed the Release, as Contractor dated \_\_\_\_\_\_, 202\_\_\_; and that he intentionally, understandingly and voluntarily waives all rights which he had or now has under Federal or Pennsylvania law regarding the said transactions.

Ву:\_\_\_\_\_

Sworn to and Subscribed Before me this\_\_\_\_\_ day of \_\_\_\_\_, 202\_\_.

Notary Public in And for said County and Commonwealth

(SEAL)

RELEASE FORM PAGE 3 of 5

#### **AFFIDAVIT - PARTNERSHIP**

COMMONWEALTH OF PENNSYLVANIA	:	
	t	SS
COUNTY OF PHILADELPHIA	-	

\_\_\_\_\_\_, being duly sworn according to law deposes and says that he is over twenty-one (21) years of age and the General Partner of the duly constituted \_\_\_\_\_\_, partnership known as \_\_\_\_\_\_, ("Partnership") which has an office at \_\_\_\_\_\_; that the Partnership entered into the transaction evidenced by the Contract, dated \_\_\_\_\_\_, 202\_\_, executed by the Partnership, as Contractor, and The School District of Philadelphia, as Owner; and executed the Release, as Contractor, dated \_\_\_\_\_\_, 202\_\_; and that the Partnership intentionally, understandingly and voluntarily waives all rights which it had or now has under Federal or Pennsylvania law regarding the said transactions.

(Trade Name of Firm)

Ву: \_\_\_\_\_

Name: Title:

Sworn to and Subscribed Before me this \_\_\_\_\_day of \_\_\_\_\_, 202\_\_.

Notary Public in And for said County And Commonwealth

(SEAL)

RELEASE FORM PAGE 4 of 5

#### **AFFIDAVIT - CORPORATION**

SS.

COMMONWEALTH OF PENNSYLVANIA				
COUNTY OF PHILADELPHIA	- ÷			

\_\_\_\_\_\_, being duly sworn according to law deposes and says that he is over twenty-one (21) years of age and the \_\_\_\_\_\_\_ of the duly constituted\_\_\_\_\_\_, corporation known as\_\_\_\_\_\_\_ ("Corporation") which has an office at \_\_\_\_\_\_\_; that the Corporation entered into the transaction evidenced by the Contract, dated \_\_\_\_\_\_\_, 202\_\_, executed by the Corporation, as Contractor, and The School District of Philadelphia, as Owner; and executed the Release, as Contractor, dated \_\_\_\_\_\_\_, 202\_\_; and that the Corporation intentionally, understandingly and voluntarily waives all rights which it had or now has under Federal or Pennsylvania law regarding the said transactions.

(Name of Corporation)

By:

Name: Title:

Sworn to and Subscribed Before me this \_\_\_\_\_day of \_\_\_\_\_, 202\_\_\_.

Notary Public in And for said County and Commonwealth

(SEAL)

RELEASE FORM PAGE 5 of 5 **GENERAL CONDITIONS** 

## GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

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# GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

#### ARTICLE GC-1 CONTRACT DOCUMENTS

#### GC-1.1 DEFINITIONS

#### 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the School District/Contractor Agreement (and all documents enumerated therein), Invitation to Bid, Instructions to Bidders, Bid Proposal Form and Contractor's Bid, Subcontractor and Supplier Approval Form, Performance Bond, Labor and Materialmen's Bond, Maintenance Bond, Release, the Conditions of the Contract (General and Supplementary), the Drawings, the Specifications, Exhibits, and all Addenda issued prior to and all Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by the School District and the Contractor, or (2) a Change Order, or (3) a written interpretation issued by the School District, the PM/CM or Architect/Engineer pursuant to Subparagraph 3.2.8 of these General Conditions, or (4) a written order for a minor change in the Work issued by the Architect/Engineer , or the PM/Cm, or the School District pursuant to Paragraph GC-12.2 of these General Conditions.

#### 1.1.2 THE CONTRACT

The Contract is the sum of all the Contract Documents. The Contract represents the entire and integrated agreement between the School District and the Contractor and supersedes all prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification as defined in Subparagraph 1.1.1 of these General Conditions. The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons or entities, other than the Owner and Contractor, as more fully described in Subparagraph 1.2.11 of these General Conditions. However, the PM/CM and the Architect/Engineer shall be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the respective duties of the PM/CM and the Architect/Engineer. The term "Prime Contract" also means the Contract.

#### 1.1.3 THE WORK

The Work comprises the completed construction required by the Contract Documents and includes all labor, materials, consumables, small tools, and equipment, and contractual requirements as indicated in the Contract Documents, necessary to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction.

#### 1.1.4 THE PROJECT

Under the multi-prime bidding and contracts requirements of the Public School Code, 24 P.S. §7-751(a.2), the School District will solicit bids for multiple separate construction contracts and enter into multiple separate construction contracts (hereinafter referred to as "separate Prime Contracts" or "multiple Prime Contracts" or "separate contractors") with multiple separate construction contractors (hereinafter referred to as "separate Contractors (hereinafter referred to as "separate Prime Contractors") on the Project for the performance of all construction work, including general construction work (which shall include civil, structural, roofing, architectural, utilities, paving and landscaping), heating, ventilating and air conditioning (HVAC) work, plumbing work, or electrical work, on the Project. The Project is the total design and construction of which the Work performed under the Contract Documents may be the whole or a part and which includes construction by the Owner and by multiple separate Prime Contractors (Contractor and such multiple separate Prime Contractors hereinafter referred to as "Contractor").

#### GC-1.2 EXECUTION, CORRELATION, AND INTENT

1.2.1 The School District/Contractor Agreement shall be signed in not less than triplicate by the School District and Contractor, each of which shall be deemed an original, but all of which shall constitute one and the same instrument. If either the School District or the Contractor, or both, do not sign the Conditions of the Contract, Drawings, Specifications, or any of the other Contract Documents, the PM/CM, the Architect/Engineer shall identify such unsigned Contract Documents upon request.

By executing the Contract, the Contractor represents that: (1) he is financially solvent, able to pay 1.2.2 his debts as they mature, and possessed of sufficient working capital to complete the Work and perform his obligations under the Contract Documents, on-time and on-budget, and is current in the payment of taxes and other indebtedness to the City of Philadelphia, School District of Philadelphia and the Commonwealth of Pennsylvania. (2) he is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform his obligations hereunder, on-time and on-budget, and has sufficient experience and competence to do so. (3) he is experienced and skilled in the performance of the Work required under the Contract Documents, and has the ability to perform and complete the Work required under the Contract Documents, on-time and on budget, and on a construction project where either a single construction contractor and his subcontractors or multiple construction contractors will be concurrently performing construction work, and in a fast paced urban school construction environment emphasizing safety, (4) he is authorized to do business in the Commonwealth of Pennsylvania and is properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over him and over the Work and the site of the Project, and (5) he has visited the Project site, familiarized himself with the local conditions and without regard to the sufficiency of such investigation, hereby undertakes all risks of increased costs, difficulty or impossibility of performance caused by such conditions. These representations, as well as the representations in Paragraph GC-4.22 of these General Conditions, shall survive the execution and delivery of the School District/Contractor Agreement and the final completion of the Work.

1.2.3 The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. Work not covered in the Contract Documents will not be required unless it is necessary to produce the intended results. Words and abbreviations that have well- known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings unless otherwise specifically defined herein. All pertinent statutes, ordinances, laws, rules, codes, regulations, standards, requirements, resolutions, and lawful orders of public authorities having jurisdiction over the Work of this Contract, including, but not limited to, the School District's health and safety program, guidelines, procedures, and requirements, are hereby incorporated into the Contract Documents the same as if repeated in full herein. The Contractor shall remain responsible for Code compliance with regard to the Project.

1.2.4 The Drawings which accompany the Specifications are for the purpose of illustrating the general character and extent of the Work and are subject to such clarification by the Architect/Engineer as may be found necessary or advisable either before or during the prosecution of the Work. The Contractor shall conform to and abide by whatever supplementary drawings and explanations may be furnished by the Architect/Engineer for the purpose of illustrating the Work. The School District, with the advice of the PC/CM and the Architect/Engineer, shall decide as to the meaning or intention of any portion of the Specifications and Drawings. Where the same may be found obscure or in dispute, the School District shall have the right to correct any errors or omissions therein. Correction of errors or omissions which have a material effect upon the cost of the Project shall be handled as provided by the General Conditions.

1.2.5 Where the Work is shown in complete detail on only part of a portion of a Drawing or there is an indication of a continuation, the remainder being shown in outline, the Work drawn out in detail shall be understood to apply to other like portions of the structure. On all Work it shall be the responsibility of the Contractor, by personal inspection, to satisfy himself as to the correctness of any information given which

may affect the quantity, size and quality of materials required for a satisfactorily completed Contract, whether or not such information is indicated on the prints or within the Specifications.

1.2.6 All Work that may be called for in the Specifications and not shown on the Drawings, or shown on the Drawings and not called for in the Specifications, shall be executed and furnished by the Contractor as if described in both. Should any incidental work or materials be required but not set forth in the Specifications or Drawings, either directly or indirectly, but which is, nevertheless, necessary for the proper carrying out of the intent thereof, the Contractor shall understand same to be implied and required, and he shall perform all such work and furnish all such materials as fully as if they were particularly described.

1.2.7 The Contractor acknowledges that his Contract Sum shall include all Work reasonably inferable and in accordance with the Contract Documents to make all building components function in the manner intended. This may include such items as properly wiring all equipment requiring electricity to function even though the electrical drawings do not show a circuit to the equipment, coordinating the location of ductwork, fixtures, etc., so as not to interfere with each other (so long as all components can physically fit within the designed space), among other things.

1.2.8 In the event of any inconsistency between what is called for by the Specifications and what is called for by the Drawings, the Contractor shall be required to provide whatever is the greater quantity and size and higher quality of materials required for a satisfactorily completed Contract.

1.2.9 The organization of the Specifications into divisions, sections, and articles, and the arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.2.10 If any portion of the Contract Documents shall be in conflict with any other portion, the various documents comprising the Contract Documents shall be considered complementary. If a conflict should arise, the PM/CM and the Architect/Engineer shall review and make an interpretation.

1.2.11 The Contractor agrees that nothing contained in the Contract Documents or any contract(s) between the School District, on the one part, and the PM/CM, the Architect/Engineer or any other School District Consultant on the Project, on the other part, shall create any contractual relationship between the Contractor, on the one part, and the School District or the PM/CM, or the Architect/Engineer or any other School District Consultant on the Project, on the other part, or between the School District or the Architect/Engineer or any other School District Consultant on the Project, on the other part, or between the School District or the Architect/Engineer or any other School District Consultant, on the one part, and any Subcontractor(s), on the other part. The Contractor acknowledges and agrees that this Contract is not intended to create, nor shall any provision be interpreted as creating, any contractual relationship between the School District or Contractor, on the one part, and any third parties, on the other part, except as expressly provided in Subparagraphs 1.2.13 and 6.2.10 and Paragraph GC-6.4 of these General Conditions.

1.2.12 The Project will be financed by the School District of Philadelphia and is subject to all applicable laws and regulations of the Commonwealth of Pennsylvania, the City of Philadelphia and the United States of America.

1.2.13 Intended Third Party Beneficiary. By executing the Contract, <u>both</u> the School District and the Contractor intend that the Contractor is an <u>intended third party beneficiary</u> of each of the other separate Contracts awarded work on the Project for the <u>sole and only purposes</u> of asserting rights, or making claims, or filing claims, causes of actions, actions or suits against the other separate Contractors and their Performance Bond sureties under Article GC-6 of these General Conditions.

GC-1.3 GENERAL RULES OF CONSTRUCTION

1.3.1 Except as expressly stated otherwise in the Contract Documents, all references to "Article(s)" or "Section(s)" or "Paragraph(s)" or "Subparagraph(s)" in this Contract are references to Articles and Sections and Paragraphs and Subparagraphs of the Contract Documents or Exhibits included in the Contract Documents; and all references to Exhibit(s) are references to the Exhibits included in the Contract Documents. The indexes and table of contents and headings used in the Contract Documents are for reference and convenience only, do not in any way define, limit, describe, or amplify the provisions of the Contract Documents or the scope or intent of their provisions, are not a part of the Contract Documents, and will not enter into the interpretations of the Contract Documents. All references to "days" in the Contract Documents mean calendar days unless noted otherwise. The terms "business days", "working days" and "work days" mean Monday through Friday, excluding holidays observed by the School District, which are published on the School District's website at the address http://www.philasd.org under the subject "Calendar". Where required hereunder to effectuate the intent of the Contract Documents, words used in the singular shall be construed to mean or include the plural and vice versa; and pronouns of any gender shall be deemed to include and designate the masculine, feminine and neuter genders. "Or" shall include "and/or".

"Applicable Law" means and includes all federal, state and local statutes, ordinances, resolutions and regulations, including the rules and regulations of any governmental authority, School District rules, regulations and policies applicable to the School District, the Contractor and the Work, and includes all applicable case law, court orders, injunctions and consent decrees.

## GC-1.4 OWNERSHIP AND USE OF DRAWINGS AND SPECIFICATIONS

1.4.1 Unless otherwise provided in the Contract Documents, the Contractor is responsible for preparation of whatever copies of the Contract Documents it requires for this contract.

## ARTICLE GC-2 OWNER

### GC-2.1 DEFINITION

2.1. The Owner is The School District of Philadelphia and is referred to throughout the Contract Documents as School District and as if singular in number and neuter in gender. The Board of Education (hereinafter referred to as "Board") is the governing body of the School District of Philadelphia pursuant to the Public School Code, 24 P.S. §21-2102 and §3-301.

2.2.1 Program Manager (PM): The program management consulting firm retained by the School District to provide comprehensive professional program management services for the implementation of its Capital Program.

2.2.2 <u>Construction Manager (CM)</u>: The management representative from the Program Manager, or the School District, who will lead the construction activities and efforts and act as the PM/CM on this capital project, or other qualified professional consulting services firm who may be performing professional construction management services on this project on an individual basis pursuant to its Contract with the School District.

2.2.3 <u>PM/CM</u>: The term refers to the Program Manager or the Construction Manager or both, as the context of the provision dictates with respect to actions or responsibilities required by the provisions of this construction contract..

GC-2.3 NOT USED

#### GC-2.4 INFORMATION, SERVICES AND RIGHTS OF THE OWNER

2.4.1 The School District, acting for itself or through its designated representatives as hereinafter provided, shall provide administration of the Contract as hereinafter described. The PM/CM, and the Architect/Engineer will be assisting the School District in the administration of the Contract. All communications, correspondence, submittals and documents in connection with the Project shall be through the PM/CM and the Architect/Engineer, unless indicated otherwise in the Contract Documents. The School District, in its sole discretion, may use other School District Consultants on the Project to assist it in the administration of the Contract.

2.4.2 The School District and its designated representatives shall at all times have access to the Work whenever it is in preparation or progress. The Contractor shall provide safe facilities for such access.

2.4.3 Notwithstanding the School District's health and safety program, guidelines, procedures, and requirements, the School District and its designated representatives shall not be responsible for, or have control over or charge of, the construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, and shall not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The School District and its designated representatives shall not be responsible for, or have control over or charge of, the acts or omissions of the Contractor, any Subcontractors, or any of their agents or employees, or any other persons performing any of the Work.

2.4.4 The School District shall furnish all available surveys describing the physical characteristics, legal limitations and utility locations for the site of the Project.

2.4.5 The School District shall secure and pay for necessary easements required for permanent structures or for permanent changes in existing facilities. The Contractor shall be responsible for all permit or license fees which are required for prosecution of the work under this Contract, except those

construction permit fees waived under Paragraph GC-4.7 of these General Conditions.

2.4.6 Upon receipt of a written request from the Contractor, information or services under the School District's control shall be furnished by the School District with reasonable promptness to avoid delay in the orderly progress of the Work.

2.4.7 The School District shall provide the milestones and milestones dates for the Project to the Contractor for his development of his detailed coordinated CPM Construction Schedule for the Project. The School District and the PM/CM, with assistance from the Architect/Engineer, shall review the separate Prime Contractors' scheduling information to assist the Lead Prime Contractor in the preparation of his coordinated CPM Construction Schedule. The School District and its designated representatives, together with the Architect/Engineer, shall review the coordinated CPM Construction Schedule submitted by the Lead Prime Contractor for compliance with the Project milestones and milestones dates and other Contract requirements.

2.4.8 The School District or the PM/CM shall conduct weekly Construction progress meetings with the Architect/Engineer, any other School District Consultants on the Project, separate Prime Contractors, their Subcontractors, and school staff representatives. The School District or its designated representatives shall call, schedule and conduct other Project meetings, as necessary or required, to be attended by the separate Prime Contractors and representatives of their Subcontractors to discuss such matters as procedures, progress, problems, scheduling, coordination, updates, schedule recovery, safety, site logistics, security, and clean-up.

The School District or the PM/CM shall prepare and maintain written correspondence, 2.4.9memoranda, emails, minutes, records and reports of Project meetings, Project Work, and any issues, problems, conflicts, disputes, changes, claims or other relevant matters or activities occurring on the Project. The School District or its designated representatives shall prepare and maintain written Project construction logs or reports of Contractor activities, weather conditions and any other outside factors which may possibly impact the progress of any work. The School District or its the PM/CM shall maintain at the Project site a complete correspondence file, as well as a complete updated file of the following records: a record copy of the Prime Contract and all Subcontracts, specifications, contract drawings, shop drawings, addenda, contract modifications, change orders, requests for information, requests for proposals, weekly progress photos, licenses and inspection contract drawing permit set. The School District or its designated representatives shall also maintain duplicate records on site of all Project data including, but not limited to, the location and data references for all vertical and horizontal control points established by licensed surveyors and retained by the School District, all benchmarks and elevations of the bottoms of footings and other relevant data. The School District or its the PM/CM shall make all records required under Subparagraph 2.4.9 of these General Conditions available to the Contractor, upon request.

2.4.10 The School District shall establish procedures to be followed for review and processing of all Shop Drawings, catalog submittals, project reports, test reports, maintenance manuals and other necessary documentation, as well as requests for changes and applications for extension of time. The School District shall have the right to review and reject Contractor Shop Drawings, Product Data, Samples, submittals, reports, manuals and other documentation if they are not in compliance with contract requirements.

2.4.11 The School District or its designated representatives shall monitor and inspect the work of the Contractor. The School District shall have the right to condemn or reject Work when in its opinion the Work does not conform to the Contract Documents. The School District's designated representatives shall have the authority to condemn or reject Work when in their opinion the Work does not conform to the Contract Documents.

2.4.12 The School District or its the PM/CM shall verify the Contractor's punch lists, and, together with the Architect/Engineer, shall conduct substantial completion inspections and final inspections.

2.4.13 In each instance in the Contract Documents in which the Architect/Engineer has a right to take certain actions or perform certain functions, the School District also shall have the right to undertake any or all of those actions or functions, in whole or in part, with respect to any or all of the Work under this Contract, upon giving notice, in writing, of its exercise of such right to the Contractor.

2.4.14 The School District shall not be precluded or estopped by approvals made or given by it under any provisions of the Contract and subject thereto, at any time, either before or after the completion and acceptance of the Work and payment thereof, from showing the true and correct amount and character of the Work performed and materials and equipment furnished by the Contractor and the Subcontractors; nor from showing at any time that the Work or materials, equipment or any parts thereof do not conform to the Specifications and the Contract. Neither the acceptance by the School District, nor any certificate approved for payment of money, nor any payments for, nor acceptance of the whole or any part of the Work by the School District, nor any extension of time, nor any possession taken by the School District shall operate as a waiver of any portion of the Contract or any power herein reserved by the School District or any right to damages or any cause of action arising out of the performance of the Contract, nor shall any waiver of any breach of the Contract be held to be a waiver of any other or subsequent breach.

2.4.15 The foregoing rights are in addition to other rights of the School District enumerated herein and those provided by law.

# GC-2.5 OWNER'S RIGHT TO STOP THE WORK

2.5.1 If the Contractor fails to correct defective Work, or fails to carry out the Work or supply labor, material or equipment in accordance with the Contract Documents, the School District may order the Contractor, in writing, to stop the Work or any portion thereof until the cause for such order has been eliminated. The right of the School District to stop the Work shall not give rise to any duty on the part of the School District to exercise this right for the benefit of the Contractor or any other person or entity. This right shall be in addition to, and not in restriction of, the School District's rights under any other provisions of the Contract or at law or in equity.

2.5.2 The School District, either itself or through its the PM/CM, may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the Work for such period of time as it may determine to be appropriate for the convenience of the School District.

2.5.3 The School District's right to stop the Work shall not relieve the Contractor of any of its responsibilities, duties and obligations under the Contract Documents.

## GC-2.6 OWNER'S RIGHT TO CARRY OUT THE WORK

2.6.1 If the Contractor breaches, defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within seventy-two (72) hours after receipt of written notice from the School District to commence and continue correction of such breach, default or neglect with diligence and promptness, the School District may make good such deficiencies and may further elect to complete all Work thereafter through such means as the School District may select, including the use of a new or alternative contractor on a time (and overtime, if necessary) and material basis, and the School District shall back charge the Contractor accordingly. The labor and material records approved by the School District for such work shall be conclusive, final and binding upon the Contractor and shall not be subject to appeal, dispute or claim. In such case, an appropriate Change Order shall be issued, deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the additional services of the Architect/Engineer, and other Consultants of the School District made necessary by such breach, default, neglect, or failure. If the payments then or thereafter due the Contractor shall immediately pay the difference to the School District upon demand.

### GC-2.7 OWNER'S RIGHT TO TERMINATE CONTRACT

2.7.1 The School District shall have certain rights to terminate the School District/Contractor Agreement, as more particularly set forth in Article GC-14 of these General Conditions.

### GC-2.8 ADDITIONAL RIGHTS

2.8.1 The rights stated in this Article GC-2 shall be in addition to and not in limitation of any other rights of the School District granted in the Contract Documents or at law or in equity.

# ARTICLE GC-3A ARCHITECT/ENGINEER

### GC-3.1 DEFINITION OF ARCHITECT/ENGINEER

3.1.1 The Architect/Engineer is the person named herein lawfully licensed to practice architecture and/or engineering, and identified as such in the School District/Contractor Agreement, and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term "Architect/Engineer" means the Architect and his engineers, whether under contract or within his own organization, or his authorized representative, as well as the Engineer and his sub-consultants or his authorized representative, where no Architect is assigned to the project. The Architect/Engineer and his team shall report directly to the School District.

3.1.2 If a Program Manager and/or a Construction Manager (PM/CM) have been retained by the School District to provide construction management services for this project, the Architect/Engineer shall coordinate its services with the PM/CM as the School District's representative with respect to approvals, communications, consultations and notices, and the routing of correspondence and submittals.

## GC-3.2 SERVICES OF THE ARCHITECT/ENGINEER

3.2.1 The Architect/Engineer shall provide certain services as hereinafter described. The Architect/Engineer shall advise and consult with the School District on an as-needed basis, and shall have the authority to act on behalf of the School District only to the extent provided in the Contract Documents. The Architect/Engineer shall cooperate with and assist the School District whenever necessary to reach conclusions or decisions pertaining to construction activities.

3.2.2 The Architect/Engineer shall at all times have access to the Work whenever it is in preparation or progress. The Contractor shall provide safe facilities for such access so that the Architect/Engineer may perform his functions under the Contract Documents. The Architect/Engineer shall have the right to review Project records and documents upon request to the School District and at all reasonable times and places.

3.2.3 The Architect/Engineer shall attend and participate in Construction progress or update and Project meetings scheduled by the School District at the Project site and any other scheduled meetings.

3.2.4 Notwithstanding the School District's health and safety program, guidelines, procedures, and requirements, the Architect/Engineer shall not be responsible for, or have control over or charge of, the construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and shall not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Architect/Engineer shall not be responsible for, or have control over or charge of, the acts or omissions of the Contractor, any Subcontractors, or any of their agents or employees, or any other persons performing any of the Work, but shall refuse to accept unsatisfactory Work resulting therefrom. The Architect/Engineer shall assist the School District in determining whether the Work conforms to the Contract Documents.

3.2.5 The Architect/Engineer shall review and evaluate the Contractor's detailed construction schedules, including schedules of shop drawing submittals, and make recommendations as necessary to the School District.

3.2.6 The Architect/Engineer shall point out the School District provided materials, supplies and equipment for the Project, Not-in-Contract ("NIC") materials, supplies and equipment, and materials, supplies and equipment that are being provided by others and are not in the Project Work, and coordinate his activities accordingly.

3.2.7 The Architect/Engineer shall, within seven (7) calendar days from date of receipt of RFIs,

review, answer, or take other appropriate action upon RFIs concerning the meaning of the Contract Documents and Project participants' performance thereunder. Where RFIs cannot be adequately reviewed and answered, or other appropriate action on RFIs cannot be adequately taken, within seven (7) calendar days of receipt of RFIs, due to their scope, complexity or volume, the Architect/Engineer shall notify the School District and the Contractor in writing and stipulate the time that will be required to complete his review, answer or other appropriate action.

3.2.8 As required, the Architect/Engineer shall render, within a reasonable time, interpretations and clarifications of requirements of the Contract Documents as are necessary for proper execution or progress of the Work. The Architect/Engineer shall make interpretations and clarifications consistent with the intent of and reasonably inferable from the Contract Documents. These interpretations and clarifications shall be in writing or in the form of drawings. These interpretations and clarifications include written documents issued by the Architect/Engineer through the RFI process and written comments or notations on shop drawings or submittals. Sketches or drawings may be issued by the Architect/Engineer, but are not required in each instance. The Architect/Engineer's decisions on matters relating to artistic effect shall be final, if consistent with the intent of the Contract Documents, subject to the reasonable approval of the School District. The Architect/Engineer shall forward this information to the School District, the Contractor and other Project participants.

3.2.9 If the Architect/Engineer prepares supplementary or detailed drawings, such supplementary information is intended only to more clearly define the Contract requirements and, in no case, shall the Contractor consider such supplementary information as a deviation from the Contract or as an authorization for additional Work. Should the Contractor have any doubt as to the intent of such drawings and/or instruction, he shall inform the Architect/Engineer and the School District accordingly, taking no action until he has been informed, in writing, of the School District's decision.

3.2.10 The Architect/Engineer shall monitor, review and document the Contractor submittal process. The Architect/Engineer shall, within fourteen (14) calendar days from date of receipt of routine submittals, review, comment upon, approve or take other appropriate action upon Shop Drawings, Product Data and Samples, and other submittals of the Contractor, to determine their compliance with the requirements of the Contract Documents. Where submittals cannot be adequately reviewed within fourteen

(14) calendar days of receipt, due to their scope, complexity or volume, the Architect/Engineer shall notify the School District and the Contractor in writing and stipulate the time that will be required to complete his review. The Architect/Engineer is not reviewing these submittals to determine the accuracy and completeness of details, such as dimensions and quantities, or to substantiate instructions for installation or performance of equipment or systems provided by the Contractor. The Architect/Engineer's review of these submittals does not constitute review or approval of safety precautions or, unless otherwise specifically stated by the Architect/Engineer, of construction means, methods, techniques, sequences or procedures. The Architect/Engineer has reviewed the entire assembly of which the item is a component or other portions of the Project of which the product depicted forms only a part. When professional certification of performance characteristics of materials, systems or equipment is required by the Contract Documents, the Architect/Engineer is entitled to rely upon such certification to establish the materials, systems or equipment will meet the performance criteria required by the Contract Documents, unless the Architect/Engineer knows such certification is inaccurate.

3.2.11 The Architect/Engineer shall visit the Project site, on a weekly basis, or as otherwise agreed by the School District to become generally familiar with the progress and quality of the Work on the Project and to determine in general if the Work completed on the Project is being performed in an manner indicating that such Work when completed will be in accordance with the requirements of the Contract Documents. The Architect/Engineer shall promptly advise the School District in writing whenever he observes any Work not being performed in accordance with the Contract Documents during his site visits. The Architect/Engineer shall promptly submit written field observation reports to the School District after his site visits. The Architect/Engineer shall report to the School District any apparent defects or deficiencies in the Work. The Architect/Engineer shall have the authority, after notification to the School District, to reject Work that does not conform to the Contract Documents.

3.2.12 The Architect/Engineer shall monitor and document the Change Management process, including RFIs, Design Bulletins, Field Instructions, Requests for Change Orders, and Construction Change Directives. The Architect/Engineer shall assist the School District to identify necessary or desirable changes in the Work, and shall evaluate requests for changes proposed by the Contractor and make recommendations regarding proposed changes to the School District. The Architect shall review, comment upon, approve or take other appropriate action on requests for proposals submitted by the Contractor. The Architect/Engineer shall assist the School District in preparing Change Orders for approval and in obtaining supporting documentation and data for the Change Orders. The Architect/Engineer shall review the Change Orders, and shall make recommendations to the School District and shall approve and execute or take other appropriate action on the Change Orders. Should errors, omissions, or conflicts in the Drawings, Specifications, or other Contract Documents prepared by the Architect/Engineer be discovered, the Architect/Engineer shall assist the School District in preparing supporting near shall assist the School District Documents prepared by the Architect/Engineer be discovered, the Architect/Engineer shall assist the School District in preparing supporting supporting as may be required.

3.2.13 The Architect/Engineer shall consult with the School District on an as-needed basis, regarding any proposed substitutions of materials and equipment specified in the Contract Documents and provide recommendations accordingly. The Architect/Engineer shall assist in the development of Quality Assurance plans for the Project and in the coordination of overall site logistics. The Architect/Engineer shall observe inspections, tests or approvals required by the Contract Documents, and, where practicable, at the normal place of testing.

3.2.14 The Architect/Engineer shall review the Contractor's pay requests with the School District and advise whether payment is appropriate based upon the quality of Work and conformity with the Contract Documents. Whenever in the reasonable opinion of the Architect/Engineer it is considered necessary or advisable to ensure the proper implementation of the intent of the Contract Documents, the Architect/Engineer shall have the authority, upon written authorization from the School District, to require additional or special inspections or testing of any Work in accordance with the provisions of the Contract Documents, whether or not such Work has been fabricated, installed, or completed.

3.2.15 The Architect/Engineer, in consultation with the School District, shall determine the date of Substantial Completion of the Project, and, together with the School District, shall jointly inspect the Work and prepare punch lists of Work requiring correction and completion by the Contractor. The School District shall transmit such punch lists to the Contractor. Thereafter, the Architect/Engineer shall certify the date of Substantial Completion of the Project and shall issue the appropriate Certificate of Substantial Completion of the Project and shall participate in final inspections of the Work with the School District. After the Architect/Engineer and the School District have jointly determined the satisfactory correction and completion of the Work by the Contractor, the Architect/Engineer shall certify the date of Final Completion of the Project and shall issue the appropriate Certificate of Final Completion of the Project.

3.2.16 The Architect/Engineer shall assist the School District during the Contractor's checkout of utilities, mechanical systems, laboratory systems and equipment for readiness and their initial start-up and testing by the Contractor. The Architect/Engineer shall attend the Turnover meeting with the School District and Contractor. The Architect/Engineer shall participate in O&M training sessions with the School District and the Contractor.

3.2.17 The Architect/Engineer shall review the Contractor's application for final payment and shall recommend final payment or take other appropriate action. The Architect/Engineer shall prepare and issue the appropriate Certificate of Final Payment.

3.2.18 The Architect/Engineer shall prepare a scanned copy on electronic media in pdf format of the "as built" drawings provided by the Contractor and submit them to the School District. The Architect/Engineer shall also prepare a complete copy of the Contract Drawings on electronic media in AutoCAD format conformed to include revisions by addenda, bulletins or other changes prepared by the Architect/Engineer and submit them to the School District.

3.2.19 The Architect/Engineer shall assist the School District in the "commissioning" or 'system checkout, startup and testing' program; "commissioning" or "system checkout, startup and testing" defined as "the quality process for achieving, validating and documenting the performance systems, sub systems and equipment to meet the basis of design and preparing facility personnel for maintenance and operation".

3.2.20 The Architect/Engineer shall make monthly post-completion warranty site visits to review Project conditions over a one-year period and shall prepare and submit written site visit reports concerning observed Project conditions to the School District.

3.2.21 In the case of the termination of the employment of the originally selected Architect/Engineer, the School District may approve another Architect/Engineer. In such event, the status of the substituted Architect/Engineer under the Contract Documents shall be that of the former Architect/Engineer.

3.2.22 The Architect/Engineer is not authorized to revoke, alter, enlarge, relax, or release any requirements of the Contract, nor to approve or accept any portion of the Work not executed in accordance with, nor to issue instructions contrary to, the Contract Documents. Any advice that the Architect/Engineer may give the Contractor shall be taken as a suggestion and in no way be construed as binding the School District in any way, nor as releasing the Contractor from fulfillment of any and all of the terms of the Contract.

### GC-3.3 ARCHITECT/ENGINEER ENTITLEMENT TO FILE CLAIMS AGAINST CONTRACTORS FOR DAMAGES AND ADDITIONAL SERVICES CAUSED BY CONTRACTORS OR THEIR SUBCONTRACTORS

3.3.1 The School District has provided written notice, pursuant to Paragraph GC-6.4 of these General Conditions, of its assignment to the Architect/Engineer of its right to file claims against any of the separate Contractors or any of their Subcontractors for damages and additional services of the Architect/Engineer that were caused by any of the separate Contractors or their Subcontractors, for <u>the sole and only</u> <u>purposes</u> of the Architect/Engineer's making, asserting, filing or bringing <u>direct</u> claims, actions, causes of actions or lawsuits against any of the separate Contractors or any of their Subcontractors on the Project.

3.3.2 The Architect/Engineer, **as an assignee of the School District**, pursuant to Paragraph GC-6.4 of these General Conditions, is entitled to make, assert, file or bring a **direct** claim, action, cause of action or lawsuit against any of the separate Contractors or any of their Subcontractors for any damages or additional services of the Architect/Engineer that are caused by any of the separate Contractors or any of their Subcontractors on the Project.

# ARTICLE GC-3B PROGRAM MANAGER AND CONSTRUCTON MANAGER

### GC-3.3 DEFINITIONS OF PROGRAM MANAGER AND CONSTRUCTION MANAGER

3.3.1.1 <u>Program Manager (PM):</u> The program management consulting firm retained by the School District to provide comprehensive professional program management services for the implementation of its Capital Program. The Capital Program consists of new construction, major renovations, life cycle replacements, modernizations to meet code requirements and educational programming needs.

3.3.1.2 <u>Construction Manager (CM)</u>: The management representative from the Program Manager, or the School District, who will lead the construction activities and efforts and act as the PM/CM on this capital project, or other qualified professional consulting services firm who may be performing professional construction management services on this project on an individual basis pursuant to its Contract with the School District.

3.3.1.3 <u>PM/CM</u>: The term refers to the Program Manager or the Construction Manager, as the context of the provision dictates with respect to actions or responsibilities required by the provisions of this construction contract.

3.3.2 The School District may assume and/or assign the responsibilities of the PM/CM as it may deem to be in its best interest.

### GC-3.4 SERVICES OF THE PROGRAM MANAGER/CONSTRUCTION MANAGER (PM/CM)

3.4.1 The PM/CM shall provide certain services as hereinafter described. The PM/CM shall provide administration of the Contract, as hereinafter described, and shall monitor the Contractor's coordination of the Work of his personnel and all of his Subcontractors with each other in order to complete the Project in accordance with the School District's objectives of cost, time, money and quality.

3.4.2 All communications, correspondence, submittals and documents in connection with the Project shall be through the PM/CM.

3.4.3 The PM/CM, with assistance from the School District and the Architect/Engineer shall develop and maintain a master construction schedule for the Project ("Project Master Schedule") based upon the separate Prime Contractors' scheduling input and cost information from the separate Prime Contractors' schedules of values. The PM/CM shall create the Project Master Schedule utilizing Primavera P3 scheduling software. The PM/CM, with assistance from the School District and the Architect/Engineer, shall review the separate Prime Contractors' schedule. The PM/CM, together with the School District and the Architect/Engineer, shall review the coordinated Construction schedule. The PM/CM, together with the School District and the Architect/Engineer, shall review the coordinated Construction schedule submitted by the General Contractor for compliance with the Project Master Schedule. Construction schedules derived pursuant to Subparagraph 3.4.3 of these General Conditions shall be considered the Contractor's schedule for purposes of this Contract.

3.4.4 The PM/CM shall conduct weekly or biweekly Construction progress meetings with the School District, Architect/Engineer, separate Prime Contractors, their Subcontractors, and school staff representative. The PM/CM shall have the authority and discretion to call, schedule and conduct job meetings to be attended by the separate Prime Contractors and representatives of their Subcontractors to discuss such matters as procedures, progress, problems and scheduling.

3.4.5 Notwithstanding the School District's health and safety program, guidelines, procedures, and requirements, the PM/CM shall not be responsible for, or have control over or charge of, the construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in

connection with the Work, and shall not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The PM/CM shall not be responsible for, or have control over or charge of, the acts or omissions of the Contractor, any Subcontractors, or any of their agents or employees, or any other persons performing any of the Work, but shall refuse to accept unsatisfactory Work resulting therefrom. The PM/CM shall assist the School District and Architect/Engineer in determining whether the Work conforms to the Contract Documents.

3.4.6 The PM/CM shall update at least monthly the Project Master Schedule. The PM/CM shall monitor construction progress and direct the Contractor when schedule recovery is required. The PM/CM shall prepare two (2)-week look-ahead construction schedules.

3.4.7 The PM/CM shall conduct weekly coordination meetings with the separate Prime Contractors. The PM/CM shall ensure that the General Contractor is coordinating Work of the separate Prime Contractors and their Subcontractors, and shall review coordination drawings prepared by the General Contractor.

3.4.8 The PM/CM shall establish procedures to be followed for review and processing of all Shop Drawings, catalog submittals, project reports, test reports, maintenance manuals and other necessary documentation, as well as requests for changes and applications for extension of time. The PM/CM shall monitor and document the Contractor's submittal process using a program and software it selects with the approval of the School District, and shall ensure that the Contractor's submittals are in accordance with the submittal requirements prior to transmittal to the Architect/Engineer.

3.4.9 The PM/CM shall monitor and inspect the Work of the Contractor. The PM/CM shall inspect both the management and work of the Contractor for compliance with the Contract Documents and Contract Drawings, particularly for delays, omissions, defects or deficiencies in the Work. The PM/CM shall ensure that the Contractor is performing Work in accordance with the Contract Documents and Contract Drawings. The PM/CM shall issue Non-compliance reports. In the event the requirements of the Contract are not being met by the Contractor or even if currently being met it appears likely that the Contractor will be unable to meet the currently updated Project Master Schedule or will be unable to complete the Work within the Contract Time, the PM/CM shall immediately advise the School District, and shall recommend remedies or other appropriate action to be taken by the School District. The PM/CM shall monitor corrective actions.

3.4.10 The PM/CM has the authority to condemn or reject Work on behalf of the School District when in his opinion the Work does not conform to the Contract Documents.

3.4.11 The PM/CM shall coordinate overall Project site logistics. The PM/CM shall inform the SCHOOL DISTRICT and school staff representative of construction progress on the Project. The PM/CM shall also inform the school staff representative when potentially disruptive work will be performed, and shall facilitate cooperation between the Contractor and the school in order to minimize disruptions.

3.4.12 The PM/CM shall develop Quality Assurance plans for the Project. The PM/CM shall maintain Project Quality Control logs.

3.4.13 The PM/CM shall monitor and document the Change Management process (including RFIs, Design Bulletins, Field Instructions, Requests for Change, Change Orders and Construction Change Directives) using the approved program management software.

3.4.14 The PM/CM shall ensure that all progress payments are processed in the approved the approved program management software. The PM/CM shall review and approve the Contractor's schedule of values, and shall enter the Contractor's schedule of values into the approved project management system utilizing the School District coding structure. The PM/CM shall review the Contractor's payment applications for approval by the School District.

3.4.15 The PM/CM shall enter Project correspondence into the approved program management software.

The PM/CM shall prepare monthly Project cost reports in the approved program management software based on construction schedules.

3.4.16 The PM/CM shall maintain in The approved program management software daily construction logs of all Contractor activities, weather conditions and any other outside factors which may possibly impact the progress of any work. The PM/CM shall record daily construction logs in The approved program management software by each inspector and superintendent. The PM/CM shall provide weekly construction updates and monthly progress reports to the School District.

3.4.17 The PM/CM shall perform field oversight and coordination, quality control/quality assurance, quality oversight, site management and logistics, HAZMAT, Non-Conformance reports, schedule/timeline/phasing oversight, and cost oversight services on the Project in accordance with its construction management services contract with the School District and the School District Construction Management Program Guidelines.

3.4.18 The PM/CM shall ensure that the Contractor is providing adequate Project site security. The PM/CM shall provide coordination of hazardous materials abatement when encountered during the Project demolition process under the Program Manager's supervision and in compliance with applicable current environmental laws, rules, regulations and orders.

3.4.19 The PM/CM shall approve and recommend the Contractor's safety plans for the Project. The PM/CM shall ensure that the Contractor and all his Subcontractors are working on the Project in accordance with their approved safety plans and the School District's health and safety program, guidelines, procedures, and requirements. The PM/CM through Safety Officers shall conduct audits and monitor construction safety. The PM/CM shall attend the Contractor's weekly tool box safety sessions. The PM/CM shall issue Non-compliance reports or stop Work notices where required, and shall monitor corrective actions. The PM/CM shall maintain a Non-compliance reports (NCR) log using the approved program management program. The PM/CM shall perform safety monitoring services on the Project in accordance with its construction management services contract with the School District's health and safety program, guidelines, procedures, and requirements.

3.4.20 The PM/CM shall maintain at the Project site a complete correspondence file, as well as a complete, updated file of the following records: a record copy of the Prime Contract and all Subcontracts, specifications, contract drawings, shop drawings, addenda, contract modifications, change orders, requests for information, requests for proposals, weekly progress photos, licenses and inspection contract drawing permit set. The PM/CM shall also maintain duplicate records on site of all Project data including, but not limited to, the location and data references for all vertical and horizontal control points established by licensed surveyors and retained by the School District, all benchmarks and elevations of the bottoms of footings and other relevant data. The PM/CM shall make all records required under Subparagraph 3.4.20 of these General Conditions available to the Contractor, upon request.

3.4.21 The PM/CM shall oversee the installation of building systems and equipment. The PM/CM shall verify the Contractor's punch lists, and shall ensure that the Contractor's punch lists are entered into The approved program management software. The PM/CM shall conduct substantial completion inspections with the School District and the Architect/Engineer. The PM/CM shall issue Notices of Substantial Completion. The PM/CM shall conduct final inspections with the School District and the Architect/Engineer.

3.4.22 The PM/CM shall ensure that the Contractor is maintaining progressive as-built construction drawings. The PM/CM shall review the final as-built construction drawings of the Contractor. The PM/CM shall attend the Turnover meeting with the School District, the, Architect/Engineer, and separate Prime Contractors.

3.4.23 The PM/CM shall perform building commissioning, closeout and post-construction services on the Project in accordance with its construction management services contract with the School District

and the Construction Management Program Guidelines. "Commissioning" is defined as "the quality process for achieving, validating and documenting the performance systems, sub systems and equipment to meet the basis of design and preparing facility personnel for maintenance and operation". The PM/CM shall manage and facilitate the implementation of all commissioning processes and guidelines throughout the duration of the Project. The PM/CM shall ensure that all equipment and facility inventory information is inputted into the School District facilities inventory database. The PM/CM shall ensure that work by other School District departments is coordinated with the work of the Contractor. The PM/CM shall coordinate between the School District and the Contractor for training sessions.

# ARTICLE GC-3C AUTHORITY DELEGATED BY THE SCHOOL DISTRICT

# GC-3.5 FINAL AUTHORITY OF THE SCHOOL DISTRICT

3.5.1 The School District has the final authority in all matters relating to and affecting the Contract and the Work.

3.5.2 The School District may delegate certain powers and duties in connection with the Contract to other Consultants as hereinafter provided. Within the scope of this delegation, and as may be additionally authorized in writing by the School District, such Consultants are authorized representatives of the School District and they shall have authority to enforce compliance with the Contract Documents, all as more particularly set forth herein. The term "designated representatives" used in Article GC-2 of these General Conditions means such Consultants.

3.5.3 Any such Consultants are not authorized to change, revoke, alter, enlarge, relax or release any requirements of the Contract, nor approve or accept any portion of the Work not constructed in accordance with provisions of the Contract Documents, nor issue instructions contrary to such provisions.

3.5.4 The exercise of or failure to exercise delegated authority by any such Consultants shall not relieve the Contractor of any of his obligations under the Contract.

## GC-3.6 COOPERATION OF CONSULTANTS

3.6.1 Although there may be no formal contractual relationship between any such Consultant and the Architect/Engineer, or between any such Consultant and the Contractor, any such Consultant and the Architect/Engineer have agreed to perform their services in full cooperation with each other.

## GC-3.7 LIMITS ON AUTHORITY AND RESPONSIBILITY

3.7.1 Notwithstanding any Project safety program of any Consultant, and any Project safety monitoring and oversight services of the School District, the School District and any such Consultant are not acting in any manner so as to assume responsibility, in whole or in part, for noncompliance of the Contractor or any of his Subcontractors with applicable federal, state, and local safety laws, statutes, ordinances, codes, rules, regulations, orders and decrees, including but not limited to, the Occupational Health and Safety Act (OSHA), or with safety standards and regulations established by the School District for the Project, including but not limited to the School District's health and safety program, guidelines, procedures, and requirements or with federal, state, and local health laws, regulations and building codes, or for any accidents arising out of or in connection with safety precautions and safety programs in connection with the construction work on the Project which caused death, personal injury or property damage and which were caused by the Contractor or any of his Subcontractors.

3.7.2 Nothing contained in the Contract Documents, or the School District's health and safety program, guidelines, procedures, and requirements, or any such Consultant's Project safety program, shall be construed to mean that the School District or any such Consultant is acting in a manner so as to assume the Contractor's and his Subcontractors' responsibilities or liabilities, in whole or in part, for safety precautions and safety programs in connection with construction work on the Project.

3.7.3 Nothing contained in the School District's health and safety program, guidelines, procedures, and requirements, or any contract(s) between the School District, on the one part, and any such Consultant on the other part, shall be construed to mean that the School District or any such Consultant are responsible for the jobsite safety of the construction means, methods, techniques, sequences, or procedures utilized by the Contractor and his Subcontractors in connection with construction work on the Project.

3.7.4 The Contractor and his Subcontractors are fully and solely responsible for the jobsite safety of the construction means, methods, techniques, sequences, and procedures utilized by the Contractor and his Subcontractors in connection with construction work on the Project. The Contractor and his Subcontractors are responsible for maintaining and supervising all safety precautions and programs in connection with construction work on the Project. The Contractor and his Subcontractors are responsible for complying with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property, or their protection from damage, injury or loss, in connection with construction work on the Project, and for taking all necessary precautions to protect the safety and health of their employees and others on the Project jobsite, including compliance with all applicable federal, state and local safety and health laws, regulations, and building codes, and for adhering to and enforcing the safety regulations set forth in the Contract Documents and the School District's health and safety program, guidelines, procedures, and requirements.

### GC-3.8 SCHOOL DISTRICT CONSULTANT ENTITLEMENT TO FILE CLAIMS AGAINST CONTRACTORS FOR DAMAGES AND ADDITIONAL SERVICES CAUSED BY CONTRACTORS OR THEIR SUBCONTRACTORS

3.8.1 The School District has provided written notice, pursuant to Paragraph GC-6.4 of these General Conditions, of its assignment to other School District Consultants on the Project of its right to file claims against any of the separate Contractors or any of their Subcontractors for damages and additional services of other School District Consultants that were caused by any of the separate Contractors or their Subcontractors, for **the sole and only purposes** of other School District Consultants' making, asserting, filing or bringing **direct** claims, actions, causes of actions or lawsuits against any of the separate Contractors on the Project.

3.8.2 Other School District Consultants on the Project, **as assignees of the School District**, pursuant to Paragraph GC-6.4 of these General Conditions, are entitled to make, assert, file or bring a **direct** claim, action, cause of action or lawsuit against any of the separate Contractors or any of their Subcontractors for any damages or additional services of other School District Consultants that are caused by any of the separate Contractors or any of their Subcontractors on the Project.

# ARTICLE GC-4 CONTRACTOR

# GC-4.1 DEFINITION

4.1.1 The Contractor is the person or organization identified as such in the School District/Contractor Agreement, together with his surety, and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The terms "Contractor" or "Prime Contractor" mean the Contractor or his authorized representative, who shall have authority to bind the Contractor in all matters pertinent to this Contract, and includes his personnel. Where reference is made herein to General, Mechanical or HVAC, Plumbing, or Electrical, or other type of Contractor, it shall mean the Contractors and their Sureties holding separate and distinct construction contracts (herein referred to as "Prime Contracts" or "separate contracts") with the School District for the specific type of construction work respectively. Where reference is made to single prime form of contract, it shall mean the Single Prime Contractor.

4.1.2 Under Paragraph GC-4,9 LEAD PRIME CONTRACTOR'S SCHEDULE and Paragraph GC-4.15 CLEANING UP and Paragraph GC-10.5 SAFETY REQUIREMENTS of these General Conditions, the terms "Contractor" or "General Contractor" means the Contractor and his personnel on a "single prime contractor" project. The term "Lead Prime Contractor" means the General Construction Contractor and his personnel on a "multiple prime contractors" project; and when there is no General Construction Contractor on a "multiple prime contractors" project, the term "Lead Prime Contractor" means the Contractor" means the Contractor (Heating, Ventilating and Air Conditioning (HVAC), Mechanical, Electrical, Plumbing, Fire Protection, or other discipline) whose contract has the largest dollar value for the required construction work on the Project and his personnel.

# GC-4.2 REVIEW OF CONTRACT DOCUMENTS

4.2.1 Before placing his proposal or bid to the School District, and continuously after the execution of this Contract, the Contractor shall carefully study and compare the Contract Documents and shall at once report to the School District any error, inconsistency, or omission discovered or which the Contractor should have discovered, including any requirement which may be contrary to any law, ordinance, rule, regulation, or order of any public authority bearing on the performance of the Work. By submitting his bid for this Contract and the Work under it, the Contractor agrees that the Contract Documents, along with any supplementary written instructions issued by or through the PM/CM, the Architect/Engineer that have become a part of the Contract Documents, appear accurate, consistent, and complete insofar as can reasonably be determined. If the Contractor has reported in writing an error, inconsistency, or omission and has promptly stopped the affected Work until instructed, and has otherwise followed the instructions of the School District, the Contractor shall not be liable to the School District or the PM/CM, or the Architect/Engineer for any damage resulting from any such errors, inconsistencies or omissions in the Contract Documents. The Contractor shall do no Work without Contract Documents and, when required, approved Shop Drawings, Product Data, or Samples for such portions of the Work.

## GC-4.3 SUPERVISION AND CONSTRUCTION PROCEDURES

4.3.1 The Contractor shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under the Contract.

4.3.2 The Contractor shall provide continuous supervision of the Work by a competent Superintendent and/or Project Manager. <u>Within five (5) calendar days after receipt of Notice to Proceed</u>, the Contractor shall furnish in writing the name and qualifications of the proposed Superintendent and/or Project Manager to the School District and the PM/CM. The Contractor shall obtain the School District's **prior approval** of the proposed Superintendent and/or Project Manager <u>before</u> commencing performance of actual Work on the Project site, which approval shall not be unreasonably withheld. The

Contractor shall not employ or use a proposed Superintendent and/or Project Manager on the Project who has not received prior approval from the School District. The Contractor shall not remove, reassign. replace, or substitute the approved Superintendent and/or Project Manager on the Project without the prior written notice to and approval of the School District, which approval shall not be unreasonably withheld. In the event that the approved Superintendent and/or Project Manager becomes unavailable to serve on the Project, the Contractor shall obtain the School District's prior approval of a proposed replacement or substitute Superintendent and/or Project Manager on the Project, which approval shall not be unreasonably withheld. The School District may demand the removal of any person employed by the Contractor or Subcontractor in or about the Work, who is deemed incompetent or guilty of misconduct, or who neglects or refuses to comply with the directions given or Contract requirements. The services of such person shall not be allowed on School District projects without the written consent of the School District. Should the Contractor continue to employ or again employ such person on the School District Project without the written consent of the School District, the School District may withhold all payments which are or may become due or the School District may suspend the Work at the expense of the Contractor, until such orders are complied with. Any delay arising out of such suspension shall not be reason for extension of the Contract Time.

4.3.3 The Contractor shall at all times enforce good order and conduct among his employees. Every employee shall be a first-class worker and competent to perform the work assigned to him. Employees shall not be permitted to trespass on School District property or conduct themselves contrary to the applicable federal, state, local, or School District rules and regulations governing School District property.

4.3.4 The Contractor shall be responsible to the School District and the Architect/Engineer or other School District Consultants on the Project for the acts and omissions of his employees, Subcontractors, and their agents and employees, and any other persons performing any of the Work.

4.3.5 The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents by the activities or duties of the Architect/Engineer or other School District Consultants or the School District on the Project, or by inspections, tests, or approvals (or the lack thereof) required or performed under Paragraph GC-7.7 of these General Conditions by persons other than the Contractor.

4.3.6 The Contractor, his employees and all others acting under his direction or control shall at all times observe and comply with, insofar as they may be applicable, any and all laws, ordinances, statutes, rules and regulations of the United States and of any state, county, municipality, or other governmental or political body, division or district in which the Work or any portion thereof is performed, and of their executive and administrative agencies and of any and all other governmental agencies having any jurisdiction over the Work, and shall also observe and comply with any and all rules and regulations of the School District.

4.3.7 The Contractor shall use project management and scheduling programs and software approved by the PM/CM and the School District. All correspondence, RFIs, payment applications or requests, daily logs, submittals, punch lists, etc. shall be entered into the approved program and software by the Contractor. An electronic copy of the Contractor's schedule shall be submitted. The Contractor shall provide hard copies of all documentation as required by the School District and the PM/CM.

4.3.8 The Contractor shall provide a Quality Control program to be approved by the PM/CM and the School District. The Contractor shall ensure the quality of the Work performed, provided, placed, put in, or installed on the Project. The Contractor shall check the Work on the Project to ensure that the Work is being performed, provided, placed, put in, or installed according to Project plans and specifications. The PM/CM shall verify that the Contractor is following his Quality Control program, and shall promptly notify the School District and the Contractor of any Quality Control problems or deficiencies.

4.3.9 The Contractor shall work with the Commissioning Manager, if one is appointed by the School District or the PM/CM, to follow all commissioning and closeout procedures on the Project in

accordance with Paragraph GC-4.17 of these General Conditions.

4.3.10 The Contractor shall coordinate the work of his personnel and all of his Subcontractors with each other in order to complete the Project in accordance with the School District's objectives of cost, time, money and quality.

# GC-4.4 LABOR, MATERIALS, AND EQUIPMENT

4.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the execution and completion of the Work, on-time and on-budget, in accordance with the Contract Documents and any applicable code or statute, whether specifically required by the Contract Documents or whether their provision may reasonably be inferred as necessary to produce the intended results, whether temporary or permanent, and whether or not incorporated or to be incorporated in the Work.

4.4.2 All Work under this Contract shall be performed in a skillful, workmanlike and first class manner. All Work under this Contract shall be performed to the satisfaction of the School District.

4.4.3 The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him. The School District may, in writing, require the Contractor to remove from the Work any employee the School District deems incompetent, careless, incapable of carrying out any part of the Work assigned to that person, or otherwise objectionable. The Contractor shall not assign any person dismissed from School District employment to perform any Work under the Contract.

4.4.4 The Contractor will be held to be reasonably familiar with all conditions affecting labor in the Project, including but not limited to unions, incentive pay, procurement, living and community conditions. The Contractor shall be responsible to the School District for all costs resulting from the failure to verify all conditions affecting labor. The Contractor shall be responsible for the maintenance and observance of sound labor practices by himself and his Subcontractors and shall take all steps reasonably necessary to avoid labor disputes and the potential delay and disruption arising therefrom.

4.4.5 All equipment, apparatus and devices of any kind, shown or indicated on the Drawings or called for in the Specifications or required for the completion of the Work shall be completely satisfactory and acceptable to the School District as regards operation, capacity and performance. No approval, either written or verbal, of any Drawings, descriptive data, or samples of such equipment, apparatus and devices shall relieve the Contractor of his responsibilities to turn over such equipment, apparatus and devices to the School District in perfect working order at the completion of the Work. Any equipment, apparatus and device not fulfilling these qualifications shall be removed and replaced by proper and acceptable equipment, apparatus and devices or put in good working order satisfactory to the School District, without additional cost to the School District.

## GC-4.5 WARRANTY

4.5.1 The Contractor warrants to the School District, the PM/CM and the Architect/Engineer that all materials and equipment furnished under this Contract shall be new unless otherwise specified, of good quality and free from all defects, merchantable and fit for the particular purposes for which the School District intends to use them, and that all Work shall be of good quality, free from faults and defects, and in conformance with the Contract Documents. All Work not conforming to these requirements, including substitutions not properly approved and authorized, shall be deemed defective. If required by the PM/CM or the Architect/Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The warranty is not limited by the provisions of Paragraph GC-13.2 of these General Conditions.

4.5.2 The warranties set forth in this Paragraph GC-4.5 and elsewhere in the Contract Documents shall survive final payment under Paragraph GC-9.8 or termination under Article GC-14 and Paragraph GC-9.10 of these General Conditions.

### GC-4.6 TAXES

4.6.1 The Contractor shall pay all sales, consumer, use, and similar taxes for the Work or portions thereof provided by the Contractor, which are legally enacted at the time bids are received, whether or not yet effective.

4.6.2 The Contractor who purchases and furnishes to the School District tangible personal property in furtherance of his Contract is exempt from the Pennsylvania Sales and Use Tax, provided such property is not affixed to the building or grounds. The Contractor may obtain the form(s) for this sales and use tax exemption from the Pennsylvania Department of Revenue. The Contractor shall refer to the Pennsylvania Department of Revenue Act 45 of 1998, which created an exemption called "Building Machinery and Equipment", for any sales and use tax exemptions relating to school construction projects, and shall complete the required exemption documents for its vendors. Information concerning the Pennsylvania Department of Revenue's Act 45 of 1998 and the "Building Machinery and Equipment" exemption can be found at the following website address:

https://www.revenue.pa.gov/TaxTypes/SUT/Pages/Act%2045%20of%201998.aspx

4.6.3 The Contractor agrees to execute all documents requested by the School District or its representative, and to provide prompt access to the School District or its representative, to all documents of the Contractor and his Subcontractors and Sub-subcontractors related to the Work on the Project, to assist the School District in making a claim or filing a petition for a refund of sales and/or use tax.

4.6.4 The Contractor hereby assigns to the School District all of its right, title and interest in any sales or use tax paid or reimbursed by the School District that may be refunded as a result of any documentation, services, labor, supplies, tools, materials, or equipment purchased in connection with the Contract. The Contractor authorizes the School District, in its own name or the name of the Contractor, to file a claim for a refund of any sales or use tax subject to this assignment. Likewise, the School District hereby assigns to the Contractor all of its right, title and interest in any sales or use tax paid by the Contractor and not reimbursed by the School District that may be refunded as a result of any documentation, services, labor, supplies, tools, materials, or equipment purchased in connection with the Contract, and agrees to file, or at the School District's option, cooperate in the Contractor's filing of, a claim for a refund of any sales or use tax subject to this assignment.

4.6.5 The Contractor may incur liability for payment of one or more of the following taxes levied by the City of Philadelphia: (a) Mercantile License Tax; (b) Net Profits Tax; (c) City Wage Tax; and (d) Business Privilege Tax. The Contractor, if not already paying any such taxes, shall promptly apply to the City of Philadelphia Department of Revenue, for a tax account number and shall file the appropriate business tax returns as provided by law.

#### 4.6.6 NOT USED

4.6.7 Notwithstanding any other provision of the Contract to the contrary, the School District represents that it is a tax-exempt organization and is therefore not subject to taxes arising out of the Contract or the Contractor's performance under the Contract. In the event, however, that the Contractor is assessed or levied any taxes, fees, or similar charges related to the Contract or the Contractor's performance hereunder (except income or corporate taxes assessed against or levied on the Contractor), the School District agrees to cooperate fully with the Contractor, at School District expense, in any administrative actions or legal proceedings with the appropriate taxing authorities. If a final judgment is

entered against the Contractor relating to the payment of such taxes, fees, or charges, the School District agrees to indemnify the Contractor for the amount thereof, including any penalties incurred in such review or contest. In no event shall the Contractor be exposed to any liability for the payment or nonpayment of any such taxes, charges, or fees.

# GC-4.7 PERMITS, FEES, AND NOTICES

4.7.1 The City Administrative Board has approved a waiver of the construction permit fees imposed under Section A902.2 of the City Administrative Code and levied by the City Department of Licenses and Inspections ("L&I Department") for School District capital projects, effective prospectively from October 12, 1999. In accordance with the City Administrative Board Rule No. 4, no permit fee is to be paid by the School District to the City for the following permits: zoning, building, fire service, plumbing, electrical, and other similar construction permits. With assistance from the Architect/Engineer, the School District shall provide the required Waiver of Permit Fees applications to the Contractors for the zoning, building, fire service, plumbing, electrical and other similar construction permits issued by the City L&I Department, Permit Services Division, in order to obtain City waivers of the permit fees for the Project. The building permit shall be applied for by the Architect/Engineer and shall be issued to the General Contractor and obtained by the General Contractor. The remaining construction permits for the Project shall be secured by the Contractors.

4.7.2 These permit fee waivers do not apply to permits or licenses issued by other Federal, State or local agencies. The Contractor shall, without additional expense to the School District, be responsible for obtaining and paying for any other necessary licenses and permits and for complying with all applicable Federal, State and Local laws, codes and regulations in connection with the prosecution of the Work.

4.7.3 The Contractor shall pay for all charges and fees, including certificates and inspection fees, which are charged by or payable to public utilities, rating bureaus, fire underwriters, etc. He shall also arrange for and give any required notice to the proper public or private body, organization, bureau, or company in order that inspections may be made which are necessary for the progress of the Work.

4.7.4 The Contractor shall provide to the School District copies of all applications, notifications, permits, licenses and any other information submitted to applicable Federal, State and Local regulatory agencies, including documentation of all communications, for all licenses and any other permits that are necessary or required for the prosecution of the Work. Proof of all notifications or approvals required to be made or obtained **prior** to installation of equipment or prosecution of the work, including but not limited to City of Philadelphia Air Management Services and Licenses and Inspections, shall be submitted to the Owner, or the designated School District's representative, prior to performing any regulated work.

4.7.5 The Contractor shall give all notices and shall comply with all laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the Work. If the Contractor performs any Work, knowing or having reason to know it to be contrary to any laws, ordinances, rules, regulations, or orders of any public authority bearing on the performance of the Work, and does so without written approval of the Architect/Engineer, the Contractor shall assume full responsibility for such Work and shall bear all damages, losses, costs and expenses attributable thereto.

4.7.6 If failure to comply with City L&I Department regulations results in penalties to the School District, they shall be payable by the Contractor, to the City, at no additional cost to the School District.

## GC-4.8 SUPERINTENDENT AND PROJECT MANAGER

4.8.1 The Superintendent and/or Project Manager and necessary assistants of the Contractor shall be in attendance at the Project site during the progress of the Work. The Superintendent and/or Project Manager shall represent the Contractor, and all communications given to the Superintendent and/or Project Manager shall be as binding as if given to the Contractor. If requested by the School District or Architect/Engineer, the Contractor shall provide a management chart and a list of personnel which shall comprise the Superintendent's and/or Project Manager's staff. In such event, all references to the Superintendent and/or Project Manager below shall be taken to include the Superintendent's and/or Project Manager's staff.

4.8.2 The Project Manager, Superintendent or a Foreman shall be on site at all times that contract work is being actively performed. The Superintendent or Project Manager shall not be employed on any other project during the course of the Work in a manner that would conflict with this assignment or give priority to another project.

# GC-4.9 LEAD PRIME CONTRACTOR'S SCHEDULE

4.9.1 The Lead Prime Contractor responsible for the preparation and updating of the coordinated CPM Construction Schedule shall be the General Construction Contractor for multi-prime contracts, the Single Prime Contractor for single-prime contracts or the Prime Contractor performing the greatest amount of work for multi-prime projects where there is no General Construction Contractor.

4.9.2 The Lead Prime Contractor, promptly after being awarded the Contract, shall prepare and submit, for review and approval by the School District and Architect/Engineer, a coordinated CPM Construction Schedule for the Work in accordance with the Specifications, Supplementary Conditions Paragraph 23 entitled "Schedule and Reports" and Division 1, General Requirements, Section 01300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements". The coordinated CPM Construction Schedule shall be related to the entire Project to the extent required by the Contract Documents, and shall include the Project construction work of all of the separate Prime Contractors and their Subcontractors, and shall provide for expeditious and practicable execution of the Work in accordance with the requirements of the Contract Documents. The Lead Prime Contractor shall coordinate the work of his personnel, all of his Subcontractors, and all of the other separate Prime Contractors and their Subcontractors with each other in order to complete the Project in accordance with the School District's objectives of cost, time, money and quality.

## GC-4-10 DOCUMENTS AND SAMPLES AT THE SITE

4.10.1 <u>Record Documents</u>. The Contractor shall maintain one (1) complete set of all Drawings, Specifications, Addenda, Change Orders, and other Modifications, approved shop drawings, product data and samples in the Contractor's field office, for use and reference by all Project participants that records all deviations and changes in the Work on the Project. The Contractor shall take necessary action to ensure such documents are in good order and marked currently to record all changes applicable to the Work made during construction. The Contractor shall bind exposed edges of prints of these Record Documents with plastic tape and protect all Record Documents throughout the Work. The Contractor shall deliver these Record Documents, in complete, legible excellent condition, to the School District upon Final Completion of the Work. The Contractor is solely responsible for the accuracy and completeness of these Record Documents.

## GC-4.11 SHOP DRAWINGS AND SAMPLES

4.11.1 Shop Drawings are drawings, diagrams, schedules, and other data specifically prepared by the Contractor or any Subcontractor, Manufacturer, Supplier, or Distributor to illustrate some portion of the Work.

4.11.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

4.11.3 Samples are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

4.11.4 The Contractor shall prepare a detailed Submittal schedule for all Shop Drawings, Product Data, Samples and other submittals for the Project. The Contractor shall submit the Submittal schedule for review and comment by the School District, the PM/CM and the Architect/Engineer, together with the Construction Schedule for the Project.

4.11.5 The Contractor shall review, approve, and submit, with reasonable promptness and in such sequence as to cause no delay in the Work or in the Work of the School District, the PM/CM, or the Architect/Engineer, or any Subcontractor, all Shop Drawings, Product Data, and Samples required by the Contract Documents.

4.11.6 By approving and submitting Shop Drawings, Product Data, and Samples, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Contractor shall adhere to any supplementary processing and scheduling instructions pertaining to Shop Drawings which may be issued by the PM/CM or the Architect/Engineer.

4.11.7 The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the School District's or the PM/CM's or Architect/Engineer's review of Shop Drawings, Product Data, or Samples under Subparagraphs 2.4.10 and 3.2.10, of these General Conditions, unless the Contractor has specifically informed the School District and the Architect/Engineer in writing of such deviation at the time of submission and the School District and Architect/Engineer have given written approval to the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data, or Samples by the, Architect/Engineer's, the PM/CM's and School District's review or approval thereof.

4.11.8 The Contractor shall make any corrections required by the PM/CM or the Architect/Engineer and shall resubmit the required number of corrected copies of Shop Drawings or new Samples. Resubmittal of Shop Drawings necessitated by required corrections shall not be a cause for extension of time. The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, or Samples, to revisions other than the corrections requested on previous submittals.

4.11.9 No portion of the Work requiring submission of a Shop Drawing, Product Data, or Sample shall be commenced until the submittal has been reviewed by the PM/CM and the Architect/Engineer as provided in Subparagraph 3.2.10 of these General Conditions. All such portions of the Work shall be in accordance with approved submittals.

## GC-4.12 USE OF SITE

4.12.1 The Contractor shall confine operations at the Project site to areas permitted by law, ordinances, permits, and the Contract Documents and shall not unreasonably encumber the Project site with any materials or equipment.

4.12.2 The Contractor and all Subcontractors shall keep their respective employees out of areas beyond the limits of the Project except where necessary for actual performance of work.

4.12.3 The Contractor shall coordinate all of his operations with all other persons or entities working on the Project site, including, without limitation, the PM/CM, the Architect/Engineer, other School District Consultants, and the School District, his Subcontractors, and all other separate Prime Contractors and their Subcontractors. The Contractor shall secure approval from the School District before using any portion of the Project site.

4.12.4 Except as noted elsewhere in the Contract Documents or otherwise mutually agreed to and arranged, the Contractor shall supply and erect such scaffolding, stairways, ladders, hoists, etc., that are necessary for proper prosecution of his Work. Building conveying systems shall not be used to transport construction equipment or personnel.

4.12.5 All hoists, derricks and other apparatus shall conform to the authority having jurisdiction and shall be maintained until no longer needed. This equipment shall be so placed so as not to interfere with or damage the Work of any trade

4.12.6 As construction proceeds, it may become necessary to move stored materials, offices, trailers, etc., to facilitate the construction. Upon written notice from the School District, the Contractor shall immediately relocate such items and any related utilities as directed. This shall be done without increased cost to the School District.

4.12.7 The Contractor shall be responsible for providing the blocking, backing, and grounds necessary for the installation of his Work.

4.12.8 The Contractor shall be responsible for furnishing and installing the necessary access panels for items of Work installed under his Contract.

4.12.9 Radios, headphones or other types of personal audio equipment are not permitted on the site.

4.12.10 Privately owned vehicles of any type are not permitted on the site. The School District is not responsible for providing parking provisions for the Contractor, his Subcontractors or their employees.

4.12.11 The Contractor, inclusive of his Subcontractors, is permitted only one trailer on the construction site.

4.12.12 The Contractor, inclusive of his Subcontractors, is to include forty (40) hours of training for School District staff on Project systems, equipment and utilities.

4.12.13 The use of tobacco products by visitors is prohibited in school buildings and on school grounds of the School District of Philadelphia, and in stadiums, or bleachers, or other premises leased by, or under the control of the School District of Philadelphia, unless visitors are in a smoking area designated for non-students where the designated area is <u>no less than 50 feet from school buildings</u>, stadiums, or <u>bleachers</u>, in accordance with Act 128 of 2000 (18 Pa.C.S.A. §6306.1) and School District of Philadelphia Board Policy No. 222. "Smoking, Tobacco Products & Paraphernalia" and Board Policy No. 316. "Use of Tobacco Products". "Tobacco products" shall mean all uses of tobacco, including cigars, cigarettes, pipes, and smokeless tobacco, as well as other substances used as smoking material.

4.12.14 There shall be no burning on the Project site. All materials not to be incorporated into the Work shall be removed from the Project site and properly and legally disposed of.

## GC-4.13 PUNCHLIST

4.13.1 At Substantial Completion of the Project, the Contractor shall prepare and submit to the School District, the PM/CM and the Architect/Engineer a punch list of the Contractor's Work not in conformance with the Contract Documents and Work not complete. The Contractor shall establish a time and date for each punch list item when they will be in conformance with the Contract Documents and complete. These dates shall be no later than the specific date noted for Final Completion of the Project. The PM/CM, the Architect/Engineer shall review the punch list with the School District and amend or modify the punch list in accordance with said review. The amended punch list shall be submitted to the Contractor, who shall revise, if necessary, the times and dates when the punch list items will be in conformance with

the Contract Documents and complete. The revised dates shall not be later than the specific date noted for Final Completion of the Project. Supplemental punchlists shall be prepared and submitted by the Contractor and the PM/CM or the Architect/Engineer as required until Final Completion of the Work.

### GC-4.14 AS-BUILT DRAWINGS

4.14.1 The Contractor is to maintain at the Project site a separate set of record drawings and specifications for his Contract, upon which a continuing and current record shall be made of all necessary field modifications made to his Work, as approved by the PM/CM and the Architect/Engineer.

4.14.2 The drawings shall accurately reflect the actual as-built conditions in the field, including all modifications required by field changes, Addenda changes or approved change orders.

4.14.2.1 At the time of Substantial Completion of the Contractor's Work, the Contractor shall deliver to the Architect/Engineer a complete set of "as-built" drawings and specifications.

4.14.2.2 The Architect/Engineer shall prepare a scanned copy on electronic media in pdf format of the "as built" drawings provided by the Contractor and submit them to the School District.

### GC-4.15 CLEANING UP

4.15.1 Each Contractor, at all times, shall keep the Project site free from accumulation of waste materials or rubbish caused by his operations. At the completion of the Work, the Contractor shall remove all his waste materials and rubbish from and about the Project site, as well as all his tools, construction equipment, machinery, and surplus materials.

4.15.2 If a Contractor fails to clean up during or at the completion of the Work, the School District may do so as provided in Paragraph GC-6.3 of these General Conditions, and the cost thereof shall be backcharged to the Contractor and the Contractor hereby authorizes the School District to withhold the amount of the cost for cleanup and removal of waste materials, rubbish and debris from monies due or to become due the Contractor under its applications for payment or payment invoices and to deduct the cost thereof from any monies due or to become due the Contractor or his Subcontractors fail to clean up and remove waste materials, rubbish and debris from the Project site as required under this Paragraph GC-4.15, the School District, at its sole option, shall have the right to stop payment of all progress payments due the Contractor until the Contractor and his Subcontractors comply with their cleaning and removal obligations under this Paragraph GC-4.15 to the School District's satisfaction. The foregoing rights are in addition to other rights of the School District enumerated in the General Conditions and those provided by law.

4.15.3 The Lead Prime Contractor, as defined in Paragraph GC-4.1.2 of these General Conditions, shall keep the entire construction area as clean as the progress of the Work will permit and shall ensure that the building and all grounds, including all areas six (6) feet beyond the construction fence, are free from accumulations of waste materials, rubbish, and debris, including removal from the premises of all pieces of debris, boxes, crates, trash, waste materials, rubbish, etc. and all droppings (such as, but not limited to paint, mortar, concrete), spots, stains and dirt from all surfaces caused by the Contractors' doing the Work on the Project on a daily basis.

4.15.4 The Subcontractors of the Lead Prime Contractor, all other Prime Contractors and their Subcontractors are responsible for maintaining their work area free from scattered debris, and cooperating with the Lead Prime Contractor by neatly piling their debris in designated locations for pick-up. The Lead Prime Contractor shall remove all waste materials, rubbish and debris generated by the other Prime Contractors and their Subcontractors from the Project site as required under Paragraph GC-4.15 (Cleaning Up) of these General Conditions. If a Contractor fails to clean up and remove waste

materials, rubbish and debris from the Project site as required under this Paragraph GC-4.15, the School District, at its sole option, shall have the right to stop payment of all progress payments due to the Contractor until the Contractor and his Subcontractors comply with their cleaning and removal obligations under this Paragraph GC-4.15 to the School District's satisfaction. The foregoing right is in addition to other rights of the School District enumerated in the General Conditions and those provided by law, including the right to backcharge the Contractor for the cost of clean-up and removal of waste materials, rubbish and debris under this Paragraph GC-4.15.

4.15.5 Burning of debris shall not be permitted on the premises. Cleaning and disposal operations shall be conducted in compliance with governing codes, ordinances, regulations and anti-pollution laws.

4.15.6 The Lead Prime Contractor shall broom-clean all work areas on a daily basis and as necessary when directed by the School District.

4.15.7 The Lead Prime Contractor shall mechanically wet sweep, and clean adjacent streets a minimum of once a week or as necessary. Service date and times must be submitted to the School District at each visit. Dust control shall be strictly maintained, including, but not limited to, wetting down of the site throughout the entire Project.

4.15.8 The Lead Prime Contractor shall remove snow from the Project site as directed to permit safe access throughout the site for workers and vehicular traffic and shall remove snow from the interior of the building that may accumulate.

4.15.9 The Lead Prime Contractor shall be responsible for providing all necessary pest control and for keeping the Project site free of rodents and other pests. The Lead Prime Contractor shall use only properly licensed personnel to perform this task and shall provide documentation of services performed to the School District at quarterly intervals throughout the duration of the Project.

4.15.10 If there is a dispute between the General Construction Contractor or the designated Lead Prime Contractor, if there is no General Construction Contractor for multi-prime projects, or the Prime Contractor, for single prime projects and any other Contractor as to whose responsibility it is to remove certain debris, it shall be referred to the School District for resolution. The School District shall direct one of the parties to remove the debris. This direction shall be carried out immediately by the applicable Contractor, at no increase in cost to the School District.

4.15.11 Upon Substantial Completion of the Project, the Lead Prime Contractor shall completely clean the entire Project. This cleaning shall include, but is not limited to, cleaning of all walls, windows, millwork, cabinetry, glass, carpet, equipment, doors, plumbing fixtures, mechanical equipment, electrical equipment, plumbing equipment, and counter tops, as well as washing, sealing and waxing of all appropriate floors, etc. The building shall be left in a condition acceptable to the School District.

#### GC-4.16 COMMUNICATIONS

4.16.1 Except as otherwise directed by the School District in writing, the Contractor shall forward all communications to the PM/CM and the Architect/Engineer.

#### GC-4.17 PROJECT CLOSEOUT, BUILDING COMMISSIONING AND POST-CONSTRUCTION

4.17.1 The Contractor shall comply with the detailed program of Project closeout activities, including closeout schedule, inspections testing, start-up procedures, resolution of start-up problems, warranty processing, and occupancy.

4.17.2 In the presence of the PM/CM, the Architect/Engineer and the School District's maintenance personnel, the Contractor shall perform the initial start-up and testing of all Project utilities, building systems and equipment. The Contractor shall check out all Project utilities, mechanical systems, laboratory systems, building systems and equipment for readiness. The Contractor shall start up, test, and calibrate all Project equipment and building systems to verify that all Project building systems are in proper working order and all Project utilities, building systems, and equipment comply with Project specifications.

4.17.3 The Contractor shall comply with all commissioning procedures, guidelines, processes and performance and reporting standards for furnished equipment, systems and assemblies applicable to the Project. "Commissioning" is defined as "the quality process for achieving, validating and documenting the performance of systems, subsystems and equipment to meet the basis of design and preparing facility personnel for maintenance and operation".

4.17.4 The Contractor shall deliver all Project operation, instruction and maintenance manuals for Project equipment and building systems, warranties, guarantees, and record documents to the School District.

4.17.5 The Contractor shall attend and participate in the Turnover meeting with the School District, the PM/CM, the Architect/Engineer and other separate Prime Contractors.

4.17.6 The Contractor shall, prior to final acceptance of the Work, provide for the School District's benefit, as well as the benefit of the Architect/Engineer and other separate Prime Contractors, if necessary, demonstrations of the functioning of all equipment on the Project. In addition, he shall provide, or cause to be provided, instruction for the appropriate school staff on the operation and maintenance of each system and individual piece of equipment included in the Project.

4.17.7 The Contractor shall perform all post-construction activities, including but not limited to warranty services, that are required under the Contract Documents.

## GC-4.18 INDEMNIFICATION

4.18.1 The Contractor shall, at his sole cost and expense, release, indemnify, defend, and satisfy all judgments and hold harmless the School District (including the members of the Board of Education), the PM/CM, the Architect/Engineer, and any other School District Consultants on the Project and their respective officers, agents, representatives, and employees from and against all claims, demands, suits, actions, judgments, costs, penalties, liabilities, damages, delays, losses and expenses (including attorneys' fees, defense costs, court costs and costs of suit), for or on account of actual or alleged death, injury, damage or loss to persons and/or property (including but not limited to employees of such Contractor or any of his Subcontractors), or economic loss, damage or expense, or employment discrimination, in any way arising out of or relating to or resulting from the performance or non-performance of the Work under this Contract, or the subsequent completion of such Work, by the Contractor and/or his Subcontractors, or any of their respective officers, agents, representatives and employees, or through the negligence of the Contractor or caused, in whole or in part, by any acts or omissions of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable (including Sub-subcontractors and material suppliers). regardless of whether or not it is caused in part by a party indemnified hereunder, or from the use of facilities or equipment furnished to the Contractor and/or any of his Subcontractors on behalf of the School District in connection with the performance of such Work of such Contractor and/or Subcontractors (including but not limited to all claims arising out of the operation of any law imposing liability out of the use of scaffolds, hoists, cranes, stays, ladders, supports or other mechanical contrivances, or any site conditions or site use).

4.18.2 In any and all claims against the School District (including the members of the Board of Education), the PM/CM, or the Architect/Engineer or any other School District Consultants on the Project

or any of their respective officers, agents, representatives or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Paragraph GC-4.18 shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts, or other employee benefit acts. This indemnity provision is intended, inter alia., to protect the School District (including the members of the Board of Education), its officers, agents, representatives and employees and the PM/CM from all claims that are asserted by employees, agents,, or workers of the Contractor or Subcontractors who are injured on or by School District real property, or on, by or as a result of School District personal property, or who assert an employment claim of any kind (including claims relating to the termination of employment) regardless of when the claim is made, from the commencement to the completion of this Contract, whether the death, injury, damage or loss to persons and/or property, or the economic loss, damage or expense, or employment discrimination, is due to School District negligence, in whole or in part, and is not limited to death, injury, damage or loss to persons or property, or economic loss, damage or expense, or employment discrimination, which occur in actual performance of this Contract, nor is this indemnity provision limited by the Pennsylvania Worker's Compensation Act.

4.18.3 No provision of this Paragraph GC-4.18 shall give rise to any duties on the part of the Architect/Engineer, or the School District, or any of their agents, representatives, or employees.

4.18.4 Obligations of the Contractor arising under this Paragraph GC-4.18 shall survive final payment under Paragraph GC-9.8 or termination under Article GC-14 and Paragraph GC-9.10 of these General Conditions.

4.18.5 This indemnity provision is independent of whether or not the Contractor and/or any of his Subcontractors has (have) insurance. This indemnity provision shall apply, particularly but not exclusively, to the claims of the Contractor and all of his Subcontractors, and all of their respective officers, agents, representatives and employees, against the School District (including the members of the School Reform Commission and the Board of Education) and all its officers, agents, representatives and employees and the PM/CM. Any violation of any of the provisions of this Paragraph GC-4.18 INDEMNIFICATION by the Contractor and/or any of his Subcontractors shall be deemed a material breach of this Contract. The Contractor and all of his Subcontractors, and all of their respective officers, agents, representatives and employees, shall have no claim against the School District, its officers, agents, representatives and employees for the acts, failures to act or negligence of the School District, directly or indirectly, or its officers and employees; and should this exculpatory clause be declared invalid by law, such invalidity shall in no manner affect or invalidate any or all other foregoing provisions in this Paragraph GC-4.18 INDEMNIFICATION.

## GC-4.19 ROYALTIES AND PATENTS

4.19.1 The Contractor shall pay all royalties and patent fees. The Contractor shall defend all suits or claims for infringement of patent rights and shall hold the School District harmless from loss on account thereof, except that the School District shall be responsible for all such loss when a particular design, process, or the product of a particular manufacturer(s) is specified, but if the Contractor has reason to believe that the design, process, or product specified is an infringement of a patent, the Contractor shall be responsible for such loss unless he promptly gives such information to the School District and Architect/Engineer.

## GC-4.20 PERSONS AUTHORIZED TO SIGN DOCUMENTS

4.20.1 By his execution of this Contract, the Contractor represents and warrants to the School District that the person(s) signing the Contract on behalf of the Contractor are duly authorized to execute this Contract in such capacity and that the Contract is a valid, legal, and binding obligation of the Contractor

enforceable in accordance with its terms. The Contractor shall, within five (5) calendar days after the earlier of a Notice to Proceed or the execution of the Contract, file with the School District a list of all persons who are authorized to sign documents such as contracts, certificates, and affidavits on behalf of the Contractor and to fully bind the Contractor to all conditions and provisions of such documents, except that in the case of a corporation, he shall file with the School District a certified copy of a resolution of the Board of Directors of the corporation in which are listed the names and titles of those personnel who are authorized to sign documents on behalf of the corporation and to fully bind the corporation to all the conditions and provisions of such documents.

# GC-4.21 CONDITIONS AFFECTING THE WORK

4.21.1 The Contractor shall be responsible for having taken all steps necessary to ascertain the nature and location of the Work and the general and local conditions which can affect the Work or the cost thereof. Failure by the Contractor to fully acquaint himself with conditions which may affect the Work, including but not limited to conditions relating to transportation, handling, storage of materials, availability of labor, water, roads, weather, topographic and subsurface conditions, other separate contracts to be entered into by the School District relating to this Project which may affect the work of the Contractor and require increased coordination and scheduling efforts by the Contractor, applicable provisions of law, and the character and availability of equipment and facilities needed prior to and during the prosecution of the Work, shall not relieve the Contractor of his responsibilities under the Contract Documents and shall not constitute a basis for an equitable adjustment under any circumstances. The School District assumes no responsibility for any understandings or representations concerning conditions made by any of its officers, agents, or employees prior to the execution of this Contract, unless such understandings or representations are expressly stated in the Contract Documents.

## GC-4.22 REPRESENTATIONS AND WARRANTIES

4.22.1 The Contractor represents, commits and warrants the following to the School District (in addition to the other representations, commitments and warranties contained in the Contract Documents), as an inducement to the School District to execute the School District/Contractor Agreement, which representations, commitments and warranties shall survive the execution and delivery of the School District/Contractor Agreement and the final completion of the Work:

4.22.1.1 that Contractor is financially solvent, able to pay his debts as they mature and possessed of sufficient working capital to complete the Work and perform his obligations under the Contract Documents, on-time and on-budget, and is current in the payment of taxes and other indebtedness to the City of Philadelphia, the School District of Philadelphia and the Commonwealth of Pennsylvania;

4.22.1.2 that Contractor is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform his obligations under the Contract Documents, on-time and on-budget, and is ready, willing and able and has sufficient experience and competence to do so;

4.22.1.3 that Contractor is authorized to do business in the State where the Project is located and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over him and over the Work and the site of the Project;

4.22.1.4 that Contractor's execution of the School District/Contractor Agreement and his performance thereof is within his duly authorized powers;

4.22.1.5 that Contractor's duly authorized representative has visited the site of the Work, familiarized himself with the local conditions under which the Work is to be performed and correlated his observations with the requirements of the Contract Documents;

4.22.1.6 that the execution and delivery of this School District/Contractor Agreement does not violate, conflict with, result in a breach of the terms, conditions or provisions of or constitute a default under any agreement or instrument to which Contractor is a party, or by which Contractor is bound and which will affect performance of his obligations hereunder or the transaction contemplated hereby, including, if Contractor is a corporation, its Articles of Incorporation and By-Laws;

4.22.1.7 if Contractor is a corporation, the Board of Directors of Contractor has duly and effectively authorized and approved the execution and delivery of the within School District/Contractor Agreement and the performance of the transactions contemplated hereby and has duly authorized the execution and delivery of all documents necessary or appropriate to the performance hereof by Contractor. No other corporate action is required in connection herewith;

4.22.1.8 that the Contract, when executed and delivered, will be a valid and binding obligation of the Contractor enforceable in accordance with its terms;

4.22.1.9 that Contractor is experienced and skilled in the performance of the Work required under the Contract Documents, and has the ability to perform and complete the Work required under the Contract Documents, on-time and on budget, and on a construction project where multiple construction contractors will be concurrently performing construction work, and in a fast paced urban school construction environment emphasizing safety;

4.22.1.10 that Contractor is thoroughly familiar with all state and local regulations and licensing requirements related to every aspect of performance of the Work, and has the necessary skills, experience and expertise required to create a harmonious relationship with, and to coordinate the activities of himself and all his Subcontractors, and to resolve all disputes, including, but not limited to, subcontract scope of work and battery limit questions, labor management disputes and jurisdictional disputes;

4.22.1.11 that Contractor will provide and maintain sufficient organization, personnel and management to carry out the requirements of the Contract Documents, on-time and on-budget, including a competent management team as necessary to provide contract administration and to coordinate the work of the Contractor and all his Subcontractors; and

4.22.1.12 that Contractor will assign to the Project personnel and employees having the necessary competency, qualifications, experience, skill and knowledge required to perform the Work under the Contract Documents, and that the School District will have the right to direct Contractor to remove any personnel from the Work or Project upon material reason therefore given in writing, and if removal of personnel is for cause, any costs of such removal will be borne by Contractor.

## GC-4.23 SUBSTITUTIONS (OR EQUAL)

4.23.1 Where any item or material is specified by proprietary name, trade name, and/or name of manufacturer AND model or catalog number, with or without the addition of such expressions as "or equal" or "approved equal", it is understood that the Contractor may propose a substitution that he feels is equal to or better than that specified which shall be subject to the approval of the Architect/Engineer, as to the equality thereof, and it is distinctly understood that: (a) the Architect/Engineer is to use his own judgment in determining whether or not any item or material proposed to be substituted is the equal of any item or material so specified, and (b) the decision of the Architect/Engineer on all such questions of equality shall not be final unless approved by the School District.

4.23.2 It shall be incumbent upon the Contractor to prove that the item or material to be substituted is in fact equal to or better than that specified. In the case of a proposed substitution, the Contractor shall submit appropriate literature, drawings and samples of the specified item or material along with appropriate literature, drawings, samples and required test results of the item or material proposed for

substitution. The Architect/Engineer shall compare the two and within fourteen (14) calendar days from date of submittal render his decision on the proposed substitution. Where submittals cannot be adequately reviewed within fourteen (14) calendar days of receipt, due to their scope, complexity or volume, the Architect/Engineer shall notify the School District and the Contractor in writing and stipulate the time that will be required to complete his review.

4.23.3 Not only must the substitution approved pursuant to this Paragraph GC-4.23 be equal or better in quality and function, but it must also fit the space allocated for the specified item or material. However, in the event of a proposed substitution that does not fit into the allocated space, if the item or material is acceptable to the School District, the Contractor, if he uses the substitute, shall make, solely at the Contractor's expense, all changes necessary to accommodate the substitution.

4.23.4 The Contractor shall submit a separate request for each substitute proposal, supported by complete data, with drawings and samples as appropriate, including:

4.23.4.1 Itemized comparison of qualities of proposed substitutions with product specified, substantiating compliance with the Contract Documents, and including product identification samples, where requested or applicable.

4.23.4.2	Changes required in other elements of the Work due to substitution.
4.23.4.3	Effect on the Construction Schedule and the Contract time.
4.23.4.4	Change in cost, if any, and amount of net change to the Contract sum.
4.23.4.5 where applicable.	Availability of maintenance service, and source of replacement materials,

4.23.4.6 Reason for substitution request.

4.23.5 The Architect/Engineer shall be the judge of equality or superiority for proposed substitutions. However, the School District has the right to accept or reject the recommendation of the Architect/Engineer. The Contractor shall not purchase or install proposed substitute products without their written acceptance by the Architect/Engineer and the School District.

4.23.6 The Contractor shall allow a minimum of fourteen (14) calendar days for Architect/Engineer's review of substitution proposals, plus an additional seven (7) calendar days for the School District to accept or reject the Architect/Engineer's recommendation. Where substitution submittals cannot be adequately reviewed within fourteen (14) calendar days of receipt, due to their scope, complexity or volume, the Architect/Engineer shall notify the School District and the Contractor in writing and stipulate the time that will be required to complete his review. Where the Architect/Engineer's recommendation cannot be adequately reviewed by the School District within seven (7) calendar days, the School District shall notify the Architect/Engineer and the Contractor in writing and stipulate the time that will be required to make its determination.

4.23.7 If the Contractor proposes to use materials which, while suitable for the intended use, deviate from requirements of the Contract Documents, the Contractor shall inform the Architect/Engineer in writing of the nature of such deviations when material is submitted for review and approval, and shall request written approval of the deviation from the Contract Documents.

- 4.23.8 <u>Product Selection Criteria</u>.
  - 4.23.8.1 <u>Proprietary Products</u>:
    - 4.23.8.1.1 The Contractor shall provide specific materials, equipment,

fixtures, apparatus, appliances or other manufactured articles of types and makes specified or indicated, except for substitutions or changes specifically reviewed by the PM/CM and the Architect/Engineer and approved by the School District.

4.23.8.1.3 Including the name of a manufacturer in a list of acceptable manufacturers does not automatically constitute approval of any equipment or product provided by that manufacturer as equivalent equipment or an equivalent product.

4.23.8.1.4 <u>Only when more than one proprietary product is listed by</u> <u>trade name, brand name, model number AND/OR catalog number</u>, the Contractor may use any products listed without a substitution request; provided normal submittal approval procedures set forth in Paragraph GC-4.11 of these General Conditions have been complied with.

#### 4.23.8.2 <u>Performance Specifications</u>:

4.23.8.2.1 Where materials, products or equipment require compliance with indicated performance requirements, the Contractor shall provide materials, products or equipment that complies with those specific performance requirements.

4.23.8.2.2 If the Contractor proposes materials, products or equipment other than those listed or indicated as the basis of design, then the Contractor shall comply with provisions pertaining to substitutions to obtain the Architect/Engineer's acceptance of such materials, products or equipment, whether or not it is included in a listing of acceptable manufacturers.

4.23.8.2.3 When products are specified only by reference standard, performance criteria or descriptive requirements, without trade names, the Contractor shall submit products by any reputable manufacturer meeting or surpassing specified requirements or standard.

4.23.8.2.4 <u>Visual Matching</u>. Where matching an established sample is required, the Architect/Engineer shall have the final judgment of whether proposed product matches sample.

4.23.9 Proposed substitutions shall be considered, provided that substitution is equal or superior in quality, design, finish, function, performance and general characteristic to product specified.

4.23.10 Substitution proposals shall be considered by the Architect/Engineer if substitution is proposed for one (1) of the following reasons:

4.23.10.1 Specified product or material has been discontinued or is no longer

available.

4.23.10.2 Specified product or material is directly related to an "or equal" clause or similar language in the Contract Documents.

4.23.10.3 Specified product or material cannot be provided within the Contract time.

4.23.10.4 Specified materials cannot receive approval of local governing authority.

4.23.11 Substitution proposals shall <u>not</u> be considered if proposed for one (1) of the following reasons:

4.23.11.1 The Contractor or Subcontractor has neglected to place an order for materials and labor early enough to conform to the Construction Schedule. Such failure or neglect shall not constitute grounds for extension of time of this Contract; nor shall arbitrary substitutions be considered solely to expedite completion.

4.23.11.2 Substitutions are indicated on Shop Drawing, Product Data or Sample

submittals, without separate formal request.

4.23.11.3 Substitutions are requested directly by the Subcontractor or supplier, without formal request from the Contractor.

4.23.12 When an accepted substitute, or "equivalent to" item of equipment or material, requires changes or additions to the Project, the Contractor shall make the adjustments and changes required to coordinate the Work for installation, without any additional cost to the School District.

4.23.13 Any additional cost, loss or damage arising from substitutions shall be the Contractor's sole responsibility.

4.23.14 By making requests for substitutions of items, materials, supplies, equipment, products or assembly, the Contractor represents, certifies, and warrants the following to the School District (in addition to the other representations, certifications and warranties contained in the Contract Documents), which representations, certifications and warranties shall survive the execution and delivery of the School District/Contractor Agreement, the final completion of the Work, the final payment made by the School District, or the termination of the Contract:

4.23.14.1 That the Contractor has investigated the proposed substitution and has determined that it is equal or superior in all respects to that specified;

4.23.14.2 That the Contractor will provide the same warranty and guarantee for the substitution that the Contractor would have provided for that specified;

4.23.14.3 That the cost data presented is complete and includes all related costs under this Contract, except the Architect/Engineer's redesign costs;

4.23.14.4 That the Contractor waives all claims for additional costs related to the substitution which may subsequently become apparent;

4.23.14.5 That the Contractor will coordinate the installation of the accepted substitution, and will make all such changes as may be required for the Work to be complete in all respects; and

4.23.14.6 That, in the event incorporation of the substitution into the Work will require revisions, deletions, or additions to the Work of the Contracts of other Contractors, the Contractor will bear the costs of such revisions, deletions, or additions to the Work of the Contracts of any other Contractors, at its sole cost and expense, and will not seek to recover any additional costs from the School District due to the substitution.

4.23.14.7 The Contractor shall be responsible for all project delays caused by its failure to make timely and complete submissions of documents or information required to evaluate its proposed substitutions.

4.23.14.8 The Contractor shall be responsible for all costs of design or redesign, submission or resubmission for approval of federal, state or local authorities having jurisdiction, including the preparation of calculations or drawings signed or stamped by a registered professional engineer where required.

## GC-4.24 DISPUTES CONCERNING THE WORK

4.24.1 In the event of any dispute between the Contractor and the School District, the PM/CM or the Architect/Engineer or any other School District Consultants on the Project, the Contractor shall, nevertheless, expeditiously proceed with the performance of the Work.

## GC-4.25 TAX COMPLIANCE

4.25.1 <u>Tax Compliance</u>. It is the policy of the School District of Philadelphia ("School District") to ensure that firms, businesses and other legal entities receiving School District contracts are current in their payment of City of Philadelphia ("City") taxes and School District taxes or other indebtedness owed to the City or the School District, including but not limited to taxes collected by the City on behalf of the School District, at the time of contract award. The School District's predecessor governing body, the School Reform Commission ("SRC"), pursuant to SRC Resolution SRC-2 dated February 21, 2013, has adopted a Tax Compliance of Vendors Policy which provides that generally, the SRC will not authorize the award of a School District taxes or other indebtedness owed to the City and/or the School District at the time of contract to a firm, business or other legal entity that is delinquent in its payment of City or School District contract to a firm, business or other legal entity that is delinquent in its payment of a School District contract to a firm, business or other legal entity that is delinquent in its payment of a School District contract to a firm, business or other legal entity that is delinquent in its payment of a School District contract to a firm, business or other legal entity that is delinquent in its payment of a School District contract to a firm, business or other legal entity that is delinquent in its payment of City or School District contract to a firm, business or other legal entity that is delinquent in its payment of City or School District contract to a firm, business or other legal entity that is delinquent in its payment of City or School District taxes or other indebtedness owed to the City and/or the School District at the time of contract award.

4.25.2 All firms, businesses and other legal entities (hereafter called "Contractor") receiving a School District contract shall comply with all of the terms and conditions of the Tax Compliance of Vendors Policy.

### 4.25.3 <u>Tax Indebtedness Representation, Warranty and Covenant</u>.

4.25.3.1 The Contractor represents, warrants and covenants to the School District that the Contractor and any other person controlling, controlled by, or under common control with the Contractor are not currently indebted to the City or the Commonwealth of Pennsylvania for or on account of any delinquent taxes (including, but not limited to, taxes collected by the City on behalf of the School District) for which no written settlement agreement or payment plan with the City, or the Commonwealth of Pennsylvania, as the case may be, has been executed and delivered.

4.25.3.2 The Contractor further represents, warrants and covenants to the School District that the Contractor and any other person controlling, controlled by, or under common control with the Contractor will not at any time during the term of this Contract (including any extensions or renewals thereof) be indebted to the City or the Commonwealth of Pennsylvania for or on account of any delinquent taxes (including, but not limited to, taxes collected by the City on behalf of the School District), liens, judgments, fees or other debts for which no written settlement agreement or payment plan with the City of Philadelphia, or the Commonwealth of Pennsylvania, as the case may be, has been executed and delivered.

## 4.25.4 <u>Proof of Tax Compliance</u>.

4.25.4.1 During the bidding process of any School District contract, the School District requires the Contractor to submit a City of Philadelphia Tax Clearance Certificate with its Bid as proof of tax compliance at the time of contract award.

4.25.4.2 During the duration of any School District contract, the Contractor shall provide proof of its tax compliance in the form of a "Certificate of Tax Clearance" from the City's Department of Revenue Tax Clearance Unit to the School District, at the School District's written request, in the sole discretion of the School District.

#### 4.25.5 <u>Satisfactory Arrangement, Settlement Agreement or Payment Plan with City</u>.

4.25.5.1 The Contractor agrees to provide written proof to the School District of its execution and delivery of any satisfactory arrangement, settlement agreement or payment plan with the City to become compliant in the payment of City or School District taxes or other indebtedness owed to

the City or the School District, or other necessary and appropriate documentation in satisfaction of said taxes or other indebtedness.

4.25.5.2 The Contractor shall continue to comply with said City satisfactory arrangement, settlement agreement or payment plan during the duration of any School District contract.

#### 4.25.6 <u>Agreement to Set off or Offset for Delinquent Tax or other Indebtedness</u>.

4.25.6.1 The Contractor agrees that the School District may set off or offset the amount of any City or School District tax or taxes or other indebtedness owed to the City or the School District against any School District payment or payments due under any School District contract. The School District and the Contractor shall have the right to rely on certificates and other official documents provided by the City in proceeding to set off or offset under this Subparagraph 4.25.6 of these General Conditions.

4.25.6.2 In addition to any other rights or remedies available to the School District at law or in equity, the Contractor acknowledges and agrees that the School District may set off or offset the amount of any City or School District tax or taxes or other indebtedness owed to the City or the School District against any School District payment or payments due under any School District contract if the Contractor breaches the tax indebtedness representation, warranty and covenant, and such breach is not resolved, to the School District's satisfaction, within a reasonable time frame specified by the School District in writing.

#### 4.25.7 Agreement to Withholding of Contract Payment.

4.25.7.1 The Contractor agrees that the School District may withhold payment or payments due to the Contractor under any School District contract if the Contractor is delinquent in its payment of City or School District tax or taxes or other indebtedness owed to the City or the School District. The School District and the Contractor shall have the right to rely on certificates and other official documents provided by the City in proceeding to withhold under this Subparagraph 4.25.7 of these General Conditions.

4.25.7.2 The Contractor agrees that the School District may withhold payment or payments due to the Contractor under any School District contract if the Contractor is delinquent in its payment of City or School District tax or taxes or other indebtedness owed to the City or the School District, and the Contractor has not entered into a satisfactory arrangement, settlement agreement or payment plan with the City to become compliant in the payment of City or School District tax or taxes or other indebtedness owed to the City or taxes or other indebtedness owed to the City or taxes or other indebtedness owed to the City or taxes or other indebtedness owed to the City or taxes or other indebtedness owed to the City or the School District.

4.25.7.3 The Contractor agrees that the School District may withhold payment or payments due to the Contractor under any School District contract if the Contractor is in default of any satisfactory arrangement, settlement agreement or payment plan with the City.

4.25.7.4 In addition to any other rights or remedies available to the School District at law or in equity, the Contractor acknowledges and agrees that the School District may withhold payment or payments due to the Contractor under any School District contract if the Contractor breaches the tax indebtedness representation, warranty and covenant, and such breach is not resolved, to the School District's satisfaction, within a reasonable time frame specified by the School District in writing.

4.25.7.5 The Contractor agrees that the School District may continue withholding payment or payments due to the Contractor under any School District contract until the City Revenue Department notifies the School District that the Contractor is tax compliant.

4.25.8 <u>Good Faith Contest</u>.

4.25.8.1 The Contractor shall be permitted to, in good faith, contest the amount of any Commonwealth of Pennsylvania, City or School District tax or taxes or other indebtedness owed to the Commonwealth of Pennsylvania, the City or the School District.

4.25.8.2 The Contractor shall diligently and expeditiously proceed to resolve the matter with the City, or the Commonwealth of Pennsylvania, as the case may be, in order to reach a satisfactory settlement agreement or payment plan with the City, or the Commonwealth of Pennsylvania, as the case may be.

4.25.8.3 The Contractor shall expeditiously pay all uncontested taxes and other indebtedness or obligations to the City or the Commonwealth of Pennsylvania.

#### 4.25.9 <u>Termination of Contract</u>.

4.25.9.1 <u>Termination for Convenience</u>. The School District, at its sole discretion, may terminate any School District contract for its convenience, at any time, upon fourteen (14) days prior written notice to the Contractor of the School District's intention to terminate said contract ("Termination Notice"), and without penalty, cost or liability to the School District, provided the Contractor is:

(i) delinquent in the payment of Commonwealth of Pennsylvania, City or School District tax or taxes or other indebtedness owed to the Commonwealth of Pennsylvania, the City or the School District; and

(ii) the Contractor has not contested the amount of the Commonwealth of Pennsylvania, City or School District tax or taxes or other indebtedness owed to the Commonwealth of Pennsylvania, the City or the School District; and

(iii) the Contractor has not entered into or executed any satisfactory arrangement, settlement agreement or payment plan with the Commonwealth of Philadelphia or the City, as the case may be, to become compliant in the payment of Commonwealth of Pennsylvania, City or School District tax or taxes or other indebtedness owed to the Commonwealth of Pennsylvania, City or the School District; or

(iv) the Contractor is in default of any satisfactory arrangement, settlement agreement or payment plan with the Commonwealth of Philadelphia or the City, as the case may be, to become compliant in the payment of Commonwealth of Pennsylvania, City or School District tax or taxes or other indebtedness owed to the Commonwealth of Pennsylvania, City or the School District.

4.25.9.2 <u>Termination for Default</u>. The School District may terminate any School District contract for default by giving the Contractor a Termination Notice provided:

(i) the Contractor is delinquent in the payment of Commonwealth of Pennsylvania, City or School District tax or taxes or other indebtedness owed to the Commonwealth of Pennsylvania, the City or the School District; and

(ii) the Contractor has not contested the amount of the Commonwealth of Pennsylvania, City or School District tax or taxes or other indebtedness owed to the Commonwealth of Pennsylvania, the City or the School District; and

(iii) the School District has requested in writing that the Contractor enter into or execute a satisfactory arrangement, settlement agreement or payment plan with the Commonwealth of Philadelphia or the City, as the case may be, to become compliant in the payment of Commonwealth of Pennsylvania, City or School District tax or taxes or other indebtedness owed to the Commonwealth of Pennsylvania, City or the School District, and the Contractor has willfully or in bad faith refused or declined to comply with said School District request; or

(iv) the School District has requested in writing that the Contractor cure its default of any satisfactory arrangement, settlement agreement or payment plan with the Commonwealth of Philadelphia or the City, as the case may be, to become compliant in the payment of Commonwealth of Pennsylvania, City or School District tax or taxes or other indebtedness owed to the Commonwealth of Pennsylvania, City or the School District, and the Contractor has willfully or in bad faith refused or declined to comply with said School District request.

The Contractor shall be liable for all excess costs and other damages resulting from said termination for default.

#### GC-4.26 NO SCHOOL DISTRICT LIABILITY FOR DAMAGES AND ADDITIONAL SERVICES OF PM/CM, ARCHITECT/ENGINEER AND OTHER SCHOOL DISTRICT CONSULTANTS CAUSED BY CONTRACTOR OR HIS SUBCONTRACTORS

4.26.1 <u>No School District Liability for Damages of the PM/CM, the Architect/Engineer and other School District Consultants Caused by Contractor or his Subcontractors: Contractor Solely Liable to the CM/PM, the Architect/Engineer and other School District Consultants. By executing this Contract with the School District, the Contractor acknowledges and agrees that:</u>

(i) in no event shall the School District be liable to the PM/CM, the Architect/Engineer or any other School District Consultant on the Project for payment of additional compensation for any direct, indirect or impact damages, including but not limited to costs of acceleration or for loss of revenue, overheard or profit, or for any delay damages, costs or expenses, including but not limited to attorneys' fees, court costs, and legal expenses of whatever kind or nature, that are caused by or attributed to the fault, negligence, breach of contract, or willful act or omission of the Contractor or any of his Subcontractors on the Project, or the delay, disruption, interference or hindrance of the Contractor or any of his Subcontractors in construction on the Project; and

(ii) the Contractor shall be solely liable to the PM/CM, the Architect/Engineer or other School District Consultants on the Project for payment of additional compensation for any direct, indirect or impact damages, including but not limited to costs of acceleration or for loss of revenue, overheard or profit, or for any delay damages, costs or expenses, including but not limited to attorneys' fees, court costs, and legal expenses of whatever kind or nature, that are caused by or attributed to the fault, negligence, breach of contract, or willful act or omission of the Contractor or any of his Subcontractors on the Project, or the delay, disruption, interference or hindrance of the Contractor or any of his Subcontractors in construction on the Project.

4.26.2 <u>No School District Liability for Additional Services of the PM/CM, the Architect/Engineer and other</u> <u>School District Consultants Caused by Contractor or his Subcontractors; Contractor Solely Liable to the</u> <u>PM/CM, the Architect/Engineer and other School District Consultants</u>. By executing this Contract with the School District, the Contractor acknowledges and agrees that:

(i) in no event shall the School District be liable to the PM/CM, the Architect/Engineer or any other School District Consultant on the Project for payment of compensation for additional consulting services of the Architect/Engineer or the other School District Consultants on the Project that are caused by or attributed to the fault, negligence, breach of contract, or willful act or omission of the Contractor or any of his Subcontractors on the Project, or the delay, disruption, interference or hindrance of the Contractor or any of his Subcontractors in construction on the Project; and

(ii) the Contractor shall be solely liable to the PM/CM, the Architect/Engineer or other School District Consultants on the Project for payment of compensation for additional consulting

services of the PM/CM, the Architect/Engineer or the other School District Consultants on the Project that are caused by or attributed to the fault, negligence, breach of contract, or willful act or omission of the Contractor or any of his Subcontractors on the Project, or the delay, disruption, interference or hindrance of the Contractor or any of his Subcontractors in construction on the Project.

4.26.3 <u>Notice of Assignment of School District Right to File Claims for Damages and Additional Services</u> of the PM/CM, the Architect/Engineer and other School District Consultants on the Project Caused by <u>Contractor or hig Subcontractor</u>. By executing this Contract with the School District, the Contractor acknowledges and agrees that:

4.26.3.1 the School District has provided written notice, pursuant to Paragraph GC-6.4 of these General Conditions, of its assignment to the PM/CM, the Architect/Engineer and other School District Consultants on the Project of its right to file claims against the Contractor and his Subcontractors for damages and additional services of the PM/CM, the Architect/Engineer and other School District Consultants on the Project that are caused by the Contractor or his Subcontractors, for **the sole and only purposes** of the PM/CM's, the Architect/Engineer's and other School District Consultants' making, asserting, filing or bringing **direct** claims, actions, causes of actions or lawsuits against any of the separate Contractors or any of their Subcontractors on the Project.

4.26.3.2 The PM/CM, the Architect/Engineer and other School District Consultants on the Project, **as assignees of the School District**, pursuant to Paragraph GC-6.4 of these General Conditions, are entitled to make, assert, file or bring a <u>direct</u> claim, action, cause of action or lawsuit against the Contractor or any of his Subcontractors for any damages or additional services of the PM/CM, the Architect/Engineer or other School District Consultants that are caused by the Contractor or any of his Subcontractors on the Project.

## ARTICLE GC-5 SUBCONTRACTORS

#### GC-5.1 DEFINITION

5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform any of the Work at the Project site, including any consulting services for Work on the Project. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative.

5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform any of the Work at the Project site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Sub-subcontractor or an authorized representative thereof.

5.1.3 Nothing contained in the Contract Documents is intended to, nor shall it, create any contractual relationship between the School District, the Architect/Engineer, any of their agents, employees, or representatives, on the one part, and any Subcontractor or Sub-subcontractor, on the other part.

## GC-5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

The Contractor shall submit, on forms provided by the School District, the names and addresses 5.2.1 of all Subcontractors, testing laboratories and manufacturing sources of material to be incorporated into or used on the Project. The Contractor shall submit full information as to the competency of Subcontractors and the quality of material when requested. These forms shall be properly completed and shall be submitted to the School District within thirty (30) calendar days of receipt by the Contractor of the executed Contract Documents. The Contractor understands and agrees that no contractual agreement exists for any part of the Work under this Contract between the School District and any of the Contractor's Subcontractors or Sub-subcontractors. Further, the Contractor understands and agrees that he alone is responsible to the School District for all of the Work under this Contract, and that any review or approval of Subcontractors or Sub-subcontractors by the School District will in no way make the School District responsible to any Subcontractor or Sub-subcontractor nor for the actions or failures of any of them. The School District's approval of any Subcontractor or Sub-subcontractor shall not create any obligation of the School District to any Subcontractor or Sub-subcontractor or in any way relieve the Contractor of his responsibility for the performance of his Subcontractors and Sub-subcontractors. In the event of nonperformance of Work by a Subcontractor or Sub-subcontractor, the Contractor shall be responsible to perform the Work, on-time and on-budget. All terms and conditions under the Contract Documents applying to the Contractor shall apply equally to his Subcontractors and Sub-subcontractors. The Contractor shall be fully responsible and liable for the performance of all Work on the Project, on-time and on-budget, required under this Contract in accordance with the Contract Documents, whether performed by the Contractor's own personnel, by Subcontractors of the Contractor, or by Sub-subcontractors of the Subcontractors.

5.2.2 The Contractor shall not contract with any such proposed person or entity to which the School District has made reasonable objection under the provisions of Subparagraph 5.2.1 of these General Conditions. The Contractor shall not be required to contract with anyone to whom he has a reasonable objection. If the Contractor subcontracts any Work without the approval of the School District, said subcontracting shall be deemed a material breach of this Contract, thereby giving the School District the right to immediately terminate this Contract with no further obligation whatsoever on the part of the School District.

5.2.3 The Contractor shall make no substitution for any previously selected Subcontractor, person, or entity if the School District has reasonable objections to such substitution.

#### GC-5.3 SUBCONTRACTUAL RELATIONS

5.3.1 By an appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Contract Documents, assumes toward the School District. Said agreement shall preserve and protect the rights of the School District under the Contract Documents with respect to the Work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the Contractor-Subcontractor Agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by these Documents, has against the School District. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with his Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the Subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Paragraph GC-5.3, and he shall identify to the Subcontractor any terms and conditions of the proposed Subcontract which may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of such Documents available to his Sub-subcontractors. The Contractor shall require each Subcontractor, to the extent of the work to be performed by the Subcontractor, to assume and perform all the obligations and responsibilities for maintenance of and access to books, records and documents as is set forth elsewhere in these Contract Documents.

5.3.2 The School District shall be a third-party beneficiary of all Subcontracts and shall have the right to enforce such Subcontracts for its own benefit. All guarantees and warranties, express or implied, shall inure to the benefit of the School District and the Contractor during the Work, and shall inure to the benefit of the School District upon completion of the Work. The Contractor shall similarly require all Subcontractors to make the School District a third-party beneficiary of all guarantees and warranties which the Contractor receives from the Subcontractors.

5.3.3 Subcontractors shall look only to the Contractor for payment, satisfaction, or legal redress in the event of any dispute arising out of the Contract Documents, and hereby waive any claim or cause of action against the School District arising out of a Subcontract or other transaction with the Contractor. Neither the Contractor, nor its Subcontractors, nor any person or entity employed by any of them, shall have any right or claim against the School District for any costs or damages arising from their performance of any of the Work, or for any monies due and owing to the Contractor, for the performance of any of the Work on the Project. The Contractor shall incorporate these requirements in all Subcontracts with Subcontractors.

5.3.4 The Mechanics' Lien Law, Act of August 24, 1963, P.L. 1175, No. 497 (49 P.S. §1101 et seq.) prohibits the filing of mechanics' liens on School District construction projects. Subcontractors and Sub-subcontractors therefore agree to keep the Work and the Project site on which Work is to be performed free and clear of all liens and claims of liens on materials furnished pursuant to a Subcontract or other transaction with the Contractor. Subcontractors and Sub-subcontractors hereby waive any rights they may have in connection with the Work to file any liens, mechanics or otherwise. The substitute remedy for the Mechanics' Lien Law is the Public Works Contractors' Bond Law, Act of December 20, 1967, P.L. 869, No. 385 (8 P.S. §191 et seq.).

5.3.5 The School District of Philadelphia is a "first class school district" under the Pennsylvania Intergovernmental Cooperation Authority Act for Cities of the First Class (known as "PICA Act"), Act of June 5, 1991, P.L. 9, No. 6 (53 P.S. §12720.104), and therefore the prompt payment provisions of the Award and Execution of Public Contracts Law, Act of December 12, 1994, P.L. 1042, No. 142 (73 P.S. §1626.8(c)(2)&(4)) (repealed), and the prompt payment provisions of the Commonwealth Procurement Code, General Procurement Provisions, Act of May 15, 1998, P.L. 358, No. 57 (62 Pa.C.S.A.

§3938(b)(2)&(4)), do not apply to the School District of Philadelphia and its construction contracts. Subcontractors and Sub-subcontractors cannot make, assert or file a claim, cause of action or lawsuit against the School District of Philadelphia for violation of the prompt payment provisions of the Award and

Execution of Public Contracts Law (repealed), or the prompt payment provisions of the Commonwealth Procurement Code, General Procurement Provisions.

5.3.6 The School District of Philadelphia is a "school district" and a "political subdivision" of the Commonwealth of Pennsylvania, and therefore the Contractor and Subcontractor Payment Act, Act of February 17, 1994, P.L. 73, No. 7 (73 P.S. §501 <u>et seq.</u>), does not apply to the School District of Philadelphia and its construction contracts. Subcontractors and Sub-subcontractors cannot make, assert or file a claim, cause of action or lawsuit against the School District of Philadelphia for violation of the Contractor and Subcontractor Payment Act.

## GC-5.4 DISPUTES CONCERNING THE WORK

5.4.1 In the event of any dispute between the Subcontractor and the Contractor, the Subcontractor shall, nevertheless, expeditiously proceed with the performance of the Work.

5.4.2 In the event of any dispute between the Subcontractor and the School District or the Architect/Engineer or any other School District Consultants on the Project, the Subcontractor shall, nevertheless, expeditiously proceed with the performance of the Work.

## ARTICLE GC-6 WORK DONE BY SCHOOL DISTRICT OR BY SEPARATE CONTRACTORS

# GC-6.1 SCHOOL DISTRICT'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS

6.1.1 Under the multi-prime bidding and contracts requirements of the Public School Code, 24 P.S. §7-751(a.2), all construction work, including general construction work (which shall include civil, structural, roofing, architectural, utilities, paving and landscaping), heating, ventilating and air conditioning (HVAC) work, plumbing work, and electrical work, on the Project shall be performed by separate multiple Prime Contractors and their Subcontractors.

6.1.2 The School District reserves the right to perform work related to the Project with its own forces, and to award separate contracts in connection with additional, different or other portions of the Project or additional or other Work on the Project site under these or similar Conditions of the Contract in the event that (a) the School District determines, in its sole judgment, that it is in its own best interests to do so under the circumstances; or (b) the School District is ordered to do so by a court of competent jurisdiction.

6.1.3 When separate contracts are awarded for additional, different or other portions of the Project or additional or other Work on the Project site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate School District/Contractor Agreement; the term "Contract" or "Prime Contract" or "separate Contract" in the Contract Documents in each case shall mean each separate Contract awarded by the School District; and the term "Project" shall include the total design and construction of which the Work performed under the Contract Documents may be the whole or a part and which includes construction by the Owner and by all separate Contractors (hereinafter referred to as "multiple Prime Contractors").

## GC-6.2 MUTUAL RESPONSIBILITY

6.2.1 The Contractor shall afford the School District and separate Contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their Work and shall connect and coordinate his Work with theirs as required by the Contract Documents.

6.2.2 If any part of the Contractor's Work depends for proper execution or results upon the Work of the School District or any separate Contractor, the Contractor shall, prior to proceeding with the Work, promptly report to the School District any apparent discrepancies or defects in such other Work that renders it unsuitable for such proper execution and results. Failure of the Contractor to so report shall constitute the Contractor's acceptance of the School District's or separate Contractor's Work as fit and proper to receive his Work, and the Contractor shall be responsible for the costs of correcting or repairing such other Work.

6.2.3 Failure of the Contractor to keep informed of the Work progressing on the Project site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by him of the status of the Work as being satisfactory for proper coordination with his own Work. It is agreed that the Contractor shall not be entitled to any damages or extra compensation from the School District on account of any Work performed by the School District or other Contractors that in any way affects the Work under this Contract. In case the Contractor, by his own acts or the acts of any person or persons in his employ, shall unnecessarily delay, interfere with, or disrupt the Work of the School District or other Contractors, by not properly cooperating with them or by not affording them sufficient opportunity or facility to perform Work as may be specified, the Contractor shall, in that case, pay all costs and expenses the School District to deduct the amount of such costs and expenses from any monies due or to become due the Contractor under this Contract. Nothing contained in this Subparagraph 6.2.3 of these General Conditions shall, however, relieve said Contractor from any liability or damage resulting to the School

District on account of such delay or delays, or disruption or disruptions, or interference or interferences.

6.2.4 Any costs caused by defective or ill-timed Work shall be borne by the party responsible therefor.

6.2.5 Should the Contractor cause damage to the Work or property of the School District or to other Work on the Project site, the Contractor shall promptly remedy such damage as provided in Subparagraph 10.2.5 of these General Conditions.

6.2.6 It shall be the affirmative duty of the Contractor to cooperate and coordinate the scheduling and progress of his Work with that of all other Contractors. Under no circumstances shall the School District be liable for damages for delays, interferences, or disruptions caused by the acts or omissions of another Contractor. In the event that any other Contractor performing work should hinder, delay, interfere with, disrupt, or damage the Contractor's Work or should otherwise cause loss or injury to the Contractor. Contractor agrees that he shall look solely to such Contractor for relief therefor. Neither the School District, nor the PM/CM, nor the Architect/Engineer nor any other School District Consultant on the Project shall be responsible for any such hindrance, delay, interference, disruption, damage, loss or injury, and the Contractor shall, in no event, attempt to hold the School District or the Architect/Engineer or any other School District Consultant on the Project liable for the costs thereof. The Contractor shall not make any claim for adjustment of the Contract Sum, equitable or otherwise, against the School District based on any of the foregoing. Similarly, the Contractor agrees that he will be responsible to any other Contractor performing work related to the Project for any loss, injury, damage, interference, disruption, or delay, including acceleration costs incurred as a result of delay, interference, or disruption caused by the Contractor. The Contractor and his Performance Bond surety shall indemnify and hold harmless the School District, the PM/CM, and the Architect/Engineer and any other School District Consultant on the Project from and against any claim brought against them by another Contractor including costs, expenses and attorneys' fees incurred by any of them as a result of the Contractor's alleged acts or omissions.

6.2.7 If, through the acts or omissions of the Contractor, any other Contractor or any Subcontractor shall suffer loss or damage to the Work, the Contractor agrees to settle with such other Contractor or Subcontractor by agreement if such other Contractor or Subcontractor will so settle. If such other Contractor or Subcontractor shall assert any claim or bring any action against the School District or the Architect/Engineer or any other School District Consultant on the Project on account of any damage alleged to have been sustained, the School District, the PM/CM, or the Architect/Engineer or the other School District, the PM/CM, or the Contractor, who shall indemnify and hold harmless the School District, the PM/CM, the Architect/Engineer and/or other School District Consultant and pay and satisfy any judgment or award entered against the School District, the Architect/Engineer, and/or the other School District Consultant in any such action and shall pay all costs and expenses, legal and otherwise, incurred by the School District, the PM/CM, the Architect/Engineer, and/or the other School District Consultant in any such action and shall pay all costs and expenses, legal and otherwise, incurred by the School District, the PM/CM, the Architect/Engineer, and/or the other School District Consultant therein or thereby.

6.2.8 In the event there is more than one Contractor engaged on the Project, each such Contractor shall be responsible to the other for damages to work, injury to any person or persons, or for any losses, costs, claims, or damages arising out of or in connection with the Work required by this Contract or any losses, costs, expenses, or damages caused by the Contractor's neglect or failure to finish or satisfactorily complete his part of the Work within the time prescribed. In all events, the provisions of Paragraph GC-4.18 of these General Conditions shall be applicable.

6.2.9 The Contractor agrees to adjust his work or schedule and coordinate his Work with other Contractors as directed by the School District.

6.2.10 Intended Third-Party Beneficiary; Right to File Claims or Suits Against Other Separate Contractors based on Third Party Beneficiary Theory. By executing each separate Contract, both the School District and each separate Contractor to each separate Contract awarded work on the Project agree and intend that each separate Contractor to each separate Contract awarded work on the Project shall be an intended third party beneficiary of each of the other separate Contracts awarded work on the Project for the sole and only purposes of asserting rights, or making claims, or filing claims, causes of actions, actions, or suits against the other separate Contractors and their Performance Bond sureties under Article GC-6 of these General Conditions, and that each separate Contractor shall be entitled to enforce each of the other separate Contracts for his own benefit for said sole and only purposes as an intended third party beneficiary, and that each separate Contractor shall be entitled to directly make or file a claim against any of the other separate Contractors based on a third party beneficiary theory for said sole and only purposes, and shall be entitled to directly sue the other separate Contractors based on a third party beneficiary theory for said sole and only purposes.

## GC-6.3 OWNER'S RIGHT TO PERFORM DISPUTED WORK

6.3.1 If a dispute arises between the Contractor and separate Contractors as to their responsibility for cleaning up pursuant to Paragraph GC-4.15 of these General Conditions or for accomplishing coordination or doing required cutting, filling, excavating, or patching as required under the Contract, the School District may carry out such Work and charge the cost thereof to the several Contractors responsible for that Work as the School District shall determine to be just.

#### GC-6.4 EXPRESS AGREEMENT TO OWNER'S ASSIGNMENT OF RIGHT TO FILE DIRECT CLAIMS AGAINST THE SEPARATE CONTRACTORS FOR CONSULTANTS' DAMAGES AND ADDITIONAL SERVICES

6.4.1 By executing their separate Contracts, the separate Contractors acknowledge and agree that in no event shall the School District be liable to the PM/CM, the Architect/Engineer or any other School District Consultant on the Project for payment of additional compensation for any direct, indirect or impact damages, including but not limited to costs of acceleration or for loss of revenue, overhead or profit, or for any delay damages, costs or expenses, including but not limited to attorneys' fees, court costs and legal expenses of whatever kind or nature, that are caused by or attributed to the fault, negligence, breach of contract, or willful act or omission of any of the separate Contractors or any of their Subcontractors on the Project, or the delay, disruption, interference or hindrance of any of the separate Contractors or any of their Subcontractors in construction on the Project. For the sole and only purposes of making, asserting, filing or bringing direct claims, actions, causes of actions or lawsuits against any of the separate Contractors or any of their Subcontractors, the separate Contractors acknowledge and agree that the School District has assigned to the PM/CM, the Architect/Engineer and other School District Consultants on the Project the School District's right under the Contract to make, assert, file or bring direct claims, actions, causes of action or lawsuits against any of the separate Contractors or any of their Subcontractors for any additional compensation, damages, losses, costs and expenses of the PM/CM, the Architect/Engineer or other School District Consultants on the Project that are caused by or attributed to the fault, negligence, breach of contract, or willful act or omission of any of the separate Contractors or any of their Subcontractors on the Project, or the delay, disruption, interference or hindrance of any of the separate Contractors or any of their Subcontractors in construction on the Project. The separate Contractors further acknowledge and agree that the PM/CM, the Architect/Engineer and other School District Consultants on the Project shall be entitled to make, assert, file or bring a direct claim, action, cause of action or lawsuit against any of the separate Contractors or any of their Subcontractors. as an assignee of the School District, pursuant to this Paragraph GC-6.4 of these General Conditions, with respect to any direct, indirect or impact damages, including but not limited to costs of acceleration or for loss of revenue, overhead or profit, or for any delay damages, costs or expenses, including but not limited to attorneys' fees, court costs and legal expenses of whatever kind or nature, that are caused by or attributed to the fault, negligence, breach of contract, or willful act or omission of any of the separate Contractors or any of their Subcontractors on the Project, or the delay, disruption, interference or hindrance of any of the separate Contractors or any of their Subcontractors in construction on the Project.

6.4.2

By executing their separate Contracts, the separate Contractors acknowledge and agree

that in no event shall the School District be liable to the Architect/Engineer or any other School District Consultant on the Project for payment of compensation for additional consulting services of the Architect/Engineer that are caused by or attributed to the fault, negligence, breach of contract, or willful act or omission of any of the separate Contractors or any of their Subcontractors on the Project, or the delay, disruption, interference or hindrance of any of the separate Contractors or any of their Subcontractors in construction on the Project. For the sole and only purposes of making, asserting, filing or bringing direct claims, actions, causes of actions or lawsuits against any of the separate Contractors or any of their Subcontractors, the separate Contractors acknowledge and agree that the School District has assigned to the PM/CM, the Architect/Engineer and other School District Consultants on the Project the School District's right under the Contract to make, assert, file or bring direct claims, actions, causes of action or lawsuits against any of the separate Contractors or any of their Subcontractors for compensation due to the Architect/Engineer or other School District Consultants on the Project for additional consulting services that are caused by or attributed to the fault, negligence, breach of contract, or willful act or omission of any of the separate Contractors or any of their Subcontractors on the Project, or the delay, disruption, interference or hindrance of any of the separate Contractors or any of their Subcontractors in construction on the Project. The separate Contractors further acknowledge and agree that the PM/CM, the Architect/Engineer and other School District Consultants on the Project shall be entitled to make, assert, file or bring a direct claim, action, cause of action or lawsuit against any of the separate Contractors or any of their Subcontractors, as an assignee of the School District, pursuant to this Paragraph GC-6.4 of these General Conditions, with respect to any compensation due for any additional consulting services that are caused by or attributed to the fault, negligence, breach of contract, willful act or omission of any of the separate Contractors or any of their Subcontractors on the Project, or the delay, disruption, interference or hindrance of any of the separate Contractors or any of their Subcontractors in construction on the Project.

## ARTICLE GC-7 MISCELLANEOUS PROVISIONS

#### GC-7.1 GOVERNING LAW

7.1.1 Unless otherwise provided in the Contract Documents, this Contract shall be governed by the laws of the Commonwealth of Pennsylvania and laws of the City of Philadelphia.

#### GC-7.2 SUCCESSORS AND ASSIGNS

7.2.1 The School District and the Contractor each binds himself, his partners, heirs, executors, administrators, successors, permitted assigns, and legal representatives to the other party hereto and to the partners, heirs, executors, administrators, successors, permitted assigns, and legal representatives of such other party in respect to all covenants, agreements, and obligations contained in the Contract Documents.

#### GC-7.3 WRITTEN NOTICE

7.3.1 Written notice shall be deemed to have been duly served if delivered in person with receipt obtained to the individual or member of the firm or entity or to an officer of the corporation for whom it was intended, or if delivered at or sent by a national overnight express carrier (e.g., Federal Express, Express Mail), or by facsimile (with copy by registered or certified United States mail, return receipt requested, postage prepaid), or by registered or certified United States mail, return receipt requested, postage prepaid, to the last business address known to him who gives the notice.

## GC-7.4 CLAIMS AND DAMAGES

7.4.1 <u>Written Notice of Any Claim Required</u>. It is an express condition of Contractor's right to make a claim or to receive any recovery or relief under or in connection with the Contract, that Contractor submit a written notice of potential claim to the School District and the PM/CM, with a copy to the Architect/Engineer, in accordance with the provisions of this Article; provided, however, that with respect to requests for relief within the scope of Article GC-12 CHANGES IN THE WORK of these General Conditions, the Contractor shall submit a Change Order Request in accordance with the provisions of Article GC-12 before initiating a claim under this Paragraph GC-7.4. Failure to comply with the provisions hereof shall constitute a waiver by the Contractor of any right, equitable or otherwise, to bring any such claim against the School District. Nothing in this Paragraph GC-7.4 is intended to expand the rights of the Contractor as they otherwise exist under the Contract.

7.4.2 <u>Contents of Notice</u>. The written notice of potential claims shall set forth:

7.4.2.1 the reasons for which the Contractor believes additional compensation will or may

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be due:

7.4.2.2 the nature of the costs involved;

7.4.2.3 the Contractor's plan for mitigating such costs; and

7.4.2.4 the amount of the potential claim.

7.4.3 <u>Timing of Notice</u>. The Notice provided above shall be given within ten (10) calendar days after the happening of the event or occurrence giving rise to the potential claim; provided, however, if the event or occurrence is claimed to be an act or omission of the School District, notice shall be given prior to the time for performance of the portion of the Work to which such act or omission relates.

7.4.4 <u>Non-Exclusive Provision</u>. The notice requirements of this Paragraph GC-7.4 are in addition to any other notice requirements set forth in the Contract Documents.

7.4.5 <u>Filing of Claims; Timing</u>. Claims, including but not limited to claims for adjustments in Contract Time, Contract Sum, or for interpretation of the requirements of the Contract Documents shall be submitted to the School District and the PM/CM in writing with a request for a formal decision in accordance with the provisions of this Paragraph GC-7.4. Claims shall be submitted by the Contractor to the PM/CM and School District, within ten (10) calendar days after the occurrence of the event or occurrence giving rise to the claim, in sufficient detail so that the basis and amount of said claims can be ascertained. The School District, in its sole discretion, may review such claims with the PM/CM and the Architect/Engineer, as more particularly provided in Subparagraph 7.4.6 of these General Conditions. It will be the responsibility of the Contractor to furnish, when requested by the School District or the PM/CM, such further information and details as may be required to determine the facts or contentions involved in his claims, including a detailed statement responding to the School District, the PM/CM, or the Architect/Engineer access to his books, records and other materials relating to the Work, and shall cause his Subcontractors to do the same, so that such claims can be investigated.

7.4.6 <u>Decision by the School District</u>. At the request of the School District, the PM/CM, or the Architect/Engineer shall review such claims and make his recommendations to the School District on such claims within the time period designated by the School District. The School District shall review the recommendations of the PM/CM and/or the Architect/Engineer and render its decision on such claims. The rendering of such a decision by the School District pursuant to this Subparagraph 7.4.6 of these General Conditions shall be a condition precedent to any exercise of remedies that either party may have under the Contract Documents, at law, in equity or otherwise with respect to such claims.

7.4.7 <u>Waiver of Claims</u>. If a claim has not been resolved, unless the party making the claim has within five (5) business days after the decision of the School District either modified the initial claim or notified the School District that the initial claim stands, the decision of the School District with regard to such claim shall be final and binding upon the party making the claim and shall not be subject to further appeal or determination.

7.4.8 <u>No Claims After Final Payment</u>. In no event shall claims be made after Final Payment is made under Paragraph GC-9.8 of these General Conditions, and receipt and acceptance of Final Payment by the Contractor shall be deemed a waiver of all claims by the Contractor.

7.4.9 <u>Duty to Prosecute Work</u>. During the process of review and ruling upon the claims by the School District and/or the PM/CM, the Contractor shall prosecute the Work without delay.

# GC-7.5 PERFORMANCE BOND, LABOR AND MATERIALMEN'S OR PAYMENT BOND, AND MAINTENANCE BOND

7.5.1 Within five (5) calendar days of the date of the Notice of Award, the Contractor shall furnish to the School District, together with the executed Contract Documents, an executed original and three(3) copies of bonds covering the faithful performance of the Contract, the payment in full of all persons providing labor or materials for the Work and inuring to the benefit of all such persons so as to give them a right of action to recover upon said bond, and providing for certain maintenance and repair of the Work. The bonds shall be in the amount of the Contract Sum. The amount of said bonds shall be increased whenever the Contract Sum is increased by a Change Order approved by the School District. The bonds shall be issued by a reputable surety acceptable to the School District and by the same Surety, under consent, who provided bid security, and legally authorized to do business as a Surety in the Commonwealth of Pennsylvania. A company which does not of itself have bonding capacity at least equal to the amount of the Contract upon which the proposed bond is to be issued shall not be acceptable. Bonds may be secured through the Contractor's usual sources. The cost of the bonds shall be included in

the Contract Sum.

7.5.2 Within five (5) calendar days after the date of the Notice of Award, the Contractor shall furnish to the School District, together with the executed Contract Documents, an executed original and three (3) copies of a bond covering the faithful performance and payment in full of all warranty related services and to issue against defective or inferior materials or workmanship which may develop during the period of one (1) year or a longer period as stated elsewhere in the Contract Documents from the date of final completion and acceptance of the Work performed under this Contract. This bond shall be in the amount of ten percent (10%) of the Contract Sum. This bond shall be issued by a reputable surety acceptable to the School District, and by the same Surety, under consent, who provided bid security, and legally authorized to do business as a Surety in the Commonwealth of Pennsylvania.

7.5.3 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the Surety to affix thereto a certified and current copy of his Power of Attorney.

7.5.4 The form of bonds shall be the same as issued in the Bidding Documents, and any other form of bonds shall be rejected by the School District.

7.5.5 The Pennsylvania statutes of limitation, 42 PA.C.S.A. §§5523, 5524, 5525 & 5527, and the Pennsylvania statute of repose, 42 PA.C.S.A. §5536, do not apply to the School District of Philadelphia and its contracts for work or services for its school grounds and buildings and its school construction projects. Performance bonds, labor and materialmen's or payment bonds and maintenance bonds containing time restrictions on commencement of suit on the bonds shall be rejected by the School District.

7.5.6 If at any time the School District, for justifiable cause, shall be or become dissatisfied with any surety or sureties then upon the bonds, or said surety or sureties be declared insolvent and ordered liquidated by a court of competent legal jurisdiction, the Contractor shall, within five (5) calendar days after notice from the School District to do so or notice of said court order of insolvency and liquidation, substitute an acceptable bond (or bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the School District. The premiums on such bond(s) shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished such an acceptable bond(s) to the School District.

7.5.7 Any person, partnership, association or corporation furnishing materials or rendering services for this Project may institute an action to recover for the same against the principal of any Payment or Labor and Materialmen's Bond in connection with this Project, as though such person, partnership, association or corporation were named therein, under and subject to the provisions of the Act of Assembly, December 20, 1967, P.L. 869, No. 385, known as the "Public Works Contractors' Bond Law" (8 P.S. §191 <u>et seq.</u>) and the Act of Assembly, May 15, 1998, P.L. 358, No. 57, known as the "Commonwealth Procurement Code", 62 Pa.C.S.A. §903.

## GC-7.6 RIGHTS AND REMEDIES

7.6.1 The duties and obligations of the Contractor imposed by the Contract Documents and the rights and remedies of the School District available thereunder shall be in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available at law or in equity.

7.6.2 The failure of the School District, the PM/CM, or the Architect/Engineer or any other School District Consultants on the Project to insist in any one or more instances upon the strict performance of any one or more of the provisions of this Contract, or to exercise any right(s) herein contained or provided by law, shall not be construed as a waiver or relinquishment of such provision or right(s) or of the right to subsequently demand such strict performance or exercise such right(s), and the right(s) shall continue unchanged and remain in full force and effect.

7.6.3 The Contractor agrees that he can be adequately compensated by money damages for any breach of this Contract which may be committed by the School District and hereby agrees that no default, act, or omission of the School District or the PM/CM, or the Architect/Engineer or any other School District Consultant on the Project shall constitute a material breach of the Contract entitling the Contractor to cancel or rescind the provisions of this Contract or (unless the School District shall so consent or direct in writing) to delay, suspend or abandon performance of all or any part of the Work. The Contractor hereby waives any and all rights and remedies to which he might otherwise be or become entitled, subject to the provisions of Subparagraph 8.3.1 of these General Conditions.

7.6.4 No provision contained in the Contract Documents shall create or give to third parties any claim or right of action against the School District, the PM/CM, the Architect/Engineer, other School District Consultants on the Project, or the Contractor except as expressly provided in Subparagraph 6.2.10 and Paragraph GC-6.4 of these General Conditions.

## GC-7.7 TESTS

7.7.1 If the Contract Documents, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any portion of the Work to be inspected, tested, or approved, the Contractor shall give the School District, the PM/CM and the Architect/Engineer timely notice of his readiness so the School District and the Architect/Engineer may observe such inspection, testing, or approval.

7.7.2 If the PM/CM or the Architect/Engineer determines that any Work requires special inspection, testing, or approval which Subparagraph 7.7.1 of these General Conditions does not include, the PM/CM or the Architect/Engineer, after receiving written authorization from the School District, shall instruct the Contractor to order such special inspection, testing, or approval, and the Contractor shall give notice as provided in Subparagraph 7.7.1 of these General Conditions, which special inspections, tests or approvals will be observed by the Architect/Engineer. If such special inspection or testing reveals a failure of the Work to comply (1) with the requirements of the Contract Documents, or (2) with respect to the performance of the Work, with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction, the Contractor shall bear all costs thereof, including compensation for the services of the School District and the Architect/Engineer made necessary by such failure.

7.7.3 Inspections and tests required to establish compliance with the Contract Documents, as provided for in the Contract Documents, except for tests to conform to Chapter 17, entitled "Structural Tests and Special Inspections" of the International Building Code latest edition, shall be made by a prequalified, independent testing agency approved by the School District. The cost of the initial services of such agency shall be paid by the Contractor. When tests indicate such non-compliance with the Contract Documents, any subsequent retesting occasioned by non-compliance shall be performed by the same agency, and the cost thereof shall be borne by the Contractor. Representatives of the testing agency shall have access to the Work at all times. The Contractor shall provide facilities for such access in order that the testing agency may properly perform its functions. Copies of all reports and test results shall be forwarded within two (2) calendar days to the Architect/Engineer and School District.

7.7.4 The Contractor shall pay for and have sole responsibility for inspections or testing performed exclusively for his own convenience, and all tests required by the Contract Documents, except for tests to conform to Chapter 17, entitled "Structural Tests and Special Inspections" of the International Building Code latest edition, which, together with the International Existing Building Code, latest edition, has been adopted by the City of Philadelphia as the Philadelphia Building Code.

7.7.5 Any required certificates of inspection, testing, or approval to be secured by the Contractor shall be delivered by him to the School District, the PM/CM and the Architect/Engineer, in such time as to avoid delay in the progress of the Work or final payment therefore.

7.7.6 Unless otherwise stipulated in other Contract Documents, the Contractor shall pay for all utilities

required for testing of installed equipment, of all of his Work and the Work of each of his Subcontractors. Labor and supervision required for making such tests shall be provided at no additional cost to the School District.

7.7.7 If the School District, in its sole discretion, employs an independent testing agency to verify compliance with Contract requirements, such agency will prepare test reports, logs, and certifications applicable to the specific inspections and tests, and will deliver the specified number of copies of the test reports, logs and certifications to the School District, the PM/CM, the Architect/Engineer and Contractor.

GC-7.8 NOT USED

#### GC-7.9 NO ASSIGNMENTS OR TRANSFERS OF RIGHTS, DUTIES OR OBLIGATIONS

7.9.1 The Contractor shall not assign or otherwise transfer all or any part of its rights, duties or obligations under this Contract, in whole or in part, except with the prior written consent of the School District; any assignment or transfer (including, but not limited to, assignment of any Subcontract) without such written consent shall be null and void. The absence of such provision or written consent shall void the attempted assignment or transfer, and the attempted assignment or transfer shall be of no effect as to the Work, the Project or this Contract. In no event shall the School District's consent to any assignment or transfer by the Contractor of any rights, duties or obligations under this Contract relieve the Contractor from its obligations hereunder or change the terms of this Contract. The Contractor accepts full responsibility for and guarantees the performance of any and all assignees and transferees (including Subcontractors and Sub-subcontractors) of the Contractor. The Contractor shall not transfer or assign any contract funds or monies or claims due or to become due hereunder, in whole or in part, without the School District's prior written approval. The attempted transfer or assignment of any contract funds or monies which are due or which become due to the Contractor, in whole or in part, or any interest therein, without such prior written approval, shall have no effect upon the School District.

#### GC-7.10 NOT USED

#### GC-7.11 FORUM; CONSENT TO JURISDICTION

7.11.1 The parties agree that when any dispute between the parties cannot be amicably resolved and resort is made to legal action, any lawsuit, action, claim, or legal proceeding involving, directly or indirectly, any matter arising out of or related to the Contract, or the relationship created or evidenced thereby, shall be brought exclusively in a federal or state court of competent jurisdiction in and only in Philadelphia County, Pennsylvania. It is the express intent of the parties that jurisdiction over any lawsuit, action, claim, or legal proceeding shall lie exclusively in this forum. The parties further agree not to raise any objection, as to forum or venue, to any lawsuit, action, claim, or legal proceeding which is brought in this forum, and the parties expressly consent to the jurisdiction and venue of this forum.

#### GC-7.12 SCHOOL DISTRICT LIABILITY; RESPONSIBILITY OR RISK OF LOSS

7.12.1 Notwithstanding any other provisions of the Contract or any Addenda or Modifications to the contrary or the School District's health and safety program, guidelines, procedures, and requirements, the School District retains its statutory immunity as provided pursuant to the laws of the Commonwealth of Pennsylvania, 42 Pa C.S.A. §§8501, 8541. The Contractor acknowledges that the School District:

- 7.12.1.1 Is a local agency, as defined in 42 Pa. C.S.A. §8501, §8541, and, 7.12.1.2 Does not waive its defanse of statutory immunity derived therefrom
- 7.12.1.2 Does not waive its defense of statutory immunity derived therefrom.

#### GC-7.13 COMPLIANCE WITH LAWS AND REGULATIONS

7.13.1 All Work performed on the Project by the Contractor and his Subcontractors shall strictly conform to all federal, state, and local laws, statutes, codes, and ordinances and the applicable rules, regulations, policies, methods and procedures of the School District and all governmental bodies, boards, bureaus, offices, commissions, and other agencies, including but not limited to the School District's health and safety program, guidelines, procedures, and requirements and the School District's SRC and Board of Education ("Board") policies and resolutions, and all applicable case law, court orders, injunctions and consent decrees.

## GC-7.14 PUBLICITY

7.14.1 Neither the School District nor the Contractor and his Subcontractors shall publicize the Contract or the Work, or attribute any comments or views about this Contract or the Work to employees or agents or officials of the other party, by press conference, press release, advertising or public relations materials without the prior written consent of the other party, which consent shall not be unreasonably withheld; provided, however, that nothing in this Paragraph GC-7.14 of these General Conditions shall be construed to prohibit either party from making any disclosure relating to the Contract or Work that is required under federal or state securities laws or state or local election laws, or to prohibit either party from publicizing, with reasonable prior notice to the other party, the fact that the Contract has been entered into, the subject matter of the Contract, or the amount of the Contract. Except as may be required for its performance of the Contract, or as mutually agreed by the School District and the Contractor, the Contractor shall refer all press and public inquiries regarding the Project to the School District's Interim Senior Vice President or Operations Manager of Capital Programs during the term of the Contract. At any time thereafter, the Contractor may respond to press and public inquiries regarding the Project following notice to the School District. During the term of the Contract, the Contractor shall provide reasonable assistance to the School District in public relations activities, and shall prepare appropriate information for, and when requested, attend public meetings regarding the Project.

## GC-7.15 SCHOOL DISTRICT OFFICERS AND EMPLOYEES NOT TO BENEFIT

7.15.1 The Contractor shall not share with any School District officer or employee, and no School District officer or employee shall accept, any portion of the compensation paid by the School District for Work, except in accordance with School District policy and applicable law. The Contractor shall disclose to the School District with each Application for Payment submitted the name(s) of any School District officer(s) or employee(s) sharing in the compensation requested and the amount such officer or employee is to be paid. Any compensation shared by the Contractor and School District officers or employees in violation of School District policy and applicable law shall be recoverable from the Contractor as damages.

#### GC-7.16 SURVIVAL

7.16.1 Any and all provisions set forth in the Contract which, by its or their nature, would reasonably be expected to be performed after the termination of the Contract shall survive and be enforceable after such termination, including, without limitation, the following:

- (a) Any and all liabilities, actual or contingent, which shall have arisen in connection with the Contract;
- (b) The Contractor's representations, certifications, warranties, guarantees and covenants set forth herein;
- (c) Article GC-9, Payments and Completion;
- (d) Article GC-13, Uncovering and Correction of Work;
- (e) Article GC-14, Termination and Suspension of the Contract;
- (f) Paragraph GC-4.18, Indemnification;

- (g) Paragraph GC-7.1, Governing Law;
- (h) Paragraph GC-7.4, Claims and Damages; and
- (i) Paragraph GC-7.11, Forum; Consent To Jurisdiction.

#### GC-7.17 NO WAIVER

7.17.1 No delay or omission by either party hereto to exercise any right or power occurring upon any noncompliance or default by the other party with respect to any of the terms of the Contract shall impair any such right or power or be construed to be a waiver thereof. A waiver by either of the parties hereto of any of the covenants, conditions, or agreements to be observed by the other shall not be construed to be a waiver of any succeeding breach thereof, or of any other covenant, condition, or agreement herein contained. Unless stated otherwise, all remedies provided for in the Contract shall be cumulative and in addition to, and not in lieu of, any other remedies available to either party at law, in equity, or otherwise. No term or provision hereof shall be deemed waived by the parties, unless such waiver or consent shall be in writing signed by both parties. No breach shall be excused, unless the agreement to excuse that breach is in writing signed by the non-breaching party.

#### GC-7.18 SEVERABILITY AND PARTIAL INVALIDITY

7.18.1 The provisions of the Contract shall be severable. If any provision of the Contract, or the application thereof, for any reason or circumstance, is to any extent held to be invalid or unenforceable, the remaining provisions of the Contract (as well as the application of all provision(s) that were held to be invalid or unenforceable to persons or entities other than those as to which they were held invalid or unenforceable) shall not be affected or impaired thereby; and each provision of the Contract shall be valid and enforceable to the fullest extent permitted by law. If any of the provisions of the Contract are determined to be invalid, then such invalidity shall not affect or impair the validity of the other remaining provisions, which shall be considered severable, and shall remain in full force and effect. If any clause in the Contract Documents is held as a matter of law to be unenforceable or unconscionable, the remainder of the Contract Documents shall be valid and enforceable without such clause.

#### GC-7.19 STATUTES OF LIMITATION AND STATUTE OF REPOSE

7.19.1 The School District is a "political subdivision" and an "agency of the legislature" of the Commonwealth of Pennsylvania. Pursuant to the Constitution of the Commonwealth of Pennsylvania, Pa. Cons. Art. 3, §14, the Public School Code, 24 P.S. §7-701, and the Pennsylvania Code, 25 Pa. Admin. Code §171.13, the School District of Philadelphia has mandatory duties and obligations to provide necessary grounds and suitable school buildings to accommodate children attending school in its school district, and to construct, furnish, equip, and maintain its school buildings and grounds in a proper, safe and healthful manner. Therefore, the School District of Philadelphia has the right to invoke the doctrine of *"nullum tempus occurrit regi"*, and the Pennsylvania statutes of limitation, 42 Pa.C.S.A. §§5523, 5524, 5525 & 5527, and Pennsylvania statute of repose, 42 Pa.C.S.A. §5536, do not apply to the School District of Philadelphia and its contracts for work or services for its school grounds and buildings and its school construction projects.

## GC-7.20 CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND INELIGIBILITY

7.20.1 The Contractor represents and warrants to the School District that neither the Contractor nor any of its principals or Subcontractors are under suspension or debarment, have received a notice of commencement of proceedings for debarment, or have been declared ineligible by the Commonwealth of Pennsylvania, the City of Philadelphia, any Federal agency or any school district. The Contractor shall provide immediate written notice to the School District's Interim Senior Vice President or Operations Manager of Capital Programs, if at any time during the term of the Contract, the Contractor learns that the certification made in this Paragraph GC-7.20 of these General Conditions was erroneous when the Contractor signed the Contract or subsequently became erroneous by reason of changed circumstances.

## GC-7.21 ENTIRE CONTRACT

7.21.1 The Contract, which includes all Contract Documents referred to herein, contains the entire and integrated contract between the parties with respect to the subject matter hereof; supersedes all prior negotiations, representations, contracts, and undertakings, either written or oral, between the parties with respect to such subject matter; and cannot be changed, modified or amended except by contract in writing signed by both parties and approved by the School District's Board of Education (board), if required by the Public School Code, 24 P.S. §5-508, and applicable law. No amendment or modification changing its scope or terms shall have any force or effect, unless it is in writing and signed by both parties and approved by the Public School Code, 24 P.S. §5-508, and applicable law.

## GC-7.22 WAGE RATES, HIRING PRACTICES AND OTHER FEDERAL, STATE AND LOCAL REQUIREMENTS

## 7.22.1 Equal Opportunity

7.22.1.1 The School District is an Equal Opportunity Employer and demands no less of companies with which it does business. The School District will not do business with companies or persons who unlawfully discriminate on the basis of age, race, color, sex, sexual orientation, disability, creed, ancestry, national origin, Vietnam-era veteran status, limited English proficiency, or any other impermissible ground in their hiring, promotion, subcontracting, or procurement practices. By submitting any proposal to contract or entering into any contract with the School District, the Contractor represents and certifies that it is an Equal Opportunity Employer; conducts its business affairs without improper regard to age, race, color, sex, sexual orientation, disability, creed, ancestry, national origin, Vietnam-era veteran status, limited English proficiency, or other impermissible ground; and has not been debarred, suspended, or declared ineligible to contract by any public or private agency or entity because of its discriminatory practices. If the Contractor has been debarred or suspended for such reason, it must submit a statement with the bid identifying the debarring or suspending entity and giving the date the debarment or suspension was or is scheduled to be lifted. The Contractor's certifications given pursuant to this Paragraph are material representations of fact upon which reliance was placed when this Contract was awarded. If it is later discovered or determined that the Contractor knowingly rendered an erroneous certification, then the School District may pursue available remedies, including termination of this Contract, suspension or debarment. The Contractor agrees to include this Subparagraph 7.22.1.1 of these General Conditions, with appropriate adjustments for the identity of the parties, in all Subcontracts that are entered into for Work on the Project to be performed under this Contract.

7.22.1.2 The Contractor shall not discriminate nor permit discrimination against any person because of race, color, religion, age, national origin, ancestry, creed, handicap, sexual orientation, union membership, disabled or Vietnam era veteran status, or limited English proficiency in the performance of this Contract, including, but not limited to, preparation manufacture, fabrication, installation, erection and delivery of all supplies and equipment. In the event of receipt of such evidence of such discrimination by the Contractor or its agents, employees or representatives, the School District shall have the right to terminate this Contract. In the event of the continued refusal on the part of the Contractor to comply with this anti-discrimination provision, the Contractor may be removed from the list of approved bidders of the School District. The Contractor agrees to include this Subparagraph 7.22.1.2 of these General Conditions, with appropriate adjustments for the identity of the parties, in all Subcontracts which are entered into for Work on the Project to be performed pursuant to this Contract.

7.22.1.3 <u>Non-Discrimination in Hiring</u>. The Contractor agrees that it will comply

with the contract provisions prohibiting discrimination of the Commonwealth Procurement Code, 62 Pa.C.S.A. §3701, and the provisions of the Philadelphia Fair Practices Ordinance administered by the Human Relations Commission of the City of Philadelphia, the Pennsylvania Human Relations Act, No. 222, October 27, 1955, as amended, (43 P.S. §951 <u>et seq.</u>), Title 7 of the Civil Rights Act of 1964, 42 U.S.C. Section 2000 <u>et seq.</u>, and all pertinent regulations adopted pursuant to the foregoing in providing equal employment opportunities in connection with all Work performed by it pursuant to this Contract. The Contractor therefore agrees:

(a) That it will not discriminate nor permit discrimination by its agents, servants, any employee or applicant for employment with regard to hiring, tenure of employment, promotion, or any other terms, conditions or privileges of employment because of race, color, gender, sex, religion, creed, age, national origin, ancestry, handicap or disability and will move aggressively as is hereinafter set forth to prevent same.

(1) That in all publications or advertisements for employees to work at the job site covered by this Contract, placed by or on behalf of the Contractor, it will state that all qualified applicants will receive consideration for employment without regard to race, color, sex, religion, creed, age, national origin, ancestry, handicap or disability.

(2) The Contractor will notify each labor union, or workers' representative from which it seeks workers of the Contractor's commitments under this Paragraph, and request that each such union or workers' representative include minority group members and women among its referrals.

(3) The Contractor will hire minority and female workers for the skilled and unskilled jobs required to perform this Contract in proportion to their availability in the relevant labor pools in the Philadelphia Metropolitan Statistical Area, or to their availability in its qualified applicant pool, whichever is greater.

(4) The Contractor will post in conspicuous places available to its employees and to applicants for employment a notice of fair practices to be provided by the Philadelphia Human Relations Commission.

(5) The Contractor will maintain a work environment free of harassment, intimidation and coercion, and will ensure that all on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment.

(b) That it will identify in each certified payroll form submitted to the School District those of its employees who are minority group members and those who are female. As used here, "minority" means African-American, Hispanic, Asian, or Native-American. The School District shall at all times have access to the work site and to the Contractor's employment records to assure compliance with this Paragraph.

(c) That it will maintain on forms to be supplied by the School District the name, race, sex, national origin, skill or craft, address, telephone number, and source of referral of each applicant for employment, which record shall show which applicants were hired.

(d) That in the event apprentices are hired in any skilled craft area, the Contractor will endeavor to hire equal numbers of culturally diverse male and female trainees in each skill area.

(e) That it will insert the provisions of subsections (a), (b), (c), and (d) of this Subparagraph 7.22.1.3 of these General Conditions in all Subcontracts which are entered into by the Contractor under this Contract, as covenants to be binding upon such Subcontractors.

(f) The Contractor's agreement to meet the requirements of this

Subparagraph 7.22.1.3 of these General Conditions is a material representation of fact upon which reliance was placed when this Contract was awarded. If it is later determined that the Contractor has not made good faith efforts to comply, within the School District's sole judgment, then the School District may pursue available remedies, including suspension or debarment of the Contractor from future School District work as non-responsible.

7.22.1.4 Non-Discrimination in Subcontracting. It is the policy of the School District that business concerns owned and controlled by minority group members and women shall have full and fair opportunity to participate in performance of contracts let by the School District. Participation of minority- owned and women-owned business enterprises must be meaningful and substantial in all phases of this Contract. The Contractor shall ensure that minority-owned business enterprises ("MBEs") and women- owned business enterprises ("WBEs") have the maximum opportunity to participate in the performance of this engagement, and shall make a good-faith effort to achieve the goals. MBEs and WBEs are minority- owned business enterprises and women-owned business enterprises that have been certified or gualified by the School District Office of Small Business Development or have been certified by the City of Philadelphia's current Office of Economic Opportunity ("OEO") [on OEO's Registry of Certified Firms] or former Minority Business Enterprise Council or the Southeastern Pennsylvania Transportation Authority's DBE Program Office, or any other certifying agency designated by the School District in its discretion. A bidder's plan to joint venture with or subcontract to MBEs and WBEs and/or to utilize MBEs and WBEs as sources of supplies, equipment, or services will be considered in evaluation of bidder responsibility. The representations and agreements in this Subparagraph 7.22.1.4 of these General Conditions are material representations of fact upon which reliance was placed when this transaction was entered into. If it is later discovered or determined that the Contractor has not made good faith efforts to comply, within the School District's sole judgment, then the School District may pursue available remedies, including suspension or debarment of the Contractor from future School District work as non-responsible.

(a) The Contractor will consider all bids from potential MBE/WBE joint ventures or subcontractors, and document on forms to be supplied by the School District or the Program Manager, the reasons for not entering into a joint venture or subcontract with a MBE/WBE. If the reason given is that the MBE/WBE price quotation was not competitive, the Contractor agrees to identify the joint venture or subcontractor accepted and to show that the joint venture's or subcontractor's price quotation was for the same work or materials quoted by the MBE/WBE.

(b) Within ten (10) days of the opening of bids, with regard to each joint venture or subcontract with or agreement to purchase supplies from MBE/WBEs, the Contractor will provide the School District with a report naming the MBE/WBE, describing the joint venture or subcontract or purchase agreement, and stating the dollar value of the joint venture or subcontract or purchase agreement.

(c) Where the Contractor proposes to perform the total contract with its own work force without any joint venture or subcontracting, before the Contract is awarded, the Contractor will submit to the School District information sufficient for the School District to determine that:

(1) It is the Contractor's normal business practice to perform all parts of such contracts with its own force; and

(2) The Contractor has the capability to perform all parts of the Contract with its own force without the use of joint ventures or subcontracts.

(d) The Contractor's agreement to meet the requirements of this Subparagraph 7.22.1.4 of these General Conditions is a material representation of fact upon which reliance was placed when this Contract was awarded. If it is later determined that the Contractor has not made good faith efforts to comply, within the School District's sole judgment, then the School District may pursue available remedies, including suspension or debarment of the Contractor from future School District work as non-responsible.

(e) The Contractor's Minority/Woman Owned Business Enterprise (MWBE) Participation Plan ("MWBE Participation Plan") is attached to and hereby incorporated by reference into this Contract. The MWBE Participation Plan shall be enforceable as any other contractual term or condition of this Contract. Sanction for breach of the MWBE Participation Plan may include suspension, cancellation of this Contract and/or debarment from future contracting opportunities with the School District.

7.22.1.5 <u>Liability of Subcontractors.</u> Any Subcontractor of the Contractor under Subparagraphs 7.22.1.1, 7.22.1.2, 7.22.1.3 and 7.22.1.4 of these General Conditions shall have the same responsibility and obligations as the Contractor to comply with the provisions of Subparagraph 7.22.1 of these General Conditions, and shall be subject to the same penalties for failure to comply as set forth in Subparagraph 7.22.1.6 of these General Conditions.

#### 7.22.1.6 Penalties for Failure to Comply.

(a) It is hereby agreed that failure to comply and demonstrate best efforts to comply with the foregoing requirements shall constitute a substantial breach of this Contract.

(b) In the event that the School District determines, after investigation, that the Contractor or Subcontractor, as the case may be, has failed to comply with any provision of Subparagraphs 7.22.1.1, 7.22.1.2, 7.22.1.3 or 7.22.1.4 of these General Conditions, and to demonstrate best efforts to comply, the School District may, in its sole discretion, invoke the termination provisions of the Contract (Article GC-14) or move to disqualify, suspend or debar the Contractor or Subcontractor pursuant to Board Policy No. 621, a copy of which is included in the Bidding Documents.

(c) The Contractor or Subcontractor, as the case may be, shall be given written notice of any determination of non-compliance and opportunity to achieve compliance within a time period to be specified in the notice.

(d) In the event the School District, after a hearing, determines to terminate this Contract, or any Subcontract entered into under this Contract, for noncompliance with and failure to demonstrate best efforts to comply with Subparagraph GC-7.22.1 of these General Conditions, all obligation on the part of the School District's part to perform this Contract shall cease, save only the obligation to pay the Contractor the sums due, including the retained amounts for all articles delivered or work done, or for all articles or equipment for which the Contractor may be liable to the date of such termination.

7.22.2 <u>Preference to Employment of War Veterans.</u> The Contractor, his Subcontractors, or any person acting on behalf of the Contractor or Subcontractors, shall keep and comply with the provisions of the Veterans Preference Act, Act of August 1, 1975, P.L. 233, No. 92 (51 Pa. C.S.A. §7101 <u>et seq</u>.), with amendments therein, giving preference to employment of honorably discharged persons, as more specifically provided therein.

7.22.3 <u>Hiring and Conditions of Employment.</u> The Contractor, his Subcontractors, or any person acting on behalf of the Contractor or Subcontractor, shall abide and be bound by all laws of the Commonwealth of Pennsylvania, the City of Philadelphia and the Federal Government, which may be applicable to this Contract, relating to and regulating the hiring, firing, working hours and any and all other conditions of employment.

## 7.22.4 Wage Rates.

7.22.4.1 The current prevailing minimum wage rates, including contributions for employee benefits, for the respective crafts and classifications as determined by the Secretary of Labor and Industry of the Commonwealth of Pennsylvania ("Pennsylvania Secretary of Labor and Industry") shall be paid to all workers engaged in Work under this Contract. Workers include laborers, mechanics, skilled and semiskilled laborers and apprentices employed by the Contractor or any

Subcontractor and engaged in the performance of services directly upon School District facilities, but do not include material suppliers or their employees who do not perform services at the job site. Apprentices are persons employed and working under a bona fide apprenticeship program, directly related to the particular craft involved in the construction industry and registered with and approved by the Pennsylvania Apprenticeship and Training Council and whose training and employment are in full compliance with the provisions of the Apprenticeship and Training Act (43 P.S. §90.1 et seq.) approved July 14, 1961 (No. 304). The Contractor and his Subcontractors shall pay at least the wage rates as determined in the decision of the Secretary of Labor and Industry to workers engaged in Work under this Contract. The Contractor and his Subcontractors shall comply with the conditions of the Pennsylvania Prevailing Wage Act (43 P.S. §165-1 et seq.) approved August 15, 1961 (No. 442), as amended August 9, 1963 (No. 342), and the Prevailing Regulations (34 PA Code §9.101 et seq.) approved May 23, 1975 issued pursuant thereto, to assure the full and proper payment of said rates.

7.22.4.2 All workers engaged in Work under this Contract shall be paid at least the current prevailing minimum wage rates for their particular classifications. The current prevailing minimum wages rates as determined by the Pennsylvania Secretary of Labor and Industry are included in the Bidding Documents or Contract Documents, and are incorporated by reference herein and made a part of this Contract. These wage rates are the wage rates in effect at the time of the making of this Contract. These wage rates shall not be altered during the period this Contract is in force. There is no requirement to pay wage rates higher than those specified in this Contract, in the event that the Pennsylvania Secretary of Labor and Industry increases the prevailing minimum wage rates during the term of this Contract, unless said increases are included in the Prevailing Minimum Wage Determination.

7.22.4.3 No workers may be employed under this Contract, except in accordance with the classifications set forth in the decision of the Pennsylvania Secretary of Labor and Industry. In the event that additional or different classifications are necessary, the School District shall petition the Pennsylvania Secretary of Labor and Industry for review of the rates and hearings.

7.22.4.4 All workers employed or working under this Contract shall be paid unconditionally, at least once a week, without deduction or rebate, on any account, either directly or indirectly, except authorized deductions, the full amounts due at the time of payment, computed at the wage rates stipulated in this Contract, regardless of whether any contractual relationship exists or the nature of any contractual relationship which may be alleged to exist between the Contractor, any Subcontractor and worker. Nothing in this Contract, the Pennsylvania Prevailing Wage Act or the Prevailing Regulations shall prohibit the payment of more than the current prevailing minimum wage rates as determined by the Pennsylvania Secretary of Labor and Industry to any worker under this Contract.

7.22.4.5 Wages shall be paid without any deductions, except those deductions which are authorized by the Wage Payments and Collection Act (43 P.S. §260.1 <u>et seq</u>.) approved July 14, 1961 (No. 329) and the Regulations of the Department of Labor and Industry of the Commonwealth of Pennsylvania issued pursuant thereto. Employers who are not parties to a contract requiring contributions for employee benefits which the Pennsylvania Secretary of Labor and Industry has determined to be included in the current prevailing minimum wage rate shall pay the monetary equivalent thereof directly to the workers.

7.22.4.6 Apprentices shall be limited to such numbers as shall be in accordance with a bona fide apprenticeship program registered with and approved by the Pennsylvania Apprenticeship and Training Council. Only apprentices whose training and employment are in full compliance with the provisions of the Apprenticeship and Training Act (43 P.S. §90.1 <u>et seq</u>.) approved July 14, 1961 (No. 304) and the Rules and Regulations issued pursuant thereto shall be employed under this Contract. Any worker using the tools of a craft who does not qualify as an apprentice within the provisions herein shall be paid the rate predetermined for journeymen in that particular craft or classification.

7.22.4.7 Payment of compensation to workers for work performed

under this Contract on lump sum basis, or a piece work system, or a price certain for the completion of a certain amount of work, or the production of a certain result shall be deemed a violation of the Pennsylvania Prevailing Wage Act and the Prevailing Regulations, regardless of the average hourly earnings resulting there from.

7.22.4.8 The Contractor and his Subcontractors shall post for the duration of this Contract the wage determination decisions of the Pennsylvania Secretary of Labor and Industry, including the effective date of any changes thereof, in a prominent and easily accessible place or places at the site of the Work and at the place or places used by them to pay workers their wages. The posted notice of wage rates must contain the following information:(1) the name of this Project; (2) the name of the School District; (3) the crafts and classifications of workers listed in the Pennsylvania Secretary of Labor and Industry's current prevailing minimum wage rate determination for this Project; (4) the current prevailing minimum wage rates determined for each craft and classification and the effective date of any changes; (5) a statement advising workers that if they have been paid less than the current prevailing minimum wage rates for their job classification, or if the Contractor or Subcontractor is not complying with the Pennsylvania Prevailing Wage Act or the Prevailing Regulations in any manner whatsoever, they may file a protest in writing with the Pennsylvania Secretary of Labor and Industry within three (3) months of the date of the occurrence, objecting to the payment to the Contractor or Subcontractor to the extent of the amount or amounts due or to become due to them as wages for work performed under this Contract; and (6) a statement advising workers that any worker paid less than the wage rate specified in this Contract has a civil right of action for the difference between the wages paid and the wages stipulated in this Contract, and that this right of action must be exercised within six (6) months from the date of the occurrence.

7.22.4.9 The Contractor and his Subcontractors shall keep an accurate record showing the name, craft or classification, number of hours worked per day, and the actual hourly rate of wage paid, including employee benefits, to each worker employed by them in connection with this Contract. This record shall include the following information: (1) the name, address and social security number of each worker; (2) the craft, if applicable, the classification within each craft, and any other classification, including apprenticeship, at which each worker worked; (3) the number of hours in each day, specified by actual calendar date, during which each worker worked; and (4) the number of hours in each day in which each worker worked at different crafts or classifications, if such worker worked in more than one craft or classification for which different wage rates were payable. This record shall include any deductions from each worker. Time cards of employees, as well as the original signed indentures for each apprentice and the approvals of the Pennsylvania Apprenticeship and Training Council shall be kept and preserved with this record. This record shall be preserved for two (2) years from the date of final payment under this Contract. This record shall be open at all reasonable hours to the inspection of the School District and the Pennsylvania Secretary of Labor and Industry or his duly authorized representatives.

7.22.4.10 The Contractor and his Subcontractors shall file written statements each week, and final written statements at the conclusion of the Work on this Contract, with the School District, under oath and on forms acceptable to the Pennsylvania Secretary of Labor and Industry, certifying that all workers have been paid wages in strict conformity with the provisions of this Contract, or if any wages remain unpaid, setting forth the amount of wages due and owing to each worker. The School District shall not make any payments to the Contractor under this Contract until it receives these statements.

7.22.4.11 In the event that the School District discovers that the Contractor or his Subcontractors have failed to pay the wage rates specified in this Contract to any worker, the School District shall notify the Pennsylvania Secretary of Labor and Industry, in writing, of such failure.

7.22.4.12 The School District shall deduct and withhold from payments due to the Contractor under this Contract any unpaid wages admitted to be due by the Contractor to his workers in his certified statements, if directed to do so by the Pennsylvania Secretary of

Labor and Industry. The School District may pay these unpaid wages directly to the workers. Such payment shall discharge the Contractor's obligation to the workers to the extent of the amount of the unpaid wages.

7.22.4.13 The School District shall terminate the Contractor's right to proceed with his work under this Contract, if directed to do so by the Pennsylvania Secretary of Labor and Industry

7.22.4.14 It shall not constitute a failure to pay the prevailing minimum wage rates for the work of a particular craft or classification under this Contract when the Contractor and his Subcontractors have paid the prevailing minimum wage rates determined for the specific craft or classification, and one or more bona fide craft unions contend that the work should have been assigned to their members instead of the members of the specific craft to whom it was assigned or by whom it was performed.

7.22.4.15 The provisions of the Pennsylvania Prevailing Wage Act and the Prevailing Regulations are herein incorporated by reference in this Contract.

7.22.4.16 The provisions herein shall apply to all Work performed on this Contract by the Contractor and his Subcontractors.

7.22.4.17 The Contractor shall insert all of the provisions contained herein and any other provisions as may be required in each of his Subcontracts.

- 7.22.5 <u>Construction Project Partnership Agreement</u>. (RESERVED)
- 7.22.6 <u>Collective Bargaining Requirement</u>. (RESERVED).
- 7.22.7 <u>Public Works Employment Verification</u>.

This Contract is covered by the Public Works Employment Verification Act, 43 P.S. §§ 167.1 through 167.11, which requires all Contractors and Subcontractors performing work on School District public works projects, under School District public works contracts executed after January 1, 2013, to utilize the Federal Government's E-Verify system to ensure that all employees performing work on School District public works projects are authorized to work in the United States. All Contractors and Subcontractors performing work on School District public works projects, under School District public works contracts executed after January 1, 2013, shall comply with the requirements of the Public Works Employment Verification Act, 43 P.S. §§ 167.1 through 167.11, and the policy guidelines of the Department of General Services of the Commonwealth of Pennsylvania for the scope, administration and enforcement of the Public Works Employment Verification Act, 4 Pa. Code §§ 66.1 through 66.9.

7.22.7.1 <u>Definitions</u>.

(a) "Contractor" shall mean the contractor that provides work under a School District public works contract.

(b) "Department" shall mean the Department of General Services of the Commonwealth of Pennsylvania.

(c) "Employee" shall mean an individual hired by the Contractor or Subcontractor after January 1, 2013 for whom the Contractor or Subcontractor is required by law to file a Form W-2 with the Internal Revenue Service.

(d) "EVP" or "EVP system" or "E-Verify system" shall mean the E-Verify Program operated by the United States Department of Homeland Security that electronically verifies employment eligibility for employees.

(e) "Form" shall mean the Public Works Employment Verification Form.

(f) "Public body" shall mean the Commonwealth of Pennsylvania, its political subdivisions, authorities created by the General Assembly of the Commonwealth and instrumentalities or agencies of the Commonwealth.

(g) "Public work" shall mean the construction, reconstruction, demolition, alteration or repair work, other than maintenance work, done under contract and paid for in whole or in part out of the funds of a public body, when the estimated cost of the total project is in excess of \$25,000. The term "Public work" does not include work performed under a manpower or rehabilitation training program.

(h) "School District public works contract" shall mean a contract for construction, reconstruction, demolition, alteration and/or repair work on a School District project that exceeds the total cost of \$25,000.

(i) "School District public works project" shall mean a School District construction, reconstruction, demolition, alteration and/or repair project that exceeds the total cost of \$25,000.

(j) "Secretary" shall mean the Secretary of General Services of the Commonwealth of Pennsylvania.

(k) "Subcontractor" shall mean the person, other than a natural person, regardless of its tier, including but not limited to a staffing agency, which performs work for the Contractor under a School District public works contract. The term "Subcontractor" shall not include persons that supply materials for the School District public works project.

(I) "Willful" shall mean action or conduct undertaken intentionally or with reckless disregard for or deliberate ignorance of the requirements and obligations established under the Public Works Employment Verification Act.

## 7.22.7.2 <u>General Requirements for Contractors and Subcontractors</u>.

(a) All Contractors and Subcontractors shall participate in the EVP system and shall utilize the EVP system to verify the employment eligibility of each new employee hired after January 1, 2013.

(b) All Contractors and Subcontractors performing work under a School District public works contract shall submit a completed Public Works Employment Verification Form to the School District to ensure compliance with the Public Works Employment Verification Act.

(c) All Contractors and Subcontractors shall maintain documentation of continued compliance with the Public Works Employment Verification Act by utilizing the EVP system for new employees hired throughout the duration of the School District public works contract.

(d) <u>Discrimination Prohibited</u>. The Contractor or Subcontractor shall not discriminate against an employee on the basis of race, ethnicity, color or national origin in conducting the verification required by the Public Works Employment Verification Act.

- 7.22.7.3 Specific Requirements for Contractors.
  - (a) As a precondition to the award and execution of a School District public

works contract, the Contractor shall submit a completed Public Works Employment Verification Form to the School District. Attached is a copy of the Public Works Employment Verification Form. This form may also be downloaded at the website of the Department of General Services of the Commonwealth of Pennsylvania at <u>www.dgs.pa.gov</u> at the following website link:

<u>https://www.dgs.pa.gov/Design-and-Construction/Public-Works-Employment-Verification/Pages/default.aspx</u> (click on "Public Works Employment Verification Form" on webpage).

The Form shall be signed by an authorized representative of the Contractor. The authorized representative of the Contractor shall have sufficient knowledge and authority to make the representations and certifications in the Form.

The completed Form shall be submitted by the Contractor with the Bid Documents or Contract Documents. The School District shall retain the Form submitted by the Contractor for the duration of the School District public works contract.

(b) During the duration of the School District public works contract, a new employee hired by the Contractor, regardless of whether he will be working onsite or offsite of the School District public works project, shall be verified by the Contractor within five (5) business days of his start date.

(c) All Subcontracts between the Contractor and its Subcontractors are required to contain notification of the applicability of the Public Works Employment Verification Act, information regarding the use of the EVP system, and reference to the Department's website at <u>www.dgs.state.pa.us</u> to obtain a copy of the Form. All Subcontracts between the Contractor and its Subcontractors shall include all of the provisions contained in General Conditions, Subparagraph 7.22.7.

#### 7.22.7.4 Specific Requirements for Subcontractors.

(a) Before beginning either onsite or offsite work on a School District public works project, each Subcontractor shall submit a completed Public Works Employment Verification Form to the School District and the Contractor. Attached is a copy of the Public Works Employment Verification Form. This form may also be downloaded at the website of the Department of General Services of the Commonwealth of Pennsylvania at <u>www.dgs.state.pa.us</u> at the following website link: <u>https://www.dgs.pa.gov/Design-and-Construction/Public-Works-Employment-Verification/Pages/default.aspx</u> (click on "Public Works Employment Verification Form" on webpage).

The Form shall be signed by an authorized representative of the Subcontractor. The authorized representative of the Subcontractor shall have sufficient knowledge and authority to make the representations and certifications in the Form.

The School District shall retain the Form submitted by the Subcontractor for the duration of the School District public works contract.

(b) During the duration of the School District public works contract, a new employee hired by the Subcontractor, regardless of whether he will be working onsite or offsite of the School District public works project, shall be verified by the Subcontractor within five (5) business days of his start date.

(c) All Subcontracts between the Subcontractor and its Subcontractors are required to contain notification of the applicability of the Public Works Employment Verification Act, information regarding the use of the EVP system, and reference to the Department's website at <u>www.dgs.state.pa.us</u> to obtain a copy of the Form. All Subcontracts between the Subcontractor and its Subcontractors shall include all of the provisions contained in General Conditions, Subparagraph 7.22.7.

7.22.7.5 <u>Violations</u>.

(a) It is a violation of the Public Works Employment Verification Act for a Contractor or Subcontractor on a School District public works project to:

(1) Fail to verify the employment eligibility of a new employee hired after January 1, 2013 through the EVP system in accordance with Federal law and the Public Works Employment Verification Act.

School District.

(2) Not provide the Public Works Employment Verification Form to the

(3) Make a false statement or misrepresentation with respect to completing or submitting the Public Works Employment Verification Form to the School District.

#### 7.22.7.6 Enforcement.

(a) The Department of General Services of the Commonwealth of Pennsylvania will enforce the Public Works Employment Verification Act through investigations, audits, sanctions and civil penalties in accordance with the Department's policy guidelines.

(b) <u>Investigations of complaints</u>. The Department will accept, review and investigate timely and credible complaints of a violation of the Public Works Employment Verification Act that are filed on the Complaint Form posted on the Department's website at the following website link: <u>https://www.dgs.pa.gov/Design-and-Construction/Public-Works-Employment-Verification/Pages/default.aspx</u> (click on "Public Works Employment Verification Complaint Form" on webpage).

A complaint must contain sufficient information to enable the Department to investigate the allegation. The School District, all Contractors and all Subcontractors on the School District's public works project shall cooperate with the Department during the investigation of a complaint.

(c) <u>Audits</u>. The Department will conduct complaint-based and random audits of Contractors and Subcontractors performing work under a School District public works contract to ensure compliance with the Public Works Employment Verification Act. The School District, all Contractors and all Subcontractors on the School District's public works project shall cooperate with the Department during an audit.

(d) <u>Sanctions</u>. If the Department's investigation determines that the Contractor or Subcontractor failed to verify an employee through the use of the EVP system in accordance with the Public Works Employment Verification Act, the Department will issue sanctions as follows:

(1) <u>First violation</u>. The Department will issue a warning letter to the Contractor or Subcontractor detailing the violation. This letter will be posted on the Department's E-Verify website at <u>www.dgs.state.pa.us</u>. A violation by the Contractor or Subcontractor that occurs 10 years or more after a prior violation will be deemed to be a first violation for purposes of sanctions.

(2) <u>Second violation</u>. The Department will initiate debarment proceedings against the Contractor or Subcontractor. Once final, the Contractor or Subcontractor will be debarred from public work for 30 days. Once final, these proceedings will prevent the Contractor or Subcontractor from submitting a bid or being awarded a contract or subcontract on a public work contract in the Commonwealth of Pennsylvania (including School District public works contracts) for 30 calendar days from the date of debarment.

(3) <u>Third and subsequent violation</u>. The Department will initiate debarment proceedings against the Contractor or Subcontractor. Once final, the Contractor or Subcontractor will be debarred from public work for not less than 180 days and not more than 1 year. Once final, these proceedings will prevent the Contractor or Subcontractor from submitting a bid or being awarded a contract or subcontract on a public work contract in the Commonwealth of Pennsylvania

(including School District public works contracts) for not less than 180 days and not more than 1 year from the date of debarment.

(4) <u>Willful violation</u>. If the Department investigates and forms a reasonable belief that there has been a willful violation of the Public Works Employment Verification Act, the Secretary of General Services of the Commonwealth of Pennsylvania will file a petition in Commonwealth Court seeking the Court to issue a rule to show cause why the Contractor or Subcontractor did not engage in a willful violation of the Public Works Employment Verification Act. If the Court finds that there was a willful violation, the Department will petition to have the Contractor or Subcontractor debarred from public work or public work contracts for 3 years from the date of the Court's determination.

(5) <u>Assessing sanctions</u>. Violations committed by the Contractor or Subcontractor on a School District public works project involving a single School District public works contract shall be considered a single violation despite the number of employees that are the subject of the violations.

(e) <u>Civil Penalties</u>. If the Secretary of General Services of the Commonwealth of Pennsylvania or a designee makes a written determination that the violation is for failing to submit a complete Public Works Employment Verification Form or making a false statement or misrepresentation in the Form, the Department will assess a civil penalty of not less than \$250 and not more than \$1,000 for each violation. The amount of the penalty is at the Department's discretion.

(f) <u>Notice and Appeal</u>. Sanctions or civil penalties imposed by the Department, other than violations found to be willful, are subject to the notice, appeal and other provisions of 2 Pa.C.S. (relating to administrative law and procedure).

#### 7.22.7.7 Protection from Retaliation.

(a) It shall be unlawful for the Contractor or Subcontractor on a School District public works project to discharge, threaten or otherwise retaliate or discriminate against an employee regarding compensation or other terms or conditions of employment because the employee:

(1) Participates in an investigation, hearing or inquiry held by the Secretary or any other governmental authority under the Public Works Employment Verification Act; or

(2) Reports or makes a complaint regarding the violation of the Public Works Employment Verification Act to the Contractor or Subcontractor or to any governmental authority.

(b) An employee who suffers retaliation or discrimination in violation of the Public Works Employment Verification Act may bring an action in a court of common pleas in accordance with established civil procedures of the Commonwealth. The action must be brought within 180 days from the date the employee knew of the retaliation or discrimination.

7.22.7.8 <u>Good Faith Immunity</u>. The Contractor or Subcontractor that relies in good faith on EVP procedures to verify employment eligibility of new employees under the Public Works Employment Verification Act shall be immune from the sanctions authorized under the Public Works Employment Verification Act and shall have no liability to an individual who is not hired or who is discharged from employment in the event that incorrect information has been provided to the Contractor or Subcontractor. The Contractor or Subcontractor that can produce written acknowledgment provided by an applicable Federal agency of use of EVP is considered to have acted in good faith.

7.22.7.9 <u>Contractor or Subcontractor Liability</u>. Nothing in the Public Works Employment Verification Act or this General Conditions, Subparagraph 7.22.7 may be construed to render the Contractor liable for the action of a Subcontractor or the Subcontractor liable for an action of another Subcontractor.

## GC-7.23 ASSIGNMENT OF ANTITRUST CLAIMS

7.23.1 The Contractor and the School District recognize that as an actual economic practice, overcharges by the Contractor's suppliers resulting from violations of State or Federal antitrust laws are in fact borne by the School District. As a part of the consideration for the award of this Contract and intending to be legally bound, the Contractor assigns to the School District all rights, title and interest in and to any claims the Contractor now has or may hereafter acquire under State or Federal antitrust laws relating to the goods or services which are the subject of this Contract.

## GC-7.24 PROHIBITION AGAINST BID-RIGGING

7.24.1 The School District, in accordance with the Antibid-Rigging Act of May 15, 1998, P.L. 358, No. 57, of the Commonwealth Procurement Code (62 Pa.C.S.A. §4501 <u>et seq</u>.), hereby advises and gives notice to all prospective bidders and contractors that full and absolute compliance with such legislation will be demanded by the School District, and each successful bidder may be required to execute a sworn affidavit certifying full compliance with and disclosure pursuant to said Act.

## GC-7.25 NATIONAL ELECTRIC CODE COMPLIANCE

7.25.1 All equipment using electrical energy or connected to the electrical system shall be wired in accordance with the established standards of the National Electrical Code as recommended by the National Fire Protection Association.

7.25.2 A Certificate of Approval, in duplicate, shall be submitted by the Contractor. Electrical components of the equipment shall be listed by the Underwriters' Laboratories for the appropriate service.

7.25.3 To facilitate inspection by an authorized agency of the National Board of Fire Underwriters, the equipment manufacturer shall be prepared to substantiate the UL approval of internal characteristics, the character, quality, and quantity of the materials which will be required, the prints and specifications of other Contractors, the character of equipment and facilities needed preliminary to and during the prosecution of the Work, the general and local conditions, and all other matters which can in any way affect the Work under this Contract. No verbal agreement or conversation with any officer, agent, or employee of the School District, the Program Manager, the Construction Manager or the Architect/Engineer, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained. Failure to comply with any or all of the above requirements shall not relieve the Contractor from the responsibility of properly estimating the requirements or costs of successful completion of the Work nor from the responsibility for the faithful performance of the provisions of this Contract.

## GC-7.26 MADE IN U.S.A.

7.26.1 All aluminum and steel products used on this Project must be manufactured in the United States of America.

7.26.2 All ferrous metal products used on this Project must comply with the requirements of the Steel Products Procurement Act (73 P.S. §1881 <u>et seq</u>., as amended).

7.26.3 The Contractor shall complete and submit to the School District or Program Manager the appropriate Steel Origin Certification on forms ST1 to ST4, provided with this Contract for all ferrous metal products prior to incorporating them into the Project, attached hereto as Exhibit "B" to General Conditions.

7.26.4 The Contractor shall be responsible for procuring and submitting appropriate Steel Origin

Certifications from his Subcontractors or fabricators, as applicable.

7.26.5 The School District shall enforce the Steel Products Procurement Act by means of removal and replacement of non-complying steel products, at the sole expense of the Contractor.

#### GC-7.27 REFERENCE STANDARDS AND INDUSTRY SPECIFICATIONS

7.27.1 Any material or operation specified by reference to published specifications of a manufacturer, a society, an association, a code, or other published standard, shall comply with requirements of the listed document which is current on the date of receipt of the proposal. In case of a conflict between the referenced document and Project Specifications, the one having more stringent requirements shall govern.

7.27.2 The Contractor, when requested or noted elsewhere in the Contract Documents, shall furnish an affidavit from the manufacturer certifying that materials or products delivered to the job meet requirements specified.

## ARTICLE GC-8 TIME

#### GC-8.1 DEFINITIONS

8.1.1 Unless otherwise provided, the Contract Time is the period of time allotted in the Contract Documents for Substantial Completion of the Project as defined in Subparagraph 8.1.3 of these General Conditions, including authorized adjustments thereto.

8.1.2 The Date of Commencement of the Work is the date established in a Notice to Proceed.

8.1.3 The Date of Substantial Completion of the Project or designated portion thereof is the date certified by the Architect/Engineer when construction is sufficiently complete, in accordance with the Contract Documents, for the use for which it is intended so the School District can fully occupy and utilize the Project or designated portion thereof for the use for which it is intended, with all of the Project's parts and systems operable as required by the Contract Documents and where all Work is complete, accessible, operable, and usable by the School District for the School District's full use. Only incidental corrective work under "punchlists" and final cleaning (if required) beyond cleaning needed for the School District's full use may remain for Final Completion of the Project.

8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically designated.

#### GC-8.2 PROGRESS AND COMPLETION

8.2.1 All time limits stated in the Contract Documents are of the essence. By executing the Contract, the Contractor confirms that he is capable of properly completing the Work within the Contract Time.

8.2.2 The Contractor shall begin the Work on the Date of Commencement referred to in Subparagraph 8.1.2 of these General Conditions. The Contractor shall carry the Work forward expeditiously with adequate forces and shall achieve Substantial Completion and Final Completion within the time limits stated in Specifications, Division 1, General Requirements, Section 01300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements".

8.2.3 The Contractor shall Substantially Complete the Work of the Project within the allotted number of days from Notice to Proceed or by the date stated in the Specifications, Division 1, General Requirements, Section 01300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements", and shall Finally Complete the Work of the entire Project within the allotted number of days from Notice to Proceed or by the date stated in Specifications, Division 1, General Requirements, Section 01300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements, Section 01300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements", unless modified by authorized extension of time. The Contractor shall also meet any project milestone or interim completion dates stated in Specifications, Division 1, General Requirements, Section 01300 entitled "Time of Completions, Division 1, General Requirements, Section 01300 entitled is stated in Specifications, Division 1, General Requirements, unless modified by authorized extension of time. The Contractor shall also meet any project milestone or interim completion dates stated in Specifications, Division 1, General Requirements, Section 01300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements", unless modified by authorized extensions of time.

## GC-8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 Except as otherwise specifically provided under Paragraph GC-12.1 (Changes in the Work), <u>the</u> <u>Contractor shall not be entitled to any increase in the Contract Sum or any payment or</u> <u>compensation of any kind</u> from the School District, the PM/CM, or the Architect/Engineer for direct, indirect, or impact damages, including but not limited to costs of acceleration or for loss of revenue, overhead or profit, arising because of hindrance, interference, disruption, or delay from any cause whatsoever, whether such hindrance or delay be reasonable or unreasonable, foreseeable or unforeseeable, or avoidable or unavoidable. Instead, as his sole right and remedy with respect to such hindrance, interference, disruption, or delay (other than due solely to fraud or bad faith as aforedescribed), the Contractor shall be <u>entitled to extensions in the Contract Time</u>.

The Contract Time shall be adjusted only for Changes in the Work (pursuant to Paragraph 8.3.2 GC-12.1 of these General Conditions), School District's Right to Stop Work (pursuant to Paragraph GC-2.5 of these General Conditions) and excusable delays (pursuant to Subparagraph 8.3.3 of these General Conditions). In the event the Contractor requests an extension of the Contract Time, he shall furnish such justification and supporting evidence as the School District may deem necessary for a determination as to whether the Contractor is entitled to an extension of time under the provisions of this Contract. The School District, after receipt of such justification and supporting evidence, and after consultation with the PM/CM, the Architect/Engineer, shall make its findings of fact and decision thereon in the School District's sole discretion, and shall advise the Contractor in writing thereof, and such decision of the School District shall be final and binding upon the Contractor and shall not be subject to further appeal or determination. If the School District finds that the Contractor is entitled to an extension of the Contract Time, the School District's determination as to the total number of days' extension shall be based upon the currently approved Project Schedule and on all data relevant to the extension. Such data shall be included in the next monthly updating of the Project Schedule. The Contractor acknowledges and agrees that actual delays (due to said changes, suspension of Work or excusable delays) in activities which, according to the schedule, do not affect the Contract Time, or do not have any effect upon the Contract Time, shall not be the basis for a change therein.

8.3.3 Subject to other provisions of this Contract, <u>the Contractor may be entitled to an extension of</u> <u>the Contract Time (but no increase in the Contract Sum)</u> for delays, disruptions, interferences, or hindrances arising from unforeseeable causes beyond the control and without the fault or negligence of the Contractor or his Subcontractors as follows:

8.3.3.1 Labor strikes or disputes (including strikes or disputes affecting transportation), that do, in fact, directly and critically affect the progress of the Work. In addition, an extension of the Contract Time shall not be allowed if a strike or dispute applies to labor or material that the Contractor can obtain from other sources.

8.3.3.2 Acts of God or natural disaster (<u>e.g.</u>, tornadoes, fires, hurricanes, blizzards, earthquakes, typhoons, or floods) that damage completed Work or stored materials.

8.3.3.3 The Contract Time shall not be extended due to normal inclement weather. Unless the Contractor can substantiate to the satisfaction of the School District that there was greater than normal inclement weather considering the full term of the Contract Time using a ten-year average of accumulated record mean values from climatological data compiled by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration for the locale of the Project and that such alleged greater than normal inclement weather actually delayed the Work or portions thereof which had an effect upon the Contract Time, the Contractor shall not be entitled to an extension of time. If the total accumulated number of calendar days lost due to inclement weather, from the start of the Work until Substantial Completion exceeds the total accumulated number to be expected for the same period, the time for completion shall be extended by the number of calendar days needed to include the excess number of calendar days lost.

8.3.3.4 Acts of war or the public enemy, acts of civil disturbance; court order, change in governmental regulation; acts of the State, Federal, or Local government in its sovereign capacity (including but not limited to government's enactment of laws, statutes, ordinances, orders, rules, regulations, policies or procedures after commencement of the Contractor's work on the Project that affect or impact the Contractor's progress or performance of work on the Project), delay or failure by third parties to provide critical goods or services that the Contractor cannot obtain from other sources; and acts of another Contractor in the performance of a contract with the School District relating to the Project, which in fact directly affect progress of the Work and can be so substantiated by the Contractor.

8.3.3.5 Delay in obtaining Project site access due to problems or delays in the land acquisition process that are not caused by the School District or the enactment by the State, Federal or Local government in its sovereign capacity of laws, statutes, ordinances, orders, rules, regulations, policies or procedures after commencement of the Contractor's work on the Project that affect or impact the Contractor's progress or performance of work on the Project.

8.3.3.6 Delay in obtaining Project site access due to failure or refusal of any adjoining property owner to give necessary permission for required construction work or necessary entry onto adjoining property to perform required construction work.

8.3.3.7 Delay or failure of governmental or regulatory authorities having jurisdiction over the Project and the Work to give necessary or required approvals or documents for Project site access, construction work, or remediation of known, unknown, differing, or unforeseen Project site conditions or environmental hazards or conditions (including but not limited to delay or failure attributed to the enactment by governmental or regulatory authorities of laws, statutes, ordinances, orders, rules, regulations, policies or procedures after commencement of the Contractor's work on the Project that affect or impact the Contractor's progress or performance of work on the Project).

8.3.4 All claims for extensions of time shall be made in writing to the School District and the PM/CM no more than seven (7) calendar days after the beginning of the delay (or disruption, hindrance, or interference, if applicable); otherwise all such claims are waived by the Contractor. In the case of a continuous cause of delay (or disruption, hindrance, or interference, if applicable), only one (1) written claim is necessary. The Contractor shall provide an estimate of the probable effect of such delay (or disruption, hindrance, or interference, if applicable) on the progress of the Work.

8.3.5 If no schedule or agreement is made stating the dates upon which written interpretations as set forth in Subparagraph 3.2.8 of these General Conditions shall be furnished, then no claim for delay (or disruption, hindrance, or interference, if applicable) shall be allowed on account of failure to furnish such interpretations until fifteen (15) calendar days after demand is made for them, and not then unless such claim is reasonable.

## GC-8.4 RESPONSIBILITY FOR COMPLETION

8.4.1 The Contractor shall furnish such manpower, materials, facilities, and equipment and shall work such hours, including night shifts, overtime operations and Sunday and holidays, as may be necessary, to ensure the prosecution and completion of the Work in accordance with the approved and currently updated Project Schedule. If the Work actually in place falls behind the currently updated and approved Project Schedule, and it becomes apparent from the current schedule that the Work will not be completed within the Contract Time, and the School District determines that the Contractor is responsible for such schedule slippage, the Contractor agrees that he will, as necessary, take some or all of the following actions, <u>at no additional cost to the School District</u>, to improve his progress:

8.4.1.1 Increase manpower in such quantities and crafts as will substantially eliminate, in the judgment of the School District, the backlog of the Work;

8.4.1.2 Increase the number of working hours per shift, shifts per working day, working days per week, the amount of equipment, or any combination of the foregoing, sufficiently to substantially eliminate, in the judgment of the School District, the backlog of the Work, and, in the event such increase in working hours per shift, shifts per working day or working days per week requires additional custodial coverage, such cost shall be borne by the Contractor, and the School District shall have the right to retain such cost from payments due the Contractor; and

8.4.1.3 Reschedule activities to achieve maximum practical concurrence of accomplishment of activities. In addition, the School District may require the Contractor to submit a revised schedule demonstrating his program and proposed plan to make up the lag in scheduled progress

and to ensure completion of the Work within the Contract Time. If the School District finds the proposed plan not acceptable, he may require the Contractor to submit a new plan. If the actions taken by the Contractor on the second proposed plan are not satisfactory, the School District may require the Contractor to take any of the actions set forth in this Paragraph GC-8.4, <u>without additional cost to the School District</u>, to make up the lag in scheduled progress.

8.4.2 Failure of the Contractor to substantially comply with these requirements may be considered grounds for a determination by the School District, pursuant to Paragraph GC-14.3 of these General Conditions, that the Contractor is failing to prosecute the Work with such diligence as will ensure its completion within the time specified.

8.4.3 This Paragraph GC-8.4 shall apply both when work is delayed and when work is accelerated on the Project.

## GC-8.5 LIQUIDATED DAMAGES

8.5.1 Upon failure by the Contractor to achieve Substantial Completion within the time specified in this Article GC-8 from the Date of Commencement as set forth in the Notice to Proceed, the Contractor shall pay to the School District, as liquidated damages and not as a penalty, the sum of One Thousand Dollars (\$1,000.00) per day for each consecutive calendar day of delay until such time as Substantial Completion of the Work is achieved.

8.5.2 In addition, the Contractor shall be as responsible for and shall pay for the cost of completion of construction of the Work, as well as for any and all additional charges by the PM/CM, the Architect/Engineer and any other consultants to the School District relating to the Contractor's failure to achieve Substantial Completion on a timely basis.

8.5.3 The Contractor and School District agrees that the amounts so fixed herein as liquidated damages are reasonable forecasts of just compensation for the harm that will be caused the School District by the Contractor's breach.

## ARTICLE GC-9 PAYMENTS AND COMPLETION

#### GC-9.1 CONTRACT SUM

9.1.1 The Contract Sum is stated in the School District/Contractor Agreement and, including authorized adjustments thereto, is the total amount payable by the School District to the Contractor for the performance of the Work under the Contract Documents.

#### GC-9.2 APPLICATIONS FOR PAYMENT

9.2.1 Prior to the date for each Progress Payment established elsewhere in the Contract Documents, the Contractor, in accordance with Supplementary Conditions 23 entitled "Schedules and Reports", shall submit to the PM/CM, the Architect/Engineer, an itemized Application for Payment, notarized by the Contractor, supported by such data substantiating the Contractor's right to payment, as the School District may require, and reflecting retainage, if any, as provided in Subparagraph 9.2.2 of these General Conditions.

9.2.2 Retainage. The School District shall have the right, but not the obligation, to reduce and/or release retainage held on any individual line item delineated on the Contractor's approved Detailed Cost Breakdown upon the Contractor's satisfactory completion and the School District's formal acceptance of said item. The School District of Philadelphia is a "first class school district" under the Pennsylvania Intergovernmental Cooperation Authority Act for Cities of the First Class (known as "PICA Act"), Act of June 5, 1991, P.L. 9, No. 6 (53 P.S. §12720.104), and therefore the following provisions of the Commonwealth Procurement Code. Part II. General Procurement Provisions, Chapter 39. Contracts for Public Works, (62 Pa.C.S.A. §§3938(b)(2)&(4)), do not apply to the School District of Philadelphia: (1) Subchapter C. Retainage, §3921. Retainage; (2) Subchapter C. Retainage, §3922. Payment of retainage to subcontractors; and (3) Subchapter E. Substantial/Final Payment, §3941. Substantial/final payment under contract. The School District shall retain ten percent (10%) of the amount of all Progress Payments until thirty (30) calendar days after the Work is finally completed and accepted. Notwithstanding the foregoing, at such time that the Contractor determines that he has completed fifty percent (50%) of his Work under the Contract, he shall notify the School District, the PM/CM and his Surety in writing of this fact and upon the School District's verification of such completion, said retainage then held may be reduced by one-half (1/2), at the School District's sole discretion, provided the Contractor is making satisfactory progress and there exists no other specific cause or reason for withholding additional sums. In the event the School District decides to reduce the retainage then held by one-half (1/2), thereafter, the sum or sums withheld on each Progress Payment shall be five percent (5%) of the value of the completed Work as based upon the Certificate of Payment. Subsequent to the reduction in retainage, the School District may (at its sole discretion) reinstitute the full ten percent (10%) retainage if it is determined that the Contractor is behind schedule, or is not prosecuting the Work with his best possible efforts, or is not strictly adhering to directives issued by the School District, the PM/CM or the Architect/Engineer.

9.2.3 Payments may be made by the School District, at its discretion, on account of materials or equipment not incorporated in the Work but delivered to and stored by the Contractor at the Project site, in accordance with the terms of the Contract Documents. Payments for stored materials or equipment shall only be considered upon submission by the Contractor of satisfactory evidence that he has acquired title to such materials or equipment, that it will be utilized in the Work under this Contract, and that it is satisfactorily stored, protected, and insured in accordance with the terms of the Contract Documents.

9.2.4 The Contractor warrants and guarantees herewith that title to all Work, materials, and equipment covered by an Application for Payment shall pass to the School District, either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests, or encumbrances, hereinafter referred to in this Article GC-9 as "liens"; and that no Work, materials, or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing Work at the Project site or furnishing materials and

equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

9.2.5 Applications for Payment shall be exclusive of state or local sales, use or gross receipts taxes, and federal excise taxes. The School District's Pennsylvania Sales Tax Blanket Exemption Number is 76-51500-1; its Federal Tax Identification Number is 23-6004102; and its Federal Excise Tax Number is 23-63-0021-K.

## GC-9.3 CERTIFICATES FOR PAYMENT

9.3.1 The Architect/Engineer, after receipt of the Contractor's notarized Application for Payment, shall, within the time set forth in the Specifications, Division 1 General Requirements, Section 01300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements", either certify and approve the pay requests, after consultation with the School District and the PM/CM for such amount as the School District determines is properly due, or notify the Contractor in writing of his reasons for withholding a Certificate of Payment as provided in Paragraph GC-9.5 of these General Conditions within seven (7) calendar days after receipt of the Contractor's Application for Payment. If the Contractor's Application for Payment is filled out incorrectly or incompletely, or if there is any other defect or impropriety therein, the School District shall notify the Contractor's Application for Payment. The School District shall pay the amount actually incurred on the due date to the Contractor.

9.3.2 The submission and approval of the Project Schedule and monthly updates thereof as required by the Specifications, Division 1 General Requirements, Section 01300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements" shall be an integral part and basic element of the Application for Payment upon which progress payment shall be made. The Contractor shall be entitled to progress payments only as determined from the currently approved and updated Project Schedule.

9.3.3 The signing of a Certificate of Payment shall constitute a representation by the Architect/Engineer to the School District and the PM/CM that, based upon his inspections at the Project site, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. However, by signing a Certificate for Payment, the PM/CM or the Architect/Engineer shall not certify that he has made an examination to ascertain how or for what purpose the Contractor has used the monies previously paid on account of the Contract Sum.

## GC-9.4 PROGRESS PAYMENTS

9.4.1 After a Certificate for Payment has been issued and has received all necessary approvals in the organization of the School District, the School District shall make payment in the manner provided in the Contract Documents.

9.4.2 The Contractor shall pay each Subcontractor (including suppliers, laborers, and materialmen) performing labor or furnishing material for the Work promptly, but in any event within fourteen
(14) calendar days after receipt of payment from the School District out of the amount paid to the Contractor on account of the Work of such Subcontractor, supplier, laborer, or materialman, the amount to which said Subcontractor is entitled, reflecting the percentage actually retained, if any, from payments to the Contractor on account of such Work, in accordance with the Contractor and Subcontractor Payment Act, Act of February 17, 1994, P.L. 73, No. 7 (73 P.S. §501 et seq.). The Contractor shall, by an appropriate agreement with each Subcontractor, also require each Subcontractor to make payments to his Sub-subcontractors in similar manner.

9.4.3 The School District may, on request and at its discretion, furnish to any Subcontractor, if practicable, information regarding the percentages of completion or the amounts applied for by the Contractor, and the action taken thereon by the PM/CM and the Architect/Engineer, on account of Work done by such Subcontractor.

9.4.4 Neither the School District nor the PM/CM nor the Architect/Engineer shall have any obligation to pay or to see to the payment of any monies to any Subcontractor, except as may otherwise be required by law.

9.4.5 No Certificate for Payment, nor any progress payment, nor any partial or entire use or occupancy of the Project by the School District, shall constitute an acceptance of any Work which is not in accordance with the Contract Documents.

The Mechanics' Lien Law, Act of August 24, 1963, P.L. 1175, No. 497 (49 P.S. §1101 et seq.) 9.4.6 prohibits the filing of mechanics' liens on School District construction projects. The Contractor therefore agrees to keep the Work and the Project site on which Work is to be performed, free and clear of all liens and claims of liens on materials furnished pursuant to the Contract Documents. The Contractor hereby waives any right he may have in connection with the Work to file any liens, mechanics or otherwise. Notwithstanding anything to the contrary contained in the Contract Documents, if any such lien is filed, or there is any reason to believe that any lien may be filed at any time during the progress of the Work or within the duration of this Contract, the School District may refuse to make any payment otherwise due the Contractor, or withhold from any payment due the Contractor, a sum sufficient in the opinion of the School District to pay all obligations and expenses necessary to satisfy such lien or claim and completely indemnify the School District against any such action or claim, unless and until the Contractor shall furnish satisfactory evidence that the indebtedness and the lien in respect thereof, if any, have been satisfied, discharged and released of record and as provided by law pending the resolution of any dispute between the Contractor and the person filing such lien; and if such evidence is not furnished by the Contractor to the School District within a period of five (5) calendar days after demand therefore, the School District may discharge such indebtedness and deduct the amount required therefore, together with any and all losses, costs, damages, and attorneys' fees suffered or incurred by the School District, from any sum payable to the Contractor under the Contract Documents. Final payment to the Contractor may be withheld until the Work and the Project site on which the Work is to be performed are free and clear of any and all liens or rights thereto arising because of Work performed or materials furnished under the Contract Documents. This Subparagraph 9.4.6 of these General Conditions shall be specifically included in all Subcontracts and purchase orders entered into by the Contractor.

9.4.7 The substitute remedy for the Mechanics' Lien Law is the Public Works Contractors' Bond Law, Act of December 20, 1967, P.L. 869, No. 385 (8 P.S. §191 <u>et seq.</u>).

9.4.8 The School District of Philadelphia is a "first class school district" under the Pennsylvania Intergovernmental Cooperation Authority Act for Cities of the First Class (known as "PICA Act"), Act of June 5, 1991, P.L. 9, No. 6 (53 P.S. §12720.104), and therefore the prompt payment provisions of the Award and Execution of Public Contracts Law, Act of December 12, 1994, P.L. 1042, No. 142 (73 P.S. § 1626.8(c)(2)&(4)) (repealed), and the prompt payment provisions of the Commonwealth Procurement Code, General Procurement Provisions, Act of May 15, 1998, P.L. 358, No. 57 (62 Pa.C.S.A.

§3938(b)(2)&(4)), do not apply to the School District of Philadelphia and its construction contracts. The School District of Philadelphia has no obligation to make progress payments, final payments, retainage payments, or any other type of payment to the Contractor within the time periods set forth in the Award and Execution of Public Contracts Law (repealed) or the Commonwealth Procurement Code, General Procurement Provisions. The School District of Philadelphia has no obligation to pay interest, penalties, attorneys' fees, costs, and expenses to the Contractor or any of his Subcontractors under the Award and Execution of Public Contracts Law (repealed) or the Commonwealth Procurement Code, General Procurement Provisions. Neither the Contractor nor his Subcontractors can make, assert or file a claim, cause of action or lawsuit against the School District of Philadelphia for violation of the prompt payment provisions of the Award and Execution of Public Contracts Law (repealed) Philadelphia for violation of the prompt payment provisions of the Commonwealth Procurement Provisions.

9.4.9 The School District of Philadelphia is a "school district" and a "political subdivision" of the Commonwealth of Pennsylvania, and therefore the Contractor and Subcontractor Payment Act, Act of February 17, 1994, P.L. 73, No. 7 (73 P.S. §501 <u>et seq.</u>), does not apply to the School District of Philadelphia and its construction contracts. The School District of Philadelphia has no obligation to make progress payments, final payments, retainage payments, or any other type of payment to the Contractor within the time periods set forth in the Contractor and Subcontractor Payment Act. The School District of Philadelphia has no obligation to pay interest, penalties, attorneys' fees, costs, and expenses to the Contractor or any of his Subcontractors under the Contractor and Subcontractor Payment Act. Neither the Contractor nor any of his Subcontractors can make, assert or file a claim, cause of action or lawsuit against the School District of Philadelphia for violation of the Contractor and Subcontractor Payment Act.

## GC-9.5 PAYMENTS WITHHELD

9.5.1 The PM/CM or the Architect/Engineer shall decline to certify payment and shall withhold his Certificate, in whole or in part, to the extent necessary to protect the School District, if in his opinion, he is unable to make representations to the School District as provided in Subparagraph 9.3.3 of these General Conditions. If the PM/CM or Architect/Engineer is unable to make representations to the School District as provided in Subparagraph 9.3.3 of these General Conditions. If the PM/CM or Architect/Engineer is unable to make representations to the School District as provided in Subparagraph 9.3.3 and to certify payment in the amount of the Application for Payment, the PM/CM or the Architect/Engineer shall notify the Contractor as provided in Subparagraph 9.3.1 of these General Conditions. If the Contractor and the PM/CM or the Architect/Engineer cannot agree on a revised amount, the Architect/Engineer shall promptly issue a Certificate for Payment in the amount for which he is able to make such representations to the School District. Even if the Contractor disputes any determination by the PM/CM or the Architect/Engineer with regard to any Certificate of Payment, the Contractor, nevertheless, shall expeditiously continue to prosecute the Work. The PM/CM or the Architect/Engineer shall also decline to certify payment or any part thereof or, because of subsequent inspections, he may nullify the whole or any part of any Certificate for Payment previously issued, to such extent as may be necessary, in his opinion, to protect the School District from loss because of:

9.5.1.1 defective Work not remedied;

. .

9.5.1.2 third-party claims filed or reasonable evidence indicating probable filing of such

claims;

9.5.1.3 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

9.5.1.4 damage to the School District or another Contractor;

9.5.1.5 reasonable evidence that the Work will not be or has not been completed within the Contract Time;

9.5.1.6 failure to carry out the Work in accordance with the Contract Documents or unsatisfactory prosecution of the Work by the Contractor;

9.5.1.7 liens filed, or reason to believe that a lien may be filed for any portion of the Work, as more specifically provided in Subparagraph 9.4.6 of these General Conditions; or

9.5.1.8 failure or refusal of the Contractor to fully comply with the Specifications, Division 1 General Requirements, Section 01300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements".

9.5.2 When the above grounds in Subparagraph 9.5.1 of these General Conditions are removed, payments shall be approved by the Architect/Engineer for amounts withheld because of these grounds.

The School District shall not be deemed in default of the Contract, due to the withholding of payments, while any of the grounds stated in Subparagraph 9.5.1 of these General Conditions remain uncured.

9.5.3 If any such delay, omission, defect or deficiency is not remedied by the Contractor within seventy-two (72) hours of notice from the School District, the School District will, without further notice, exercise its remedies under the Contract Documents, including, but not limited to those remedies outlined in Paragraphs GC-2.5 and GC-2.6 of these General Conditions.

# GC-9.6 SUBSTANTIAL COMPLETION

9.6.1 When the Contractor considers that the Project is substantially complete as defined in Subparagraph 8.1.3 of these General Conditions, the Contractor shall prepare for the School District a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. When the School District, the PM/CM and the Architect/Engineer, on the basis of an inspection, determine that the Project or designated portion thereof is substantially complete, the PM/CM and the Architect/Engineer shall then prepare a Certificate of Substantial Completion of the Project, state the responsibilities of the School District and the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance, and fix the time within which the Contractor shall complete the items listed therein. The Certificate of Substantial Completion of the Project shall be submitted to the School District and the Contractor for their written acceptance of the responsibilities assigned to them in such Certificate.

9.6.2 After Substantial Completion of the Project and upon application by the Contractor, certification by the PM/CM and the Architect/Engineer and after the certification has received all necessary approvals by the School District, the School District shall make payment, reflecting adjustment in retainage, if any, for such Work or such portion thereof, as provided in the Contract Documents.

9.6.3 The acceptance of the Substantial Completion payment, except for the retainage sums due at final acceptance, shall constitute a waiver of all claims by the Contractor.

## GC-9.7 PARTIAL OCCUPANCY OR USE

9.7.1 The School District has the right, at its sole option, to occupy and use any completed or partially completed portion of the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the School District and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work, and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the School District and Architect/Engineer as provided under Paragraph GC-9.6 of these General Conditions. The stage of the progress of the Work shall be determined by written agreement between the School District and Contractor or, if no agreement is reached, by decision of the Architect/Engineer, which shall be final and binding upon the Contractor.

9.7.2 Immediately prior to such partial occupancy or use, the School District and Architect/Engineer shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

9.7.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

## GC-9.8 FINAL COMPLETION AND FINAL PAYMENT

9.8.1 Upon receipt of written notice from the Contractor that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the School District, the PM/CM and the Architect/Engineer shall make such inspection and, when the Work is found acceptable under the Contract Documents and the Contract fully performed, the PM/CM and the Architect/Engineer shall issue a final Certificate for Payment stating that to the best of his knowledge and on the basis of his inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said final Certificate, is due and payable. The final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth in Subparagraph 9.8.2 of these General Conditions have been fulfilled. The Date of Final Completion of the Project shall also be certified by the PM/CM and the Architect/Engineer.

Neither the final payment nor that remaining retained percentage shall become due until the Work 9.8.2 is free and clear of any and all liens as required by Subparagraph 9.4.6 of these General Conditions and the Contractor submits to the School District, in form and substance satisfactory to the School District: (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the School District or its property might in any way be responsible, have been paid or otherwise satisfied, (2) consent of Surety, if any, for final payment, (3) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be cancelled or allowed to expire until at least thirty (30) calendar days' prior written notice has been given to the School District, (4) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (5) a Contractor's sworn statement duly executed and acknowledged showing all Subcontractors to be fully paid, (6) if required by the School District, other data establishing payment or satisfaction of all such obligations, such as receipts, releases, and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the School District, and (7) all assignable warranties, as-built drawings and maintenance manuals for the Project as completed. If any Subcontractor or Sub-subcontractor refuses to furnish a release or waiver required by the School District, the Contractor shall furnish a bond satisfactory to the School District to indemnify the School District against any loss, as a condition to final payment. If any such lien or claim remains unsatisfied after all payments are made, the Contractor shall promptly pay to the School District all monies that the School District may be compelled to pay in discharging such lien or claim, including all costs and attorneys' fees. The School District may withhold from final payment any sum that the School District has reason to believe may be needed to satisfy any lien, claim, or threat of lien arising out of the Work. The School District may deduct from final payment an amount equal to any costs, expenses, and attorneys' fees incurred by the School District in removing or discharging any liens arising out of the Work.

9.8.3 If, after Substantial Completion of the Project, Final Completion of the Project is materially delayed through no fault of the Contractor or by the issuance of Change Orders affecting Final Completion, and the School District so confirms, the School District shall, upon application by the Contractor and certification of payment by the PM/CM and the Architect/Engineer and certification of Substantial Completion of the Project by the PM/CM and the Architect/Engineer and after all necessary approvals of the School District's organization, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance of Work not fully completed or corrected is less than the retainage stipulated in the Contract Documents, and if bonds have been furnished as provided in Paragraph GC-7.5 of these General Conditions, the written consent of the Surety to the payment of the balance due for that portion of such payment of the balance due for that portion of such payment of the balance due for that portion of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the PM/CM and the Architect/Engineer prior to certification of such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.8.4 The making of final payment shall constitute a waiver of all claims by the School District against the Contractor, except those arising from:

9.8.4.1 unsettled liens and claims against the School District, the PM/CM, the Architect/Engineer, other School District Consultants on the Project, or their employees, agents or representatives;

9.8.4.2 faulty or defective Work;

9.8.4.3 failure of the Work to comply with the requirements of the Contract Documents;

9.8.4.4 any warranties contained in or required by the Contract Documents;

9.8.4.5 damages incurred by the School District resulting from lawsuits brought against the School District, the PM/CM, the Architect/Engineer, other School District Consultants on the Project, or their agents, employees, or representatives because of failures or actions on the part of the Contractor, his Subcontractors, Sub-subcontractors, or any of their employees, agents, or representatives; or

9.8.4.6 responsibilities that survive final payment as noted elsewhere in the Contract

Documents.

9.8.5 The acceptance of final payment shall constitute a waiver of all claims by the Contractor against the School District, the PM/CM and the Architect/Engineer.

9.8.6 Warranties required by the Contract Documents shall commence on the Date of Final Completion of the Project or designated portion thereof, unless otherwise provided in the Certificate of Final Completion of the Project or elsewhere in the Contract Documents.

## GC-9.9 NON-AUTHORIZATION OF FUNDS

9.9.1 The Contractor acknowledges that payments under the Contract may not exceed the amount that the School District's Auditing Services Office certifies as available for the Contract. During the term of the Contract, the School District reserves the right to fund the balance of the Compensation in varying amounts from time to time as funds become available, not to exceed in total the maximum amount stated in the Contract. The Contractor agrees that the School District shall not be obligated to fund the Contract except out of funds certified by the School District's Auditing Services Office as currently available, even if those funds are less than the maximum amount stated in the Contract. If at any time sufficient funds are not certified as available, the School District may, at its sole discretion, exercise its options described in Paragraph GC-9.10 of these General Conditions (Unavailability of Funds).

#### GC-9.10 UNAVAILABILITY OF FUNDS

9.10.1 In the event the School District, in its sole discretion, does not or cannot obtain or continue funding for the Contract from any source or sources at an aggregate level sufficient to allow for payment for the Work required under the Contract, the School District may, in its sole discretion, exercise one of the following alternatives:

(a) Terminate the Contract effective upon a date specified in a Termination Notice pursuant to Article GC-14, Termination and Suspension of the Contract, of these General Conditions; or

(b) Continue the Contract by reducing, through written notice to the Contractor, the amount of the Contract and the scope of the Work, consistent with the nature, amount, and circumstances of loss of funding.

9.10.2 Any termination or reduction of the Contract pursuant to this Paragraph GC-9.10 shall not affect any obligations or liabilities of either party accruing prior to such termination or reduction. The School District shall not face any liability or penalty as a result of such termination or reduction of the Contract.

## GC-9.11 CROSSING FISCAL YEARS

9.11.1 If the School District will pay any portion of the compensation set forth in the Contract in any School District fiscal year subsequent to the current fiscal year (the School District's fiscal year runs July 1 – June 30), the portion of the compensation that may accrue hereunder in a subsequent fiscal year remains subject to legally mandated budget authorization by the Board of Education of the School District, under Applicable Law. If for any reason funds for that portion of the compensation that may accrue hereunder in a subsequent fiscal year are not continued in any subsequent School District fiscal year, the Contract and the School District's liability under the Contract shall automatically terminate at the end of the fiscal year for which the Board of Education, has authorized funds.

## GC-9.12 AUDITS; RECORDS AND PAYMENTS; INSPECTORS GENERAL

9.12.1 <u>Audits</u>. From time to time during the Term and for a period of six (6) years after the expiration or termination of the Contract (*see*, 24 Pa. Stat. § 5-518), the School District; the Controller of the City; the Commonwealth, including without limitation its Auditor General and the Pennsylvania Department of Education, or a department, agency or instrumentality of the United States of America, if the School District funds the Contract with federal funds, or any of their authorized representatives (each, for the purposes of this Section, an "Auditor") may audit any and all aspects of the Contractor's performance under the Contract, including but not limited to its billings, invoices, and payments received.

9.12.2 Inspection. If requested by an Auditor or the School District, the Contractor shall submit to the Auditor and the School District, for review or inspection, all invoices presented for payment pursuant to the Contract, all canceled checks, materials, invoices, vouchers, reports, work product, work papers, books, records and accounts upon which the invoices are based, and any and all documentation and justification in support of expenditures or fees incurred pursuant to the Contract. The Contractor acknowledges and agrees that any Auditor may inspect or review all of its Work, materials, and all of its sites, locations and facilities related to its performance under the Contract. Inspection and review of Work and materials shall take place at the offices of the Contractor in the City, or in another location with the Auditor's consent. The Contractor shall cooperate with all School District, City, Commonwealth and federal inspections and review of the Work, materials, and sites, locations and facilities lies in the sole discretion of the Auditor. Such inspection or review may include, without limitation, meetings with persons receiving services under the Contract, review of staffing ratios and job descriptions, and meetings with any of the Contractor's staff members who either directly or indirectly participate or participated in carrying out any of the Work, including preparing, delivering or installing any Materials.

9.12.3 <u>Retention and Availability of Records</u>. The Contractor shall retain all records, books of account and documentation pertaining to the Contract for the greater of (i) the period required by Applicable Law, or (ii) six (6) years following expiration or termination of the Contract; provided that if any litigation, claim or audit commences prior to expiration of said six (6) year period, then the Contractor shall retain the records until all litigation, claims or audit findings have been completely terminated or resolved without right of further appeal. The Contractor shall make available, at the Contractor's office in the City or another Contractor office in reasonable proximity to the City, at reasonable times during the duration of the Project and for the period set forth in this Paragraph 9.12.3, all records pertaining to the Contract for the purpose of inspection, audit or reproduction by any Auditor. The Contractor shall provide such records without unreasonable delay when requested by an Auditor.

9.12.4 <u>Inspector General; Inspectors General</u>. The School District's Inspector General shall enjoy all the rights, powers, and privileges of an Auditor under the Contract and any and all additional rights,

powers, and privileges as provided by Applicable Law and by delegation from the Board of Education or other duly constituted authority having jurisdiction, e.g., a commission. The Contractor shall cooperate and comply with any audit or investigation by the School District's Inspector General, or by any City, Commonwealth or federal inspector general having jurisdiction, and any joint investigation. The Contractor and his partners, members, shareholders, directors, officers, employees, agents, contractors and Subcontractors shall cooperate fully with the School District's Inspector General by providing true, correct and complete information and records, as well as all necessary or appropriate assistance in any matter investigated by the Inspector General. In any investigation the School District's Inspector General shall have and enjoy complete and unimpeded access to all papers, workpapers, books, records, documents, information, personnel, processes, e.g., meetings, data, computer hard drives and networks, e-mail, text or instant messages, facilities and other assets owned, leased, licensed or used by or for the School District, including but not limited to information regarding the Contractor or other School District contractors, or any other Person involved in any way with the School District, as deemed necessary in performing investigative or audit activities pertaining in any way to the business, operations or public functions of the School District or the Board of Education, and in the custody of the Contractor or any Subcontractor.

9.12.5 The term "Materials" in this Paragraph 9.12 means any and any and all reports, records, documents, documentation, information, supplies, plans, original drawings, specifications, computations, sketches, renderings, arrangements, videos, pamphlets, advertisements, statistics and other data, computer tapes, computer programs, software, and other tangible work product, materials or goods prepared, supplied or developed by the Contractor as part of or in connection with the Work, or for the Contractor by a Subcontractor in connection with the Work, and deliverable or delivered to the School District by the Contractor or its Subcontractor pursuant to the Contract.

# ARTICLE GC-10 PROTECTION OF PERSONS AND PROPERTY

## GC-10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The School District, the PM/CM, the Architect/Engineer, and other School District Consultants on the Project, or their agents, employees or representatives, are not responsible for the means, methods, techniques, sequences or procedures utilized by the Contractor, or for safety precautions and programs in connection with the Work. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

10.1.2 The Contractor shall be responsible for any violation of the safety precautions and programs and shall defend and hold the School District, the PM/CM, the Architect/Engineer, and any other School District Consultants on the Project harmless from any penalty, fine or liability in connection with the Work, including but not limited to any claim made by or on behalf of any employee of the School District, employee of the Contractor and the Subcontractors relating to the conduct or Work of said Contractor, Subcontractor or other persons whether or not directly or indirectly involved in the Work. The Contractor shall be responsible and shall bear the full risk that these precautions and programs meet with the approval of the insurance companies providing insurance under Article GC-11 of these General Conditions. Meeting this approval shall not relieve the Contractor of his indemnification responsibilities, provided that to the extent any insurance claim is covered by the property and boiler and replacement insurance in place at the time of an award, the School District, the PM/CM, the Architect/Engineer and any other School District Consultants on the Project shall look to the property insurance available, other than to the Contractor or Subcontractors, for coverage of any liability, losses, damages and expenses covered by said insurance.

## GC-10.2 SAFETY OF PERSONS AND PROPERTY

#### 10.2.1 The Contractor shall:

(a) pre-plan, coordinate, and execute all Project activities in a manner that assures the prevention and control of conditions that may cause students, teachers, school staff personnel, school visitors, and Project neighborhood residents injury and work-related illness; and

(b) prevent and control conditions that may cause Contractor or Subcontractor employee injury and work-related illness; and

and

- (c) control exposures and/or conditions that come in contact with the general public;
- (d) comply with all applicable federal, state, and local regulations; and
- (e) decrease operating costs through conservation of human physical resources.

The Contractor shall meet all OSHA standards for the safety of, and shall take all reasonable precautions for safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

10.2.1.1 all employees on the Project and all other persons who may be affected thereby;

10.2.1.2 all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the Project site, under the care, custody or control of the Contractor or any of his Subcontractors or Sub-subcontractors; and

10.2.1.3 other property at the Project site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

10.2.3 The Contractor shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent utilities.

10.2.4 When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

10.2.5 The Contractor shall promptly remedy all damage or loss to any property referred to in Subparagraphs 10.2.1.2 and 10.2.1.3 of these General Conditions caused, in whole or in part, by the Contractor, any Subcontractor, any Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable and for which the Contractor is responsible under Subparagraphs 10.2.1.2 and 10.2.1.3 of these General Conditions, except damage or loss solely attributable to the acts or omissions of the School District, the PM/CM, or the Architect/Engineer, or any other School District Consultant on the Project, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to his obligations under Paragraph GC-4.18 of these General Conditions.

10.2.6 In accordance with Paragraph GC-10.5 (Safety Requirements), the Contractor shall designate a responsible member of his organization at the Project site whose duty shall be prevention of accidents. This person shall be the Contractor's superintendent, unless otherwise designated by the Contractor in writing to the School District and the PM/CM.

10.2.7 The Contractor shall not load or permit any part of the Work to be loaded so as to endanger its safety or the safety of persons or property.

10.2.8 The Contractor shall promptly report, in writing, to the School District, the PM/CM and the Architect/Engineer, all accidents arising out of or in connection with the Work which cause death, personal injury or property damage, giving full details and statements of any witnesses. In addition, if death or serious personal injuries or serious damages are caused, the accident shall be reported immediately, by telephone or messenger, to the School District.

# GC-10.3 PROTECTION OF UTILITIES

10.3.1 <u>Utilities</u>. The Contractor shall protect from damage active operating utilities at or near the Project site and shall be responsible for the repair or restoration of any damage to such facilities resulting from failure to comply with the requirements of the Contract or the failure to exercise reasonable care in the performance of the Work. The Contractor shall comply with all applicable laws, statutes, regulations, ordinances, rules or orders of any public authority, including but not limited to Underground Utility Line Protection Law (Act No. 287 of December 10, 1974, 73 P.S. §176 <u>et seq</u>.). If the Contractor fails or refuses to repair any such damage or to make any arrangements as required by this Paragraph GC-10.3 promptly, the School District may have the necessary work performed and charge the cost thereof to the Contractor.

10.3.2 Protection of Utilities. At points where the Contractor's operations are adjacent to utility facilities,

damage to which might result in expense, loss, disruption of service or other undue inconvenience to the public or to the owners, Work shall not be commenced until all arrangements necessary for the protection thereof have been made by the Contractor. The Contractor shall be solely and directly responsible to the owners and operators of such utilities for any damage, injury, expense, loss, inconvenience, or delay, caused by the Contractor's operations.

10.3.3 <u>Relocation of Utilities</u>. Where utilities or their appurtenances interfere with permanent construction, unless otherwise specified, Work involved in permanently relocating or otherwise altering such utilities and their appurtenances will not be a part of the Contract. If the Contractor wishes to have any utilities temporarily relocated, he shall make necessary arrangements with the owners thereof and shall reimburse them at his own expense for the cost of such Work. The Contractor shall keep the School District advised of temporary relocation arrangements.

10.3.4 <u>Utility Repair</u>. The Contractor shall not repair or attempt to repair any damaged utility but shall immediately contact the utility owner. The Contractor shall obtain the name, address and telephone number of each utility company that the Work will affect and the person in such utility company to contact. He shall submit to the School District said names, addresses and telephone numbers.

10.3.5 <u>Consideration of Obstructions in Bid and Work</u>. The Contractor agrees that he has made full provision in his Bid for costs and/or delays which may be incurred to remove and/or relocate existing known utilities so that the Work can proceed in a particular area without an interruption to service on other areas.

10.3.6 <u>Duty to Minimize Utility Disruptions</u>. Where the operations of the Contractor will affect the School District's operation and use of existing facilities or School District-occupied portions of the Work, the Contractor shall arrange his Work to minimize its effect on such areas, protect the School District, the PM/CM, the Architect/Engineer, or any other School District Consultant on the Project, and others not directly involved in construction, renovation, demolition and equipping, and shall coordinate the timing, sequencing, and duration of the disruptions with the School District, and shall proceed with such Work only after receiving authority to do so. It is agreed that such Work shall be performed during nonworking hours so as to minimize its impact on others.

10.3.7 <u>Unavoidable Interruptions of Service</u>. The Contractor shall at all times seek to avoid interruptions of utility services to the Project, unless it is absolutely necessary. When interruption of the services is unavoidable, the Contractor shall notify the School District and the PM/CM in writing fourteen (14) calendar days in advance requesting permission for the interruptions of utility services and identifying the length of time needed. Only after the Contractor receives the approval from the School District and the PM/CM shall he proceed with the Work. During the interruptions of services, the Contractor shall maintain communication with the School District, and be ready to restore temporary service if any emergency arises. The Contractor shall continue his Work on a twenty-four (24) hour basis, until such Work is completed and the services restored.

10.3.7.1 During all renovation construction, the building must continue to function in a manner directed by the School District. Accordingly, the separate Prime Contractors must include in their bids the necessary costs to relocate the building services or provide new services in such a manner so that the renovation work can proceed in a particular area without an interruption to services in other active parts of the portion of the Project so affected. "Building services" include, but are not limited to, heat, air conditioning, ventilation, power lighting, telephone, teledata, communications, media systems, computer systems, etc.

10.3.8 <u>Vegetation</u>. The Contractor shall preserve and protect existing vegetation such as trees, shrubs, and grass on or adjacent to the Project site which are not indicated to be removed and which do not unreasonably interfere with his Work and he shall replace in kind the vegetation, shrubs and grass damaged by him at his own expense.

10.3.9 <u>Compliance with Laws</u>. The Contractor shall comply with all applicable laws, regulations, codes

and orders regarding precautions to be taken in the protection of existing vegetation, structures, utilities, and improvements, including but not limited to Underground Utility Line Protection Law, as amended (Act No. 172 of December 12, 1986, 73 P.S. §176, <u>et seq</u>.), enacted in the Commonwealth for the designation and protection of utilities.

10.3.10 <u>Existing Utilities, Privies, Wells, Test Holes</u>. If, during the prosecution of the Work, the Contractor uncovers or damages any known or unknown existing utilities, privies, wells, and/or test holes, he shall relocate, repair, remove, abandon, properly cap off and/or plug the utility, privies, wells, and test holes so as not to interfere with the Work of any other Contractor on the Project.

## GC-10.4 EMERGENCIES

10.4.1 In any emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss, at no additional compensation and without extension of time.

10.4.2 In the event emergency repairs or work is necessary to prevent damage and the Contractor is not available, the School District may make such repairs or do such work, either by itself or through another Contractor. The Contractor shall pay the expenses of the repairs or work when necessitated by defects in the Contractor's work.

## GC-10.5 SAFETY REQUIREMENTS

10.5.1 <u>Safety of Persons and Property</u>. The Contractor and each Subcontractor shall be solely responsible for safety on the Project. The Contractor and each Subcontractor shall establish a Safety Program on the Project that, at a minimum, complies with all local, state and federal safety standards and any safety standards established by the School District for the Project, including the School District's health and safety program, guidelines, procedures, and requirements. The Contractor and all Subcontractors shall provide sufficient, safe, and proper facilities at all times for the installation of the Work, and shall make sure the same is available for inspection by the School District and its representatives.

10.5.2 <u>Safety Responsibility</u>. The Contractor's and Subcontractors' employees, suppliers, and agents shall, when about the jobsite, observe and comply with the strictest of the applicable laws and any regulations prescribed by School District or as set forth in the Contract Documents. The School District reserves the right to assign job specific safety requirements in the Project bid specifications. The assignment of safety responsibility on each Project site (unless otherwise specified by the School District of Philadelphia) shall be as follows:

#### (1) <u>Projects with a Single Prime Contractor</u>

(a) The Contractor shall assume responsibility for overall site safety coordination and shall perform its safety responsibility on the Project through a competent Superintendent who shall be acceptable to the School District. The Superintendent of the Contractor must have at least attended a 10-Hour OSHA Construction Outreach Program and have an up-to-date CPR and First Aid Certification. The Superintendent of the Contractor shall be on site daily. The Contractor shall supply an alternate Superintendent if this individual is on vacation, out sick, etc. The Superintendent of the Contractor shall be responsible for the implementation and enforcement of the safety requirements set forth in the Contract Documents, OSHA, and the School District's health and safety program, guidelines, procedures, and requirements by all employees on site. The Superintendent of the Contractor shall have the authority to stop work if an imminent danger situation occurs.

(b) Each Subcontractor shall perform its safety responsibility on the Project through a

competent foreman or superintendent. The foreman or superintendent of the Subcontractor shall be responsible for the implementation and enforcement of the safety requirements set forth in the Contract Documents, OSHA, and the School District's health and safety program, guidelines, procedures, and requirements by its employees on site. If at any one time the Subcontractor intends to or does have forty (40) or more employees on the jobsite for a period of twenty (20) consecutive work days or more ("high employment"), such Subcontractor's foreman or superintendent shall be present on the jobsite on a full-time basis to ensure the safety of its employees and operations during the period of such high employment.

## (2) <u>Projects with Multiple Prime Contractors</u>

(a) The Lead Prime Contractor as designated in Paragraph GC-4.1.2 of these General Conditions shall assume responsibility for overall Project safety coordination and shall perform its safety responsibility on the Project through a competent Superintendent who shall be acceptable to the School District. The Superintendent of the Lead Prime Contractor must have at least attended a 10-Hour OSHA Construction Outreach Program and have an up-to-date CPR and First Aid Certification. The Superintendent of the Lead Prime Contractor shall be on site daily. The Lead Prime Contractor shall supply an alternate Superintendent if this individual is on vacation, out sick, etc. The Superintendent of the Lead Prime Contractor shall be responsible for the implementation and enforcement of the safety requirements set forth in the Contract Documents, OSHA, and the School District's health and safety program, guidelines, procedures, and requirements by all employees on site. The Superintendent of the Lead Prime Contractor shall have the authority to stop work if an imminent danger situation occurs.

(b) Each Prime Contractor shall perform its safety responsibility on the Project through a competent Superintendent who shall be acceptable to the School District. The Superintendent of each Prime Contractor must have at least attended a 10-Hour OSHA Construction Outreach Program and have an up-to-date CPR and First Aid Certification. The Superintendent of each Prime Contractor shall be on site daily. The Prime Contractor shall supply an alternate Superintendent if this individual is on vacation, out sick, etc. The Superintendent of the Prime Contractor shall be responsible for the implementation and enforcement of the safety requirements set forth in the Contract Documents, OSHA, and the School District's health and safety program, guidelines, procedures, and requirements by all employees on site. The Superintendent of the Prime Contractor shall have the authority to stop work if an imminent danger situation occurs.

(c) If at any one time the Prime Contractor intends to or does have forty (40) or more employees on the jobsite for a period of twenty (20) consecutive work days or more ("high employment"), such Prime Contractor's Superintendent shall be present on the jobsite on a full-time basis to ensure the safety of its employees and operations during the period of such high employment.

The Contractor and each Subcontractor shall be responsible for the payment of all fines and/or claims for damages levied against them for safety or environmental deficiencies related to the conduct of their employees or Work. In accordance with the Contract Documents, the Contractor and all Subcontractors shall defend and indemnify the School District and School District's Representatives from and against any loss, damage or expense, including attorneys' fees, related to the failure of the Contractor or any Subcontractor to comply with the School District's health and safety program, guidelines, procedures, and requirements and Paragraph GC-10.5 of these General Conditions.

10.5.3 <u>General Safety Requirements</u>. The following safety provisions, to the extent they are stricter than applicable laws or any separate regulations prescribed by the Owner, shall be complied with for all personnel on the jobsite and enforced by the Contractor:

(1) The School District requires 100% fall protection for all trades on all Projects. This

requirement is mandatory for all work greater than or equal to six (6) feet above a lower working level or surface. This policy shall be strictly enforced. There shall be no second chances under this policy. Employees observed in violation of this policy shall be immediately removed from the Project and shall not be permitted to return to a School District Project, at the sole discretion of the School District. Employees shall receive Safety Violation Fines for violation of this policy.

(2) Appropriate eye protection is required when there is a potential for a foreign object to enter an employee's eye. Eye protection must meet ANSI standards. The Contractor shall have the option to require 100% eye protection at all times. This must be conveyed to all Subcontractors at the time of the Bid.

(3) 100% wearing of heavy duty work boots/shoes is required (no sneakers or sandals).

(4) 100% wearing of hard-hat.

(5) 100% wearing of shirt with at least a 4 inch sleeve and long pants (no shorts). No muscle shirts or cut off shirts are permitted.

(6) Operations that require a Ground Fault Circuit Interrupter (GFCI) or an Assured Equipment Grounding Program in accordance with the OSHA 1926 Construction Safety and Health Standards shall use GFCIs and not the Assured Equipment Grounding Program option.

(7) No flammable liquids shall be stored within the building overnight.

(8) Hot work permits shall be issued by the Contractor. Fire watch shall be 2 hour in duration in all active schools. Fire watch for new construction shall be per OSHA regulations.

(9) Annual crane inspection certificate must be presented to the Contractor prior to any mobile crane being brought onto the site. All mobile cranes must have an anti-two block device. Only qualified operators (CCO or equivalent training/experience) are permitted to operate cranes on site. Operator qualifications must be submitted to the Contractor prior to the use of the crane on site. The Contractor shall forward the annual crane inspection certification and the operator qualification to the School District prior to crane usage on site.

(10) The Contractor or Subcontractor shall submit a Crane Lift Plan to the School District and the PM/CM for each phase of work on site if a crane is to be used.

(11) All confined spaces on site shall be designated "Permit Required Confined Spaces". The Contractor is responsible for verifying that the Subcontractor has proper controls on all confined space entries.

(12) All trenches and excavations must meet OSHA Regulations.

(13) Each Contractor and Subcontractor must conduct weekly toolbox safety meetings. The toolbox meetings must be documented. The Contractor must forward documentation of toolbox talks to the School District and the PM/CM.

(14) Each Contractor and Subcontractor must inspect work areas daily. Safety deficiencies must be corrected immediately. The Contractor shall submit a weekly Project Self-Inspection Report to the School District and the PM/CM.

(15) Housekeeping shall be closely monitored. Work areas must be cleaned by the end of the workday and debris must be properly disposed of. The Contractor shall strictly monitor and enforce this requirement.

(16) The Contractor shall conduct safety meetings at least every 2 weeks on the site. Attendance by each Subcontractor is required. The Contractor shall be responsible for maintaining and distributing meeting minutes.

(17) The Contractor shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including barriers, fences, railings, and floor coverings. The Contractor shall post and maintain danger signs and other warnings against hazards, promulgate safety regulations and notify owners and users of adjacent utilities of any dangerous or hazardous conditions.

(18) The Contractor shall comply with the storm water discharge environmental regulations.

(19) Security on the jobsite shall be the responsibility of the Contractor.

The Contractor and Subcontractors shall make certain all vendors, suppliers, material dealers, haulers, and/or independent haulers or others who merely transport, pick-up, deliver or carry materials, personnel, parts, or equipment, or other items or persons working under them, conform and adhere to all School District health and safety program, guidelines, procedures, and requirements and Paragraph GC-10.5 of these General Conditions.

10.5.4 <u>Safety Training</u>. Each Contractor and Subcontractor have the responsibility to make sure their employees receive adequate safety training for the tasks to be performed prior to the employee of the Contractor or Subcontractor being permitted to perform any Project work on site. Each Contractor and Subcontractor shall review site specific safety requirements with their employees. The Contractor and Subcontractors shall determine the appropriate amount of time required to complete this training. Documentation as proof of this training shall be maintained. This documentation shall be available upon request.

10.5.5 <u>Exposure Identification</u>. The Contractor shall require each Subcontractor to attend a Pre-Construction Meeting during which safety will be discussed. Primary exposures and expectant controls shall be discussed during this meeting. If the Contractor or any Subcontractor is involved in extra hazardous work, as designated by the School District and the PM/CM, the affected Contractor or Subcontractor shall be required to provide a written Job Safety Analysis (JSA) covering those extra hazardous operations before those operations begin. The JSA must identify the hazard, the appropriate work processes required, the approximate number of site personnel exposed, methods of safeguarding those employees, safety equipment to be used, methods of instruction employees in proper work processes and the method of monitoring these controls. "Extra hazardous work" includes, but is not limited to, steel erection, cast in place concrete work on elevated decks, work on steep slope roofs, etc. Imminent danger situations brought to the attention of the Contractor shall be corrected immediately by the Contractor in accordance with the School District's health and safety program, guidelines, procedures, and requirements and Paragraph GC-

10.5 of these General Conditions. All work shall cease in the area where the imminent danger situation exists until the exposure is corrected. Other unsafe conditions on the jobsite including, without limitation, unsafe work, construction or permanent equipment, tools or actions by persons shall be brought to the School District's attention or the attention of the Contractor's Superintendent or the Subcontractor's foreman or superintendent as soon as reasonably possible. Within 24 hours after receiving written notice, the condition shall be corrected or removed from the jobsite. Lost time and lost productivity associated with this or any safety violation shall not entitle the Contractor or Subcontractors must immediately notify the School District and the PM/CM by telephone (followed by written confirmation within 24 hours) when they become aware of any product or material that is a part of or is to be used in performing the Work which fails to comply with any applicable law or applicable safety rules or standards of any government agencies (including the Environmental Protection Agency), or which contains a defect which could present a substantial risk to the public health or of injury to the public or the environment.

10.5.6 <u>Drug and Alcohol Policy</u>. The Contractor and all Subcontractors are prohibited from use and possession of alcoholic beverages, drugs (other than prescription), carrying weapons or ammunition onto the jobsite. The Contractor agrees to comply, and ensure that all Subcontractors comply, with any postings or notices located at the jobsite regarding safety, security or weapons.

10.5.7 <u>Identification Badge</u>. All personnel who have access to the jobsite are required to wear the identification badge required by the School District on their outer garment. Personnel visiting the site must be escorted by an individual with an identification badge. The identification badge will be issued and monitored by the Contractor. The Contractor shall be responsible for photographing the employee and for laminating the identification badges. The background for the identification badges will be supplied by the Contractor and approved by the School District of Philadelphia and the PM/CM.

10.5.8 <u>Visitors</u>. All visitors to the site must report to the Contractor and sign a "Visitor's Release". All visitors must be briefed by the Contractor as to the site specific hazards present and must be escorted at all times while on site.

10.5.9 <u>Safety Programs</u>. The Contractor shall submit his Safety Program to the School District and the PM/CM fourteen (14) days prior to the Pre-Construction Meeting. The Contractor shall <u>not</u> begin work on site until the Safety Program has been approved. The Contractor shall require each Subcontractor to provide, and the Contractor shall be responsible for monitoring, the following items:

(1) Records, including the OSHA 300 Log, of Occupational Injuries and Illnesses that occur on the site; and

(2) A copy of their Safety Program. The Safety Program must meet or exceed the School District health and safety program, guidelines, procedures, and requirements. <u>No</u> Subcontractor is permitted to work on site without an approved Safety Program. The Subcontractor may work under the provisions in the Contractor's Safety Program. If the Subcontractor works under the Contractor's Safety Program, a letter stating this must be forwarded to the School District; and

(3) The foreman or superintendent of the Subcontractor shall be responsible for review and approval of the Subcontractor's Safety Program. The Contractor shall also review Safety Programs for critical Subcontractors. Feedback shall be given to the foreman or superintendent of the Subcontractor.

10.5.10 Hazard Communication. The Contractor shall exercise the utmost care in the use and handling of hazardous materials or equipment and only competent, trained and experienced employees of the Contractor or of any Subcontractor shall be permitted to handle hazardous materials or equipment. The Contractor and Subcontractors shall have written Hazard Communication Programs. The Contractor shall maintain and have readily available the list and the MSDS for each of the materials on the premises covered under the OSHA Hazard Communication Standard. The Subcontractors shall not bring any materials on the premises covered under the OSHA Hazard Communication Standard until a list of the materials and the MSDS have been given to the Contractor. The Contractor shall ensure that all personnel that could have exposure to materials covered under the OSHA Hazard Communication Standard will be notified of the possible exposure. In the performance of the Work, the Contractor and all Subcontractors shall transport, store, use and/or dispose of all materials categorized by any applicable law or governmental authority as petroleum products or hazardous substances in strict compliance with all applicable laws relating thereto. The Contractor shall indemnify and hold harmless the Indemnified Parties, Architect/Engineer, and their respective consultants, agents, and employees, from and against all claims, damages, losses and expenses, including but not limited to, attorneys' fees, arising out of or resulting from the Contractor's failure to comply with this requirement whether or not caused by the actions or inactions of the parties indemnified. Except for the materials identified in Division 1, General Requirements, Section 01000 Summary of Work, nothing contained in this Subparagraph 10.5.10 or in the Contract Documents shall obligate the Contractor to handle or remove petroleum products or hazardous materials presently located

on the Project site. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under the School District's health and safety program, guidelines, procedures, and requirements and the Contract Documents. The Contractor shall require each Subcontractor to provide records of the disposal hazardous wastes. Copies of hazardous waste manifests shall be forwarded to the School District.

10.5.11 <u>Accident Reporting</u>. All Contractors and Subcontractors must report all known injuries, occupational-related illnesses, potential general liability incidents, or property damage immediately. Verbal notification shall be given immediately to the School District, the PM/CM, Contractor or Subcontractor of any bodily injury to persons not employed on the jobsite, <u>e.g.</u>, visitors, invitees, or trespassers, as well as damage to property of others arising out of operations on the jobsite. Verbal notification shall be given immediately to the School District, the PM/CM, Contractor of any pollution incident or any environmental hazard or incident that occurs on the jobsite. All known accidents and occurrences must be reported within 24 hours. At the School District's discretion, failure to report a claim within 24 hours of an occurrence shall result in a \$400 penalty. This penalty shall be issued through a Non-Negotiable Deduct Change Order or other means approved by the School District.

10.5.12 <u>Accident Investigation</u>. Accident Investigation reports are required for all employee injuries (no matter how minor), occupational-related illnesses, property damage, general liability, near miss incidents, pollution incidents, and environmental hazards or incidents. Accident Investigation Reports must be completed within 24 hours of the incident unless the Contractor or Subcontractor notifies the Superintendent of the Contractor or the foreman or superintendent of the Subcontractor that the circumstances surrounding the incident will require additional investigation. Failure to complete an Accident Investigation Report within 24 hours of an occurrence shall result in a \$250 penalty. This penalty shall be issued through a Non-Negotiable Deduct Change Order or other means approved by the School District.

10.5.13 <u>Return to Work</u>. All Contractors shall promptly return injured workers to full or light duty work (as their physical condition permits) as soon as they are advised of the employee's ability to return to work. Upon such notification, the Contractor or Subcontractor shall immediately return such injured worker to work, whether or not a job is immediately available, and whether such work is on the Project. Failure to do so shall result in a penalty assessment to the Contractor of \$1,500 weekly until such time as the injured worker is returned to work. This penalty shall be issued through a Non-Negotiable Deduct Change Order or other means approved by the School District.

10.5.14 <u>Safety Violations</u>. Penalties for non-compliance with the School District's health and safety program, guidelines, procedures, and requirements, Article GC-10 (Protection of Persons and Property) of these General Conditions, other safety regulations and requirements set forth in the Contract Documents, and OSHA Regulations are as follows:

(1) Owner may withhold progress payments until such non-compliance has been corrected; and

(2) Owner has the right to correct the safety infraction and charge back to the Contractor the cost of such correction; and

(3) Owner has the right to dismiss the Contractor or Subcontractor from the jobsite, any employee of the Contractor, or any Subcontractor for continued non-compliance or a serious safety infraction.

The Contractor shall take all necessary precautions to protect the safety and health of its employees, Subcontractors' employees and others on the jobsite, including compliance with all applicable federal, state, county and municipal safety and health laws, regulations, and building codes, and shall adhere to and enforce the safety regulations set forth in Article GC-10.5 (Protection of Persons and Property) of these General Conditions and elsewhere in the Contract Documents, and the School District's health and safety program, guidelines, procedures, and requirements. In order to reduce Contractor and

Subcontractor safety violations, the School District has instituted penalties for safety violations. Safety Violation fines may be issued to the Contractor or Subcontractors by the School District. Safety Violation Fines shall be issued through a Non-Negotiable Deduct Change Order or other method approved by the School District with written notification sent to the Contractor or Subcontractors. Safety Violation Fines affect both the employee(s) observed violating safety policies and his/her employer, who is responsible for the safety of their employees. For ANY safety violation the following penalties shall apply:

## **Employee**

1<sup>st</sup> offense – Employee will be issued a written warning.

2<sup>nd</sup> offense for the same violation - The worker will be directed to leave the project for the remainder of the day or period determined by the School District.

3<sup>rd</sup> offense for the same violation – The worker will be directed to leave the project and will not be permitted to return to any School District project, at the sole discretion of the School District.

## **Employer**

1<sup>st</sup> offense – The Contractor or Subcontractor will be issued a written warning.

2<sup>nd</sup> offense for the same type of violation – The Contractor or Subcontractor shall be fined according to the fine schedule and may be subject to a fine of up to \$1,000 per repeat violation (see following schedule for specific fines).

3<sup>rd</sup> offense for the same type of violation – In addition to the fines issued, the School District will arrange a separate agency safety awareness training at the Contractor's or Subcontractor's expense. The training shall be given for a period of 2 hours. All of the Contractor's or Subcontractor's personnel working on the project shall attend the training.

# Note: Contractor or Subcontractor employees may be permanently removed from the site on the 1<sup>st</sup> offense for serious safety violations (<u>e.g.</u>, violation of the 6 foot fall protection policy, use of alcohol or drugs on site, fighting, etc.).

The School District requires a detailed safety orientation prior to the Contractor's or Subcontractor's employees performing work on site. Site specific safety requirements must be reviewed in detail. In addition to this orientation, the School District expects all Contractors to train employees per Project safety requirements and federal, state, and local requirements. The School District considers the safety orientation to be the Employees "written" warning, and therefore, individuals shall be cited without warning. There shall be no second chances.

Safety Violation				
Fines				
Contractor/Subcontractor:	Project Name:			
	New Violation			
No Hard-hats or Safety Glasses (if necessary) per employee.	\$250/violation			
Eating in non-designated area per employee or not cleaning up eating area	\$500/violation			
Removal of guardrail without adequate replacement.	\$1,000/violation			
Working with fall hazard 6' or greater with no fall Protection or guardrail.	\$2,500/violation			
Failure to provide adequate protection during excavation and trenching work.	\$2,500/violation			
Removal of opening protection without adequate replacement.	\$2,500/violation			
Failure to use Lockout/Tagout Program.	\$2,500/violation			
Unsecured compressed gas cylinder.	\$500/violation			
Openings in electric panels.	\$1,500/violation			
Failure to properly protect reinforcing or form stakes that present an impalement hazard.	\$1,000/violation			
Smoking on District property per employee	Removal from site and \$1,000/violation			
Failure to comply with the Prime Contractors site specific safety plan	\$250/violation			
Failure to use SDP Hot Work Permit Form	\$500/violation			
Silica Dust Exposure	\$2,500/violation			
No GFCI or ungrounded electrical cord	\$250/violation			
All others:	\$500/violation			

Note: Safety Violation Fines are issued per violation. If a Contractor or Subcontractor has more than one (1) employee in violation of a known safety requirement (example: 2 employees working in an improperly sloped trench, etc.), the Contractor or Subcontractor is subject to a \$1,000 fine per violation. The Owner considers this 2 violations since 2 employees were exposed.

# ARTICLE GC-11 INSURANCE

## GC-11.1 INSURANCE

11.1.1 <u>The Contractor's Insurance</u>. Unless otherwise approved by the School District's Office of Risk Management in writing, prior to commencing Work under the Contract, the Contractor shall, at its sole cost and expense, procure and maintain in full force and effect, covering the performance of the Work required under the Contract, the types and minimum limits of insurance specified below. All insurance shall be procured from reputable insurers who are financially responsible and authorized to do business on an admitted basis in the Commonwealth of Pennsylvania or otherwise acceptable to the School District Office of Risk Management. All insurance must be afforded by an insurance carrier with at least an A-(Excellent) rating from a reputable agency (e.g., A.M. Best). All insurance required herein, except the Professional Liability Insurance, shall be written on an "occurrence" basis and not a "claims-made" basis. IN NO EVENT SHALL SERVICES BE PERFORMED UNTIL THE REQUIRED EVIDENCE OF INSURANCE HAS BEEN

FURNISHED. The insurance shall provide for at least thirty (30) calendar days' prior written notice to be given to the School District and the PM/CM in the event coverage is materially changed, cancelled, or non-renewed. The Contractor shall advise the School District and the PM/CM immediately upon receiving any notice of cancellation or nonrenewal of the required insurance. The School District of Philadelphia, its commission members, board directors, officers, employees and agents, shall be named as Additional Insureds on the General Liability Insurance and the Automobile Liability Insurance policies and the policies shall be so endorsed. An endorsement is required stating that the coverage afforded the School District and its commission members, board directors, officers, employees and agents, as Additional Insureds, will be primary to any other coverage available to them, and that no act or omission of the School District shall invalidate the coverage. The Contractor will use its best efforts to obtain an endorsement from its insurance carrier that reflects that no act or omission of the School District shall invalidate the coverage. The Contractor will use its best efforts to obtain an endorsement from its endorsement is denied, said denial must be on the letterhead of the Status of its efforts. If this endorsement is denied, said denial must be on the letterhead of the Contractor's insurance carrier and not its broker. The Contractor shall require its Subcontractors under this Contract to maintain the required levels of insurance.

#### INSURANCE COVERAGE REQUIREMENTS

Prior to commencement of any work under the Contract and until completion and final payment is made for the work, the Contractor shall, at its sole expense, maintain the following insurance on its own behalf and furnish to the School District Certificates of Insurance evidencing same. The School District reserves the right to request, and the Contractor agrees to provide, all insurance endorsements within ten (10) days of a written request for same.

11.1.1.1 <u>Workers' Compensation and Employer's Liability:</u> in the State in which the work is to be performed and elsewhere as may be required and shall include, where applicable, U.S. Longshoremen's and Harbor Workers' Coverage.

- a) Workers' Compensation Coverage: Statutory Requirements
- b) Employers Liability Limits not less than:

Bodily Injury by Accident:	\$ 500,000 Each Accident
Bodily Injury by Disease:	\$ 500,000 Each Employee
Bodily Injury by Disease:	\$ 500,000 Policy Limit

 Including Waiver of Right to Recover from Others Endorsement (WC 00 0313) where permitted by state law.

11.1.1.2 <u>Commercial General Liability:</u> (including Premises - Operations, Independent Contractors, Products/Completed Operations, Broad Form Property Damage, Contractual Liability

(including Liability for Employee Injury assumed under a Contract as provided in the standard ISO policy form), and Explosion, Collapse and Underground Coverages).

a) Occurrence Form with the following limits:

(1)	General Aggregate:	\$2,000,000
(2)	Products/Completed Operations Aggregate:	\$2,000,000
(3)	Each Occurrence:	\$1,000,000
(4)	Personal and Advertising Injury:	\$1,000,000
(5)	Fire Damage (any one fire):	\$ 50,000
(6)	Medical Expense (any one person):	\$ 10,000

- (7) Coverage to also include: Premises Operations; Blanket Contractual Liability; Personal Injury Liability; Products and Completed Operations; Independent Contractors, Employees and Volunteers as Additional Insureds; Cross Liability; and Broad Form Property Damage (including Completed Operations).
- b) **Products/Completed Operations** Coverage must be maintained for a period of at least three (3) years after final payment (including coverage for the Additional Insureds as set forth in these Insurance Requirements).
- c) The General Aggregate Limit must apply on a Per Project basis.
- d) Coverage for Mold/Fungus (no Mold/Fungus exclusion) or, in the alternative, coverage for Mold/Fungus can be provided by a Contractor's Pollution Liability Policy.
- e) No Exterior Insulated Finishing System ("EIFS") or similar exterior wall system exclusion.

#### 11.1.1.3 **Automobile Liability:**

- a) Coverage to include:
  - (1) All Owned, Hired and Non-Owned Vehicles (or "Any Auto")
  - (2) **Contractual Liability Coverage** (including Liability for Employee Injury assumed under a Contract as provided in the standard ISO policy form)
  - (3) Per Accident Combined Single Limit \$1,000,000 (including death) and property damage liability.
  - (4) For those contractors involved in the transportation of hazardous material, the policy shall include the following endorsements: MCS-90 and ISO-9948.

## 11.1.1.4 Commercial Umbrella Liability:

- a) Occurrence Limit: \$3,000,000
- b) Aggregate Limit (where applicable): \$3,000,000
- c) Policy to apply excess of the Commercial General Liability (following form Per Project General Aggregate Limit including full coverage for mold/fungus, EIFS, Commercial Automobile Liability and Employers Liability Coverage.
- d) An Additional Insured endorsement as indicated elsewhere in this Paragraph 11.1.1.
- e) Coverage: Limits in excess of underlying limits in underlying primary insurance policies and broader coverage than combined scope of underlying primary insurance policies.

11.1.1.5 <u>Builder's Risk Insurance:</u> (If required by the Specifications, Division 1 General Requirements, Section 01200 (or 01 1200) entitled "Special Insurance Requirements".)

- a) The General Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, builder's risk insurance. Such insurance shall be written on a completed value form and in the amount of the initial Contract Sum as well as subsequent modifications (including but not limited to architects' fees and materials and equipment supplied by the School District) thereto for the entire Work at the site on an agreed amount basis. Such builder's risk insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made or until no person or entity other than the School District has an insurable interest in the property to be covered, whichever is earlier. This insurance shall include interests of the School District, the General Contractor, Subcontractors and Sub-subcontractors in the Work.
- b) Builder's Risk Insurance shall be on an "all-risk" policy form and shall insure against the perils of fire and extended coverage (including earthquake and flood) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, false work, temporary buildings and debris removal including demolition as may be made legally necessary by the operation of any law, ordinance, or regulation.
- c) Soft Costs: The Builder's Risk Insurance shall provide compensation for expenditures that are necessarily incurred due to a delay in the completion of the Project caused by or resulting from an insured loss. "Soft costs" endorsement shall cover all damages identified both in the Contract and the Performance Bond.
- d) Extra Expense: The Builder's Risk Insurance shall provide compensation for expenditures over and above normal expenses incurred due to physical loss or damage. Extra Expense" endorsement shall cover all damages identified both in the Contract and the Performance Bond.
- e) Unless otherwise provided in the Contract Documents, this Builder's Risk Insurance shall cover portions of the Work stored off the site after written approval of the School District at the value established in the approval, and also portions of the Work in transit.
- f) The General Contractor shall purchase and maintain **Boiler and Machinery Insurance** required by the Contract Documents or by law, which shall specifically

cover such insured objects during installation and until final acceptance by the School District. This insurance shall include interests of the School District, the General Contractor, Subcontractors and Sub-subcontractors in the Work, and the School District and General Contractor shall be named insured(s).

- Any deductible applicable to the insurance purchased shall be identified in the g) Contract Documents and the responsibility for paying the part of any loss not covered because of the operation of such deductible shall be borne by the General Contractor. The General Contractor is responsible for any uninsured or underinsured losses as well as, if applicable, reimbursement to the School District of payments of the deductible for any losses caused by the negligence or faulty workmanship of the General Contractor and its Subcontractors and Sub-subcontractors.
- h) Before the commencement of work, the General Contractor shall provide to the School District a copy of the builder's risk insurance policy.
- i) The Builder's Risk Insurance shall include an endorsement to allow for automatic permission to occupy the Project premises.
- j) If the School District is damaged by the failure of the General Contractor to maintain insurance as required, then the General Contractor shall bear all reasonable costs properly attributable to that failure.
- k) In the event of a claim or an incident that may result in a claim under the Builder's Risk Insurance policy, the General Contractor shall provide the School District with details of such claim within ten (10) days of the incident and allow the School District and/or its representatives to inspect the Project site and/or partake in the investigation and settlement of such incident or claim.
- I) The following supplemental coverages (sublimits) are required for the Builder's Risk Insurance:
  - (1) Flood and Earthquake (Earth Movement) limits for \$5,000,000
  - (2) Ordinance or Law Coverages \$1.000.000
  - (3)Soft Costs \$1.000.000

11.1.1.6 Rigger's Liability Insurance: (If required by the Specifications, Division 1 General Requirements, Section 01200 (or 01 1200) entitled "Special Insurance Requirements".)

- a) "All Risk" Replacement Cost Coverage
- b) Occurrence Limit:
- No overload exclusion C)

11.1.1.7 Pollution Liability Insurances: (If required by the Specifications, Division 1 General Requirements, Section 01200 (or 01 1200) entitled "Special Insurance Requirements"

- a) Each Claim/Aggregate:
- b) Deductible/Self Insured Retention Not to exceed \$50,000
- Occurrence Form Gradual and Sudden/Accidental Pollution. C)
- Insurance to be maintained for the duration of the work and for a period of five d) (5) years thereafter.
- Pay on behalf of in lieu of indemnity. e)
- Covered operations all those performed by or on behalf of the Named Insured. f)
- All disposal facilities must be licensed and maintain pollution liability insurance g) of not less than \$5,000,000.

\$1.000.000

\$1.000.000

11.1.1.8 **Professional Liability Insurance:** (If required by the Specifications, Division 1 General Requirements, Section 01200 (or 01 1200) entitled "Special Insurance Requirements".)

a)	Per Claim Limit:	\$2,000,000
,	Aggregate Limit:	\$2,000,000
	Deductible/Self Insured Retention	Not to exceed \$50,000

- b) Coverage shall be maintained continuously starting on the date of the Contract award and for a period of three (3) years after Contract completion.
- c) Coverage to include: Environmental Contractors errors and omissions, including liability assumed under this Contract.
- d) Professional Liability Insurance may be written on a claims-made basis provided that coverage for occurrences arising out of the performance of the Services or Work required under this Contract shall be maintained in full force and effect for a retroactive date prior to work and an extending reporting period of thirty-six (36) months.
- e) Policy retroactive date must be on or before the date that Work begins.
- f) Any deductibles associated therewith shall be the sole responsibility of the Contractor.

11.1.1.9 <u>Environmental Liability/Contractor's Pollution Insurance:</u> (If required by the Specifications, Division 1 General Requirements, Section 01200 (or 01 1200) entitled "Special Insurance Requirements".)

11.1.1.9.1 If the scope of work includes environmental remediation for asbestos, avian droppings, lead paint, mold, polychlorinated biphenyls (PCB's) underground storage tank removal or soil remediation, the Contractor shall also provide the following insurance:

## ENVIRONMENTAL LIABILITY/CONTRACTOR'S POLLUTION INSURANCE

- a) Limit of Liability: \$1,000,000 with a deductible not to exceed \$50,000.
- b) Coverage: Pollution Liability.
  - (1) Remediation 5 Years Completed Operations.
  - (2) Pay on behalf of in lieu of indemnity.
  - (3) Occurrence form Gradual and Sudden/Accidental Pollution.
  - (4) Covered operations all those performed by or on behalf of the Named Insured.

11.1.1.9.2 This coverage may be provided either under policies issued to the Contractor or to the Remediation Subcontractor, in which case the Contractor shall be an Additional Named Insured. In both cases the School District shall also be an Additional Named Insured.

#### 11.1.1.10 Self Insured Retentions:

None of the policies of insurance required of the Contractor by this Contract shall contain self-insured retentions in excess of \$50,000.

## 11.1.1.11 Financial Rating of Insurance Companies:

- a) A.M. Best Rating: A- (Excellent) or Higher
- b) A.M. Financial Šize Category: Class VII or Higher

11.1.1.12 **The School District of Philadelphia (including the Board of Education), its officers, agents and employees, board members** shall be added as an ADDITIONAL INSURED on all liability policies (except Workers' Compensation and Professional Liability Policy, where applicable), even for claims regarding their partial negligence, **on a primary, non-contributory basis**. Additional Insured Coverage should be provided by attaching <u>both</u> ISO endorsements CG 2010 (for ongoing operations) and CG 2037 (for Completed Operations) or their equivalent.

The **School District** reserves the right to require the Contractor to name other parties as additional insured(s).

11.1.1.13 It is agreed the Contractor's insurance will not be cancelled, materially changed or non-renewed without at least thirty (30) days' advance written notice to the School District by Certified Mail – Return Receipt Requested.

## 11.1.1.14 Waiver of Rights of Recovery and Waiver of Rights of Subrogation:

- a) The **Contractor**, Subcontractors and Sub-subcontractors waive all rights of recovery against the **School District and the Additional Insured(s)** for loss or damage covered by any of the insurance maintained by the **Contractor**, Subcontractors or Sub-subcontractors.
- b) The **Contractor**, Subcontractors and Sub-subcontractors and their respective insurance carriers hereby waive all rights of subrogation against the **School District and the Additional Insured(s)** for loss or damage covered by any of the insurance maintained by the **Contractor**, Subcontractors or Sub-subcontractors.
- c) If any of the policies of insurance required under this Contract require an endorsement to provide for the waiver of subrogation set forth in b) above, then the named insureds of such policies will cause them to be so endorsed.

11.1.1.15 The amount of insurance provided in the aforementioned insurance coverages shall not be construed to be a limitation of the liability on the part of the **Contractor**, Subcontractors or Sub- subcontractors.

11.1.1.16 Any type of insurance or any increase in limits of liability not described above which the **Contractor** requires for its own protection or on account of statute shall be its own responsibility and at its own expense.

11.1.1.17 The carrying of insurance described shall in no way be interpreted as relieving the Contractor of any responsibility or liability under the Contract.

11.1.1.18 Prior to the commencement of work and/or payment, the **Contractor** shall file Certificates of Insurance with the **School District** which shall be subject to the **School District's** approval of adequacy of protection and the satisfactory character of the insurer. The Certificates of Insurance should be mailed within five (5) days of receipt of these insurance requirements to the **School District**, regardless of when the **Contractor's** Work will start. The Project description and Project Number must be shown on the Certificate of Insurance.

In the event of a failure of the **Contractor** to furnish and maintain said insurance and to furnish satisfactory evidence thereof, the **School District** shall have the right (but not the obligation) to take out and maintain the same for all parties on behalf of the Contractor who agrees to furnish all necessary information thereof and to pay the cost thereof to the **School District** immediately upon presentation of

an invoice.

11.1.1.19 In no event is the **Contractor** to begin Work until a Certificate of Insurance showing coverage in the aforementioned amounts required for the Work is received and approved by the **School District**. Any Work performed without having the Certificate of Insurance received and approved by the **School District** shall be at the **Contractor's** own risk.

11.1.2 <u>Evidence of Insurance Coverage</u>. The Contractor shall deliver the required Certificate(s) of Insurance, together with the executed Contract Documents, to the School District within five (5) calendar days after the date of Notice of Contract Award and receipt of the Contract Documents. Certificates of Insurance evidencing the required coverages must specifically reference the School District Contract number for which they are being submitted, and the Contractor shall attach a copy of each insurance certificate to this Contract. The original of the Certificate(s) of Insurance shall be submitted to the School District at the following address:

The School District of Philadelphia Office of Risk Management 440 N. Broad Street – Suite 325 Philadelphia, PA 19130-4950 (Fax No.: 215-400-4591) Attn.: Director of Insurance Risk Management

with a copy to:

The School District of Philadelphia Office of Capital Programs 440 N. Broad Street, Suite 371 Philadelphia, PA 19130-4015 Attn.: Contracts Manager (Fax No.: 215-400-4731)

Both submissions must be made at least ten (10) calendar days before Work is begun and again at least ten (10) calendar days before an additional Term of the Contract. The ten (10) calendar day requirement for advance documentation of coverage may be waived in situations where such waiver will, in the sole judgment of the School District Risk Manager, benefit the School District; but under no circumstances shall the Contractor actually begin Work (or continue Work, in the case of an additional Term of the Contract) without providing the required evidence of insurance. The endorsement adding the School District for Philadelphia as an additional insured must specifically reference the School District Contract number and be submitted to the School District Risk Manager and School District's Contracts Manager in the Office of Capital Programs at the above addresses. The School District reserves the right to require the Contractor to furnish certified copies of the original policies of all insurance required under the Contract at any time upon (10) calendar days' written notice to the Contractor.

11.1.3 Notice of Claim or Lawsuit. The Contractor shall advise the School District in writing, within ten (10) calendar days upon notification of a claim or lawsuit based upon the Contractor's services, omission or breach, that it will abide fully by Paragraph GC-4.18, INDEMNIFICATION and Article GC-11, INSURANCE of the Contract, and that the applicable insurance carrier(s) has (have) been advised to defend, indemnify, and hold harmless the School District in accordance with the provisions of Paragraph GC-4.18, INDEMNIFICATION and Article GC-11, INSURANCE of the Contract. The Contractor shall not decline to provide the School District with full protection and coverage under Paragraph GC-4.18, INDEMNIFICATION and Article GC-11, INSURANCE of the Contract because some other Contractor or consultant may, in whole or in part, be responsible for the occurrence, death, injury, damage, or loss to persons or property, or economic loss, damage, or expense, or because the School District may be a co-insured or an additional insured on some other Contractor's or consultant's policy of insurance. The Contractor agrees that any violation of this Subparagraph 11.1.3 of Article GC-11, INSURANCE shall be

deemed a material breach of the Contract.

11.1.4 <u>Self-Insurance</u>. The Contractor may not self-insure any of the coverages required under the Contract without the prior written approval of the School District Risk Manager. In the event that the Contractor desires to self-insure any of the coverages listed above, it shall submit to the School District's Contracts Manager of Capital Programs and School District Risk Manager, prior to the commencement of Work hereunder, a certified copy of the Contractor's most recent audited financial statement, and such other evidence of its qualifications to act as a self-insurer (e.g., State approval) as may be requested by the School District's Contracts Manager of Capital Programs or School District Risk Manager. In the event such approval is granted, it is understood and agreed that the School District, its commission members. board directors, officers, employees and agents shall be entitled to receive the same coverages and benefits under the Contractor's self-insurance program that they would have received had the insurance requirements been satisfied by a reputable insurance carrier authorized to do business in the Commonwealth of Pennsylvania or otherwise acceptable to the School District Risk Manager. If at the time of commencement of the Contract, the Contractor self-insures its workers' compensation and employers' liability coverage, the Contractor may, in lieu of the foregoing, furnish to the School District Risk Manager and School District a current copy of the State certification form for self-insurance or a current copy of the State Insurance Commissioner's letter of approval, whichever is appropriate. The insurance (including self- insurance) requirements set forth herein are not intended and shall not be construed to modify, limit, or reduce the indemnifications made in the Contract by the Contractor to the School District, or to limit the Contractor's liability under this Contract to the limits of the policies of insurance (or self-insurance) required to be maintained by the Contractor hereunder.

# ARTICLE GC-12 CHANGES IN THE WORK

## GC-12.1 CHANGES IN THE WORK

12.1.1 The School District may, at any time, without notice to the sureties or invalidating the Contract or the Bonds provided by said sureties, by written order designated or indicated to be a Change Order, make any change in the Work within the general scope of the Contract or as may be considered by the School District necessary or desirable from time to time to fully and perfectly complete the Project.

12.1.2 Any and all deviations or changes from the requirements of the Contract must be duly authorized by Change Order on forms approved by the School District prior to proceeding with any part of the Work affected by such deviation or change. Consideration shall be given only to proposed deviations or changes when submitted on the forms of the School District.

12.1.3 The originator of the request shall state in detail both the reason for his recommending the execution of such Change Order and the scope of Work to be performed. Within fifteen (15) calendar days, the Contractor shall insert, and submit for approval, in the spaces provided, an itemized breakdown of the cost of additional or deleted Work proposed. The Architect/Engineer and the School District shall carefully review the proposal of the Contractor. The School District shall review the information and comments contained on the Change Order and, if in its judgment, the proposed deviations or changes are warranted and sufficient funds are available, the School District may approve the Change Order. The School District reserves the right to accept or reject a proposal of the Contractor, to obtain quotations from other sources and to employ other parties to perform such Work, if so desired. The Contractor shall be informed, in writing, of the decision, with copy of such decision to other interested parties. The Contractor shall proceed with such Change Orders after receiving the written authority therefore, and such Work shall be controlled by all the terms and provisions of this Contract, subject to such prices as are agreed upon or established by the School District in its written directives.

12.1.4 The determination of the increase or decrease in compensation to be paid to the Contractor for additions to or reductions in the Work, respectively, shall be determined by application of unit prices wherein such are set forth elsewhere in the Contract Documents, or, in those cases where unit prices are not applicable, by a lump sum mutually agreed upon by the School District and the Contractor.

12.1.5 If, however, unit prices are not applicable and if the parties cannot agree upon a lump sum, then additional compensation to be paid the Contractor shall be determined as follows. For all extra work performed by the Contractor, the gross cost to the School District shall include the net cost of the Work to the Contractor, the gross cost to the School District shall include the net cost of the Work to the Subcontractor, the gross cost to the School District shall include the net cost of the Work to the Subcontractor plus an allowance for overhead and profit. For all extra work performed by a Subcontractor plus an allowance for overhead and profit. The costs shall be supported by signed time sheets, signed by School District project management, material invoices and equipment invoices.

- 12.1.5.1 Net cost of extra work shall be the actual or prorated cost of:
  - (1) Labor, including foreman, at the prevailing rate of wages, Contributions and taxes;
  - (2) Materials entering permanently into the Work, including delivery to the site;
  - (3) Ownership or rental cost of construction equipment and expendable tools prorated for the time necessary for the work. Rental charges for machinery and equipment furnished by the Contractor from his own stock shall not exceed 75% of the published rates based on the compilation of National Average Rental Rates, most recent edition, of the Associated Equipment Distributors;

- (4) Power and consumable supplies for the operation of power equipment, prorated for the time necessary for the Work; and
- (5) Insurance, taxes and bonds.

12.1.5.2 Overhead and profit shall be the aggregate total amount allowed to the Contractor, Subcontractor and Sub-subcontractor and shall include the costs of the Project Manager, Project Superintendent, office personnel, small tools, among other things. The markup for overhead and profit shall be calculated as follows:

- (1) Cost between \$0.00 and \$25,000.00 15%.
- (2) Cost between \$25,001.00 and \$50,000.00 12%.
- (3) Cost over \$50,000.00 10%.

12.1.5.3 Under no circumstances shall the total combined markup for overhead and profit by the Contractor, his Subcontractors and Sub-subcontractors exceed the percentages for markup for overhead and profit indicated in Subparagraphs (1), (2) and (3) above. The School District shall make the final determination as to net cost of labor and materials. <u>All Change Orders relating to price and/or time are subject to prior acceptance or approval by action item of the Board of Education for the School District of Philadelphia, or express ratification of Change Order work already performed by action item of the Board of Education for the School District of Philadelphia.</u>

12.1.5.4 <u>Documentation of Time and Material Work</u>: The Contractor shall maintain detailed records of the labor, material and equipment expended in the performance of time and material work performed under this Article GC-12 and shall submit documentation of the labor, material and equipment expended at the end of each day that such work is performed for signature by the School District's designated representative.

12.1.6 When a change in the Work includes a category or categories of Work both added to and deleted from the Contract, the total quantities of added Work and of deleted Work shall be determined separately for each category and the appropriate Unit Price or net cost of the Work shall be applied to the differences between the two total quantities.

12.1.7 Unit Prices (if applicable) shall be inclusive of all costs and shall be applied to units of measure as defined in the Specifications for each category of Work.

12.1.8 An Alternate or Alternative is an amount, including all cost and applicable overhead and profit, proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if the School District decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems or installation methods described in the Contract Documents.

12.1.9 If the Contractor shall fail to perform such authorized Work by Change Order as described above, the School District may then arrange for the performance of said Work in any manner it may see fit, and the Contractor shall not interfere with such performance of said Work. The School District may withhold payments due the Contractor until any loss which may be sustained by the School District, because of the Contractor's refusal to perform, can be definitely determined by the School District, and the amount of such loss shall be deducted from the balance due the Contractor.

12.1.10 Nothing in this Article GC-12 shall excuse the Contractor from proceeding with the Contract as changed.

12.1.11 The amount payable to the Contractor under this Contract, the Contract Time, and the date required for performance of any part of the Work may be changed only by a Modification to this Contract.

## GC-12.2 MINOR CHANGES IN THE WORK

12.2.1 The School District, the PM/CM or the Architect/Engineer shall have authority to order minor changes in the Work, not involving an adjustment in the Contract Sum, or an extension of the Contract Time, and not inconsistent with the intent of the Contract Documents. Such changes may be made through the RFI process or by mark-ups, comments or notations on shop drawings or submittals. Such changes shall be effected by written order, and shall be binding on the School District and the Contractor. The Contractor shall carry out such written orders promptly.

## GC-12.3 CONSTRUCTION CHANGE DIRECTIVES

12.3.1 When the School District or the PM/CM and the Contractor disagree on the terms of a proposal request, whether scope, cost, or time of performance, or the School District or the PM/CM has determined that the Work must be performed immediately to avoid project delay, the School District may issue a Construction Change Directive. The Construction Change Directive instructs the Contractor to coordinate with the other Contractors as required and proceed without delay with a change in the Work, for subsequent inclusion in a Change Order.

12.3.2 The Construction Change Directive shall contain a description of the change in the Work and designate the method to be followed to determine any change in the Contract Sum or Contract Time.

12.3.3 For Construction Change Directive work performed on a time and material basis, the School District will pay the Contractor as provided in Paragraph GC-12.1.4.

12.3.4 <u>Notice.</u>: The Contractor shall notify the School District and the PM/CM of the complete planned schedule of the Work related to the Construction Change Directive, <u>prior</u> to commencing the Work.

12.3.5 <u>Documentation</u>. The Contractor shall maintain detailed records of the Work required by the Construction Change Directive.

12.3.6 After completion of the changed Work, the Contractor shall submit a complete, itemized accounting and supporting data necessary to substantiate the cost of the Construction Change Directive.

#### GC-12.4 DISPUTED WORK

12.4.1 When the School District, the PM/CM and the Contractor or any of his Subcontractors disagree on whether specific items of Work are included in the contract scope of work or constitute extra work, the School District or the PM/CM may direct the Contractor in writing to proceed with the work in question as Disputed Work for subsequent determination.

12.4.2 The Contractor shall proceed with the Disputed Work without delay and coordinate such Work as necessary with the other Contractors. The Contractor shall maintain detailed records of all associated costs for the subject Disputed Work as time and material work in accordance with Paragraphs GC-12.1.4 and GC-12.1.5 of these General Conditions.

12.4.3 In the event of any dispute between the Contractor or his Subcontractor and the School District, the PM/CM or the Architect/Engineer concerning the scope of the Work, the Contractor or his Subcontractor shall, nevertheless, expeditiously proceed with the performance of the Work

12.4.4 In the event of any dispute between the Contractor or his Subcontractor and the School District, the PM/CM or the Architect/Engineer concerning the amount to be paid for the changed work, the School District reserves the right to issue a unilateral Change Order for the amount it has determined to be justified

## GC-12.5 CHANGE PROPOSALS

12.5.1 All change proposals submitted by the Contractor shall include the following detailed backup that will allow the PM/CM, the Architect/Engineer and the School District to properly evaluate the proposal:

- (1) Man-hours and rates for each trade involved in the change.
- (2) Material and equipment costs.
- (3) Detailed proposals for all subcontracted Work.
- (4) Detailed proposals from material suppliers.
- (5) Written explanation justifying additional compensation.
- (6) Inclusion of applicable credits.
- (7) Unit prices (if applicable) included in the Contractor's proposal shall govern to the extent applicable.

12.5.2 When submitting a Change Proposal, the Contractor shall provide complete copies of the Change Proposal to other Prime Contractors. The other Prime Contractors shall, within five (5) days of receipt of the Change Proposal, provide to the PM/CM, the Architect/Engineer and the School District a written response indicating that the Work incorporated in the Change Proposal will have one of the following effects on the Work of the Contractor furnishing the response:

- (1) The Work of the Change Proposal will not affect the Contractor's Contract Amount or Time.
- (2) The Work of the Change Proposal will not affect the Contractor's Contract Amount but will affect the Contractor's Time. A detail of effect on Time shall be included.
- (3) The Work of the Change Proposal will not affect the Contractor's Time but will affect the Contractor's Contract Amount. A detail of effect on Contract Amount shall be included.
- (4) The Work of the Change Proposal will affect the Contractor's Contract Amount and Time. A detail of effect on both Contract Amount and Time shall be included.

## GC-12.6 TIME LIMIT ON CHANGE PROPOSALS AFTER SUBSTANTIAL COMPLETION

12.6.1 All change proposals initiated by the Contractor pursuant to this Article GC-12 shall be submitted within six (6) months of the date of Substantial Completion and must include all required backup information and documentation necessary to evaluate them, including but not limited to the backup detail specified in Paragraph GC-12.5 above.

12.6.2 Any change proposal submitted by the Contractor after that date shall be rejected as untimely, unless the Contractor demonstrates to the reasonable satisfaction of the School District that necessary information or documentation was not available until the time of the submittal.

# ARTICLE GC-13 UNCOVERING AND CORRECTION OF WORK

## GC-13.1 UNCOVERING OF WORK

13.1.1 If any portion of the Work should be covered, contrary to the request of the School District, the PM/CM or the Architect/Engineer, or to requirements specifically expressed in the Contract Documents, such Work must, if required in writing by the School District or the PM/CM, be uncovered for its observation. The uncovering and replacement shall be totally at the Contractor's expense, without change in the Contract Time.

## GC-13.2 CORRECTION OF WORK

13.2.1 The Contractor shall promptly correct all Work rejected by the PM/CM, the Architect/Engineer or the School District as defective or as failing to conform to the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for the PM/CM's or the Architect/Engineer's additional services made necessary thereby.

13.2.2 If, within one (1) year after the Date of Final Completion of the Project or within such longer period of time as may be prescribed by law or by the terms of any applicable warranty specified elsewhere in the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct such Work promptly, at the Contractor's sole expense, after receipt of a written notice from the School District to do so, unless the School District has previously given the Contractor a written acceptance of such condition. This obligation shall survive termination of the Contract. The School District shall give such notice promptly after discovery of the condition.

13.2.3 The Contractor shall, unless removal is waived by the School District, remove from the Project site all portions of the Work which are defective or nonconforming, or if permitted or required, he shall correct such Work in place by and at the expense of the Contractor promptly after receipt of notice, and such rejected Work shall not thereafter be tendered for acceptance unless the former rejection or requirement for correction is disclosed.

13.2.4 If the Contractor does not proceed with the correction of such defective or nonconforming Work within a reasonable time fixed by written notice from the School District, the School District may either

(1) by separate contract or otherwise, replace or correct such Work and charge the Contractor the cost occasioned the School District thereby, and remove and store the materials or equipment at the expense of the Contractor; or (2) terminate this Contract for default as provided in Paragraph GC-14.3. If the Contractor does not pay the cost of such replacement or correction and the removal and storage within ten

(10) calendar days thereafter, the School District may, upon ten (10) additional calendar days' written notice, sell such Work at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs that should have been borne by the Contractor, including compensation for additional services of the PM/CM or the Architect/Engineer made necessary thereby and attorneys' fees and expenses. If such proceeds of sale do not cover all costs which the Contractor should have borne, the difference shall be charged to the Contractor, and an appropriate Change Order shall be issued. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the School District immediately upon demand.

13.2.5 The Contractor shall bear the cost of making good the Work of the School District or separate Contractors destroyed or damaged by such correction or removal.

13.2.6 Nothing contained in this Paragraph GC-13.2 shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents,

including Paragraph GC-4.5 hereof. The establishment of the time period of one (1) year after the Date of Final Completion or such longer period of time as may be prescribed by law or by the terms of any warranty required by the Contract Documents relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which his obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to his obligations other than specifically to correct the Work.

## GC-13.3 ACCEPTANCE OF NONCONFORMING WORK

13.3.1 In its sole discretion, if the School District elects to accept Work which does not completely satisfy the requirements of the Contract Documents or is nonconforming, the School District may do so (without waiving any rights or remedies the School District may have with respect to said Work) instead of requiring its removal and correction, in which case a Change Order shall be issued to reflect a reduction in the Contract Sum where appropriate and equitable. If the amount is determined after final payment, this amount shall be paid to the School District by the Contractor immediately upon demand.

# ARTICLE GC-14 TERMINATION AND SUSPENSION OF THE CONTRACT

## GC-14.1 TERMINATION BY THE CONTRACTOR

14.1.1 If the Project is stopped for a period of ninety (90) calendar days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault or negligence of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the Contractor, then the Contractor may, upon seven (7) additional days' written notice to the School District and the PM/CM, terminate the Contract and recover from the School District, as his sole and exclusive remedy and without prejudice to any right or remedy otherwise available to the School District or a purchaser, payment for all Work executed and not previously paid.

## GC-14.2 TERMINATION FOR CONVENIENCE OF SCHOOL DISTRICT

14.2.1 The School District may, at any time upon ten (10) calendar days' written notice to the Contractor, terminate (without prejudice to any right or remedy of the School District or a purchaser) the whole or any portion of the Work for the convenience of the School District. Such termination for convenience shall be, at the School District's sole discretion, and without penalty, cost, or liability to the School District.

14.2.2 The Contractor shall be entitled to payment from the School District for any Work satisfactorily performed in accordance with the provisions of the Contract prior to the effective date of termination.

14.2.3 The Contractor shall continue to perform the Contract in accordance with its terms through the effective date of the termination, and shall make diligent efforts to mitigate all costs and losses associated with the termination.

14.2.4 The School District shall incur no liability beyond such stated amount for any Work that is terminated under Paragraph GC-14.2, Termination for Convenience of the School District, or Paragraph GC-9.10, Unavailability of Funds, of these General Conditions. Without limiting the generality of the foregoing, in no event shall the Contractor be entitled to receive, or to submit any claim for, any of the following costs directly or indirectly caused by the termination: (i) field or home office overhead; or (ii) costs caused by or related to loss of productivity or loss of profit related to the Work and the Contract, or to any other Contract or work that the Contractor performed or could have performed but was prevented from performing because of the termination or its commitment to the Work.

14.2.5 In the event the School District partially terminates the Contract pursuant to this Paragraph GC-14.2, the Contractor shall continue to perform the Contract in accordance with its terms with respect to all Work not terminated. The School District shall pay the Contractor in accordance with the Contract for Work that is not terminated.

#### GC-14.3 DEFAULT TERMINATION

14.3.1 The School District may, upon seventy-two (72) hours' written notice to the Contractor, terminate (without prejudice to any right or remedy of the School District or a purchaser) the whole or any portion of the Work required by the Contract Documents, in any one (1) of the following circumstances:

14.3.1.1 if the Contractor abandons the Work or refuses or fails to prosecute the Work or any separable part thereof with such diligence as will ensure the Substantial Completion of the Project within the Contract Time, or refuses or fails to complete said Work within such time;

14.3.1.2 if the Contractor is in default in carrying out any provisions of this

Contract for a cause within his control or fails to comply with any material provision, term or condition of the Contract;

14.3.1.3 if a petition under any bankruptcy or insolvency law is filed against the Contractor, or the Contractor petitions for relief under the Bankruptcy Code, or makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of his insolvency, or there is the appointment of a receiver, trustee or custodian to take possession of all or substantially all the assets of the Contractor for the benefit of creditors, or any action is taken or suffered by the Contractor under any federal or state insolvency, bankruptcy, reorganization, moratorium or other debtor relief act or statute;

14.3.1.4 if the Contractor fails to supply a sufficient number of properly skilled workers or proper materials;

14.3.1.5 if the Contractor fails to make prompt payment to Subcontractors or for materials or labor;

14.3.1.6 if the Contractor submits an Application for Payment or any other document which is intentionally falsified;

14.3.1.7 if a lien or notice of lien is filed against any Work or the Project

14.3.1.8 if the Contractor disregards any laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction;

14.3.1.9 if there is a material falseness or inaccuracy of any representation or commitment of the Contractor contained in the Contract or in any other document submitted to the School District by the Contractor in relation to the Work or the Contractor's Bid;

14.3.1.10 if there is misappropriation by the Contractor of any funds provided under the Contract or failure by the Contractor to notify the School District upon discovery of any misappropriation;

14.3.1.11 if there is a violation of law which results in a guilty plea, a plea of nolo contendere, or conviction of a criminal offense by the Contractor, its directors, employees, or agents (1) directly or indirectly relating to the Contract or the Work required under the Contract, whether or not such offense is ultimately adjudged to have occurred, or (2) which adversely affects the performance of the Contract; or.

14.3.1.12 if the Contractor violates any provision of the Contract Documents.

The right of the Contractor to proceed shall not be so terminated under this Paragraph GC-14.3 because of any delays in the completion of the Work due to unforeseeable causes, beyond the control and without the fault or negligence of the Contractor or his Subcontractors, as set forth in Subparagraph 8.3.3 of these General Conditions.

14.3.2 If, after the Contractor has been terminated for default pursuant to this Paragraph GC-14.3, it is determined that none of the circumstances set forth in Subparagraph 14.3.1 of these General Conditions exist, then such termination shall be considered a termination for convenience pursuant to Paragraph GC-14.2 of these General Conditions.

site:

## GC-14.4 ALLOWABLE TERMINATION COSTS

14.4.1 If the School District terminates the whole or any portion of the Work pursuant to Paragraph GC-14.2 of these General Conditions, then the School District shall only be liable to the Contractor for those costs reimbursable to the Contractor in accordance with Subparagraph 14.4.2 of these General Conditions, plus a markup of ten percent (10%) on the actual fully accounted costs recovered under Subparagraph

14.4.2 of these General Conditions; provided, however, that if it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, no profit shall be included or allowed hereunder, and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss.

14.4.2 If the School District terminates the whole or any portion of the Work pursuant to Paragraph GC-14.2 of these General Conditions, then the School District shall pay the Contractor the amounts determined by the School District as follows:

14.4.2.1 an amount for supplies, services, or property accepted by the School District pursuant to Subparagraph 14.5.1.6 of these General Conditions (or sold or acquired pursuant to Subparagraph 14.5.1.7 of these General Conditions) and not heretofore paid for, and to the extent provided in the Contract, such amount shall be equivalent to the aggregate price for such supplies or services computed in accordance with the price or prices specified in the Contract, appropriately adjusted for any saving of freight or other charges; and

14.4.2.2 the total of:

(1) the cost incurred in the performance of the Work terminated, including initial costs and preparatory expense allocable thereto, but exclusive of any costs attributable to supplies or services paid or to be paid for under Subparagraphs 14.4.2.1 or 14.4.2.2(2) of these General Conditions;

(2) the cost of settling and paying claims arising out of the termination of Work under Subcontracts or orders, pursuant to Subparagraph 14.5.1.5 of these General Conditions, which are properly chargeable to the terminated portion of the Contract (exclusive of amounts paid or payable on account of completed items of equipment delivered or services furnished by Subcontractors or vendors prior to the effective date of the Notice of Termination), which amounts shall be included in the costs payable under (1) above; and

(3) the reasonable costs of settlement, including accounting, legal, clerical, and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the Contract and for the termination and settlement of Subcontracts thereunder, together with reasonable storage, transportation, and other costs incurred in connection with the protection or disposition of property allocable to this Contract.

14.4.3 The total sum to be paid to the Contractor under this Paragraph GC-14.4 shall not exceed the Contract Sum as reduced by the amount of payments otherwise made, and by the Contract price of Work not terminated and as otherwise permitted by this Contract. Except for normal spoilage, and except to the extent that the School District shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor, as provided in this Subparagraph 14.4.3, the fair value, as determined by the School District, of property which is destroyed, lost, stolen, or damaged so as to become undeliverable to the School District, or to a buyer pursuant to Subparagraph 14.5.1.7 of these General Conditions.

14.4.4 If the School District terminates the whole or any part of the Work pursuant to Paragraph GC-14.3 of these General Conditions, then the School District may procure, upon such terms and in such manner as the School District may deem appropriate, supplies or services similar to those so terminated, and the Contractor shall be liable to the School District for any excess costs for such similar supplies or services.

The Contractor shall continue the performance of this Contract to the extent not terminated hereunder.

#### GC-14.5 GENERAL TERMINATION PROVISIONS

14.5.1 After receipt of a Notice of Termination from the School District, pursuant to Paragraphs GC-14.2 or GC-14.3 of these General Conditions, and except as otherwise directed by the School District, the Contractor shall:

14.5.1.1 stop Work under the Contract on the date and to the extent specified in the Notice of Termination;

14.5.1.2 place no further orders or Subcontracts for labor, materials, equipment, services, or facilities, except as may be necessary for completion of such portion of the Work under the Contract as is not terminated;

14.5.1.3 terminate all orders and Subcontracts to the extent that they relate to the performance of Work terminated by the Notice of Termination;

14.5.1.4 assign to the School District in the manner, at the times and to the extent directed by the School District, all of the rights, title, and interest of the Contractor under the orders and Subcontracts so terminated, in which case the School District shall have the right, at its sole discretion, to settle or pay any or all claims arising out of the termination of such orders and Subcontracts;

14.5.1.5 settle all outstanding liabilities and all claims arising out of such termination of orders and Subcontracts, with the approval or ratification of the School District, to the extent it may require, which approval or ratification shall be final for all the purposes of this Subparagraph;

14.5.1.6 transfer title and deliver to the entity or entities designated by the School District, in the manner, at the times and to the extent, if any, directed by the School District, and to the extent specifically produced or specifically acquired by the Contractor for the performance of such portion of the Work as had been terminated:

(1) the fabricated or unfabricated parts, Work in progress, partially completed supplies, and equipment, materials, parts, tools, dies, jigs, and other fixtures, completed Work, supplies and other material produced as part of, or acquired in connection with, the performance of the Work terminated by the Notice of Termination; and

(2) the completed or partially completed plans, drawings, information, and other property related to the Work;

14.5.1.7 use his best efforts to sell, in the manner, at the times, to the extent, and at the price or prices directed or authorized by the School District, any property of the types referred to in Subparagraph 14.5.1.6 of these General Conditions; provided, however, that the Contractor:

(1) shall not be required to extend credit to any buyer; and

(2) may acquire any such property under the conditions prescribed by and at a price or prices approved by the School District, and, provided further that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the School District to the Contractor under this Contract or shall otherwise be credited to the price or cost of the Work covered by this Contract or paid in such other manner as the School District may direct;

14.5.1.8 complete performance of such part of the Work as shall not have been terminated by the Notice of Termination; and

14.5.1.9 take such action as may be necessary, or as the School District or Architect/Engineer may direct, for the protection and preservation of the property related to this Contract, which is in the possession of the Contractor and in which the School District has or may acquire an interest.

14.5.2 The Contractor shall preserve and make available to the School District and the PM/CM, at all reasonable times, at the office of the Contractor, but without direct charge to the School District, all his books, records, documents and other evidence bearing on the costs and expenses of the Contractor and any Subcontractor under this Contract and relating to the Work terminated hereunder, or, to the extent approved by the School District, photographs, microphotographs, or other authentic reproductions thereof.

14.5.3 In arriving at any amount due the Contractor pursuant to Paragraph GC-14.4 of these General Conditions, there shall be deducted:

14.5.3.1 all unliquidated advances or other payments on account theretofore made to the Contractor applicable to the terminated portion of this Contract;

14.5.3.2 any claim which the School District may have against the

Contractor;

14.5.3.3 such claim as the School District determines to be necessary to protect the School District against loss because of outstanding or potential liens or claims; and

14.5.3.4 the agreed price for, or the proceeds of sale of, any materials, supplies, or other things acquired by the Contractor or sold, pursuant to the provisions of Subparagraph 14.5.1.7 of these General Conditions and not otherwise recovered by or credited to the School District.

14.5.4 If the termination, pursuant to Paragraph GC-14.2 of these General Conditions, is partial, then the Contractor may file with the School District a claim for an equitable adjustment of the price or prices specified in the Contract relating to the continued portion of the Contract (the portion not terminated by the Notice of Termination), and such equitable adjustment as may be agreed upon shall be made in such price or prices. Any claim by the Contractor for an equitable adjustment under this Subparagraph must be asserted within six (6) months from the effective date of the Notice of Termination.

14.5.5 The Contractor shall refund to the School District any amounts paid by the School District to the Contractor in excess of costs reimbursable under Paragraph GC-14.4 of these General Conditions.

14.5.6 The School District may, at its option and the Contractor's expense, have costs reimbursable under Paragraph GC-14.4 of these General Conditions audited and certified by independent certified public accountants selected by the School District.

14.5.7 The Contractor shall be entitled to only those damages and that relief from termination by the School District as specifically provided in Article GC-14 of these General Conditions.

#### GC-14.6 ADDITIONAL REMEDIES OF THE SCHOOL DISTRICT

14.6.1 In the event the Contractor commits or permits an event of default, the School District may, in its sole discretion, exercise one or more of the following remedies in addition to or in lieu of the termination remedy provided in Paragraph GC-14.3 of these General Conditions:

(a) terminate the Contract in part only, in which case the Contractor shall be obligated to perform the Contract to the extent not terminated; or

(b) perform (or cause a third party to perform) the Work and the Contract, in whole or in part, including, without limitation, obtaining or paying for any required insurance or performing other acts capable of performance by the School District. The Contractor shall be liable to the School District for all sums paid by the School District and all expenses incurred by the School District (or a third party) pursuant to this Paragraph GC-14.6, together with interest at the statutory legal rate of 6%

permitted in the Commonwealth of Pennsylvania thereon from the date of the School District's incurring of such costs.

The School District shall not in any event be liable for inconvenience, expense, or other damage incurred by the Contractor by reason of such performance or paying such costs or expenses, and the obligations of the Contractor under the Contract shall not be altered or affected in any manner by the School District's exercise of its rights under this Article GC-14; or

(c) withhold, or offset against, any funds payable to or for the benefit of the Contractor; or

(d) collect, foreclose or realize upon any bond, collateral, security or Insurance provided by or on behalf of the Contractor; or

(e) exercise any other right or remedy it has or may have at law, in equity, or under the Contract; and,

(f) in addition to, and not in lieu of, the foregoing remedies, the School District shall have the right to stop the Work or any portion thereof in the event the Contractor fails to remedy any defects in any of the Work or commits or permits any other event of default, following written notice by the School District, or fails to carry out any portion of the Work in accordance with the Contract, by issuing its written Stop Work Order, which shall be signed by the School District's Director of Capital Programs or Operations Manager of Capital Programs. Any Stop Work Order shall state in reasonable detail the cause(s) for its issuance. Upon receiving a Stop Work Order, the Contractor shall immediately cease working on that portion of the Work specified in the Stop Work Order until the School District notifies the Contractor in writing that the cause for the Stop Work Order has been eliminated, and directs the Contractor in writing to resume the Work. The Contractor shall resume the Work immediately upon receipt of such written notice from the School District.

# GC-14.7 CONCURRENT PURSUIT OF REMEDIES; NO WAIVER OR DUTY TO EXERCISE

14.7.1 The School District may exercise any or all of the remedies set forth in this Article GC-14, each of which may be pursued separately or in connection with such other remedies as the School District, in its sole discretion, shall determine. No extension or indulgence granted to the Contractor shall operate as a waiver of any of the School District's rights in connection with the Contract. The rights and remedies of the School District as described in this Article GC-14 and elsewhere in the Contract shall not be exclusive and are in addition to any other rights or remedies available to the School District under the Contract, at law, or in equity. Nothing contained in this Article GC-14 shall create a duty on the part of the School District to exercise any rights granted to it hereby for the benefit of the School District, or for the benefit of the Contractor, or any person or entity other than the School District.

#### GC-14.8 SUSPENSION OF WORK DUE TO UNFAVORABLE CONDITIONS

14.8.1 If, in the judgment of the School District, the Contractor is taking undue risk of damage to any part of the Project by proceeding with the Work during unfavorable weather or other conditions, then the PM/CM or the Architect/Engineer or the School District shall immediately verbally notify the Contractor or his representative, at the Project site, to suspend operations because of said condition or conditions. The School District shall thereupon, by letter or telegram, confirm the verbal order to suspend the Work, either wholly or in part, for such period of time as may be necessary.

14.8.2 In case of suspension, an extension of the Contract Time may be requested by the Contractor, but regardless of whether it is granted or not, no allowance or additional compensation shall be made to the Contractor for any expense resulting from suspension of the Work. The School District shall not be

liable to the Contractor in any event for any expenses, damages, losses or profits, anticipated or otherwise, or any other charges whatsoever arising out of a suspension in the Work of the Contractor or any Contractor engaged on this Project.

14.8.3 It shall be clearly understood that the failure of the PM/CM, or the Architect/Engineer or the School District to so advise the Contractor regarding unfavorable conditions shall not relieve the Contractor of his responsibility for compliance with all the terms of the Contract.

#### GC-14.9 SUSPENSION FOR CONVENIENCE OF SCHOOL DISTRICT

14.9.1 The School District shall have the right, at any time, during the term of the Contract, to suspend all or any part of the Work, for the convenience of the School District, for the period of time that the School District, in its sole discretion, determines to be in the best interest of the School District, upon written notice to the Contractor stating the effective date and extent of the work suspended.

14.9.2 If a suspension of the Work pursuant to this Paragraph GC-14.9 is for greater than thirty (30) days, the Contractor shall have the right to submit a claim to the School District for the payment of costs for all Work performed and expenses incurred in accordance with the provisions of the Contract prior to the effective date of the suspension.

14.9.3 The Contractor shall be entitled to an equitable extension of the time of performance provided in the Contract for any suspension pursuant to this Paragraph GC-14.9.

14.9.4 The School District shall have the right, during the period of any suspension pursuant to this Paragraph GC-14.9, to terminate the Contract as provided in this Article GC-14, in Article GC-9 of the General Conditions, and elsewhere in the Contract.

END OF GENERAL CONDITIONS

CONTRACT ATTACHMENTS (Required Provisions Incorporated by Reference)

# THE SCHOOL DISTRICT OF PHILADELPHIA

No. 610.1 SECTION: 600 Finance TITLE: Disqualification, Suspension or Debarment of Bidders ADOPTED: June 16, 1986 REVISED: January 30, 2020

# 610.1 TERMINATION OF CONTRACTS AND DISQUALIFICATION, SUSPENSION, OR DEBARMENT OF VENDORS

# Purpose

The Board of Education ("Board") seeks to realize the full value of the School District of Philadelphia's ("District") business relationships with its vendors and protecting the District from non-responsible vendors.

This policy authorizes the District to establish guidelines and standards for evaluating vendor responsibility, and regarding termination of contracts, and disqualification, suspension, and debarment of vendors from contracting or subcontracting with the District. This policy applies to all contracts with the District. The District may terminate contracts, and may disqualify, suspend, or debar vendors and their affiliates to protect the District and the public's interest in compliance with law, Board policies (for example, Policy 612), contract commitments, and appropriate business practices, among other things.

# **Definitions**

The following words and phrases, when used in this policy, shall have the meaning given to them in this section:

"Debarment" means exclusion from serving as a vendor for the District for a specified time.

"Disqualification" means exclusion as a vendor from award of any particular contract with the District.

**"Suspension**" means exclusion as a vendor for the District for an indefinite time determined by some stated future occurrence.

# <u>Authority</u>

The Pennsylvania Public School Code authorizes the Board to adopt policies and procedures and to make rules and regulations to manage school affairs and fiscal well-being of the District, including with respect to competitive procurements and vendor responsibility. [1][2][3][4][5][6][7]

# **Delegation of Responsibility**

The Board authorizes the Superintendent or designee to delegate responsibility for the development of administrative procedures for the implementation and enforcement of this policy concerning:

- 1. Bases and procedures for termination of contracts, debarment, disqualification, and suspension;
- 2. The duration and scope of debarment, disqualification, and suspension; and
- District personnel or offices responsible for making and enforcing decisions regarding termination of contracts, and disqualification, suspension, or debarment of vendors and their affiliates.

Additionally, the Office of Procurement Services shall maintain a "Procurement Manual," which shall be updated as needed and posted on the District's website. The Procurement Manual may define other terms and provide additional guidance relevant to this Policy.

# Legal References:

- 1. <u>24 P.S. § 5-510</u>
- 2. <u>24 P.S. § 7-751</u>
- 3. <u>24 P.S. § 8-807.1[1]</u>
- 4. <u>24 P.S. § 6-610</u>
- 5. <u>24 P.S. § 8-801</u>
- 6. Policy 601 Fiscal Objective
- 7. Policy 610 Purchases Subject to Competitive Process

#### **Related References:**

#### Policy 612: Business Diversity in the Procurement of Materials and Contracted Services

GP 1800: Suspended, Disqualified or Debarred Vendors

#### Administrative Procedures for Termination of Contracts and Disqualification, Suspension, or Debarment of Vendors (Attachment for Policy No. 610.1)

#### PURPOSE

The Board of Education ("Board") seeks to realize the full value of the School District of Philadelphia's ("District's") business relationships with its vendors.

#### DEFINITIONS

The following words and phrases, when used in this policy, shall have the meaning given to them in this section:

"Debarment" means exclusion from serving as a vendor for the District for a specified time.

"Disqualification" means exclusion as a vendor from award of any particular contract with the District.

"Suspension" means exclusion as a vendor for the District for an indefinite time determined by some stated future occurrence.

"Vendor(s)" includes any business enterprise, person, firm, partnership, non-profit corporation, forprofit corporation, limited liability company or other legal entity that may seek to or does submit a bid or proposal in response to an invitation to bid or request for proposals or qualifications, or otherwise is seeking to contract with the District or act as a subcontractor on a District contract, and/or with which the District has entered into a contract.

In addition to the above terms, the Office of Procurement Services ("Procurement Services"), in its "Procurement Manual," which shall be updated from time to time and posted on the Procurement Services website, shall define other terms relevant to Policy 610.1 ("Policy").

#### GUIDELINES

Detailed information regarding the implementation of the Policy is further described in the Procurement Manual. The considerations and actions below shall be made based on evaluation of the District's best interests, in the sole discretion of the District, and in accordance with law.

#### **Termination**

The District may terminate contracts for convenience or for cause.

#### **Debarment**

#### **Causes for Debarment**

The District may debar a **vendor** or affiliate for any one or more of the following **reasons**:

1. Conviction of or civil judgment for crimes or causes of action involving fraud or dishonesty;

- 2. Violation of any **antitrust laws**, laws governing labor or employment, including wages and hours, child labor, or discrimination, or any election or campaign finance laws;
- Unsatisfactory performance or failure to perform in accordance with the terms of one or more contracts with the District or any person or entity, or subcontracts, provided that such acts or failures to act occurred within a reasonable period of time before or during the District's decision;
- 4. Debarment from contracting or subcontracting by any other federal, state or local governmental body;
- 5. Providing false or misleading information as part of any prequalification statement, bid, **proposal, response,** contract, or subcontract, including but not limited to financial statements, fair employment forms, or product descriptions;
- 6. Noncompliance with District policies, including, but not limited to, Policies 612 and 818;
- 7. Unauthorized payments, gifts or other valuable consideration to any person having any official duties, direct or indirect, in connection with bidding, awarding of, or performing District contracts or subcontracts;
- 8. The use by employment, subcontract or other formal association of former District employees who have resigned or been dismissed for reasons of moral turpitude or breach of fiduciary duty, where the former employee (i) holds a position with the vendor or affiliate which brings the former employee into contact with students or (ii) has fiduciary responsibilities with the vendor; or
- 9. Any other lawful reason.

#### **Duration of Debarment**

- 1. Debarment shall be imposed for a specified time not to exceed three years unless reasons for a longer period are stated in the notice of debarment.
- 2. The District may extend debarment for an additional specified period at any time before a debarment expires upon adequate evidence in addition to that which supported the original debarment in accordance with the procedure for debarment.
- 3. The District may reduce the period of debarment upon the **vendor's** written request supported

by adequate evidence of good cause, such as:

- a. Reversal of the conviction or judgment upon which the debarment was based without a new trial within a reasonable time;
- b. Bona fide change in ownership or management of the **vendor**; or
- c. Elimination of other causes for which debarment was opposed.

#### **Procedure for Debarment**

The District official responsible for soliciting bids or proposals, retaining services, or overseeing performance on the class or classes of contracts or subcontracts at issue, with the advice and approval of Procurement Services and Office of General Counsel, shall begin debarment

proceedings by giving notice of intent to debar to the **vendor** and any specified affiliates **of the decision and rights and process to challenge the decision, if any.** 

#### **Suspension**

#### **Causes for Suspension**

The District may, **based on evaluation of its best interest**, suspend a **vendor** or affiliate for any one or more **reasons**, **including**:

- 1. Indictment for any crimes, action or inaction as discussed in the *Causes for Debarment* section above;
- 2. Irregularities of a serious nature in business dealings with the District or seriously reflecting on the propriety of further business dealings with the District.

#### **Duration of Suspension**

Suspension shall be imposed for a period pending the outcome of criminal proceedings or the completion of an investigation and such legal proceedings as may ensue.

#### **Procedure for Suspension**

The District official responsible for soliciting bids or proposals, retaining services, or overseeing performance on the class or classes of contracts or subcontracts at issue, with the advice and approval of Procurement Services in consultation with Office of General Counsel, shall begin suspension proceedings by giving notice of intent to suspend to the vendor and any specified affiliates of the decision and rights and process to challenge the decision, if any.

#### **Disgualification**

#### **Causes for Disqualification**

The District may, based on evaluation of its best interests, disqualify a vendor or its affiliate with respect to any particular bid, pre-qualification, request for proposals or qualifications, or contract award for any one or more reasons, including the following:

- 1. Any causes for debarment or suspension;
- 2. Inadequate financial resources to perform the contract or subcontract;
- 3. Inadequate experience, **capacity**, organization, or resources **(technical, workforce, or other)** to perform the contract;
- 4. Discrimination in the vendor's employment or business practices on the basis of race, color, sex or national origin or other protected class; or
- 5. Any other facts or circumstances showing a reasonable likelihood of inability to perform the contract.

#### Procedure for Disqualification

The District official responsible for soliciting bids or proposals, retaining services, or overseeing performance on the class or classes of contracts or subcontracts at issue, with the advice of the Procurement Services and Office of General Counsel, shall begin disqualification proceedings by giving notice of intent to disqualify to the vendor and any specified affiliates of the decision and rights and process to challenge the decision, if any.

## **Miscellaneous**

#### **Responsibility for Agents**

Vendors and affiliates are deemed responsible for the acts of persons acting for or on their behalf, such that fraudulent, criminal, or other improper conduct of an officer, director, shareholder, partner, employee, or other associate, or the same representatives of a joint venture or similar arrangement partner, may be imputed to the vendor, affiliate, or joint venture or similar arrangement partner.

#### **Effect on Executory Contracts**

- A. The District may continue in effect any contracts or subcontracts with debarred or suspended **vendors** which have not been fully performed at the time of debarment or suspension in accordance with their terms.
- B. The District shall not renew or extend contracts with debarred or suspended **vendors without Board approval.**

#### **Restrictions on Subcontracting**

When a debarred or suspended **vendor** is proposed as a subcontractor for any subcontract subject to District approval, the District shall not approve such subcontractor unless the Superintendent or designee states in writing the compelling reasons for such approval.

#### Records

Procurement Services shall maintain records of all contracts terminated and all vendors or affiliates debarred, suspended, or disqualified for the purpose of enforcing the Policy.

#### **Maintenance Schedule**

Procurement Services shall review these administrative procedures annually.

No. 612

SECTION: 600 Finances

TITLE: Business Diversity in the Procurement of Materials and Contracted Services

ADOPTED: January 30, 2020

# 612 BUSINESS DIVERSITY IN THE PROCUREMENT OF MATERIALS AND CONTRACTED SERVICES

# <u>Purpose</u>

The Board of Education ("Board") is committed to promoting equitable opportunity to do business with The School District of Philadelphia ("District") under contract awards relating to, among other things, facilities, professional services, goods and supplies.

The Board recognizes that the District's support for supplier diversity initiatives and engagement in minority business development helps to create a more diverse workforce that will enhance opportunities for employment of the District's diverse student population and their families.

It is the intent of the Board and the District that the District and all contractors, vendors, consultants and entities contracting with the District and by extension their subcontractors (collectively "Vendors"), shall not discriminate against any person in regard to race, color, age, creed, religion, sex, sexual orientation, ancestry, national origin, handicap/disability, gender identify, or genetic information. [1][2][3][4][5][6][7][8]

# <u>Authority</u>

The Pennsylvania Public School Code authorizes the Board to adopt policies and procedures and to make rules and regulations to manage school affairs and fiscal well-being of the District, including with respect to procurements and vendor responsibility. [9]

# **Delegation of Responsibility**

The Board authorizes the Superintendent, through the Office of Procurement Services ("Procurement Services"), to develop administrative procedures to establish processes for requiring diversity inclusion in procurement and contracting, encompassing, among other things:

- Development and implementation of standards, staffing, benchmarks and measurements to achieve diversity goals;
- Monitoring, compliance, and enforcement guidelines, with sanctions and penalties for failure to comply; and
- Recordkeeping and reporting on outcomes of the District's diversity contracting initiatives, on individual contracts and through aggregate spending.

# THE SCHOOL DISTRICT OF PHILADELPHIA

## Mandatory Regulatory Procedures

Consistent with the values of the Board, the District shall:

- Take proactive steps through its procurement and contracting processes to maximize the inclusion and active participation of qualified and certified Minority and Women-owned Business Enterprises ("M/WBEs"), among small and other disadvantaged business enterprises to advance and promote employment opportunities for a diverse workforce;
- Establish goals for having District purchases and contracting to support the development and participation of such enterprises, while ensuring District business is conducted in accordance with the District's best interests concerning value, capacity, expertise, business dealings, and available resources of potential Vendors; and
- Require Vendors to adhere to District equitable opportunity and anti-discrimination policies through the life of District agreements.

The District and its Vendors shall provide a full and fair opportunity for the participation of disadvantaged businesses, such as M/WBEs, in the procurement and contracting processes.

The District will develop reasonably attainable participation goals, drawn from a disparity analysis of relevant businesses seeking to do business with the District.

The District will ensure that all Vendors take good faith actions to achieve the District's diversity participation goals in order to offer the maximum practicable opportunity for qualified and certified M/WBEs, small, and other disadvantaged enterprises through all phases of the contract and any subsequent contract amendment.

Vendors must demonstrate that the participation of M/WBEs and other disadvantaged businesses is meaningful and substantial in all phases of a contract and any subsequent amendment. Participation shall be measured in terms of actual dollars received for work performed and/or services provided by M/WBEs and other disadvantaged businesses, and vendor workforce management practices.

The District will maintain comprehensive records regarding the entire scope of the procurement process, post-award compliance, and administration of the M/WBE participation process.

As part of this process, the District shall require and review submission of diversity forms and documentation concerning progress toward achievement of applicable participation goals to determine whether Vendors meet or exceed their diversity requirements, including post-award monitoring and evaluation of diversity commitment. Diversity contracting and compliance information shall be a matter of public record consistent with the Pennsylvania Right-to-Know Law. [10]

The District shall not enter into any agreements that would undermine the objectives contained in this policy. District employees at all levels are responsible and accountable for resources under their control, and all employees must adhere to this policy and its administrative procedures.

The Superintendent or designee through Procurement Services shall monitor (i) adherence to the Policy throughout all applicable offices in the District, and (ii) Vendors' obligations and performance consistent with this Policy, including sanctions for breach of agreed upon M/WBE and diversity participation obligations.

The Superintendent or designee, through Procurement Services, will provide the Board with quarterly reports reflecting the District's efforts to achieve the goals of this policy.

#### Legal References:

- 1. <u>43 P.S. §§ 951</u>, et seq.
- 2. <u>20 U.S.C. §§ 1681</u>, et seq.
- 3. <u>29 U.S.C. §§ 621</u>, et seq.
- 4. <u>29 U.S.C. § 794</u>
- 5. <u>42 U.S.C. §§ 12101</u>, et seq.
- 6. <u>42 U.S.C. §§ 1981</u>, et seq.
- 7. <u>42 U.S.C. §§ 2000e</u>, et seq.
- 8. <u>24 P.S. § 7-751</u>
- 9. <u>24 P.S. § 5-510</u>
- 10. <u>65 P.S. §§ 67.101, et seq</u>.

### **Related Information:**

- 1. Chapter 17-1600: Philadelphia Code (defining "diverse workforce")
- City of Philadelphia Office of Economic Opportunity (OEO) Requirements: Executive Order 03-12 (Participation of minority, women, and disabled owned businesses on City contracts)
- 3. Section 17-500 of The Philadelphia Code
- 4. Board Policy 104: Nondiscrimination in Employment Practices.
- 5. Policy 610 Purchases Subject To Competitive Process
- 6. Policy 102 Multiracial/Multicultural/Gender Education

# Administrative Procedures for Business Diversity in the Procurement of Materials and Contracted Services (Attachment for Policy No. 612)

# PURPOSE

The Office of Procurement Services and the Office of Minority and Small Business Development are responsible for the implementation of Board of Education ("Board") Policy 612 ("Policy"). The Policy is intended to assert anti-discrimination requirements of The School District of Philadelphia ("District") and to assist Minority and Women-Owned Business Enterprises ("M/WBE") and other disadvantaged entities overcome barriers to and stimulate financial development and stability.

These administrative procedures outline the District's approach to incorporating business diversity processes and anti-discrimination requirements into its procurement and contracting activities. The City of Philadelphia's Office of Economic Opportunity's Annual Disparity Study ("Disparity Study") serves as the foundation for the District's approach to meeting its business diversity and anti-discrimination goals.

# PROCEDURES

# A. GOALS AND OBJECTIVES

The District's Office of Minority and Small Business Development ("OMSBD"), under the Office of Procurement Services ("Procurement Services"), will identify and facilitate meaningful opportunities for M/WBEs through evaluation and establishment of participation goals. OMSBD may also provide opportunities for other disadvantaged businesses to contract with the District.

# **B. IMPLEMENTATION**

OMSBD has the overall responsibility to administer, monitor and enforce M/WBE policies, standards and requirements, and to manage and monitor the District's utilization of M/WBEs to ensure that businesses owned and operated by minorities and women have full access to and equitable opportunity to participate in the District's public contracting. Such standards and requirements will be incorporated into Procurement Services' "Procurement Manual," which will be updated from time to time and posted on the District's website. Implementation responsibilities include, among other things:

- 1. Aligning the M/WBE program with the Policy;
- Establishing language for bid and proposal solicitations setting forth the objective, enforcement, and sanctions related to noncompliance with the Policy and the District's antidiscrimination requirements;
- 3. Creating, maintaining, and distributing a directory of certified M/WBEs;
- 4. Regularly reviewing the progress of each program office's achievement of M/WBE goals;
- 5. Ensuring that District solicitations and proposals adhere to the procurement procedures;
- 6. Monitoring all prime contracts with M/WBE goals throughout the duration of the contract to ensure that all efforts are made to comply with goals and requirements;
- 7. Providing quarterly reports of M/WBE participation that can be readily accessed and distributed to District leadership and the Board; and

8. Providing a dedicated resource to manage the promotion, development and growth of M/WBEs for the District's public contracting opportunities.

The objectives of the implementation activities conducted and overseen by OMSBD are to establish an effective program to encourage meaningful participation of M/WBEs, be accountable for achieving measurable outcomes of diversity engagement in District contracting, and be open and transparent in the implementation and documented outcomes of diversity engagement.

The District's implementation of the Policy will be guided by the suitability, capacity, and availability of businesses in the marketplace to ensure the delivery of quality goods and services.

### Responsibilities and Duties

- Procurement Services delegates OMSBD to implement both the administration of the Policy and administrative procedures requiring diversity inclusion in contracting and procurement, and the monitoring of (i) adherence to the Policy throughout all applicable offices in the District, and (ii) Vendors' obligations and performance consistent with the Policy, including sanctions for breach of agreed upon M/WBE and diversity participation commitments.
- 2. OMSBD is responsible for overall implementation, reporting and monitoring of the M/WBE program, including day-to-day oversight of the District's compliance with the Policy. OMSBD will provide training opportunities for District staff and prospective vendors.
- 3. Program office administrators are responsible for supporting their program office's achievement of M/WBE goals and maintaining contract information required to support reporting and contract compliance efforts.
- 4. The Office of General Counsel ("OGC") supports District compliance with all applicable laws and regulations and assists District program offices in achieving their objectives involving contract preparation.
- A. Annual Goals

OMSBD is responsible for developing annual participation rates for M/WBEs in the procurement and contracting business of the District. These rates, and participation goals for individual contracts, are based on the Disparity Study, which analyzes utilization of M/WBEs in relation to the availability of such firms to compete for business and contracts.

These ranges represent the percentage of M/WBE and diversity participation that should be attained in the available market absent discrimination in the solicitation and selection of these businesses. These ranges are based upon an analysis of factors such as the size and scope of the contract and the availability of certified minority-owned, woman-owned, and other disadvantaged businesses available to perform various elements of the contract.

## B. Accountability

Responsibility to implement the Policy rests in all District program offices, which shall be accountable for promoting diverse participation and seeking to reach participation goals established by OMSBD. OMSBD will provide training for program offices regarding diversity in contracting, and assist program offices with identifying opportunities to contract with M/WBEs and other disadvantaged businesses whenever possible. District program offices shall further cooperate with OMSBD by establishing participation goals and furnishing information to enforce compliance with the Policy. OMSBD will further collaborate in program offices' evaluation of contractor performance pertaining to achievement of participation goals and commitments.

OMSBD shall similarly provide vendors with (i) resources to help identify diverse suppliers and partners, and (ii) assistance with compliance and reporting.

C. Articulation of Policy in Solicitations

OGC and OMSBD will develop standard language stating the objective of the Policy for use in all bid solicitations and requests for proposals (collectively "Solicitation(s)").

D. Contracting Requirements

Procurement Services maintains a "Procurement Manual" providing guidelines for the District's procurement and contracting processes. OMSBD shall devise the following for incorporation into the Procurement Manual:

#### 1. Participation Ranges

OMSBD shall establish a specific M/WBE participation range ("Participation Range") for each Solicitation. OMSBD shall require each bidder or proposer (collectively "Respondent") to include, in its Solicitation response, a plan to meet the Participation Range that includes the dollar amounts, percentage of overall contract value and/or scope of work to be performed by M/WBEs ("Participation Plan"). The District may also consider workforce diversity economic opportunity plans that would allow a Respondent to satisfy part of the Participation Range. OMSBD may consider a Respondent's good faith efforts to secure meaningful M/WBE participation and inability to satisfy the Participation Range in lieu of a valid Participation Plan.

#### 2. Contractor Responsibilities

The District requires Respondents to covenant, represent, and warrant that they, and their subcontractors and partners, as appropriate, commit to adhering to diversity goals, anti-discrimination laws and policies, and workforce management practices that promote meaningful and substantial participation of M/WBEs and other disadvantaged business enterprises throughout the entire life of a contract and subsequent amendment.

The District considers commitments in a Participation Plan as material representations upon which the District relies in awarding and signing a contract. The Parties shall incorporate the Participation Plan as a part of the contract between the School District and a contractor, and the Participation Plan shall be enforceable like any other contractual term, covenant or condition, in the manner set forth in the contract.

If a vendor does not make a good faith effort to comply, the District may pursue available remedies. Sanctions for breach of a Participation Plan may include suspension, disqualification or debarment from future contracting opportunities with the District, contract termination, withholding of payment, or other remedies.

The District shall require vendors to keep appropriate records and periodically report to the District regarding use of M/WBEs and other certified diverse businesses. Reporting areas include business enterprise classifications, types of contracts, dollar value of contracts and work awarded to M/WBEs, actual dollars received by M/WBE contractors, workforce diversity, and progress toward attaining participation goals.

#### 3. Diversity Certifications

To verify a company's status as a certified M/WBE or any other diverse certification, the District will, with limited exception, recognize only those third-party certifications identified in the Procurement Manual. The District may recognize other third-party certification from certifying agencies not included in the Procurement Manual at the discretion of Procurement Services.

As part of its review of overall achievement of District diversity goals, OMSBD will also monitor contracts for minor professional services or sole source contracts that are not the subject of a Solicitation, but which include a Participation Plan.

#### C. MONITORING AND REPORTING

OMSBD and Procurement Services shall monitor the implementation of the Policy throughout the entire cycle of the procurement and contracting process. All Solicitations and executed contracts will contain language specifying rights and obligations for monitoring and reporting of OMSBD, Procurement Services, and vendors. OMSBD shall monitor the bidding and proposal frequency and success of M/WBEs and other diverse businesses as prime contractors, and through prime contractors' payments to M/WBEs and other diverse businesses.

To ensure District accountability and vendors' compliance with the Policy, Procurement Services and OMSBD shall analyze overall District, departmental, and contract specific performance, including:

- 1. Assisting with program office monitoring of contract performance by conducting post-award compliance reviews and on-site inspections, to ensure that the vendor meets diversity participation commitments and other contract requirements;
- 2. Monitoring prime contractors' payments to M/WBEs and other contractors utilized through payment reporting and acceptance of payments by sub-contractors;
- 3. Monitoring the bidding and proposal frequency and success of M/WBEs and other disadvantage businesses as prime contractors;
- 4. Reporting findings of discrimination and/or exclusion to the Superintendent or designee;

- 5. Recommending withholding of payments or contract termination, suspension. disqualification, debarment, or other relief, if OMSBD finds noncompliance with diversity participation commitments; and
- 6. Recommending additional training or supports for program offices that consistently fail to achieve participation benchmarks.

# D. MAINTENANCE SCHEDULE

OMSBD shall review the policy annually and recommend for Board consideration any changes necessary to achieve the goals of the policy. OMSBD will also review these administrative procedures annually and make any revisions necessary to implement the policy

# Pennsylvania Department of Education (PDE) FBI Federal Criminal History of Records of Prospective Employees

# **APPLICANT PROCEDURE**

All applicants will receive an unofficial copy of their report via email (**Please note the link is available** only for **ONE-TIME** access only, and once accessed will no longer be valid. You should only access this link from a device that will allow you to download, print, or save your results at that time). Fee is payable to IDEMIA.

The fingerprint-based background check is a multiple-step process, as follows:

 Registration - The applicant must register prior to going to the fingerprint site. Walk in service is allowed but all applicants are required to complete pre-enrollment in the new Universal Enrollment system. Pre-enrollment can be completed online or over the phone. The registration website is available online 24 hours/day, seven days per week at <a href="https://uenroll.identogo.com">https://uenroll.identogo.com</a>. Telephonic registration is available at 1-844-321-2101 Monday through Friday, 8am to 6pm EST. During the pre-enrollment process, all demographic data for the applicant is collected (name, address, etc.) along with notices about identification requirements and other important information.

When registering on-line, an applicant must use the appropriate agency specific Service Code to ensure they are processed for the correct agency and/or applicant type. Using the correct service code ensures the background check is submitted for the correct purpose. Fingerprint requests processed through any other agency or purpose cannot be accepted and are not transferrable. If an applicant enters the wrong code by mistake, the incorrect applicant type will appear at the top of the screen. The applicant should select the "Back to Home" button and begin the process again, by reentering the correct Service Code. If the applicant proceeds with the process under the incorrect code, the pre-enrollment and/or results cannot be transferred to another state agency and the applicant will have to start the process over and pay for the background check again.

To obtain your correct service code please contact the School Services Office at <u>ra-pde-schoolservice@pa.gov</u>.

 Payment - The applicant will pay a fee of \$25.25 for the fingerprint service and to secure an unofficial copy of the Criminal History Record. Major Credit Cards as well as Money orders or cashier's checks payable to MorphoTrust will be accepted on site for those applicants who are required to pay individually. No cash transactions or personal checks are allowed.

IDEMIA has also established a payment option for fingerprinting services for entities interested in paying the applicant's fee. This new option provides a payment 'coupon' that the entity will provide to each applicant for use. Each coupon is unique and may only be used one time. Account applications must be completed prior to the applicant visiting the fingerprint site. The authorized representative must complete the account application. To establish a billing account, you will need to complete an <u>application</u> (PDF) with IDEMIA.

Fingerprint Locations – After registration, the applicant proceeds to the fingerprint site of their choice for fingerprinting. The location of the fingerprint sites and days and hours of operation
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for each site are posted on IDEMIA's website at <u>https://uenroll.identogo.com</u>. The location of fingerprint sites may change over time; applicants are encouraged to confirm the site location nearest to their location. PDE encourages entities where access to the fingerprint location is more than 25 miles away to contact IDEMIA and suggest areas where another closer site could be established.

- 4. Fingerprinting At the fingerprint site the Enrollment Agents (EA) manages the fingerprint collection process. The fingerprint transaction begins when the EA reviews the applicant's qualified State or Federal photo ID before processing the applicant's transaction. Applicants will not be processed if they cannot produce an acceptable photo ID. After the identity of the applicant has been established, all ten fingers are scanned to complete the process. The entire fingerprint capture process should take no more than three to five minutes.
- 5. Report Access For the public or private school or higher education institution to access the official report via the electronic system, applicants must present their UEID to the hiring entity (as shown on the receipt provided after fingerprint capture). This process allows an applicant to provide multiple potential employers with their UEID, as the report is linked to the UEID number and not assigned to a specific school. If an applicant has lost their receipt or needs to confirm UEID, the applicant may visit the UEP website (<u>https://uenroll.identogo.com/</u>) and simply check status of their file by providing alternate personal information. Applicants will enter their personal information after clicking in the lower portion of that screen to obtain their receipt with the UEID.

Applicants will receive an unofficial copy of their report. However, the school is **required to review the official CHRI online** and print a file copy of the CHRI if the applicant is hired by the school or their contractor, or if the applicant is approved for student teaching.

# CONFIDENTIALITY (SECURITY) OF APPLICANT INFORMATION

On-site access to the Livescan equipment, and the data traveling from the equipment, is comprehensively secured and regulated by both IDEMIA and the regulations governing the use of that data.

**Electronic Security** – The computer system is housed within a secured network that is protected by firewall devices configured explicitly to allow only permissible protocols and traffic. IDEMIA ensures that all devices procured under this process continue to adhere to the Commonwealth's Security requirements. Systems are configured to provide a point of defense with controlled access from both inside and outside the network. Livescan systems are configured to support logging and audit capability. Furthermore, the Livescan solution will support 128 bit encryption.

#### FINGERPRINTING

#### **Processing and Storage**

The applicant's scanned fingerprints and registration information will be electronically transmitted by IDEMIA via IDEMIA's approved channeling process directly to the FBI. The fingerprints are run against

the FBI database, and the report is sent directly from the FBI back to IDEMIA. Currently, IDEMIA maintains the reports for **five years** from the date of the report on a secure server (accessible by authorized representatives). After five years, the reports are destroyed. Neither PDE or the FBI or IDEMIA stores an applicant's fingerprints. If an applicant is required to obtain a new report, the applicant must be fingerprinted again in order to obtain the report.

#### **Group Fingerprinting Support**

If you have a requirement to fingerprint a large group of applicants (300 college education majors, a contractor's entire staff of 120 employees, 50 bus drivers, etc.) IDEMIA and the fixed site providers will try to accommodate that request. Some fingerprint service sites have the ability to bring portable equipment to your site. If you are in need of Group Fingerprinting Support, visit <u>https://uenroll.identogo.com</u>. Service sites in your area that have mobile equipment will be listed.

NOTE: This mobile service requires the visited site to provide broadband internet access and access through any firewall. The sites that offer mobile services can provide you instructions, in advance of their visit, that would allow fingerprinting to occur at your site. You must however, plan ahead. Requirements for hosting a mobile Livescan operation can be found at <a href="https://uenroll.identogo.com">https://uenroll.identogo.com</a>.

We encourage you to utilize this service but you must plan ahead. Please do not overwhelm the service by sending large groups of applicants to fixed site locations. If you must send a large group of applicants to a fixed site, please plan for their arrival to occur over days and weeks, not over hours.

#### **Corrections and Resubmissions**

In some cases, a classifiable fingerprint record cannot be obtained. Immediately upon indication, IDEMIA will take corrective action to notify the applicant of the need to re-print the applicant at no cost to the applicant. This corrective action will be completed at the earliest possible time that is convenient for the applicant. IDEMIA will contact the applicant directly via email should a re-print be necessary. NOTE: Reprinting can be applied to each applicant one time only.

If the applicant's fingerprints are unable to be transmitted electronically by IDEMIA to the FBI a second time, the applicant will be notified that a "name check" process will be instituted. The name check is a manual review of records completed by the FBI, with the results being sent to IDEMIA. Upon receipt of name check results from the FBI, IDEMIA will send the results via email to the applicant (**Please note the link is available for ONE-TIME access only and once accessed will no longer be valid. You should only access this link from a device that will allow you to download, print, or save your results at that time). Administrators will have access to review the results in the PA Safe Check system. This process takes 4 – 6 weeks; please allow ample time for processing.** 

#### **GENERAL REQUIREMENTS**

The Act requires that all of the following individuals who will have direct contact with children (as defined in <u>22 Pa. Code § 8.1</u>) provide to their prospective employer a copy of their Federal Criminal History Record, PA State Police Report and DPW Child Abuse Report that cannot be more than five (5) years old at the time of hire.

- Student teachers (participating in classroom teaching, internships, clinical or field experience),
- Prospective employees of public and private schools, Intermediate Units and Area Vocational-Technical Schools (including, but not limited to: administrators, teachers, substitutes, custodians, cafeteria workers and office employees), and
- Independent contractors and their employees (including, but not limited to: bus drivers, PIAA Sports Officials, and construction workers).

Prospective employees/student teacher candidates/contractors and their employees, hereafter referred to collectively as applicant, are to submit with their employment application State and Federal criminal history reports (for the Federal Criminal History Report the applicant is to submit their Universal Enrollment ID (UEID) or a copy of the completed form/request. Criminal history reports (results of background checks) shall be no more than five years old at the time of hire.

Administrators shall require each applicant to produce the original criminal history reports prior to employment or follow appropriate procedures to employ applicants on a provisional basis, until the report is received and reviewed. Student teacher candidates are to submit their criminal history reports to the administrator of the educator preparation program prior to participation in any classroom teaching, internship, or clinical or field experience.

Provided all conditions listed in the Law are met, when the applicant provides a copy of the completed UE form to the administrator, the administrator may employ applicants on a provisional basis for a single period not to exceed 90 days (see the **PROVISIONAL HIRE** section)

An administrator or other person responsible for employment decisions in a school or other institution under this section who willfully fails to comply with the provisions of this section commits a violation of this Act and shall be subject to civil penalty. A civil penalty shall not exceed \$2,500. Procedures that will be followed by staff of the School Services Unit when investigating alleged violations of 24 PS 1-1 11 are contained in Basic Education Circular 24 PS 1-111 Violations of Background Checks.

# INQUIRIES

More information regarding fingerprinting locations and the process for obtaining an FBI fingerprint based background check report may be found at: <u>https://uenroll.identogo.com</u>.

Applicants and schools with policy questions may contact PDE at (717) 783-3750 or RA-PDE-SchoolService@pa.gov.

Fingerprint Services Customer Service Call Center: 1-844-321-2101.

Frequently Asked Questions: https://www.identogo.com/locations/pennsylvania.

# **OTHER ENTITIES**

The electronic system contains only FBI Criminal History Record Information (CHRI) reports for applicants who were fingerprinted through PDE under Act 114 of 2006. Effective April 1, 2007, the Act requires that all employees and prospective employees of schools and their contractors as well as student teacher candidates obtain the federal background check report prior to employment in which

they will have contact with children. Only Pennsylvania public and private schools and higher education institutions with an approved teacher preparation program will be authorized to access the reports in the secure online system.

**DHS-licensed agencies**, such as daycare facilities are not permitted to access the Department of Education's online system for their employees. These agencies' employees are required to obtain background check reports under the Child Protective Services Law (CPSL). This Act requires applicants to register and be fingerprinted under a system administered by the Department of Human Services (DHS) to obtain results for their employers.

In some cases, DHS-licensed agencies send employees into schools. These applicants may submit a DHS report to a school as an acceptable clearance so that an additional FBI clearance through PDE is not required. Although DHS contracts with IDEMIA to obtain the FBI fingerprint-based background check reports, PDE may not access reports in the DHS system, and DHS may not access the PDE online system. Please see the Q & A's regarding PDE and DHS report issues on our website for more information on this topic.

It is important for applicants to register and be fingerprinted under the system where the applicant will be employed (DHS or PDE). In order to avoid confusion and the need to register and be fingerprinted a second time, applicants should check with their prospective employer prior to registering and being fingerprinted. Further questions on DHS requirements should be addressed to the DHS office, reachable by phone at 717-783-6211.

Entities such as Alternative Education for Disruptive Youth (AEDY) providers, tutoring agencies, and staffing agencies are considered independent contractors and are not permitted to access the official reports online. Applicants to these entities will provide their UEID to their prospective employer. The agency is then responsible to provide the applicant's UEID and other reports to the school entity that is contracting for the services. The school entity associated with the services will review the official CHRI through the online database to make a determination as to the fitness of the applicant to work in a position in which they will have contact with children.

**Head Start, Behavioral Health agencies,** and **other child care facilities**, please review the Q & A's on our website regarding PDE and DHS report issues for guidance and clarification on procedures.

Only higher education institutions with an approved teacher preparation program will be granted access to reports. Other post-secondary programs that do not train educators through a field experience/student teaching program are not provided access to the online system. Applicants within a higher education facility that fall under Act 114 are student teachers or others in educator preparation programs. All other applicants in a **college or university** that need to obtain fingerprinting (such as **nursing students** completing clinical rotations) must apply through the DHS system under the requirements of the CPSL.

#### **PROVISIONAL HIRE**

The Act permits, but does not require school entities to employ applicants on a provisional basis for a single period not to exceed ninety (90) days, except during a lawful strike proceeding under the provisions of the act of July 23, 1970, known as the "Public Employee Relations Act", provided that all of the following conditions are met:

- The applicant has applied for the information required under subsection (b) and where applicable, under subsection (c) or (c.1) and the applicant provides a copy of the appropriate completed request forms to the Administrator.
- The Administrator has no knowledge of information pertaining to the applicant which would disqualify them from employment pursuant to subsection (e)
- The applicant swears or affirms in writing that they are not disqualified from employment pursuant to subsection (e)
- If the information obtained pursuant to subsection (b), (c), or (c1) reveals that the applicant is disqualified from employment pursuant to subsection (e), the applicant shall be suspended and subject to termination proceedings as provided for by law.
- The Administrator requires that the applicant not be permitted to work alone with children and that the applicant work in the vicinity of a permanent employee.

# SCHOOL ENTITY PROCEDURES: CHRI ACCESS AND REVIEW

Administrators of approved school entities will have access to review the official report of the applicant online through a secure website. Approved school entities are public schools including school districts, intermediate units, Career and Technology Centers and Charter Schools; and private schools including Approved Private Schools, PRRIs, licensed private academic schools and non-public schools. Teacher Training Institutions (higher education institutions) are also considered approved school entities to access CHRI reports for prospective student teachers.

Each school entity is provided with one general administrative login and password from PDE. Account information is issued via email to the chief school administrator at each approved entity (e.g. Superintendent, Director, CEO, etc.).

The general administrative login and password will allow each chief school administrator to create "school user" logins and passwords so that school staff can have access to the secure website. The school administrator is responsible for maintaining the list of personnel who will have access to the system. Any changes to the added user accounts will be managed by the administrative account. This includes adding additional school user accounts, unlocking accounts and/or modifying the password, and disabling accounts for staff who should no longer have access to FBI reports.

Administrative accounts are managed by PDE. PDE can assist school entities, using the following functions:

- Add new administrative accounts for new schools that have not yet registered with IDEMIA. (NOTE: Access is only for schools.)
- Provide the username and password to school administrators if account information has been misplaced.
- Unlock the account and reset the password if necessary (due to 3 unsuccessful login attempts).
- Update the administrator name and email address associated with the account/school.
- Disable the administrative account when a school is closed.

Questions or requests regarding any of the above issues with administrative accounts can be directed to <u>RA-PDE-SchoolService@pa.gov</u>.

To allow the school to review an applicant's CHRI report, the applicant must provide the UEID). To

access a record, the school user will go to a secure website specific to the online access of CHRI reports for PDE. At this screen, the school user will log in with their personal username and password and PA SafeCheck Token. After the number is entered, the CHRI report will appear in a separate window for the user to review. The CHRI that is available for review online constitutes the **official record**.

The administrator of the school entity is required to review the CHRI to make a determination as to the fitness of the applicant to work in a position in which they will have contact with children. If the applicant is hired, the school administrator must print out a copy and retain it in the employee's file. If the applicant is not hired, the administrator is prohibited from printing a copy and retaining it in a file.

Access to the online review system is limited to authorized users for approved school entities and is not permitted for independent contractors or other schools. School entities should work with their contractors to establish a process for the contractor to provide the UEID to the school, in order for the school to access the CHRI online. In the case of a contractor's employee, the school is to review the CHRI and transmit the fitness determination to the contractor. If the applicant is hired by the school entity or contractor, the school will make a copy of the CHRI for the employee's file. If the contractor wishes to maintain their own file copy, it is suggested that contractors provide the unofficial copy to the contractor.

# SCHOOL CONTRACTOR PROCEDURES

Contractors, including school bus drivers and others who perform work for the school entity under contract are required to obtain their clearances. Results are made available electronically for schools to review. Access to the database is not permitted for independent contractors.

Public and private schools will need a listing of their contractors' prospective employees and their UEID's. Schools should work with their contractors to establish a process for the contractor to provide the UEID to the school. The schools will then be responsible for going online to review the prospective employees' CHRI records to make a determination of the fitness of the individual to perform work that places the individual in contact with children. The law has required the school to make this fitness determination; this does not reflect a policy change and does not change the status of the employee as an employee of the contractor. The school administrator is to transmit that fitness determination to the contractor. Once hired, a copy of the contracted employees' official CHRI is to be maintained by the school. An official copy will not be provided to the applicant or to the contractor. For contractors that wish to see a copy, a suggested solution is that contractor. The paper copy will not be regarded as the official report; but, it will provide an applicant with a copy of the information that the school will see when the report is reviewed.

#### LEXSTAT 24 P.S. 1-111

109PGS

#### PENNSYLVANIA STATUTES, ANNOTATED BY LEXISNEXIS(R)

#### \*THIS DOCUMENT IS CURRENT THROUGH ACT 41 OF THE 2007 LEGISLATIVE SESSION\* \*\*\* AUGUST 29, 2007 ANNOTATION SERVICE \*\*\*

#### PENNSYLVANIA STATUTES TITLE 24. EDUCATION CHAPTER 1. PUBLIC SCHOOL CODE OF 1949 ARTICLE 1. PRELIMINARY PROVISIONS

#### Go to the Pennsylvania Code Archive Directory

#### 24 P.S. § 1-111 (2007)

Legislative Alert: LEXSEE 2007 Pa. HB 842 -- See section 1.

§ 1-111. Background checks of prospective employes; conviction of employes of certain offenses

(a) This section shall apply to all prospective employes of public and private schools, intermediate units and area vocational-technical schools, including independent contractors and their employes, except those employes and independent contractors and their employes who have no direct contact with children. This subsection shall expire March 31, 2007.

(a.1) Beginning April 1, 2007, this section shall apply to all prospective employes of public and private schools, intermediate units and area vocational-technical schools, including, but not limited to, teachers, substitutes, janitors, cafeteria workers, independent contractors and their employes, except those employes and independent contractors and their employes who have no direct contact with children.

(1) Beginning April 1, 2007, this section shall apply to bus drivers offered employment by a school district, private school, nonpublic school, intermediate unit or area vocational-technical school or by an independent contractor.

(2) Beginning April 1, 2007, this section shall apply to student teacher candidates assigned to all public and private schools, intermediate units and area vocational-technical schools.

(3) For purposes of this section, "student teacher candidate" shall mean an individual participating in a classroom teaching, internship, clinical or field experience who, as part of a program for the initial or advanced preparation of professional educators, performs classroom teaching or assists in the education program in a public or private school, intermediate unit or area vocational-technical school under the supervision of educator preparation program faculty.

(4) Prior to a student teacher candidate's participation in any classroom teaching, internship, clinical or field experience, that candidate shall provide to the administrator of his or her educator preparation program all criminal history record information required of an employe or prospective employe who is subject to this section.

24 P.S. sec. 1-111 (2007) - Page 1 of 5

(5) The student teacher candidate may not participate in any classroom teaching, internship, clinical or field experience if this section would prohibit an employe or prospective employe subject to this section from being employed under those circumstances.

(6) During the course of a student teacher candidate's participation in an educator preparation program, the administrator of the student teacher candidate's educator preparation program shall maintain a copy of the criminal history record information that was provided by the student teacher candidate. The penalty provisions of subsection (g) shall be applicable to the administrator of a student teacher candidate's educator preparation program.

(7) If a student teacher candidate is continuously enrolled in an educator preparation program, the criminal history record information initially submitted by that candidate to that program shall remain valid during that period of enrollment. If a student teacher candidate's enrollment in an educator preparation program is interrupted or if that candidate transfers to another educator preparation program, the candidate shall provide to the administrator of his or her educator preparation program all criminal history record information required of an employe who is subject to this section.

(b) Administrators of public and private schools, intermediate units and area vocational-technical schools shall require prospective employes to submit with their employment application, pursuant to 18 Pa.C.S. Ch.91 (relating to criminal history record information), a report of criminal history record information from the Pennsylvania State Police or a statement from the Pennsylvania State Police that the State Police central repository contains no such information relating to that person. Such criminal history record information shall be limited to that which is disseminated pursuant to 18 Pa.C.S. § 9121(b)(2) (relating to general regulations) and shall be no more than one (1) year old. An applicant may submit a copy of the required information with the application for employment. Administrators shall maintain a copy of the require contractors to produce the original document for each prospective employe of such contractor prior to employment.

(c) Where the applicant has not been a resident of this Commonwealth for at least two (2) years immediately preceding the date of application for employment, administrators shall require the applicant to submit with the application for employment a set of fingerprints which may be submitted to the Federal Bureau of Investigation for Federal criminal history record information pursuant to the Federal Bureau of Investigation appropriation of Title II of Public Law 92-544, 86 Stat. 1115 or a copy of such Federal criminal history record. Administrators shall forward the set of fingerprints for the Federal criminal history record to the Department of Education. The Department of Education shall be the intermediary for the purposes of this section. The Department of Education shall return the Federal criminal history record to the applicant. When the applicant provides a copy of the Federal criminal history record, it shall be no more than one (1) year old. Administrators shall maintain a copy of the required information and shall require each applicant to produce a Federal criminal history record that may not be more than one (1) year old at the time of employment. The original Federal criminal history record shall be returned to the applicant. This subsection shall expire March 31, 2007.

(c.1) Beginning April 1, 2007, administrators shall require the applicant to submit with the application for employment a copy of the Federal criminal history record in a manner prescribed by the Department of Education. When the applicant provides a copy of the Federal criminal history record, it shall be no more than one (1) year old. Administrators shall maintain a copy of the required information and shall require each applicant to produce a Federal criminal history record that may not be more than one (1) year old at the time of employment. The original Federal criminal history record shall be returned to the applicant.

24 P.S. sec. 1-111 (2007) - Page 2 of 5

(d) The State Board of Education shall, in the manner provided by law, promulgate the regulations necessary to carry out this section. The regulations shall provide for the confidentiality of criminal history record information obtained pursuant to this act.

(e) No person subject to this act shall be employed in a public or private school, intermediate unit or area vocationaltechnical school where the report of criminal history record information indicates the applicant has been convicted, within five (5) years immediately preceding the date of the report, of any of the following offenses:

(1) An offense under one or more of the following provisions of Title 18 of the Pennsylvania Consolidated Statutes:

Chapter 25 (relating to criminal homicide).

Section 2702 (relating to aggravated assault).

Former section 2709(b) (relating to stalking).

Section 2709.1 (relating to stalking).

Section 2901 (relating to kidnapping).

Section 2902 (relating to unlawful restraint).

Section 3121 (relating to rape).

Section 3122.1 (relating to statutory sexual assault).

Section 3123 (relating to involuntary deviate sexual intercourse).

Section 3124.1 (relating to sexual assault).

Section 3125 (relating to aggravated indecent assault).

Section 3126 (relating to indecent assault).

Section 3127 (relating to indecent exposure).

Section 4302 (relating to incest).

Section 4303 (relating to concealing death of child).

Section 4304 (relating to endangering welfare of children).

Section 4305 (relating to dealing in infant children).

A felony offense under section 5902(b) (relating to prostitution and related offenses).

Section 5903(c) or (d) (relating to obscene and other sexual materials and performances).

Section 6301 (relating to corruption of minors).

Section 6312 (relating to sexual abuse of children).

24 P.S. sec. 1-111 (2007) - Page 3 of 5

(2) An offense designated as a felony under the act of April 14, 1972 (P.L. 233, No. 64), known as "The Controlled Substance, Drug, Device and Cosmetic Act."

(3) An out-of-State or Federal offense similar in nature to those crimes listed in clauses (1) and (2).

(f) The requirements of this section shall not apply to employes of public and private schools, intermediate units and area vocational-technical schools who meet all the following requirements:

(1) The employes are under twenty-one (21) years of age.

(2) They are employed for periods of ninety (90) days or less.

(3) They are a part of a job development and/or job training program funded in whole or in part by public or private sources. Once employment of a person who meets these conditions extends beyond ninety (90) days, all requirements of this section shall take effect.

(g) An administrator, or other person responsible for employment decisions in a school or other institution under this section who wilfully fails to comply with the provisions of this section commits a violation of this act and shall be subject to civil penalty as provided in this section.

(1) The department shall have jurisdiction to determine violators of this section and may, following a hearing, assess a civil penalty not to exceed two thousand five hundred dollars (\$2,500).

(2) The civil penalty shall be payable to the Commonwealth.

(h) No person employed in a public or private school on the effective date of this section shall be required to obtain the information required herein as a condition of continued employment. Any person who has once obtained the information required under this section may transfer to another school in the same district or established and supervised by the same organization and shall not be required to obtain additional reports before making such transfer.

(i) Notwithstanding subsections (b), (c) and (c.1), administrators, before April 1, 2007, may employ in-State applicants on a provisional basis for a single period not to exceed thirty (30) days and may employ out-of-State applicants on a provisional basis for a single period not to exceed ninety (90) days and, after March 31, 2007, may employ any applicants on a provisional basis for a single period not to exceed ninety (90) days, except during a lawful strike proceeding under the provisions of the act of July 23, 1970 (P.L. 563, No. 195), known as the "Public Employe Relations Act," provided that all of the following conditions are met:

(1) the applicant has applied for the information required under subsection (b) and, where applicable, under subsection (c) or (c.1) and the applicant provides a copy of the appropriate completed request forms to the administrator;

(2) the administrator has no knowledge of information pertaining to the applicant which would disqualify him from employment pursuant to subsection (e);

(3) the applicant swears or affirms in writing that he is not disqualified from employment pursuant to subsection (e);

(4) if the information obtained pursuant to subsection (b), (c) or (c.1) reveals that the applicant is disqualified from employment

24 P.S. sec. 1-111 (2007) - Page 4 of 5

pursuant to subsection (e), the applicant shall be suspended and subject to termination proceedings as provided for by law; and

(5) the administrator requires that the applicant not be permitted to work alone with children and that the applicant work in the immediate vicinity of a permanent employe.

HISTORY: Act 1990-211 (H.B. 1810), § 1, approved Dec. 19, 1990, eff. in 60 days; Act 1997-30 (H.B. 8), § 1, approved June 25, 1997, See section of this act for effective date information; Act 2002-153 (H.B. 204), § 1, approved Dec. 9, 2002, eff. immediately.; Act 2003-48 (S.B. 80), § 2, approved Dec. 23, 2003, eff. immediately.; Act 2004-70 (H.B. 564), § 1, approved July 4, 2004, eff. immediately.; Act 2006-114 (H.B. 185), § 1, approved July 11, 2006, eff. immediately.

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24 P.S. sec. 1-111 (2007) - Page 5 of 5

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#### LEXSTAT 23 PA. C.S. 6355

#### PENNSYLVANIA STATUTES, ANNOTATED BY LEXISNEXIS(R)

#### \*THIS DOCUMENT IS CURRENT THROUGH ACT 41 OF THE 2007 LEGISLATIVE SESSION\* \*\*\* AUGUST 29, 2007 ANNOTATION SERVICE \*\*\*

#### PENNSYL VANIA CONSOLIDATED STATUTES TITLE 23. DOMESTIC RELATIONS PART VII. ABUSE OF FAMILY CHAPTER 63. CHILD PROTECTIVE SERVICES SUBCHAPTER C.2. BACKGROUND CHECKS FOR EMPLOYMENT IN SCHOOLS

#### Go to the Pennsylvania Code Archive Directory

#### 23 Pa.C.S. § 6355 (2007)

§ 6355. Requirement

(a) INVESTIGATION .-

(I) Except as provided in paragraph (2), an administrator shall require each applicant to submit an official clearance statement obtained from the department within the immediately preceding year as to whether the applicant is named as the perpetrator of an indicated or a founded report or is named as the individual responsible for injury or abuse in an indicated report for school employee or a founded report for school employee.

(2) The official clearance statement under paragraph (I) shall not be required for an applicant who:

(i) transfers from one position as a school employee to another position as a school employee of the same school district or of the same organization; and

(ii) has, prior to the transfer, already obtained the official clearance statement under paragraph (1).

(b) GROUNDS FOR DENYING EMPLOYMENT.-- Except as provided in section 6356 (relating to exceptions), an administrator shall not hire an applicant if the department verifies that the applicant is named as the perpetrator of a founded report or is named as the individual responsible for injury or abuse in a founded report for school employee. No individual who is a school employee on the effective date of this subchapter shall be required to obtain an official clear-ance statement under subsection (a)(1) as a condition of continued employment.

(c) PENALTY,-- An administrator who willfully violates this section shall be subject to an administrative penalty of \$ 2,500. An action under this subsection is governed by 2 Pa,C.S. Ch. 5 Subch. A (relating to practice and procedure of Commonwealth agencies) and Ch. 7 Subch. A (relating to judicial review of Commonwealth agency action).

HISTORY: Act 1994-151 (H.B. 1001), § 4, approved Dec. 16, 1994, eff. July I, 1996.

#### 23 Pa.C.S. § 6356

#### 109PGS

#### LEXSTAT 23 PA.C.S. § 6356

#### PENNSYLVANIA STATUTES, ANNOTATED BY LEXISNEXIS(R)

#### \*THIS DOCUMENT IS CURRENT THROUGH ACT 41 OF THE 2007 LEGISLATIVE SESSION\* \*\*\* AUGUST 29, 2007 ANNOTATION SERVICE \*\*\*

#### PENNSYLVANIA CONSOLIDATED STATUTES TITLE 23. DOMESTIC RELATIONS PART VII. ABUSE OF FAMILY CHAPTER 63. CHILD PROTECTIVE SERVICES SUBCHAPTER C.2, BACKGROUND CHECKS FOR EMPLOYMENT IN SCHOOLS

#### Go to the Pennsylvania Code Archive Directory

23 Pa.C.S. § 6356 (2007)

#### § 6356. Exceptions

Section 6355 (relating to requirement) shall not apply to any of the following:

(1) A school employee who is:

(i) under 21 years of age;

(ii) participating in a job development or job training program; and

(iii) employed for not more than 90 days.

(2) A school employee hired on a provisional basis pending receipt of information under section 6355(a) if all of the following apply:

(i) The applicant demonstrates application for the official clearance statement under section 6355(a).

(ii) The applicant attests in writing by oath or affirmation that the applicant is not disqualified under section 6355(b).

(iii) The administrator has no knowledge of information which would disqualify the applicant under section 6355(b).

(iv) The provisional period does not exceed:

(A) 90 days for an applicant from another state; and

(B) 30 days for all other applicants.

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(v) The hiring does not take place during a strike under the act of July 23, 1970 (P.L. 563, No. 195), known as the Public Employee Relations Act.

HISTORY: Act 1994-151 (H.B. 1001), § 4, approved Dec. 16, 1994, eff. July 1, 1996.

#### PENNSYLVANIA CHILD ABUSE HISTORY CLEARANCE

welfare. Do not send cash or personal cl SEND TO CHILDLINE AND ABUSE REGIS HARRISBURG, PA 17105-8170	TRY. DEPARTMENT OF PUBLIC WELFARE,		ChildLine Use Only DATE RECEIVED BY CHILDLINE				
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#### PENNSYLVANIA STATE POLICE REQUEST FOR CRIMINAL RECORD CHECK

SP 4-164 (7-2009)

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Homeland Security is Everyone's Responsibility - Pennsylvania Terrorism Tip Line 1-888-292-1919

Affidavit

Print

#### Pennsylvania State Police Criminal History Record Information Federal Bureau of Investigation Criminal History Record Information and Pennsylvania Department of Public Welfare Child Abuse Official Clearance Statement for Employees and Prospective Employees of Independent Contractors 24 P.S. § 1-111(i) and 23 Pa. C.S.A. § 6356(2)

STATE OF	÷	
COUNTY OF	: SS	
I,		
	[print name of affiant],	

duly affirm and verify the truth of the following statements.

1. I am an employee, or a prospective employee, of an independent contractor of The School District of Philadelphia (the "School District");

2. I have applied for the information required under subsections (b), Pennsylvania State Police criminal history record information, and (c.1), Federal Bureau of Investigation Federal criminal history record information, of Section 1-111 of the Pennsylvania Public School Code, 24 P.S. § 1-111 ("Section 111"), and have attached to this Affidavit true, correct and complete copies of these completed request forms;

3. I am not disqualified from employment pursuant to subsections (e) or (f.1) of Section 111, because I have not been convicted of any of the offenses listed in subsections (e) of Section 111, and, if I have been convicted of any of the offenses listed or described in subsection (f.1) of Section 111, all of the time period or periods mandated in subsection (f.1) have elapsed before the date of this Affidavit;

4. I hereby demonstrate application for the official clearance statement under 23 Pa. C.S.A. § 6355(a), and have attached to this Affidavit a true, correct and complete copy of my application;

5. I am not disqualified under 23 Pa. C.S.A. § 6355(b), because I am not named as the perpetrator of a founded report, or named as the individual responsible for injury or abuse in a founded report, under subsection 6355(b);

6. I understand and acknowledge that if any of the foregoing reports reveal that I am disqualified from employment, my employer shall suspend me and proceed to terminate my employment;

7. I also understand and acknowledge that until the School District receives these reports and these reports verify that I am not disqualified from employment, my employer shall not permit me to work alone with any child or children and shall require that I work in the immediate vicinity of a permanent employee; and

8. I further understand and acknowledge that my employer may employ me on a provisional basis only for a single period not to exceed ninety (90) days, provided that I comply with the requirements set forth in this Affidavit.

My compliance with the requirements associated with this Affidavit does not entitle me to any job; my employer (or prospective employer) has and reserves the right, in its discretion, to set other terms, covenants, conditions and requirements in connection with any offer to hire or any job.

I shall submit the originals of the information and statement noted above to the School District for inspection and copying within five (5) business days after I receive each such document.

I make the statements set forth in this Affidavit subject to the penalties provided in 18 Pa. C.S.A. § 4904 relating to unsworn falsification to authorities.

Signature of Affiant

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

See attached instructions for guidance on how to use this Affidavit.

#### Instructions for the Affidavit as to Criminal History Record Information and Child Abuse Clearances for employees of Independent Contractors

September 2013

#### A. The Contractor's hiring authority.

Employers have the right to set the terms and conditions on which they may hire and employ their own employees, including for instance, a requirement that applicants be of good character. *Compliance with the specific requirements of 24 P.S. § 1-111 or 23 Pa. C.S.A. §§ 6354 – 6358 does not ensure, or entitle you to, employment by anyone. Your employer has the right to impose, and may impose, additional conditions and requirements, beyond the requirements imposed by these statutes, if your employer offers you a job.* 

#### B. Criminal History – Commonwealth of Pennsylvania and FBI.

1. Subsection 111(e) provides that no person shall be employed in a public or private school, intermediate unit or area vocational-technical school, or by an independent contractor thereof, where the report of criminal history record indicates the applicant has been convicted of any of the following offenses:

a. An offense under one or more of the following provisions of Title 18 of the Pennsylvania Consolidated Statutes:

Chapter 25	<ul> <li>relating to criminal homicide</li> </ul>
Section 2702	<ul> <li>relating to aggravated assault</li> </ul>
Section 2709.1	<ul> <li>relating to stalking</li> </ul>
Section 2901	<ul> <li>relating to kidnapping</li> </ul>
Section 2902	<ul> <li>relating to unlawful restraint</li> </ul>
Section 2910	<ul> <li>relating to luring a child into a motor vehicle or structure</li> </ul>
Section 3121	– relating to rape
Section 3122.1	<ul> <li>relating to statutory sexual assault</li> </ul>
Section 3123	<ul> <li>relating to involuntary deviate sexual intercourse</li> </ul>
Section 3124.1	<ul> <li>relating to sexual assault</li> </ul>
Section 3125	<ul> <li>relating to aggravated indecent assault</li> </ul>
Section 3126	<ul> <li>relating to indecent assault</li> </ul>
Section 3127	<ul> <li>relating to indecent exposure</li> </ul>
Section 3129	<ul> <li>relating to sexual intercourse with animal</li> </ul>
Section 4302	<ul> <li>relating to incest</li> </ul>
Section 4303	<ul> <li>relating to concealing the death of child</li> </ul>
Section 4304	<ul> <li>relating to endangering welfare of children</li> </ul>
Section 4305	<ul> <li>relating to dealing in infant children</li> </ul>
Section 5902(b)	<ul> <li>– a felony offense relating to prostitution and related offenses</li> </ul>
Section 5903(c) or (d)	<ul> <li>relating to obscene other sexual materials and performances</li> </ul>
Section 6301(a)(1)	<ul> <li>relating to corruption of minors</li> </ul>
Section 6312	<ul> <li>relating to sexual abuse of children.</li> </ul>
Section 6318	<ul> <li>relating to unlawful contact with minor</li> </ul>
Section 6319	<ul> <li>relating to solicitation of minors to traffic drugs</li> </ul>
Section 6320	<ul> <li>relating to sexual exploitation of children</li> </ul>

b. An offense designated as a felony under the act of April 14, 1972 (P.L. 233, No. 64), known as "The Controlled Substance, Drug, Device and Cosmetic Act."

c. An out-of-State or Federal offense similar in nature to those crimes listed in clauses B.1.a. and b. above.

#### 2. Other Offenses.

a. Subsection 111(f.1) provides that if the report of criminal history record information indicates the person has been convicted of a felony offense of the first, second or third degree other than those enumerated under subsection 111(e) (listed above in subsection B.1)., the person shall be eligible for prospective employment only if a period of ten (10) years has elapsed from the date of expiration of the sentence for the offense.

b. If the conviction is for a misdemeanor of the first degree, the person shall be eligible for prospective employment only if a period of five (5) years has elapsed from the date of expiration of the sentence for the offense.

c. If the report of criminal history record information indicates the person has been convicted more than once for an offense under 75 Pa.C.S. § 3802(a), (b), (c) or (d) (relating to driving under influence of alcohol or controlled substance) and the offense is graded as a misdemeanor of the first degree under 75 Pa.C.S. § 3803 (relating to grading), the person shall be eligible for prospective employment only if a period of three years has elapsed from the date of expiration of the sentence for the most recent offense.

# By signing the Affidavit, you affirm and verify that you have not been convicted of one of the crimes listed in B.1. above, and that if you have been convicted of an offense described in B.2., above, the stated period of ineligibility for employment after expiration of the sentence or sentences has elapsed before the date of your Affidavit.

3. All applicants, including all Pennsylvania residents, must procure the Federal Bureau of Investigation (FBI) criminal history record information, including applicants who reside in the Commonwealth of Pennsylvania.

4. You must attach to your Affidavit true, correct and complete copies of your applications to the Pennsylvania State Police and the FBI.

#### C. Child Abuse Official Clearance Statement.

1. You must attach to your Affidavit a true, correct and complete copy of your application to the Pennsylvania Department of Public Welfare.

## By signing the Affidavit, you affirm and verify that you have not been named as the perpetrator of a founded report or named as the individual responsible for injury or abuse in a founded report at any time.

#### D. General Requirements.

1. You must forward to your employer originals of the Pennsylvania State Police and FBI reports and your Child Abuse Official Clearance Statement within five (5) business days after you receive them.

2. You must insert the date you sign the Affidavit in the space provided below your signature.

#### STEEL ORIGIN CERTIFICATE

#### ST-1 STEEL ORIGIN CERTIFICATION: PRIME CONTRACTOR

This form must be executed by the Prime Contractor and submitted to the CIS within 30 days from the date the Professional approves a GSC-23 listing a "steel product". No steel product may be delivered on-site unless DGS has received an ST form. A completed form is required for each <u>type</u> of steel product (e.g., beams, columns, stairways, etc.), from each supplier <u>but not</u> for each piece of steel product.

#### A. TO BE COMPLETED BY THE PRIME CONTRACTOR:

	1.	Name of Contractor's firm
	2.	Firm's address:
	3.	Firm's phone number:4. Date submitted:
	5.	Contract No 6. Contract Title:
	7.	Steel Product Certified: 8. GSC-23:
	9.	Name & Address of Supplier:
В.	TYP	E OF STEEL PRODUCT (Check and complete one (1) applicable category):
	10.	Identifiable steel product:       100% of the steel in the product is identifiably         marked as manufactured in the United States.       a.         Other documentation required:       NONE         b.       Manner in which steel product is identifiable:         (1)      Stamped "Made in U.S.A."         (2)      Stamped "Made in"         (3)      Other.
	11.	<ul> <li><u>Non-identifiable structural steel</u>: Less than 100% of the steel contained in the product is identifiable as provided above. Structural steel is defined as steel products used as a basic structural element of a project (i.e., steel beams, columns, decking, stairways, reinforcing bars, structural lintels, pipes, etc.)         <ul> <li>a. Other documentation <u>required</u>: Bills of lading, invoices <u>and</u> mill certificates that certify that the steel contained in the product was melted and/or manufactured in the United States.</li> </ul> </li> </ul>
	12.	<ul> <li><u>Non-identifiable non-structural steel:</u> all other steel products including door and window frames, machines, equipment, etc.</li> <li>a. Other documentation <u>required:</u> Executed Form ST-2</li> </ul>
pro an	oduct nende	<b>FICATION:</b> I, the undersigned officer of the Contractor, do certify that, to the best of my knowledge, the steel tisted above complies with the provisions of the Steel Products Procurement Act (73 P.S. § 1881, et seq., as ed). I understand that by signing this document I certify that the facts contained herein are true. I further and that this document is subject to the provisions of the Unsworn Falsification to Authorities (18 P.S. § 4904)

understand that this document is subject to the provisions of the Unsworn Falsification to Authorities (18 P.S. § 4904) and the Steel Products Procurement Act, which provides penalties including, but not limited to, debarment from bidding on any Commonwealth of Pennsylvania public works project for a period of five years. I agree to provide documentation supporting these facts if requested by the Commonwealth. The Commonwealth reserves the right to pursue any action deemed necessary to protect the Commonwealth's interest and ensure compliance with the laws of the Commonwealth. WITNESS:

Name:	
Secretary or	Treasurer

Name: President or Vice President (Seal)

(Rev. 6/1/99)

#### ST-2 STEEL ORIGIN CERTIFICATION: NON-IDENTIFIABLE, NON-STRUCTURAL STEEL

This form must be executed by the Purchaser and the Fabricator of any item containing steel that is not structural steel. This form must be submitted to the CIS within 30 days from the date the Professional approves a GSC-23 listing a "steel product". No steel product may be delivered on-site unless DGS has received the ST form. Structural steel is defined as steel products used as a basic structural element of a project (i.e., steel beams, columns, decking stairways, reinforcing bars, pipes, etc.). Purchasers of <u>structural</u> steel products (contractors or subcontractors) <u>must</u> provide bills of lading, invoices <u>and</u> mill certifications that the steel was manufactured in the United States instead of this form. The Fabricator shall be herein defined as the firm that assembles the component parts of the product to be purchased. The Department of General Services will accept the certification of firms that are earlier in the chain of purchase (i.e., manufacturers of components, steel suppliers) in lieu of the Fabricator.

#### A. TO BE COMPLETED BY THE PURCHASER:

1. Name of purchasing firm

- 2. Firm's address:
- 3. Firm's phone number:\_\_\_\_\_\_4. Date submitted to Fabricator:\_\_\_/\_\_/

6. Contract title:

- 5. Contract No. DGS
- 7. Steel Product Certified:

Model:

#### B. TO BE COMPLETED BY THE FABRICATOR/MANUFACTURER:

- 9. Name of firm:
- 10. Address of firm:\_\_\_\_\_
- 11. Firm's phone number:\_\_\_\_\_\_\_\_12. Date received:\_\_\_\_/\_\_\_/\_\_\_\_
- 13. Federal Employer ID. No.:\_\_\_\_

**CERTIFICATION:** I, the undersigned officer of the Fabricator/Manufacturer, do certify that our firm assembled/fabricated the components to the steel products listed in Section A, Item 7, and that all steel components therein are comprised of steel that is melted and/or manufactured in the United States. I understand that, by signing this document, I certify that I have received assurances from the suppliers/manufacturers of the components that said components do not contain foreign manufactured steel. I further understand that this document is subject to the provision of the Unsworn Falsification to Authorities Act (18 P.S. § 4904). I also understand that I am subject to the provisions of the Steel Products Procurement Act (73 P.S. § 1881, et seq.) which provides penalties including, but not limited to, debarment from supplying any products for Commonwealth of Pennsylvania public works projects for a period of five (5) years for violations therein. I agree to provide documentation supporting these facts if requested by the Commonwealth. The Commonwealth reserves the right to pursue any action deemed necessary to protect the Commonwealth's interest and ensure compliance with the laws of the Commonwealth.

#### WITNESS:

Name: Secretary or Treasurer Name: President or Vice President (Rev. 6/1/99)

8. GSC-23#\_\_\_\_

\_(Seal)

#### ST-3 75% U.S. MANUFACTURE CERTIFICATION

The Steel Products Procurement Act (73 P.S. § 1881, et seq.) allows the use of steel products with both foreign and domestic steel if at least 75 percent of the cost of the materials (including steel, rubber, wood, plastic, etc.) in the product are manufactured or produced, as the case may be, in the United States.

This form must be executed by a Fabricator of any item containing BOTH U.S. AND FOREIGN STEEL. The Fabricator shall hereby be defined as the firm that assembles the component parts of the product to be purchased. The Department of General Services will accept the certification of firms that are earlier in the chain of purchase (i.e., manufacturers of components, steel suppliers) in lieu of the Fabricator.

This form must be submitted to the CIS within 30 days from the date the Professional approves a GSC-23 listing a "steel product". No steel product may be delivered on-site unless DGS has received an ST form.

#### A. TO BE COMPLETED BY THE PRIME CONTRACTOR (PURCHASER):

1. Name of Contractor:

2.	Address of Contractor:	
З.	Phone Number:	4. Date submitted to Fabricator://
5. 7.	Contract No. DGS	6. Contract Title: 8. GSC-23#

Model:

#### B. TO BE COMPLETED BY THE FABRICATOR/MANUFACTURER:

9 Name of Firm:

10

10.	Address of Firm:				_
11.	Firm's Phone number: ()	12.	Date Received:	 1	13.
	Fed. Employer ID. No.:				

14. Percentage of the cost of the articles, materials and supplies which have been mined,

produced or manufactured in the U.S. for the product listed above on Line 7:

**CERTIFICATION:** I, the undersigned Officer of the Fabricator/Manufacturer, do certify that our firm assembled/manufactured the components to the steel product listed in Section 7, that the steel in said product is both foreign and domestically manufactured, and that all the facts contained in this document are true. I agree to provide documentation supporting these facts if requested by the Commonwealth. I further understand that this document is subject to the provisions of the Unsworn Falsification to Authorities Act (18 P.S. § 4904) and the Steel Products Procurement Act (73 P.S. § 1881, et seq.) which provide penalties including, but not limited to, debarment from supplying any products for Commonwealth of Pennsylvania public works projects for a period of five (5) years for violations therein. The Commonwealth reserves the right to pursue any action deemed necessary to protect the Commonwealth's interest and ensure compliance with the laws of the Commonwealth.

#### Witness:

Name: Secretary or Treasurer Name<sup>-</sup> President or Vice President (Seal)

(Rev. 6/1/99)

ST4 NOT DOMESTICALLY MANUFACTURED: PRIME CONTRACTOR

This form <u>must</u> be executed by the Prime Contractor and submitted to the CIS within 30 days from the date the Professional approves a GSC-23 listing a "steel product". No steel product may be delivered on-site unless DGS has received, reviewed and provided <u>written approval</u> of the ST-4 form. An ST-4 form can only be submitted for approval when a steel product is <u>not</u> domestically produced in sufficient quantities. DGS will verify the accuracy of the information on the ST-4 form and will contact additional suppliers/manufacturers to ascertain the availability of a domestic steel product.

÷ é ő 6

Phone Number:	4. Date Submitted:	5. Contract No. DGS:	No. DGS:
Contract Title:	7. Steel Product	oduct	8. GSC-23.
iers/Manufacturers nanufactured steel.	Suppliers/Manufacturers contacted by the Prime Contractor that claimed that the above product is not produced/manufactured with U.Smanufactured steel. <u>At least</u> four Suppliers/Manufacturers are needed. Manufacturers listed in specifications must be contacted.	led that the above produc leeded. <b>Manufacturers l</b> i	t is not produced/manufactured with sted in specifications must be con
Firm Name: Address:			Phone Number:
Person Contacted:	:pa	Ī	Date Contacted: / /
Firm Name:			Phone Number:
Person Contacted:	ed:	Ĩ	Date Contacted: / /
Firm Name:			Phone Number:
Address: Person Contacted:	ed:	s (4	Date Contacted: / /
Firm Name:			Phone Number:
Address:		8	
Person Contacted:	ed:		Date Contacted: / /

**CERTIFICATION:** I, the undersigned Officer of the Contractor, do certury triat Litave with a ways and ways and ways and the above-referenced project. I understand that this produce/manufacture the steel product listed on Line 7 with U.S. Steel in sufficient quantities to complete the above-referenced project. I understand that this document is subject to the provisions of the Unsworn Falsification to Authorities Act (18 P.S. Sec. 4904) and the Steel Products Procurement Act, which provide document is subject to the provisions of the Unsworn Falsification to Authorities Act (18 P.S. Sec. 4904) and the Steel Products Procurement Act, which provide document is subject to the provisions of the Unsworn Falsification to Authorities Act (18 P.S. Sec. 4904) and the Steel Products Procurement Act, which provide document is subject to the provisions of the Unsworn Falsification to Authorities Act (18 P.S. Sec. 4904) and the Steel Products Procurement Act, which provide document is subject to the provisions of the Unsworn Falsification to Authorities Act (18 P.S. Sec. 4004) and the Steel Products Procurement Act, which provide document is subject to the provisions of the Unswer and the Unswer and the Provisions of the Vertex interest and ensure compliance with the laws of the Commonwealth reserves the right to pursue any action deemed necessary to protect the Commonwealth's interest and ensure compliance with the laws of the

WTNESS:

Name: Secretary or Treasurer

(SEAL)

(Rev. 6/1/99)

Name: President or Vice President



### Commonwealth of Pennsylvania

#### **Public Works Employment Verification Form**

Complete and return the form to the contracting Public Body prior to the award of the contract.

Company Legal Name:			
Doing Business As: (if different from Legal Name) Mailing Address:			
	Street Address 1		
	Street Address 2		
	City	State	Zip Code
Check one:	Contractor	Subcontractor	p 0000
Contracting Public Body: _			
Contract/Project Number:			
Project Description:			
Date Enrolled in E-Verify (N	ИМ/DD/YYYY):		
that as of today's date, Public Works Employment Program (EVP) operated by	Verification Act ('the / the United States D	eferenced public works contra- , our company is in c e Act') through utilization of Department of Homeland Sect horized to work in the United	ompliance with the the federal E-Verify urity. To the best of
verify the employment elig start date throughout the o	ibility of each new h duration of the publi	tors/subcontractors will utilize ire within five (5) business da c works contract. Documenta Il be maintained in the event	ys of the employee tion confirming the
l,			sentative of the
	at the submission o	contained in this verification of false or misleading informa anctions provided by law.	
Authorized Representative	Signature	Date of Sig	gnature
Printed Name:			
Phone Number:	En	nail:	

SUPPLEMENTARY CONDITIONS

#### SUPPLEMENTARY CONDITIONS

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#### SUPPLEMENTARY CONDITIONS

#### 1. GENERAL STATEMENT

1.1 The following Supplementary Conditions act to modify, change, and/or add to the School District/Contractor Agreement and the documents incorporated or described therein. Where any article, paragraph or subparagraph of the said documents is modified, supplemented or voided by these Supplementary Conditions, the unaltered parts of said documents shall remain in effect. The General Conditions and the Supplementary Conditions are applicable to all of the Work under the Contract and shall apply to the Contractor and all Subcontractors and Sub-subcontractors.

#### 2. DEFINITIONS

- 2.1 "Board" shall mean the Board of Education, successor to the School Reform Commission
- 2.2 "School District" and "Owner" shall mean the School District of Philadelphia, Pennsylvania or the authorized representative thereof.
- 2.3 SRC" shall mean the School Reform Commission, School District of Philadelphia.
- 2.4 NOT USED
- 2.5 "Architect/Engineer" shall mean the firm or person or the authorized representative thereof, identified or designated as such elsewhere in the Contract Documents.
- 2.6 NOT USED
- 2.7 "Project" shall mean the entire construction work as indicated on the Drawings and described in the Specifications for the construction project on the site located in Philadelphia, Pennsylvania.
- 2.8 "Contractors" or "Prime Contractors" or "separate Contractors" shall mean the separate multiple construction contractors, or their authorized representatives thereof, and all their Subcontractors performing separate general construction work (which shall include civil, structural, roofing, architectural, utilities, paving and landscaping), heating, ventilating and air conditioning (HVAC) work, plumbing work, or electrical work, pursuant to separate multiple construction contracts ("Prime Contracts"), or construction contractors performing additional, different or other Project work pursuant to separate construction contracts with the School District under the multi-prime bidding and contracts requirements of the Public School Code, 24 P.S. §7-751, for the Project. "Contractor" shall also mean each separate Prime Contractor or the authorized representatives thereof, and their personnel, and all their Subcontractors, as the context requires.
- 2.9 "Approval" or "Approved" shall mean the written approval of the SRC or its authorized representative. "Approve" or "Approval" where used in conjunction with the Architect/Engineer's responses to submittals, requests, applications, inquiries, reports and claims by the Contractor shall be limited by the Architect/Engineer's responsibilities and duties as specified in the General Conditions and Supplementary Conditions. In no case shall "approve" or "approval" by the Architect/Engineer be interpreted as a release of the Contractor from responsibilities to fulfill requirements of the Contract Documents.
- 2.10 "As Shown", "As Indicated", "As Detailed": These words, and words of like implication, refer to information contained by Drawings describing the Work, unless explicitly stated otherwise in other Contract Documents.

- 2.11 "Plans" or "Drawings": All Drawings or reproductions of Drawings pertaining to required Work.
- 2.12 "Provide": As a directive to the Contractor, meaning, "newly furnish and install completely ready for intended use" unless otherwise indicated elsewhere in the Contract Documents.
- 2.13 "Indicated": Shown on Drawings, noted on Drawings, specified, or a combination thereof.
- 2.14 "Furnish": Purchase and supply new and deliver to Project site, ready for operations at Project site, and for School District's ownership and intended usage.
- 2.15 "Install": Set in place and make usable that which is furnished.
- 2.16 "Necessary": Needed, as reasonably inferable from Contract or required, in order to make Work complete and available for use.
- 2.17 Descriptions, provisions and requirements pertaining to method and manner of performing Work, or to quantities and qualities of materials to be furnished under the terms of the Contract
- 2.18 NOT USED
- 2.19 Except as provided above, all of the defined terms in these Supplementary Conditions have the meanings set forth in the School District/Contractor Agreement and the General Conditions.
- 2.20 The term "day" as used in these Supplementary Conditions shall mean calendar day unless otherwise specifically designated. The terms "business day", "working days", and "work days" as used in these Supplementary Conditions shall mean Monday through Friday, excluding holidays observed by the School District.
- 2.21 The term "or" as used in these Supplementary Conditions shall mean "and/or".
- 2.22 Where required hereunder to effectuate the intent of these Supplementary Conditions, words used in the singular shall be construed to mean or include the plural and vice versa; and pronouns of any gender shall be deemed to include and designate the masculine, feminine and neuter genders.

#### 3. WORK PREPARED UNDER SEPARATE CONTRACTS

- 3.1 NOT USED
- 3.2 The SRC may perform Work related to the Project with its own forces, or may undertake or award other separate contracts or additional, other or different Work and may install equipment and furniture in the building or on the grounds, concurrently with this Contract. The other separate Contractors, along with their Subcontractors, will perform all construction work on the Project concurrently with this Contract. The Contractor shall fully cooperate with such other separate Contractors and School District employees, and carefully fit his own Work to such additional, other or different Work as may be directed by the School District. The Contractor shall coordinate and supervise the Work of this Contract with the Work performed by the other separate Contractors by mutual agreement and School District employees. The Contractor shall not commit or permit any act that will interfere with the performance of Work by any other separate Contractor or by School District employees. The School District shall finally resolve any unresolved disputes on the Project.

#### 4. DETAILED COST BREAKDOWN

4.1 Before the first Application for Payment, the Contractor shall submit to the School District, on forms

furnished by the School District, an Accurate and Detailed Cost Breakdown for the various portions of the Work, supported by such data as to substantiate its accuracy as the School District may require, including, but not limited to, quantities of the respective items and the allowance for labor, materials and other costs entering into each item. The Cost Breakdown in conjunction with the coordinated CPM Construction schedule (as defined in Paragraph 23 of these Supplementary Conditions) shall be used as the basis for the Contractor's Application for Payment, and only for this purpose.

- 4.2 <u>Coordination</u>: Coordinate preparation of the Detailed Cost Breakdown with preparation of the Contractor's Construction Schedule in accordance with the General Conditions and Paragraph 4 of the Supplementary Conditions.
- 4.3 <u>Format and Content</u>: Use the Specifications Table of Contents as a guide to establish the format for the Detailed Cost Breakdown. Provide at least one line item for each Specification Section in Divisions 2 through 33 as applicable.
  - 4.3.1 Identification: Include the following Project identification on the Detailed Cost Breakdown:

Project name and location. Project number. Contractor's name and address. Date of submittal.

4.3.2 Arrange the Detailed Cost Breakdown in tabular form with separate columns to indicate the following for each item listed:

Related Specification Section or Division. Description of Work. Name of subcontractor. Name of manufacturer or fabricator. Name of supplier. Change Orders (numbers) that affect value. Dollar value.

Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

- 4.3.3 Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items.
- 4.3.4 Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
- 4.3.5 Provide a separate line item in the Detailed Cost Breakdown for each part of the Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.
  - (a) Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.
- 4.3.6 Provide separate line items on the Detailed Cost Breakdown for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 4.3.7 <u>Margins of Cost</u>: Show line items for indirect costs and margins on actual costs only when

such items are listed individually in Applications for Payment. Each item in the Detailed Cost Breakdown and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.

- (a) Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Detailed Cost Breakdown or distributed as general overhead expense, at the Contractor's option.
- 4.3.8 Schedule Updating: Update and resubmit the Detailed Cost Breakdown prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

#### 5. PROGRESS PAYMENTS

- 5.1 Starting thirty (30) calendar days after the date of Notice to Proceed, the Contractor shall submit to the Architect/Engineer an itemized Application for Payment in the form prescribed in Paragraph 5.5 of these Supplementary Conditions, supported by such data substantiating the Contractor's right to payment as the School District may require.
- 5.2 Progress Payments shall be made for Work completed and material delivered and properly stored in accordance with the General Conditions.
- 5.3 The Contractor shall receive Progress Payments in accordance with Article GC-9 of the General Conditions.
- 5.4 Payments for off-site stored materials, supplies and equipment shall not be considered.
- 5.5 Applications for Payment shall be prepared by the Contractor on forms obtained from the School District. The Contractor shall indicate on these forms the quantity and value of the Work done and materials incorporated by the Contractor to the end of the application period. The Contractor shall also break down the total Work completed to date of submission on these forms. Applications for payment shall be submitted to the School District, in a penciled type format by the 20<sup>th</sup> day of each month, and may include projected costs to the 30<sup>th</sup> day of the month. The School District, shall review and adjust the invoice as required, and return it to the Contractor, who shall then make the indicated corrections to the values, and submit a final hard notarized original, along with five (5) copies to the School District, by the 25<sup>th</sup> day of each month.
  - 5.5.1 <u>Application for Payment at Substantial Completion</u>: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.
  - 5.5.2 Administrative actions and submittals that shall precede or coincide with this application include:
    - (a) Warranties (guarantees) and maintenance agreements.
    - (b) Final cleaning.
    - (c) Application for reduction of retainage and consent of surety.
    - (d) List of incomplete Work, recognized as exceptions to Architect/Engineer's Certificate of Substantial Completion.
  - 5.5.3 <u>Final Payment Application</u>: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:
    - (a) Completion of Project closeout requirements.
    - (b) Completion of items specified for completion after Substantial Completion.

- (c) Ensure that unsettled claims will be settled.
- (d) Ensure that incomplete Work is not accepted and will be completed without undue delay.
- (e) Transmittal of required Project construction records to the School District.
- (f) Proof that taxes, fees, and similar obligations were paid.
- (g) Removal of temporary facilities and services.
- (h) Removal of surplus materials, rubbish, and similar elements.
- 5.6 Materials in reasonable quantities, which are delivered to the Project site, properly stored either on the site, during the Project, or inside the building, and accepted for incorporation in the Work but not yet so used, may be included on Applications for Payment, only after prior approval has been granted by the School District. The Contractor shall submit with the Applications for Payment reflecting the unincorporated material, original and five (5) copies of itemized, receipted invoices showing payment of such material by the Contractor and delivery slips certifying to the delivery of the quantities set forth on the estimate to the Project site of the Work. Payment for materials stored on the Project site shall be based on actual cost for same as shown by the receipted invoices and shall not exceed the cost of materials as indicated on the approved Detailed Cost Breakdown for the particular items involved. The Contractor shall mark or identify such materials as being the property of the School District, and shall be solely responsible for such materials' safekeeping and usability at the time they are to be incorporated in the Work, and shall at his own expense care for, protect same, and take out insurance against theft, loss from any other cause, damage, destruction and/or such other risks as may be involved, which would render the aforesaid materials unfit or unavailable for incorporation into the Work. The Contractor shall not remove the materials from the Project site or any approved storage area, except for incorporation into the Work, without first requesting and receiving prior written consent of the School District.
- 5.7 Should a dispute arise between the School District and the Contractor, which dispute is based upon increased costs caused by, or claimed to be caused by, actions or inactions of another Contractor or Contractors, the School District may withhold additional retainage in the sum of one and one-half (1-1/2) times the amount of any possible liability arising from such dispute until such dispute is finally resolved by agreement of all parties involved or by a court order or judgment entered in a legal action, suit, or proceeding, unless the Contractor causing the additional claim furnishes a bond satisfactory to the School District to indemnify the School District against said claim.
- 5.8 Applications for payment shall not include requests for payment on account of changes in the Work that have not yet been included in a Change Order approved by the SRC. Applications for payment shall <u>not</u> include "extra work", "additional work" or "changed work" of the Contractor, Subcontractors, or Sub-subcontractors that has not been approved by the School District and included in a Change Order approved by the SRC. Applications for payment shall <u>not</u> include damages, costs, fees, and expenses of the Contractor, Subcontractors, or Sub-subcontractors that have not been approved by the School District for payment and included in a Change Order approved by the School District for payment and included in a Change Order approved by the School District for payment and included in a Change Order approved by the School District for payment and included in a Change Order approved by the School District for payment and included in a Change Order approved by the School District for payment and included in a Change Order approved by the School District for payment and included in a Change Order approved by the School District for payment and included in a Change Order approved by the SRC.

#### 6. TRAFFIC MAINTENANCE, CONTROL, AND TEMPORARY WORK

- 6.1 Whenever the Contractor's operations affect vehicular or pedestrian traffic, the Contractor shall be responsible for the installation and maintenance of any and all traffic control devices as deemed necessary by the authority having jurisdiction.
- 6.2 The Contractor shall keep temporary Work from blocking access to completed Work. If, however, conflict with normal traffic access occurs, he shall provide temporary bypass routing until such temporary Work is completed.
- 6.3 The Contractor shall move all temporary Work previously installed from the premises after it is no longer needed, and before completion of the Contract, provided, however, that the

Contractor shall maintain certain of the temporary Work on the Project site until the Project is Substantially Complete, as necessary, including but not limited to, construction fences, barricades and other protection.

#### 7. APPROACHES AND WALKWAYS

- 7.1 The Contractor shall provide and maintain all necessary approaches, exits and walkways required to properly execute his Work, including traffic Flagman, barriers and signage, in such a manner so as to provide public pedestrian safety, and not to interfere with the access and the Work of the other separate Contractors.
- 7.2 Any damage to property not existing at the time of the Notice to Proceed shall be repaired by the Contractor who did the damage, at no additional cost to the School District.

#### 8. EQUIPMENT OR WORK NOT IN CONTRACT (NIC)

8.1 When certain items of equipment and other work are indicated as "NIC" (Not in Contract), or to be furnished and installed under other contracts, any requirements needed for the preparation of openings, provision of backing, etc., for receipt of such "NIC" work shall be provided as shown or specified in the Contract Documents by the appropriate separate Contractor, upon written request of the Contractor. The Contractor shall then properly form and otherwise prepare his Work in a satisfactory manner to receive such "NIC" Work. All Work not identified as such shall be provided under the Contract where it is shown or specified.

#### 9. SANITARY PROVISIONS

9.1 The General Construction Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no General Construction Prime Contractor on a particular project, shall provide and maintain in a sufficient, neat and sanitary condition such sanitary conveniences and accommodations for the use of all workers on the Project as may be necessary to comply with the requirements and regulations of the City of Philadelphia Department of Health or of other bodies or tribunals having jurisdiction thereof.

#### 10. TEMPORARY WATER SUPPLY

- 10.1 The Plumbing Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no Plumbing Prime Contractor on a particular project, shall make all non-potable temporary water connections from existing hydrants as required for the execution of the Work.
- 10.2 The General Construction Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no General Construction Prime Contractor on a particular project, shall provide, at his own expense, temporary potable water bottle service for use by all Contractors and Subcontractors for drinking for the duration of the Project.

#### 11. TEMPORARY HEATING AND COOLING

11.1 <u>Building Enclosure:</u> Cold weather shall not be accepted as a reason for stopping or delaying the Work of any Contractor. The General Construction Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no General Construction Prime Contractor on a particular project, shall be responsible for providing all temporary enclosures, including but not limited to those required to maintain the proper temperatures and shelter for all masonry construction.

- 11.2 <u>Heat for Construction</u>: The HVAC Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no HVAC Prime Contractor on a particular project, shall provide at his expense all temporary heat required to maintain a minimum temperature of 50 degrees F in the building interior around the clock whenever needed for construction purposes. In addition to maintaining a minimum temperature of 50 degrees F during the entire heating season, the temperature shall be maintained at a minimum of 70 degrees F. for ten (10) days prior to and during installation, and for four (4) days after installation in areas where finish carpentry, resilient flooring, glue-down carpeting, masonry and painting work are being performed. Other temperatures shall be maintained as required elsewhere in the Specifications.
- 11.3 <u>Temporary Heating and Cooling for Occupied Buildings:</u> The Mechanical Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no HVAC Prime Contractor on a particular project, shall coordinate sequencing of the demolition of existing heating and cooling systems with the new work, so that that complete and functional heating and cooling systems are operational during the respective heating and cooling seasons.

The heating season runs from October 1 each year to April 15 of the following year and the cooling season runs from April 15 to October 1 each year.

If the existing or new systems are not operational and providing the necessary

heating by October 1, and cooling by May 1 of each project year, the Mechanical Contractor shall provide, at its expense, temporary heating and cooling equipment and fuel to maintain a minimum of 70 deg. F in the school during the heating season and 78 deg. F during the cooling season F until such time as the new systems are fully operational.

All costs of installation and maintaining utility services including fuel oil, natural gas and electricity required to support the temporary heating and cooling equipment shall be the responsibility of the Mechanical Contractor. Installation of utility hookups shall be coordinated with and in compliance with the prevailing utilities requirements.

- 11.4 Temporary heating devices that may produce soot, smudges, stains, and other deposits shall not be acceptable. The HVAC Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no HVAC Prime Contractor on a particular project, shall be responsible for removal of any such deposits that may occur.
- 11.5 Prior to final Project completion, The HVAC Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no HVAC Prime Contractor on a particular project, shall replace all filters and otherwise clean and recondition all HVAC equipment used to provide temporary heat to the satisfaction of the School District.
- 11.6 The School District's warranty on all HVAC equipment shall not begin until final Project completion.

#### 12. TEMPORARY LIGHTING AND POWER

- 12.1 The Electrical Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no Electrical Prime Contractor on a particular project, shall provide and maintain electric service and shall pay for all electric consumption, including without limitation, consumption by equipment maintained and used at any time by the School District in trailers maintained by the School District at the site.
- 12.2 The Electrical Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no Electrical Prime Contractor on a particular project, shall provide, at his own expense, all electrical

connections, tie-ins, extensions, construction materials, etc., required for the temporary lighting, including site security lighting, and power requirements as well as the execution of his Work.

- 12.3 Power to be furnished by the Electrical Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no Electrical Prime Contractor on a particular project, shall be for hand tools and equipment rated one horsepower (1 HP) or less. Electric power for any tools or equipment with larger power requirements shall be furnished by the Contractor requiring this power.
- 12.4 All wiring, material, devices, etc., installed as part of the construction light and power work shall be completely removed by the Electrical Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no Electrical Prime Contractor on a particular project, as the permanent work is completed and the temporary services are no longer required.

#### 13. TEMPORARY FIRE PROTECTION

13.1 The Electrical Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no Electrical Prime Contractor on a particular project, shall provide fire protection equipment as required by the authority having jurisdiction during the duration of the Work.

#### 14. SIGN-NOT USED

#### 15. SECURITY

- 15.1 The School District shall not be responsible for any Contractor's and his Subcontractors' tools, equipment, materials, supplies or labor. The General Construction Contractor, or the Lead Prime Contractor (as defined in GC-4.1.2), if there is no General Construction Prime Contractor on a particular project, shall provide security services for the duration of the Project, including but not limited to:
  - 15.1.1 Policing the entire Project site and restricting trespassers, including maintaining a worker and visitor sign-in sheet on a daily basis.
  - 15.1.2 Protecting tools, equipment, materials, supplies and work of the Contractors and all Subcontractors.
  - 15.1.3 Protecting field offices.
  - 15.1.4 Eliminating any conditions detrimental to the Project.
- 15.2 All Contractors and their Subcontractors may, at their own expense, keep additional security personnel on the premises to protect their property or Work, as they deem necessary, upon notification and approval by the School District.

#### 16. DIGITAL PHOTOGRAPHIC DOCUMENTATION

Each prime contractor shall provide photographic documentation of its work on the project as follows:

1. <u>General.</u>

Documentation of its work and progress shall be made by digital photos made with a digital camera or digital phone camera.

#### 1.1 Image Quality.

1.2. Digital images must be able to print an 8-by-10 picture at 300 DPI and the image needs to be 2,400 pixels by 3,000 pixels minimum.

1.3 Digital images may be transferred via thumb drive or electronically via file transfer protocol such as WeTransfer, Drop Box or Google.

#### 2. Before and After Surveys.

2.1 A Complete <u>BEFORE</u> and <u>AFTER</u> Photo Survey of <u>ALL</u> the rooms and spaces included inits contract shall be provided.

2.2 The BEFORE Survey must be submitted before the start of demolition/construction for review and approval by the District, and additional photos, if required.

2.3 The AFTER Survey will be submitted for review at project Substantial Completion and additional photos, if required by the District, for Final Acceptance and Final Payment

#### 3. Monthly Progress Documentation.

3.1. Monthly progress photos shall include ALL areas worked on during the month and shall be required for progress payment. A minimum of one (1) image for each wall, ceiling and floor will be provided for each room or space.

3.2 Photos from the same perspectives in each area worked on from month to month are required, unless otherwise approved or directed.

4. Change Documentation.

4.1. <u>BEFORE</u> Photos of <u>existing</u> conditions where change order requests are submitted for additional costs due to changed or unforeseen conditions shall be provided <u>before</u> the work in question is done.

4.2 This includes field directive work, as well as pre-negotiated change order work.

4.3. <u>AFTER</u> photos to document the claimed additional work shall be provided with the Change Order Request

#### 17. PROJECT MEETINGS

17.1 All Prime Contractors and their Subcontractors or their authorized representatives shall attend all Project Meetings with the School District and the Architect/Engineer for the purpose of coordinating and/or expediting the Work. Should the Contractor elect to be represented at such meetings, it shall be understood and agreed that the School District and the Architect/Engineer in dealing with the Contractor's representative does so with full assurance that such representative's actions and commitments may be accepted as though the Contractor who signed and is bound by the Contract were himself present and personally made such agreements and commitments. The meetings will be held biweekly or as determined necessary by the School District. All Prime Contractors and their Subcontractors are required to submit two-week look ahead schedules at each meeting. Such schedules are required to be current and to provide accurate projections of all intended work for the following ten (10) work days.

- 17.2 The Architect/Engineer shall prepare and distribute to all concerned the written minutes of the Project Meeting at or prior to the next regularly scheduled meeting. This report shall contain, but is not limited to, a complete listing of any and all clarifications of the Contract Documents, agreements or commitments made during the Project Meeting. If any Prime Contractor or any of his Subcontractors take exception to the statements in these minutes, or any omissions, they shall notify the Architect/Engineer, in writing, within three (3) days after receipt of the minutes, with a copy of the letter of exception to the School District, listing in detail the exceptions. Otherwise, the minutes shall stand as written.
- 17.3 Paragraph 17 specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:
  - (a) Preconstruction conferences (initial project meeting).
  - (b) Preinstallation conferences.
  - (c) Progress meetings.
  - (d) Coordination meetings.

#### 17.3.1 PRECONSTRUCTION CONFERENCE

- (a) The School District shall schedule a Project preconstruction conference before starting construction, at a time convenient to the School District, Architect/Engineer, the Contractor, and other Prime Contractors after execution of the Contract, but not later than fifteen (15) calendar days after the School District issues a Notice to Proceed to the Contractor. The preconstruction conference shall be held at the Project Site. The meeting shall be conducted to review responsibilities and personnel assignments, among other things.
- (b) <u>Attendees</u>: Authorized representatives of the School District, the Architect/Engineer, the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; other Prime Contractors, and other concerned parties shall attend the preconstruction conference. All participants at the preconstruction conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
- (c) <u>Agenda</u>: The participants at the preconstruction conference shall discuss items of significance that could affect progress, including the following:
  - Tentative construction schedule. Critical work sequencing. Designation of responsible personnel. Procedures for processing field decisions and Change Orders. Procedures for processing Applications for Payment. Distribution of Contract Documents. Submittal procedures for submittal of Shop Drawings, Product Data, and Samples.
  - (8) Preparation of record documents.
  - (9) Use of the premises.
  - (10) Parking availability.
  - (11) Office, work, and storage areas.
  - (12) Equipment deliveries and priorities.
  - (13) Safety procedures.
  - (14) First aid.
  - (15) Security.
  - (16) Housekeeping.
  - (17) Working hours.
  - (18) Phasing.
  - (19) Responsibility for temporary facilities and controls.

(20) Progress cleaning.

#### 17.3.2 PREINSTALLATION CONFERENCES

- (a) The Architect/Engineer shall conduct, and the Contractor shall schedule, a Project preinstallation conference at the Project Site before each construction activity that requires coordination with other construction.
- (b) <u>Attendees</u>: The Installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the preinstallation conference. The Contractor shall advise the School District, Architect/Engineer, and other Prime Contractors of scheduled meeting dates.
- (c) <u>Agenda</u>. The participants at the preinstallation conference shall review the progress of other construction activities and preparations for the particular activity under consideration at each preinstallation conference, including requirements for the following:
  - (1) Contract Documents.
  - (2) Options.
  - (3) Related Change Orders.
  - (4) Purchases.
  - (5) Deliveries.
  - (6) Submittals, Shop Drawings, Product Data, and quality-control samples.
  - (7) Review of mockups.
  - (8) Possible conflicts.
  - (9) Compatibility problems.
  - (10) Time schedules.
  - (11) Weather limitations.
  - (12) Manufacturer's recommendations.
  - (13) Warranty requirements.
  - (14) Compatibility of materials.
  - (15) Acceptability of substrates.
  - (16) Temporary facilities and controls.
  - (17) Space and access limitations.
  - (18) Regulations of authorities having jurisdiction and Governing regulations.
  - (19) Safety.
  - (20) Inspecting and testing requirements.
  - (21) Required performance results.
  - (22) Recording requirements.
  - (23) Protection of construction and personnel.
- (d) The Architect/Engineer shall record significant discussions and agreements and disagreements of each preinstallation conference, and the approved schedule. The Architect/Engineer shall promptly distribute the record of the preinstallation conference to everyone concerned, including the School District, the Contractor, and other Prime Contractors.
- (e) The Contractor shall <u>not</u> proceed with the installation if the preinstallation conference cannot be successfully concluded. The Contractor shall initiate whatever actions are necessary to resolve impediments to performance of Work and shall reconvene the preinstallation conference at

the earliest feasible date.

#### 17.3.3 PROGRESS MEETINGS

- (a) The Project Manager shall conduct, and the Contractor shall arrange, Project progress meetings at the Project Site at regular fourteen (14) day intervals. The Contractor shall notify the School District, the Architect/ Engineer, and other Prime Contractors of scheduled meeting dates. The Contractor shall coordinate dates of meetings with preparation of the payment request.
- (b) <u>Attendees</u>: In addition to representatives of the School District, the Architect/Engineer, the Contractor, and other Prime Contractors, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the progress meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.
- (c) <u>Agenda</u>: The participants at the progress meeting shall review and correct or approve minutes of the previous progress meeting. The participants at the progress meeting shall also review other items of significance that could affect progress on the Project. The participants at the progress meeting shall include topics for discussion as appropriate to the status of the Project.
  - (c.1) <u>Contractor's Construction Schedule</u>: The participants at the progress meeting shall review progress on the Project since the last project meeting. The participants at the progress meeting shall determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule, and determine how construction behind schedule will be expedited; and secure commitments from parties involved to do so. The participants at the progress meeting shall discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
  - (c.2) The participants at the progress meeting shall also review the present and future needs of each entity present, including the following:
    - (1) Interface requirements.
    - (2) Time.
    - (3) Sequences of operations.
    - (4) Status of submittals.
    - (5) Deliveries.
    - (6) Off-site fabrication problems.
    - (7) Access.
    - (8) Site utilization.
    - (9) Temporary facilities and services.
    - (10) Hours of work.
    - (11) Hazards and risks.
    - (12) Housekeeping.
    - (13) Quality and work standards.
    - (14) Change Orders.
    - (15) Documentation of information for payment requests.

- (16) Progress cleaning.
- (d) <u>Reporting</u>: No later than three (3) days after each progress meeting, the Project Manager shall distribute minutes of the progress meeting to each party present and to parties who should have been present. The Project Manager shall include a brief summary, in narrative form, of progress since the previous progress meeting and report.
- (e) <u>Schedule Updating</u>: The Contractor shall revise the Contractor's Construction Schedule after each progress meeting where revisions to the Construction Schedule have been made or recognized. The Contractor shall issue the revised Construction Schedule concurrently with the report of each progress meeting.

#### 17.3.4 COORDINATION MEETINGS

- (a) The Lead Prime Contractor, as defined in GC-4.1.2 shall schedule and conduct Project coordination meetings at regular intervals convenient for all parties involved. Project coordination meetings are in addition to specific meeting held for other purposes, such as regular progress meetings, preinstallation conferences and special preinstallation meetings.
- (b) The **Lead Prime Contractor** shall request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.
- (c) The **Lead Prime Contractor** shall record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting not later than three (3) days after each meeting.

#### 18. HOURS OF WORK

- 18.1 Normal workday and work hours are, five (5) days a week, Monday through Friday, eight (8) hours a day from 7:00 A.M. to 3:30 P.M.,. It is the sole responsibility of the Contractor to provide and include in the Base Bid Price, all labor resources necessary to satisfy time of completion requirements and meet the Substantial Completion Date.
- 18.2 The Contractor shall perform Work at the Project site during hours which comply with The Philadelphia Code and Charter as enforced by City agencies, including but not limited to, the Department of Public Health, Air Management Services.
- 18.3 Except in case of emergency, no work shall be performed on Saturdays, Sundays or Holidays or during hours outside of the normal hours of work, without prior notice and approval of the School District. The Contractor shall notify the School District at least three (3) days in advance of the Work to be performed, or no later than Wednesday noon if any Work is planned for the following weekend. Holidays occurring on Friday or Monday shall be considered part of the adjacent weekend.
- 18.4 If the Contractor's operation requires that the Architect/Engineer, Inspectors, School District or School District's consultants or any other Contractors working at the Project site either work overtime or use additional man hours at the Project site, the Contractor shall reimburse the School District for all applicable costs incurred due to overtime spent or additional man hours spent at the Project site.

18.5 No work shall be performed on Sundays or Holidays or outside of normal hours of work, except in case of emergency, without the presence of an inspector or other representative of the School District.

#### 19. SHOP DRAWINGS/SAMPLES

- 19.1 Shop Drawings and Samples shall be dated and shall bear the name of the Project; a description or the names of equipment, materials, and items; and complete identification of locations at which materials or equipment are to be installed. The related Contract drawing number and the Contract specification section and paragraph number shall also be included in the identification of the submittal.
- 19.2 Submission of Shop Drawings and Samples shall be accompanied by a transmittal letter, in duplicate, containing the name of the Project, the Contractor's name, the number of Shop Drawings and Samples, and titles and other pertinent data.
- 19.3 The Architect/Engineer shall review and return with his comments the Contractor's Shop Drawing and Sample Submissions within fourteen (14) calendar days of receipt of this information. Where submittals cannot be adequately reviewed within fourteen (14) calendar days of receipt, due to their scope, complexity or volume, the Architect/Engineer shall notify the School District and the Contractor in writing and stipulate the time that will be required to complete its review.
- 19.4 All shop drawings, samples and/or material or equipment submittals shall bear the Contractor's stamp or seal stating that the Contractor has reviewed the submittals and they conform to the requirements of the Contract Documents. The Architect/Engineer will review all shop drawings, samples, and/or product data within fourteen (14) working days of their receipt from the Contractor. Where submittals cannot be adequately reviewed within fourteen (14) calendar days of receipt, due to their scope, complexity or volume, the Architect/Engineer shall notify the School District and the Contractor in writing and stipulate the time that will be required to complete its review.
  - 19.4.1 By submitting shop drawings, product data, samples, and similar submittals, the Contractor represents that he has determined and verified:
    - (a) Dimensions, quantities, field dimensions, and relationship to existing Work.
    - (b) Coordination with Work to be installed later.
    - (c) Work on shop drawings is accurate and clearly shown.
    - (d) Work equipment will fit into assigned spaces with sufficient access for servicing and maintenance.
    - (e) Coordination with information on previously accepted shop drawings, product data, samples, or similar submittals.
    - (f) Full compliance with requirements of Contract Documents.
  - 19.4.2 In reviewing shop drawings, product data, samples and similar submittals, the Architect/Engineer shall be entitled to rely upon the Contractor's representation that information in submittals is correct and accurate.
  - 19.4.3 Submittals that are returned or rejected because of insufficient Contractor review or coordination shall not be justification for a claim for an extension of time.
- 19.5 Within fourteen (14) calendar days or less than within the time allowed in the coordinated CPM Construction schedule, after receiving the Architect/Engineer's comments on shop drawings or samples, the Contractor shall review and coordinate the shop drawings with the other separate Contractors. If any separate Contractor has coordination problems with the approved shop

drawings, he shall notify the Architect/Engineer immediately.

- 19.6 The Contractor shall submit to the Architect/Engineer five (5) prints of all shop drawings, and shall submit to the School District one (1) print of all shop drawings. The marked-up reproducible shall be returned to the Contractor. Within twenty-four (24) hours after receipt of the marked-up reproducible from the Architect/Engineer, the Contractor shall make prints and shall submit them to his Subcontractors and the other separate Contractors for the coordination of the Work of all trades, and shall submit one (1) set of prints to the School District.
- 19.7 For all catalog cuts, product data, and non-drawing type submissions, the Contractor shall submit to the Architect/Engineer a minimum of eight (8) copies for approval. Four (4) copies will be returned to the Contractor.

#### 19.8 <u>Samples</u>.

- (a) The Contractor shall provide to the Architect/Engineer full-size, fully fabricated samples, cured and finished as specified, and physically identical with material or product proposed.
- (b) For visual range samples, the Contractor shall submit three (3) sets of samples, with three (3) sample pieces in each set, showing full range of color and texture anticipated in final Work, to the Architect/Engineer.
- (c) For manufacturer's standard samples, the Contractor shall submit a full set of standard choices from manufacturer to the Architect/Engineer.
- (d) For color match samples, the Contractor shall submit to the Architect/Engineer three (3) samples of proposed final color to compare to the Architect/Engineer's sample.
- 19.9 The Contractor shall furnish additional copies of submittals required by authorities having jurisdiction over portions of the Work, by Subcontractors and suppliers for coordination of the Work, and by any other Contractors whose Work is related.
- 19.10 The Contractor shall submit all required submittals from each technical section of the Specifications at the same time to the Architect/Engineer.
- 19.11 The School District, at its discretion, may require that laboratory tests be made on any materials submitted for incorporation in the Project. When tests are so required, the Contractor shall deliver samples of sufficient size and quantity, to meet testing laboratory requirements, to the Architect/Engineer, and shall forward a letter to the School District advising of such delivery
- 19.12 The Contractor shall pay all expenses in connection with obtaining any laboratory testing of any material required to be tested. Reports of the testing laboratory shall be forwarded by the laboratory, original and one (1) copy to the Architect/Engineer, and one (1) copy each to the School District and Contractor.
- 19.13 Based upon the test report, the School District shall make the final determination as to whether or not the tested article meets the Contract requirements. Should the tested material fail to meet the Contract requirements, the Contractor shall then take immediate action to submit other materials for testing and approval which will meet the Contract requirements.
- 19.14 In the case of materials for which laboratory tests are not required, the Contractor shall deliver samples, properly labeled, to the job site and shall advise the Architect/Engineer by letter of such delivery, sending one (1) copy of the letter to the School District.

- 19.15 Promptly after receipt of the Contractor's letter, the Architect/Engineer shall examine the samples and shall note upon the aforementioned label, by affixing his signature and date, his recommendations as to whether or not the samples satisfy the Contract requirements. The Architect/Engineer's recommendations shall be noted in the weekly Job Conference minutes.
- 19.16 Approved samples shall remain on the Project site for use in checking the material or equipment incorporated in the Work.
- 19.17 Shop drawings and/or catalog data shall be submitted in a timely and orderly manner by the Contractor as required by the Contract Documents.
  - 19.17.1 The Contractor shall identify each submittal and shall include the following information in each submittal:
    - (a) Name of Project.
    - (b) School District's Project number, if applicable.
    - (c) Submittal number.
    - (d) The Contractor.
    - (e) The Subcontractor, supplier, or manufacturer.
    - (f) Number and title of relevant Specification section.
    - (g) Drawing number and detail references and applicable Specification section.
    - (h) Location or locations where product is to be installed, as appropriate.
    - (i) Where printed materials describe more than one (1) product or model, clearly identify item to be furnished.
    - (j) Show previous applicable changes made in Project by Change Orders and other instructions or remarks.
  - 19.17.2 The Contractor shall attach a transmittal letter to each submittal containing the following information:
    - (a) The Contractor's signature.
    - (b) Project name.
    - (c) List of submittal titles and number of copies.
    - (d) Date of submission.
    - (e) Submission number. Number transmittals consecutively.
  - 19.17.3 <u>Re-submittals</u>. The Contractor shall:
    - (a) Make re-submittals in same form and number of copies as first submittal.
    - (b) Note date and content of previous submittal made for this item of Work on resubmittals.
    - (c) Note date and content of revision in title block and indicate extent of revision clearly.
    - (d) For Submission number: Use same submission number as original submittal, with letter suffix to indicate first and subsequent re-submittals (i.e., A, B, C, etc.)
  - 19.17.4 <u>Shop Drawings and Product Data Content</u>. The Contractor shall:
    - (a) Illustrate fully requirements of the Contract Documents.
    - (b) Identify products, materials and equipment.

- (c) Show methods of assembly, dimensions, connections and other data required for fabrication.
- (d) Clearly indicate relationship to adjoining Work.
- (e) Submit Product Data for materials prior to or with material samples.
- (f) Reproductions of Contract Drawings are not acceptable as Shop Drawings, unless specifically permitted by the Architect/Engineer.
- 19.17.5 Coordinated or Combined Submittals.
  - (a) Coordinated or combined submittals are Shop Drawings, Product Data, and/or Samples that include Work of more than one (1) supplier or Subcontractor.
  - (b) Coordinated submittals show adjacent or related portions of Work completely.
  - (c) When combined submittals are required, the Contractor shall coordinate and integrate submittals in manner specified.
- 19.17.6 Sample Requirement. The Contractor shall:
  - (a) Provide samples physically identical with proposed material or product, unless otherwise authorized by the Architect/Engineer.
  - (b) If color or pattern is specified to be selected from manufacturer's standard range, submit full range of manufacturer's standard finishes, including available colors, textures, and patterns for the Architect/Engineer's selection.
  - (c) Submit samples to illustrate functional characteristics of products, including parts and attachments.
  - (d) For natural materials, submit sample sets showing full range of color and texture anticipated in final Work.
  - (e) Include the following information on label, tag or other identifying attachment:
    - (1) Name of Project.
    - (2) The Architect/Engineer's name and Project number.
    - (3) Name of Contractor, Subcontractor, manufacturer, fabricator, supplier or processor.
    - (4) Trade designation, grade and quality of material or product.
    - (5) Date of submittal.
    - (6) Specific identification of each sample and precise reference to Specification section where materials, product or element of Work is specified.
    - (7) Space for approval stamps of the Architect/Engineer and Contractor.
- 19.18 If the shop drawings or catalog information sheets show variations from the Contract requirements because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his letter of transmittal and shall note such variations on his submittal in order that, if accepted, suitable action may be taken for proper adjustment in the Contract. Otherwise, the Contractor shall not be relieved of the responsibility for executing the Work in complete conformity with the Contract even though the shop drawings or catalog information has been approved. The

Contractor shall not make changes on reproducible returned to the Contractor with the Architect/Engineer's stamp applied thereto.

#### 19.19 Architect/Engineer's Review of Submittals.

19.19.1 After receipt of the Contractor's submittal, the Architect/Engineer will review it for conformance to the Contract Documents and will certify that this review has been performed by affixing the Architect/Engineer's stamp.

#### 19.19.2 Limitations of Architect/Engineer's Review.

- (a) The Architect/Engineer's review and action upon submittals is only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.
- (b) Review of submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which shall remain the responsibility of the Contractor.
- (c) The Architect/Engineer's review shall not constitute approval of safety precautions and programs, or of any construction means, methods, sequences, techniques or procedures.
- (d) The Architect/Engineer's review of a specific item shall not indicate review of an assembly of which the item is a component.
- (e) The Architect/Engineer's approval of submittals does not relieve the Contractor of responsibility for deviations from requirements of the Contract Documents, unless the Contractor has specifically informed the Architect/Engineer in writing of such deviation at the time of submittal and the Architect/Engineer has given written approval to the specific deviation.
- 19.19.3 <u>Action Following Architect/Engineer's Review</u>. The Contractor shall process submittals according to notations placed on them by the Architect/Engineer.
  - (a) "No Exception Taken" or "Make Corrections Noted" means: Proceed with fabrication, purchase, or both, of items included in submittal, subject to revisions, if any, included in the Architect/Engineer's review comments.
  - (b) "Revise and Resubmit" means:
    - (1) A portion of submittal is unacceptable; and
    - (2) Correct and resubmit the part of submittal in question.
  - (c) "Rejected" means: Fabrication of Work indicated cannot proceed. Correct submittal and resubmit.
  - (d) The Contractor shall make corrections or changes in submittals required by the Architect/Engineer and shall resubmit the submittals until they are released for fabrication by the Architect/Engineer.
  - (e) If the Contractor considers required revision to be a Change in Scope of Work, he shall notify the Architect/Engineer in writing immediately.

19.19.4 After the Architect/Engineer's review of the Contractor's submittal, re-submittal for substitution of materials or equipment shall not be considered, unless accompanied by explanation acceptable to the Architect/Engineer concerning reason for substitution.

#### 19.19.5 Sample Installations.

- (a) Definition: A partial installation of selected materials for the Architect/Engineer's approval of workmanship and visual acceptance of materials.
- (b) The Contractor shall construct sample installations prior to pre-installation conferences.
- (c) The Contractor shall maintain sample installations during construction as a standard for the Work.
- (d) Properly finished and maintained sample installations may be incorporated into the Work.

#### 19.19.6 Mock-ups.

- (a) Definition: A sample panel specially erected near the Project site or, upon the Architect/Engineer's approval or direction, at a remote location that incorporates several specified materials.
- (b) The Contractor shall construct mock-ups prior to ordering final materials.
- (c) Mock-ups shall display color range, texture, bond, mortar color and workmanship expected of materials incorporated in the Work.
- (d) Mock-ups will be used by the Architect/Engineer for final color selection.
- (e) The Contractor shall maintain approved mock-ups in good condition until completion of relevant Work and use as standard for the Work.
- (f) The Contractor shall remove mock-ups from Project site at completion of the Project.
- 19.19.7 Certificates.
  - (a) Definition: Notarized certification of type specified.
  - (b) The Contractor shall not construe certification as relieving him from furnishing satisfactory materials if, after tests are performed on selected samples, material does not meet specified requirements.
  - (c) <u>Professional Certification</u>:
    - (1) When professional certifications of performance criteria of materials, systems or equipment is required by the Contract Documents, the School District and Architect/Engineer shall be entitled to rely on such certifications.
    - (2) Neither the School District nor Architect/Engineer shall be expected to make independent examination or verification of professional certifications.

#### 20. WORKER IDENTIFICATION

- 20.1 It is mandatory that the Contractor's and his Subcontractors' personnel display the following form of identification, at all times, whenever on School District property.
- 20.2 The Contractor and his Subcontractors are to supply their workers with identification in the forms of OSHA approved hard hats and identification badges required by the School District. Each hard hat shall indicate the name of the Contractor, along with an identifying number not less than 1 1/2" high on each side of the hat. The Contractor is responsible for supplying the names and assigned number of each of his personnel to the Architect/Engineer on a daily basis. The identification badges shall contain the information required by the School District. The Contractor shall issue the identification badges to his personnel and the personnel of his Subcontractors, and shall monitor the wearing of the identification badges by his personnel and the personnel of his Subcontractors under GC-10.5 Safety Requirements, Subparagraph 10.5.7 (Identification Badge) of the General Conditions.
- 20.3 The Contractor shall be responsible for his employees as well as his Subcontractors' and Subsubcontractors' employees. All employees must sign in with security personnel at the entrance to the site before gaining access to the Project site.
- 20.4 Any personnel not properly identified will be removed from the premises.

#### 21. STORAGE OF MATERIALS AND EQUIPMENT

- 21.1 The Contractor shall provide and maintain storage facilities sufficient to keep materials and equipment from being damaged or stolen.
- 21.2 Materials and equipment may be stored at the Project site only with the approval of the School District. The Contractor must receive prior approval to the exact location of the intended storage space prior to placement of materials. If the Contractor stores materials and/or equipment at the Project site, he must provide all security he deems necessary to protect the materials and/or equipment. In addition, the Contractor shall take care to properly distribute materials and/or equipment in order not to overload the structure.
- 21.3 The School District shall not be obligated to accept for storage at the Project site any materials and/or equipment more than ten (10) days prior to the date scheduled for installation of such materials and/or equipment.
- 21.4 All materials intended to be stored on the site must receive prior authorization by the School District as to the location. All materials must be placed in a neat, contained and organized manner. No loose, spilled, unbundled or improperly laid material will be permitted on the site or to be invoiced.
- 21.5 The Contractor, in making or ordering shipments of materials, supplies, equipment, or any other item, shall not consign or have consigned materials, supplies, equipment, or any other item in the name of the School District. The School District shall not have any obligation to make payment for any charges, fees, costs, or expenses related to any shipments made by or to the Contractor.

#### 22. GENERAL COORDINATION

22.1 All Contractors and their Subcontractors shall establish and maintain communication throughout the course of their Work to assure maximum coordination of the Work performed by each. In addition, all Contractors and their Subcontractors shall produce and maintain Coordination Drawings as required or as specified elsewhere in the Contract Documents. This includes the

approvals of the Work of each Contractor and each Subcontractor as required for proper coordination.

- 22.2 Coordination Drawings shall be initiated by HVAC Contractor and all Work of the Subcontractors of the HVAC Contractor shall be added to his Coordination Drawings. All Work of the other Contractors and their Subcontractors shall be added to the Coordination Drawings in the following order of priority, whether or not all trades are involved in the Scope of Work:
  - (a) Plumbing Contractor
  - (b) Subcontractors of the Plumbing Contractor
  - (c) Electrical Contractor
  - (d) Subcontractors of the Electrical Contractor.
- 22.3 The Contractor shall coordinate construction operations included in various Sections of the Specifications and with those of other Prime Contractors and entities to ensure efficient and orderly installation of each part of the Work. The Contractor shall also coordinate construction operations included under different Sections of the Specifications that depend on each other for proper installation, connection, and operation.
  - 22.3.1 The Contractor shall schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 22.3.2 The Contractor shall coordinate installation of different components and with other Prime Contractors to ensure maximum accessibility for required maintenance, service, and repair.
  - 22.3.3 The Contractor shall make adequate provisions to accommodate items scheduled for later installation.
- 22.4 Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and lists of attendees at meetings.
  - 22.4.1 The Contractor shall prepare similar memoranda for the School District, the Architect/Engineer and separate Contractors where coordination of their work is required.
- 22.5 <u>Staff Names</u>: Within 15 days of commencement of construction operations, the Contractor shall submit a list of the Contractor's principal staff assignments, including the superintendent and other personnel in attendance at the Project Site. The Contractor shall identify individuals and their duties and responsibilities, list their addresses and telephone numbers, and provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to the Project.

22.5.1 The Contractor shall post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone. The Contractor shall keep the list current at all times.

- 22.6 <u>Inspection of Conditions</u>: The Contractor shall require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- 22.7 The Contractor shall coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.
- 22.8 The Contractor shall clean and protect construction in progress and adjoining materials in place, during handling and installation. The Contractor shall apply protective covering where required to

assure protection from damage or deterioration at Substantial Completion.

- 22.9 The Contractor shall clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. The Contractor shall adjust and lubricate operable components to assure operability without damaging effects.
- 22.10 <u>Limiting Exposures</u>: The Contractor shall supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

#### 23. SCHEDULE AND REPORTS

- 23.1 The Lead Prime Contractor, as defined in GC-4.1.2, shall provide a coordinated CPM Construction Cost and Manpower Loaded schedule developed by a professional scheduling organization or experienced individual scheduler (qualifications to be submitted for approval by the School District within five (5) working days after the Notice to Proceed) and subsequent monthly and biweekly updates.
- 23.2 The Lead Prime Contractor shall meet with the School District, the Architect/Engineer and all other Contractors performing work on the Project at a pre-construction conference within fifteen (15) calendar days after the School District issues a Notice to Proceed to the Contractor, and each Contractor shall furnish to the School District and the Lead Prime Contractor at that meeting a Preliminary coordinated CPM Construction schedule for his Work, in accordance with the provisions of Paragraph 23 of these Supplementary Conditions.
- 23.3 The Lead Prime Contractor, within fifteen (15) calendar days after the pre-construction conference and in accordance with Article GC-8 of the General Conditions, shall submit a fully coordinated CPM Construction schedule proposing the integration of his Work and the Work of all his Subcontractors and the Work of all the other separate Contractors and their Subcontractors into his schedule.
- 23.4. <u>Detailed Schedule</u>. At a minimum, the Contractor's coordinated CPM Construction schedule shall meet the following requirements:
  - 23.4.1 It must be sufficiently detailed to identify all significant activities with costs and manpower related to those activities, in a format and at a level of detail that is acceptable to the School District. Software used for the coordinated CPM Construction schedule shall be Microsoft Project Professional 2013, or later, unless other software is approved by the District for this project.
    - (a) The schedule must be cost-loaded. Each work activity must have a cost value assigned to it. The sum of the costs should equal the total contract price for the Contract. Code activities by a corresponding pay item on the Schedule of Values. The subtotal of all activities in a pay item should equal that item on the approved Schedule of Values.
  - 23.4.2 The schedule must be resource-loaded. It must include an estimate of crew size, equipment, production rates and similar data used to arrive at adequate durations and sequences.
  - 23.4.3 The Contractor shall base his schedule upon the Hours of Work as described in Paragraph 18 of these Supplementary Conditions, unless otherwise provided for in the Contract Documents. Should the Contractor at his sole option elect to work overtime or on a shift basis, the Contractor shall be responsible for all additional costs incurred by the School District as a result of such action.

- 23.4.4 It must include all constraints related to submission approvals of the Architect/Engineer and the School District.
- 23.4.5 It must be fully coordinated with all Contractors.
- 23.4.6 It must contain any necessary constraints dealing with the operations of the Project.
- 23.4.7 The coordinated CPM Construction schedule shall comply with the various time limits imposed by the scope of Work and by any contractually specified intermediate milestone dates and completion dates included in the Contract.
- 23.4.8 <u>Activity Data</u>. The activities identified in the detailed schedule shall be analyzed in detail to determine activity time durations in units of whole working days. Activities shown shall have a maximum duration of fifteen (15) working days, except in the case of non-construction activities such as procurement of materials and delivery of equipment. All durations shall be the result of definitive manpower and resource planning by the Contractor.
- 23.4.9 The activity data shall include activity codes to facilitate selection, sorting and preparation of summary reports and graphics. Activity codes shall be developed for:
  - (a) Area Subdivision of the building and site into logical modules or blocks and levels.
  - (b) Responsibility The Contractor or Subcontractor responsible for the Work.
  - (c) Specification 16 Division CSI format.
  - (d) System Division of the Work into building systems for summary purposes.
  - (e) Milestones Work associated with completion of interim completion dates or milestones, if any are described in Specifications Section 01300 (or 01 1300) Time of Completion, Milestones and Phasing or Sequencing Requirements.
- 23.4.10 Logic diagrams, bar charts and cost and resource graphics shall be prepared using Microsoft Project Professional 13, or later version, unless other scheduling software is approved by the School District for this project. Logic diagrams and bar charts shall be prepared on sheets sized appropriate for the data being displayed. The preferred sheet size is 24 inches by 36 inches. The Contractor shall use color for each plot to enhance the data being displayed. Sheet size, type size and font selected for each plot shall show data in clear and easily understood format.
- 23.4.11 <u>Reports</u>.
  - (a) For initial submittal and each update, the Contractor shall prepare the following standard report:
    - (1) Tabular Predecessor/Successor Schedule Report sorted by Activity ID.
    - (2) Tabular Schedule Report sorted by Total Float/Early Start, Area/Early Start, and Responsibility/Early Start.
    - (3) Tabular Cost Report sorted by Responsibility and Responsibility/ Cost Code showing budgeted costs and actual costs to date.
    - (4) Narrative discussing progress to-date, anticipated progress for upcoming

update period and potential problem areas. The narrative should include a milestone listing showing planned and currently scheduled dates for each interim and completion milestone.

(b) The Contractor shall prepare special reports as requested by the School District. Content, format, selections and order shall be limited to the capability of the Microsoft Project software.

#### 23.4.12 Graphics.

- (a) For initial submittal, the Contractor shall prepare the following graphics using Microsoft Project Professional, or other approved software:
  - (1) Pure logic diagram (Precedence Format) of entire data, not time scaled, grouped by Activity Code and tracking Resources and Costs.
  - (2) Detailed Bar Chart sorted by Activity Code with Early Start and Early Finish.
  - (3) Summary Bar Chart summarizing by Activity Code with Early Start and Early Finish.
  - (4) Cash Flow Diagram.
- (b) For each update, the Contractor shall prepare the following graphics using Microsoft Project or other approved software:
  - (1) Two (2) month Look-ahead Bar Chart showing Work Activities with Early Start in the next forty (40) working days sorted by Activity Code and Early Start.
  - (2) Summary Bar Chart summarizing by Activity Code showing progress with Early Start and Early Finish.
  - (3) Resource and Cost Graphics.
- (c) For each Change Order involving an adjustment in the Contract time for performance, the Contractor shall prepare a pure logic diagram showing the changed Work with all predecessor and successor activities (Fragnet).
- (d) The School District may request special graphic presentations limited to the capability of Microsoft Project Professional.
- 23.4.13 <u>Project Activity Data</u>. The Contractor shall furnish a copy of the complete Project data with each initial submittal and each update. The data shall be copies using Primavera backup utility onto CD-R recordable compact disk.
- 23.4.14 <u>Submittals</u>. In no case shall first application for payment be approved prior to submission of acceptable preliminary schedule, detailed submittal schedule, and schedule of values.
- 23.4.15 Monthly updates, required schedules and graphics shall be submitted to the School District and Architect/Engineer within five (5) working days following the end of the preceding month. Monthly updates, schedules and graphics shall be submitted in three (3) copies to the School District and Architect/Engineer and one (1) copy to each Subcontractor. Submittals shall be in the form of a tabular schedule reports and graphics as noted herein and appropriate recovery schedule if any scheduled interim or completion milestone activity

is found to be behind schedule. The Contractor shall bring a draft updated schedule to the Progress Meeting or to a Schedule Update Meeting as mutually agreed upon for review by all in attendance. Following agreement on the update, the Contractor shall prepare and formally submit the update within five (5) working days of the Meeting.

- 23.4.16 If any of the required submissions are returned to the Contractor for corrections or revisions, they shall be resubmitted within five (5) calendar days after the return mailing date. Re-submittals shall be in the same quantities as noted herein. Review and response by the School District or Architect/Engineer will be given within ten (10) working days after resubmission.
- 23.4.17 Schedule of Submittals.
  - (a) The Contractor shall prepare a chronological schedule of submittals, including:
    - (1) Anticipated date of Architect/Engineer's receipt of submittal.
    - (2) Required date of Architect/Engineer's return of submittal.
    - (3) Specifications sections to which submittal relates.
    - (4) Subcontractor or material fabricator responsible for preparing the submittal.
    - (5) Decision dates for selection of finishes and products specified by allowances or specified to be selected during the sample review process.
  - (b) The Contractor shall give the School District and Architect/Engineer two (2) weeks' notice of anticipated significant revisions to accepted schedule of submittals.
- 23.4.18 If submittals are made which do not conform to the Specification or design intent of the Contract Documents, any delay due to re-submittal and re-review shall be the Contractor's responsibility.
- 23.4.19 <u>Payment Withheld</u>. If the Contractor fails to submit the required material as indicated in Paragraph 23.4 of these Supplementary Conditions within the time prescribed or the revision thereof within the requested time, the School District may withhold approval of Progress Payment Estimates until such time as the Contractor submits the required information.
- 23.5 With each monthly pay request of the Contractor, the Contractor shall also submit to the School District and the Architect/Engineer a monthly report of progress, identifying problem areas and planned corrections ("Progress Schedule"). The School District and the Architect/Engineer shall review such Progress Schedule and, if necessary, shall determine and implement alternative courses of action that may be necessary to achieve contract compliance by the Contractor.
- 23.6 With each monthly progress report, the Contractor shall show the actual progress in the coordinated CPM Construction schedule, against the planned progress. Updates of the coordinated CPM Construction schedule shall also reflect and highlight all necessary changes including changes in logic, sequencing and duration for meeting milestones, and keeping the Project within established time frames. Copies of such charts shall be furnished to the School District, and maintained on the wall of the construction site office for continuous monitoring by all parties. The School District shall have the right to modify the coordinated CPM Construction schedule at any time and from time to time. Such updated or modified coordinated CPM Construction schedule shall be known as the "current coordinated CPM Construction schedule".

- 23.7 The School District, with the assistance of the Architect/Engineer, shall determine the adequacy of the superintendents, work crews, equipment, materials and supplies of the Contractor to ensure quality construction, and adherence to the milestones established in the coordinated CPM Construction schedule, or if adjusted, modified or updated, the current coordinated CPM Construction schedule.
- 23.8 The School District and the Architect/Engineer shall schedule and conduct pre-construction, construction and Project meetings, on a regular basis at the Project site, as needed, with the School District, the Architect/Engineer, and the Contractor and his Subcontractors to discuss jointly such matters as site rules, procedures, progress, problems, scheduling and report requirements and such other matters as the School District and Architect/Engineer shall determine.
- 23.9 The Contractor shall perform his Work in accordance with the milestones established in the approved coordinated CPM Construction schedule, or if adjusted, modified or updated, the current coordinated CPM Construction schedule. Sequential revision numbers shall be applied to each revision to the current coordinated CPM Construction schedule.
- 23.10 The coordinated CPM Construction schedule shall be updated by the Contractor at least monthly or more often as required by the School District, and the Contractor shall furnish to the School District and the Architect/Engineer for review, such reports and information as may be requested. Updates of the coordinated CPM Construction schedule shall be made at the end of each month reflecting actual or reasonably anticipated progress as of the last working day of the month. Monthly updates of the coordinated CPM Construction schedule shall be made each month until all work is substantially complete.
- 23.11 Each monthly submittal of the coordinated CPM Construction schedule shall show actual progress to the end of the previous month and the projected schedule for completion of remaining Work. Each update of the coordinated CPM Construction schedule shall be sequentially numbered and dated for identification. All schedule submittals shall be in the form and substance as requested by the School District and shall include without limitation as follows:
  - (a) Project Summary Schedule summarizing progress on major areas of Work.
  - (b) Milestone summary sorted by Area, Early Start and Total Float.
  - (c) Pre-construction Schedule submittal/Approval/Fabrication and Delivery.
  - (d) Construction Schedule-sorted by trade, Early Start and Total Float.
- 23.12 The Contractor shall meet with the School District and the Architect/Engineer at the end of the updating period to review information in draft form before preparation of the required schedules and graphics. The Contractor shall present data, prepared in advance, for review and approval of the School District and the Architect/Engineer, including:
  - (a) Actual Start Dates.
  - (b) Actual Completion Dates.
  - (c) Activity Percent Complete and/or Remaining Duration.
  - (d) Revised logic, changes in activity durations or resource assignments.
  - (e) Narrative report discussing progress through the update period; changes, delays or other circumstances affecting progress; status of the Project with respect to completion schedule; and any efforts by the Contractor to improve progress.

- (1) The update meeting shall establish the values to be submitted for payment and shall be directly related to the schedule of values in the application for payment.
- (2) The Contractor shall prepare a report of the update meeting and shall make all changes, additions or corrections to the data resulting from the review. The Contractor shall promptly prepare the monthly submittal following the update meeting.
- 23.13 The Contractor shall cooperate with the School District and the Architect/Engineer by attending update meetings with the School District and the Architect/Engineer.
- 23.14 The Contractor shall submit proposed schedule revisions and obtain written approval of the School District and the Architect/Engineer before deviating from the milestones established in the coordinated CPM Construction schedule, or if adjusted, modified or updated, the current coordinated CPM Construction schedule. If during the progress of the Work, the Contractor determines that he will not be able to complete his work for a particular activity in the time allotted, he must notify the School District and the Architect/Engineer in writing immediately. Adjustments to the coordinated CPM Construction schedule prepared by the Contractor may be made to accommodate the Contractor; provided that such adjustments do not alter Contract Milestone dates or the Date of Substantial Completion and the School District and the Architect/Engineer approve the adjustment after reviewing its impact on any other Contractor or Work on the Project. Otherwise, complete adherence to the Contract Schedule shall remain a requirement for the Contractor.
- 23.15 The coordinated CPM Construction schedule, or if adjusted, modified or updated, the current coordinated CPM Construction schedule, must be matched by performance of the Work. If the Contractor is, at any time, behind in the Work or if in the opinion of the School District, the Contractor is delaying or failing to prevent delay by his Subcontractors in the progress of the Work necessary to complete the Project, the Contractor shall take such action as shall be necessary to bring the general progress of the Work into line with the milestones established in the coordinated CPM Construction schedule, or if adjusted, modified or updated, the current coordinated CPM Construction schedule. The cost and expense of overtime, or any additional measures, shall be borne entirely by the Contractor including the increased costs and damages to the School District, the Architect/Engineer, or any other separate Contractors resulting from such overtime work or additional measures.
- 23.16 Upon failure by the Contractor to perform the Work in accordance with the milestones established in the coordinated CPM Construction schedule, or if adjusted, modified or updated, the current coordinated CPM Construction schedule, or to achieve any Contract Milestone at or before the specified date, the Contractor shall promptly submit to the School District and the Architect/Engineer a plan showing how the Contractor plans to mitigate impact upon other portions of the Work and the Project and how he plans to complete the late Work.
- 23.17 In addition to the foregoing responsibilities and liabilities of the Contractor, whenever the Contractor's performance of the Work has failed to meet the milestones established in the coordinated CPM Construction schedule, as adjusted in accordance with the provisions of this Paragraph, the Contractor shall be responsible for the costs of delay, if any, incurred by the School District, Architect/Engineer and any other Contractors as set forth in the General Conditions.
- 23.18 The School District may request the Contractor to work overtime to expedite the final completion of the Work at a time when the Contractor is not in default of any of the provisions of the Contract. The Contractor agrees to work said overtime, and the Contractor shall be reimbursed only for the Contractor's extra labor cost over the amount for regular time during the period of such overtime, including additional fringe benefit costs, insurance and taxes incurred by him with respect thereto and only those other actual costs of the Contractor directly related to said overtime, which have been approved in advance by the School District. Time slips covering said overtime must be

submitted to the School District for checking and approval. No commission or fee is to be charged by or allowed to the Contractor on account of overtime or costs related thereto, nor shall the Contractor be compensated for any lost efficiency or production alleged to have resulted from said overtime work.

#### 24. RECORD AND INFORMATION BINDER

- 24.1 <u>General Notes</u>. Thirty (30) days prior to Substantial Completion of the Project, the Contractor shall prepare and deliver to the School District five (5) copies of a Record and Information Binder. The Binder shall be as specified herein. The Binder shall meet the approval of the School District.
- 24.2 <u>Make-up of Binder</u>. Binder shall be bound in a three-ring loose-leaf binder similar to "National" No. 3881, with the following title lettered on the front: "Record and Information" as well as the title of the Contract. The Binder for each Contract shall be of a different color.
- 24.3 <u>Contents</u>. The Binder shall contain a complete description and maintenance instruction on each piece of equipment of any nature incorporated into the Work. In addition, it shall include a description of all finishing materials and specialties, such as floor tile, carpet, acoustical tile, roofing, etc. The Binder shall provide names and addresses of the manufacturers as well as those of the local representatives, distributors, Subcontractors, among other things.
- 24.4 The Binder shall contain the information set forth above, in addition to requirements set forth elsewhere in the Contract Documents.

#### 25. GUARANTEE/WARRANTY

- 25.1 The Contractor shall provide a one (1) year guarantee/warranty for all Work unless otherwise noted elsewhere in the Contract Documents.
- 25.2 Eleven (11) months after Substantial Completion of the Project, the Contractor shall accompany the School District and the Architect/Engineer on a guarantee/warranty review of the Project. Subsequent to this review, the Contractor shall be given a list of items for which he is responsible to correct during the guarantee/warranty period. This guarantee/warranty review is in addition to any other requirements or responsibilities noted elsewhere in the Contract Documents.
- 25.3 Start of all warranties and guarantees shall be the date of Final Completion of the Project.
- 25.4 The Contractor shall forward warranty and guarantee registration cards to the manufacturers in the name of the School District of Philadelphia showing the date of Final Completion of the Project as the beginning date for warranty and guarantee periods.

#### 26. CUTTING AND PATCHING

- 26.1 <u>Cutting and Patching Proposal</u>: The Contractor shall submit a proposal to the School District and the Architect/Engineer describing procedures well in advance of the time cutting and patching will be performed for approval of these procedures before proceeding.
- 26.2. The Contractor shall include the following information, as applicable, in the proposal:
  - (a) Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
  - (b) Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's

appearance and other significant visual elements.

- (c) List products to be used and firms or entities that will perform Work.
- (d) Indicate dates when cutting and patching will be performed.
- (e) Utilities: List utilities that cutting and patching procedures will disturb, including HVAC units and other electrically operated equipment. List utilities that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
- (f) Approval by the School District to proceed with cutting and patching does not waive the School District's right to later require complete removal and replacement of unsatisfactory work.
- 26.3 <u>Requirements for Structural Work</u>: The Contractor shall comply with all of the requirements set forth in this Supplementary Condition 26. Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
- 26.4 Unless explicitly detailed on Drawings, obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
  - (a) Bearing walls.
  - (b) Structural concrete.
  - (c) Structural steel.
  - (d) Lintels.
  - (e) Miscellaneous structural metals.
  - (f) Equipment supports.
  - (g) Piping, ductwork, vessels, and equipment.
- 26.5 <u>Operational Limitations</u>: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.
- 26.6 Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:
  - (a) Fire protection systems.
  - (b) Control systems.
  - (c) Bells and alarms.
  - (d) Communication systems.
  - (e) Electrical wiring systems.
- 26.7 <u>Visual Requirements</u>: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Architect/Engineer's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.
- 26.8 Retain experienced and specialized Installer or fabricator to cut and patch the exposed Work listed below.
  - (a) Stonework and brick masonry.
  - (b) Ornamental metal.
  - (c) Preformed metal panels.
  - (d) Firestopping.
  - (e) Window wall system.
  - (f) Stucco and ornamental plaster.
  - (g) Acoustical ceilings.

- 26.9 <u>Existing Warranties</u>: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.
- 26.10 Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.
- 26.11 Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.
- 26.12 <u>Temporary Support</u>: Provide temporary support of work to be cut.
- 26.13 <u>Protection</u>: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- 26.14 Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- 26.15 Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.
- 26.16 Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- 26.17 Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- 26.18 Cut existing construction using methods least likely to damage elements retained or adjoining construction.
  - (a) In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - (b) To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
  - (c) Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
- 26.19 Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
  - (a) Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
  - (b) Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  - (c) Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.
  - (d) Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- 26.20 Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

#### 27. CHASES, OPENINGS AND ALTERATIONS, SLEEVES, THIMBLES AND INSERTS

27.1 Each separate Contractor shall furnish and install all sleeves, thimbles, and inserts necessary for the installation of his Work at the proper and exact location and in sufficient time so as not to impede the Work of any other Contractor or Work on the Project.

#### 28. DAILY FIELD REPORTS

- 28.1 The Contractor shall submit to the School District daily field reports which shall contain, at a minimum, the following information:
  - (a) Subcontractors working on the job site.
  - (b) Hours worked.
  - (c) Total number of workers by trade and minority head count.
  - (d) Specific locations where workers are working and what work was done by the workers.
  - (e) Deliveries.

#### 29. SECURITY CLEARANCE

29.1 All employees of Contractors working on The School District of Philadelphia properties, <u>while</u> <u>children are present at the School District of Philadelphia site</u>, are required to complete the "Pennsylvania Child Abuse History Clearance CY 113 12/99" form and the "Pennsylvania State Police Request for Criminal Record Check SP-4-164 (12-99)" form. Attached is a copy of each of these forms. These forms may also be downloaded at the following website addresses:

<u>http://www.dpw.state.pa.us/findaform/childabusehistoryclearanceforms/</u> or <u>http://www.education.state.pa.us/portal/server.pt/gateway/PTARGS\_6\_2\_39112\_0\_0\_43/</u> (for the "Child Abuse History Clearance" form)

<u>http://www.portal.state.pa.us/portal/server.pt?open=512&objID=4451&PageID=458621&mode=2</u> (for the "Criminal Record Check" form)

Contractors and Subcontractors can also request a supply of these forms by calling the Pennsylvania Department of Public Welfare (DPW) at telephone number 717-783-6211.

Contractors and Subcontractors can request a Criminal History Check online through the Pennsylvania Access to the Criminal History (PATCH) System at the following website address:

https://epatch.state.pa.us/Home.jsp

29.2 All employees of Contractors working on The School District of Philadelphia properties, <u>while</u> <u>children are present at the School District of Philadelphia site</u>, are also required to submit a current report of the "Federal Bureau of Investigation (FBI) Federal Criminal History Record", obtained through Cogent Systems which is managing the program for the Commonwealth of Pennsylvania. Attached is a Pennsylvania Department of Education (PDE) memo concerning how to register with IdentoGo: https://www.education.pa.gov/Educators/Clearances/CHRI/Pages/ Applicant-Procedures.aspx and how to obtain the FBI fingerprint-based background check from IdentoGo Systems.

- 29.3 The Contractor shall inform its Subcontractors that both "Pennsylvania Child Abuse History Clearance" and "Pennsylvania State Police Request for Criminal Record Check" forms, together with processing fees, must be submitted to DPW for each employee who will be working on-site, **while children are present at the School District of Philadelphia site**. Employees of the Contractor and its Subcontractors shall **not** begin work at the Project site until these forms have been returned from DPW. It is necessary to send copies of the request forms to the School District. However, copies of both forms (returned from DPW) for each employee of the Contractor and each employee of any Subcontractors working at the Project site, **while children are present at the School District**.
- 29.4 The Contractor shall inform its Subcontractors that registration for the FBI fingerprint-based background check with Cogent Systems, together with processing fees, must be submitted to Cogent Systems for each employee who will be working on-site, <u>while children are present at the School District of Philadelphia site</u>. Employees of the Contractor and its Subcontractors shall <u>not</u> begin work at the Project site until the "FBI Federal Criminal History Record" report has been returned from PDE's School Services Unit. It is not necessary to send copies of the request for the FBI fingerprint-based background check to the School District. However, copies of the "FBI Federal Criminal History Record" report (returned from PDE's School Services Unit) for each employee of the Contractor and its Subcontractors working at the Project site, <u>while children are present at the School District of Philadelphia site</u>, must be delivered to the office of the School District.
- 29.5 In the event that the School District of Philadelphia (or its agents) request a "Pennsylvania Child Abuse History Clearance" form, "Pennsylvania State Police Request for Criminal Record Check" form, and "FBI Federal Criminal History Record" report for any on-site employee of the Contractor or Subcontractors, and the Contractor is unable to produce the forms and report, the employee of the Contractor or Subcontractors must leave the Project site immediately. The employee of the Contractor or Subcontractors may return to the Project site once the appropriate forms and record have been obtained and submitted to the School District of Philadelphia (or its agents). If any members of the Contractor's Project team are required to be in the existing School District of Philadelphia building site, while children are present at the School District of Philadelphia site, before mobilization for Project construction after Contract award, the "Pennsylvania Child Abuse History Clearance" form, "Pennsylvania State Police Request for Criminal Record Check" form, and "FBI Federal Criminal History Record" report must be on-file in the School District's office.
- 29.6 Attached are the current Pennsylvania statutes containing the Background Checks requirements and the Affidavits required by these statutes.

#### **30. OPERATION AND MAINTENANCE DATA**

- 30.1 This Supplementary Condition 30 includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - (a) Operation and maintenance documentation directory.
  - (b) Emergency manuals.
  - (c) Operation manuals for systems, subsystems, and equipment.
  - (d) Maintenance manuals for the care and maintenance of systems and equipment.
  - (e) Servicing information
  - (f) Trouble shooting information.

The Contractor shall comply with all of the requirements set forth in this Supplementary Condition 30.

#### 30.2 SUBMITTALS

- 30.2.1 <u>Initial Submittal</u>: Submit two (2) draft copies of each manual to Architect/Engineer at least ten (10) days before requesting inspection for Substantial Completion. Include a complete operation and maintenance, trouble shooting and servicing directory. The Architect/Engineer will return one (1) copy of draft and mark whether general scope and content of manual are acceptable.
- 30.2.2 <u>Final Submittal</u>: Submit two (2) copies of each manual in final form to the Architect/Engineer at least ten (10) days before final inspection. The Architect/Engineer will return one (1) copy with comments within ten (10) days after final inspection.
- 30.2.3 Correct or modify each manual to comply with the Architect/Engineer's comments. Submit five (5) copies of each corrected manual within ten (10) days of receipt of the Architect/Engineer's comments.

#### 30.3 COORDINATION

30.3.1 Where operation and maintenance, servicing and troubleshooting documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

#### 30.4 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- 30.4.1 <u>Organization</u>: Include a section in the directory for each of the following:
  - (a) List of documents.
  - (b) List of systems.
  - (c) List of equipment.
  - (d) Table of contents.
- 30.4.2 <u>List of Systems and Subsystems</u>: List systems alphabetically. Include references to operation, maintenance, servicing and troubleshooting manuals that contain information about each system.
- 30.4.3 <u>List of Equipment</u>: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- 30.4.4 <u>Tables of Contents</u>: Include a table of contents for each emergency, operation, and maintenance, servicing and troubleshooting manual.
- 30.4.5 <u>Identification</u>: In the documentation directory and in each manual, identify each system, subsystem, and piece of equipment with the same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems".

#### 30.5 MANUALS, GENERAL

30.5.1 <u>Organization</u>: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

- (a) Title page.
- (b) Table of contents.
- (c) Manual contents.
- 30.5.2 <u>Title Page</u>: Enclose title page in transparent plastic sleeve. Include the following information:
  - (a) Subject matter included in manual.
  - (b) Name and address of Project.
  - (c) Name and address of School District.
  - (d) Date of submittal.
  - (e) Name, address, and telephone number of Contractor.
  - (f) Name and address of Architect/Engineer.
  - (g) Cross-reference to related systems in manuals.
- 30.5.3 <u>Table of Contents</u>: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Specifications. If operation, maintenance, servicing or troubleshooting documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- 30.5.4 <u>Manual Contents</u>: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- 30.5.5 <u>Binders</u>: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders not to exceed three (3) inches in thickness, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on front and spine to hold labels describing contents and with pockets inside covers to hold folded oversize sheets.
- 30.5.6 If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders, if necessary, to provide essential information for proper operation or maintenance of equipment or system
  - (a) Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL", Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
- 30.5.7 <u>Dividers</u>: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specifications Section number and Section title.
- 30.5.8 <u>Protective Plastic Sleeves</u>: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
- 30.5.9 <u>Supplementary Text</u>: Prepared on 8-1/2-by-11-inch, 20-lb/sq. ft. white bond paper.
- 30.5.10 Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
  - (a) If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
  - (b) If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate

locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

#### 30.6 EMERGENCY MANUALS

- 30.6.1 <u>Content</u>: Organize manual into a separate section for each of the following:
  - (a) Type of emergency.
  - (b) Emergency instructions.
  - (c) Emergency procedures.

#### 30.7 OPERATION MANUALS

- 30.7.1 <u>Content</u>: In addition to requirements in this Paragraph, include operation data required in individual Specification Sections and the following information:
  - (a) System, subsystem, and equipment descriptions.
  - (b) Performance and design criteria if Contractor is delegated design responsibility.
  - (c) Operating standards.
  - (d) Operating procedures.
  - (e) Operating logs.
  - (f) Wiring diagrams.
  - (g) Control diagrams.
  - (h) Piped system diagrams.
  - (i) Precautions against improper use.
  - (j) License requirements including inspection and renewal dates.
- 30.7.2 <u>Descriptions</u>: Include the following:
  - (a) Product name and model number.
  - (b) Manufacturer's name.
  - (c) Equipment identification with serial number of each component.
  - (d) Equipment function.
  - (e) Operating characteristics.
  - (f) Limiting conditions.
  - (g) Performance curves.
  - (h) Engineering data and tests.
  - (i) Complete nomenclature and number of replacement parts.
- 30.7.3 <u>Operating Procedures</u>: Include the following, as applicable:
  - (a) Startup procedures.
  - (b) Equipment or system break-in procedures.
  - (c) Routine and normal operating instructions.
  - (d) Regulation and control procedures.
  - (e) Instructions on stopping.
  - (f) Normal shutdown instructions.
  - (g) Seasonal and weekend operating instructions.
  - (h) Required sequences for electric or electronic systems.
  - (i) Special operating instructions and procedures.
  - (j) Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- 30.7.4 <u>Servicing and Troubleshooting</u>: Include pertinent information in the operation and maintenance manuals required to service and troubleshoot installed equipment.

Information should include routine maintenance procedures and guidance to perform in depth analysis in order to troubleshoot and resolve problems that may develop during operation of the equipment.

30.7.5 <u>Piped Systems</u>: Diagram piping as installed, and identify color-coding where required for identification.

#### 30.8 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- 30.8.1 <u>Content</u>: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- 30.8.2 <u>Source Information</u>: List each system, subsystem, and piece of equipment included in The manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specifications Section number and Section title.
- 30.8.3 <u>Manufacturers' Maintenance Documentation</u>: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
  - (a) Standard printed maintenance instructions and bulletins.
  - (b) Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  - (c) Identification and nomenclature of parts and components.
  - (d) List of items recommended to be stocked as spare parts.
- 30.8.4 <u>Maintenance Procedures</u>: Include the following information and items that detail essential maintenance procedures:
  - (a) Test and inspection instructions.
  - (b) Troubleshooting guide.
  - (c) Precautions against improper maintenance.
  - (d) Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - (e) Aligning, adjusting, and checking instructions.
  - (f) Demonstration and training videotape, if available.
  - (g) Information necessary to troubleshoot problems with equipment.
- 30.8.5 <u>Maintenance and Service Schedules</u>: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
  - (a) <u>Scheduled Maintenance and Service</u>: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  - (b) <u>Maintenance and Service Record</u>: Include manufacturers' forms for recording maintenance.
- 30.8.6 <u>Spare Parts List and Source Information</u>: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

- 30.8.7 <u>Maintenance Service Contracts</u>: Include copies of maintenance agreements with name and telephone number of service agent.
- 30.8.8 <u>Warranties and Bonds</u>: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
- 30.8.9 <u>Warranty Binder</u>: In addition to including warranties and bonds in the Operating and Maintenance manuals, provide a separate binder to include all warranties for equipment provided by all prime and subcontractors. Include procedures to follow and required notifications for warranty claims.

#### 30.9 MANUAL PREPARATION

- 30.9.1 <u>Operation and Maintenance Documentation Directory</u>: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- 30.9.2 <u>Emergency Manual</u>: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by School District's operating personnel for types of emergencies indicated.
- 30.9.3 <u>Systems and Equipment Maintenance Manual</u>: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- 30.9.4 <u>Operation and Maintenance Manuals</u>: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
  - (a) Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
  - (b) Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by School District's operating personnel.
- 30.9.5 <u>Manufacturers' Data</u>: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
  - (a) Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- 30.9.6 <u>Drawings</u>: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
  - (a) Do not use original Project Record Documents as part of operation and maintenance manuals.

#### 31. DEMONSTRATION AND TRAINING

- 31.1 This Supplementary Condition 31 includes administrative and procedural requirements for instructing School District's personnel, including the following:
  - (a) Demonstration of operation of systems, subsystems, and equipment.
  - (b) Training in operation and maintenance of systems, subsystems, and equipment.

The Contractor shall comply with all of the requirements set forth in this Supplementary Condition 31.

#### 31.2 SUBMITTALS

- (a) <u>Instruction Program</u>: Submit five (5) copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
- (b) At completion of training, submit five (5) complete training manuals for School District's use.
- (c) <u>Qualification Data</u>: Firms and persons specified in "Quality Assurance" paragraph must demonstrate their capabilities and experience by providing names and addresses of three (3) completed projects and the applicable school district or similar institution.
- (d) <u>Attendance Record</u>: For each training module, submit list of participants.
- (e) <u>Demonstration and Training Video</u>: Submit five (5) copies at end of each training module.

#### 31.3 QUALITY ASSURANCE

- (a) <u>Instructor Qualifications</u>: A factory-authorized service representative, complying with requirements of Paragraph 31.2(c), including experience in operation and maintenance procedures and training.
- (b) <u>Pre-demonstration and training Conference</u>: Conduct conference at Project site to comply with specified requirements. Review methods and procedures related to demonstration and training, including, but not limited to, the following:
  - (1) Inspect and discuss facilities required for instruction.
  - (2) Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
  - (3) Review required content of instruction.
  - (4) For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.
- (c) The videographer used for the recording and production of the Training Videos must be a firm or sole-proprietor regularly engaged in the business of video documentation. The Videographer shall have at least 3 years experience with training and/or corporate video production. The qualifications of the proposed videographer shall be submitted for School District's approval upon request.

#### 31.4 COORDINATION

- (a) Coordinate instruction schedule with School District's operations. Adjust schedule as required to minimize disrupting School District's operations.
- (b) Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- (c) Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by School District's representative unless directed otherwise.

#### 31.5 DEMONSTRATION AND INSTRUCTION PROGRAM

- (a) <u>Program Structure</u>: Develop an instruction program that includes individual demonstration and training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:
  - (1) HVAC Equipment
    - 1. Piping and Valves.
    - 2. Boiler, Burner, and Auxiliaries.
    - 3. Oil Tank and Tank Monitoring System.
    - 4. Pumps, Fluid Transfer Units, and Gas Booster (if applicable).
    - 5. Combustion air/Fresh intake air louvers/dampers.
    - 6. Natural Gas Leak Gas Detection System.
  - (2) Plumbing Equipment
    - 1. Piping and Valves.
    - 2. Backflow Preventers.
    - 3. Ejector Pumps & Alternator System.
  - (3) Water Treatment Equipment
    - 1. Tanks.
    - 2. Chemical Feed Pumps and Feeders.
    - 3. Water Purifiers/Softeners.
    - 4. Testing Kits.
- (4) Controls Equipment
  - 1. Building Automation System.
  - 2. Controller Units.
  - 3. Control Devices and Actuators.
  - 4. Sensors, Transmitters, and Switches.
  - (5) Other Equipment and Systems
    - 1. Use the contents of the Operational and Maintenance manual to develop the demonstration and training material. Training should cover all operational requirements, maintenance procedures as well as safety and emergency situations. References should be made to the specific sections of the Operation and Maintenance Manual(s) that apply.
- (b) <u>Training Modules</u>: Develop a learning objective and teaching outline for each module where demonstration and training is specified. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:

- (1) <u>Operational Requirements, and Criteria</u>: Include the following:
  - 1. System, subsystem, and equipment descriptions.
  - 2. Performance and design criteria if the Contractor is delegated design responsibility.
  - 3. Operating standards.
  - 4. Regulatory requirements.
  - 5. Equipment function.
  - 6. Operating characteristics.
  - 7. Limiting conditions.
  - 8. Performance curves.
- (2) <u>Documentation</u>: Review the following items in detail:
  - 1. Emergency manuals.
  - 2. Operations manuals.
  - 3. Maintenance manuals.
  - 4. Project Record Documents.
  - 5. Identification systems.
  - 6. Warranties and bonds.
  - 7. Maintenance service agreements and similar continuing commitments.
- (3) <u>Emergencies</u>: Include the following, as applicable:
  - 1. Instructions on meaning of warnings, trouble indications, and error messages.
  - 2. Instructions on stopping.
  - 3. Shutdown instructions for each type of emergency.
  - 4. Operating instructions for conditions outside of normal operating limits.
  - 5. Sequences for electric or electronic systems.
  - 6. Special operating instructions and procedures.
- (4) <u>Operations</u>: Include the following, as applicable:
  - 1. Startup procedures.
  - 2. Equipment or system break-in procedures.
  - 3. Routine and normal operating instructions.
  - 4. Regulation and control procedures.
  - 5. Control sequences.
  - 6. Safety procedures.
  - 7. Instructions on stopping.
  - 8. Normal shutdown instructions.
  - 9. Operating procedures for emergencies.
  - 10. Operating procedures for system, subsystem, or equipment failure.
  - 11. Seasonal and weekend operating instructions.
  - 12. Required sequences for electric or electronic systems.
  - 13. Special operating instructions and procedures.
- (5) <u>Adjustments</u>: Include the following:
  - 1. Alignments.
  - 2. Checking adjustments.
  - 3. Noise and vibration adjustments.
  - 4. Economy and efficiency adjustments.
- (6) <u>Troubleshooting</u>: Include the following:
  - 1. Diagnostic instructions.
  - 2. Test and inspection procedures.
- (7) <u>Maintenance</u>: Include the following:

- 1. Inspection procedures.
- 2. Types of cleaning agents to be used and methods of cleaning.
- 3. List of cleaning agents and methods of cleaning detrimental to product.
- 4. Procedures for routine cleaning
- 5. Procedures for preventive maintenance.
- 6. Procedures for routine maintenance.
- 7. Instruction on use of special tools.
- (8) <u>Repairs</u>: Include the following:
  - 1. Diagnosis instructions.
  - 2. Repair instructions.
  - 3. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - 4. Instructions for identifying parts and components.
  - 5. Review of spare parts needed for operation and maintenance.
- (c) Demonstration of Equipment
  - (1) Following completion of training, the equipment/system must be started up and shown to be fully functional at all operating conditions.
  - (2) The Architect/Engineer should approve that the equipment/system is operating as designed.

#### 31.6 PREPARATION

- (a) Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- (b) Set up instructional equipment at instruction location.
- (c) Prior to conducting demonstration and training, the Contractor is required to:
  - (1) Insure check-out and start-up of equipment is completed by authorized factory representative.
  - (2) Check-out and start-up reports are submitted to the School District's Project Manager.
  - (3) Operation and Maintenance manuals are submitted and approved.
  - (4) Equipment is fully functional.
  - (5) Preliminary testing, adjusting and balancing is complete.
- (d) The Contractor will not be allowed to conduct demonstration and training prior to meeting the conditions set forth herein unless approved by the School District's Project Manager. Any attempt to conduct demonstration and training on equipment that is not fully functional will result in cancellation of the training session until such time that the Contractor complies. All cost associated with cancellation of demonstration and training because the equipment is not fully functional will be borne by the Contractor.

#### 31.7 INSTRUCTION

- (a) Engage qualified instructors to instruct School District's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
  - (1) Instructor shall describe operational requirements, criteria, and regulatory requirements.
  - (2) School District Project Manager or Commissioning Manager will furnish Contractor

with names and positions of participants if available.

- (b) <u>Scheduling</u>: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  - (1) Schedule training with School District personnel with the School District's Project Manager with at least seven (7) days advance notice or as specified in the technical provisions of the Contract.
- (c) <u>Demonstration and Training Videos</u>: Training videos are to be provided on DVD discs in a standard video format that can be played by Windows Media Center or compatible windows player. All DVDs must be labeled directly on the video. Label shall include the Contract title, school name, School District Contract number, detailed listing of the content, the date of each training session, and the Contractor's name.
  - (1) Record and produce each training session module separately. Consolidate individual disciplines, i.e., General Contract, HVAC, Plumbing and Electrical, onto a minimum number of indexed discs.
  - (2) The videos will include classroom instructions, if appropriate, demonstrations, board diagrams, and other visual aids when used, but not the student practice.
  - (3) Engage a professional videographer to record and produce the required videos.
  - (4) Include at beginning of each training video introductory chapters of the specific demonstration and training, a verbal description of the lesson outline, learning objectives and a description of specific skills and knowledge that participant is expected to master.
  - (5) Provide all DVDs in a durable 3-ring binder with protection sleeves to facilitate storage and organization of the videos. Protection sleeves shall be designed for CD/DVD long-term storage, archival-safe and acid-free. Hard cases, with the same information that is printed directly on the DVD may be used and must provide long term storage, archival-safe and be acid free.
- (d) <u>Cleanup</u>: Collect used and leftover educational materials and remove from Project site. Restore systems and equipment to condition existing before initial training use.

#### 32. SURVEYS

- 32.1 Prior to the commencement of any Work on the Project site, the Contractor shall make a complete survey of existing conditions, and any discrepancies from the Contract Documents shall immediately be reported to the Architect/Engineer.
- 32.2 The Contractor shall employ a registered professional engineer and surveyor, registered in the Commonwealth of Pennsylvania, to verify the location of the new building to be placed on the Project site by establishing corner locations and center line of buildings, and to provide horizontal and vertical control. Such Survey shall be immediately delivered to the Architect/Engineer.
- 32.3 After the work of the Contract is complete, the same registered professional engineer shall immediately furnish to the Architect/Engineer a post-construction, as-built survey confirming the building corners, center lines, sub-grade building pad elevations, sub-grade elevations of roads, and parking lot. As-built survey shall be drawn at a minimum 1-inch equal 40 feet scale with one-foot contour intervals on a 30 by 42 inch mylar sheet. As-built survey shall show spot grade elevations at minimum 50 foot intervals and at building corners, points of center line intersections, along

property lines and grates of underground structures.

- 32.4 The Contractor shall employ a licensed engineer and surveyor, registered in the Commonwealth of Pennsylvania, to perform all surveying and control work as provided in the Contract Documents for the completion of the Work.
- 32.5 This Supplementary Condition applies for new construction only unless instructed otherwise.

#### **33. CRANE LIFTING REQUIREMENTS.**

33.1. Annual crane inspection certificate and crane operator certification (NCCCO or equivalent) must be submitted to the Project Manager before a crane is used at the site.

33.2. All mobile cranes must be equipped with an anti-two block device.

33.3. A Crane Lift Plan must be submitted to the Project Manager for approval at least five (5) days prior to each planned crane lift, except for a plan covering a period of continuous lifting.

33.4. Lifting over occupied spaces in school buildings is **not** permitted; lifts must be scheduled for times when the space is unoccupied.

END OF SUPPLEMENTARY CONDITIONS

# GENERAL SPECIFICATIONS (DIVISION 01)

SECTION 01 1000 - SUMMARY OF WORK

PART 1 GENERAL

NOTE: Prime Contractors must use the Internet web-based project management communications tool, E-Builder<sup>®</sup> software, and protocols included in that software for this project.

Prime Contractors shall contact the SDP Contracts Manager for information on how to secure the necessary license(s) for themselves and their Subcontractors.

The use of this project management communications tool does not replace or change any contractual responsibilities of the participants.

NOTE: The Environmental Remediation Work Plan included in Section 01-1135 shall be the responsibility of the ELECTRICAL Construction Contractor, utilizing the services of a licensed and qualified Asbestos Abatement Contractor (AAC)

NOTE: Abatement must be done when the school is not in operation. Due to Southwark being a year-round school, all environmental remediation will need to occur during the <u>third shift</u>. Additionally, due to current school occupancy - there are no identified swing spaces. Environmental remediation will need to be phased appropriately to safeguard adequate time for applicable environmental clearances.

NOTE: The ELECTRICAL Contractor shall be responsible for all Lead Based Paint stabilization in accordance with Section 01 1100 Environmental Coordination, Part 4 - Renovation, Repair and Painting-US EPA LEAD BASED PAINT RULE.

Note: THE CONTRACTOR SHALL MARK THE LOCATIONS OF CONDUIT OR DEVICE ATTACHMENT POINTS IN THE CMU PAINTED WALLS FOR DRILLING BY THE AAC AND CORES IN THE SLABS FOR REMOVAL OF VAT BY THE AAC. CORES ARE TO BE DRILLED BY THE CONTRACTOR.

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provision of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this section.
- B. See General Conditions and Supplementary Conditions for items pertaining to this section not enumerated herein.
- C. See Section 01 1100 Environmental Coordination, and related attachments for information related to Environmental Coordination.

#### 1.2 PROJECT

- A. Project Name: Southwark Elementary School Fire Alarm System Replacement
- B. Project Owner: School District of Philadelphia
- C. Site Location: 1835 S 9th st, Philadelphia, PA 19148
- D. Engineer of Record: Stantec Engineering

#### 1.3 CONTRACT DESCRIPTION

- A. Project will be constructed under a single prime contract for Electrical Contractor.
- B. The work of the prime contract is identified in this section and on Drawings.

#### 1.4 SUMMARY OF WORK

- A. Design goals and Objectives: This project includes the full replacement of the existing fire alarm and fire detection systems within Southwark Elementary School, address 1835 S
   9th Street, Philadelphia, PA, 19148, a campus composed of two primary buildings, referred to as Southwark and temporary building.
- B. Included in this project is replacement of in-duct smoke detectors which are to be furnished by the Electrical Contractor, removed and installed in the ducts by a mechanical contractor and wired by the Electrical Contractor. All cost and work are to be the responsibility of the Electrical Contractor including the mechanical work as a sub contract.

#### 1.5 WORK COVERED BY CONTRACT DOCUMENTS

- A. Without intending to limit or restrict extent of work required under Contract, Work to be performed includes but is not limited to the following:
  - 1. Demolition
  - 2. Grounding
  - 3. Branch Circuits
  - 4. Fire Alarm System
- B. Both buildings will receive a new addressable, voice-annunciated, indoor/outdoor fire alarm system of pull stations, notification devices, and detection devices. The system will be unified across both buildings and connected via buried conduit.
- C. Electrical Contract Scope:
  - 1. Installation of new fire alarm speakers and strobes.
  - 2. Installation of new fire alarm control panel.
  - 3. Installation of new fire alarm annunciators.
  - 4. Installation of new fire alarm remote booster panel.
  - 5. Installation of new fire alarm pull stations.
  - 6. Installation of new smoke and heat detectors.
  - 7. Connection of fire alarm systems between both buildings (via existing conduit or replacement thereof).
  - 8. Wiring to new fire alarm devices.
  - 9. Demolition and replacement of smoke dampers and all associated work.
  - 10. Connection of existing ANSUL devices to new fire alarm system.
  - 11. Demolition of old fire alarm bells.
  - 12. Demolition of old fire alarm speakers and strobes.
  - 13. Demolition of old fire alarm annunciators and control panels.
  - 14. Demolition of old fire alarm detectors.
  - 15. Demolition of wiring to old fire alarm devices.
  - 16. Patch, repair and paint existing wall and ceiling as required.
  - 17. Perform sealing, firestopping, and insulation of walls as required.
- D. Items of Labor, material, and equipment not specified in detail or shown on drawings, but incidental to or necessary for the complete installation and proper operation of the

several branches of work and described in the contract documents, or reasonably implied in connection herewith, shall be furnished as if called for in detail by the specifications or drawings. This includes electrical work associated with mechanical and plumbing work whether indicated on electrical drawings or not.

- 1.6 WORK BY OWNER
  - A. No items of equipment have been pre-purchased by the owner.
  - B. No items of equipment are to be installed by the owner
  - C. All processes, equipment, conduit, wiring, devices, instruments, accessories, appurtenances, and controls required to complete the work of these contracts is to be furnished and installed by the contractor.

#### 1.7 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings or specified in Contract Documents by Contract limits.
  - 1. Locate and conduct construction activities in ways that will limit disturbance to the site.
  - 2. Maintain the existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.
- B. Arrange use of site and premises to allow:
  - 1. Owner Occupancy
  - 2. Work by Others
  - 3. Use of site and premises by the public.
- C. Provide access to and from site as required by law and by Owner:
  - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- D. Existing building spaces may not be used for storage.
- E. Limit conduct of especially noisy work during school hours.
- F. Utility Outages and Shutdown:
  - 1. Limit disruption of utility services to the hours the building is unoccupied.
  - 2. Do not disrupt or shut down life safety systems, including but not limited to the fire alarm system electrical service, without 7 days' notice to Owner and authorities having jurisdiction.
  - 3. Prevent accidental disruption of utility services to other facilities.
- 1.8 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS
  - A. Unless otherwise noted, all provisions of the General Conditions, Supplementary Conditions, and Division 01 General Requirements apply to this contract.

#### 1.9 DRAWINGS

A. The drawings listed on Sheet E-001 are included as part of all Contracts.

#### 1.10 WORK SEQUENCE OR PHASES

- A. All work shall be completed in accordance with specification 01 1300 TIME OF COMPLETION, MILESTONES, PHASING OR SEQUENCING
- B. All contractors are required to perform their work in accordance with the School District of Philadelphia's policies and procedures. Certain related scope items cannot be performed while children are in session and/or while school is in operation. It is the responsibility of the contractor to coordinate the project's schedule, timeline, and all construction related requirements with the School District of Philadelphia prior to placing any bids for this project.
- B. Owner will occupy the premises during entire construction period or during certain portions of the construction period that coincide with the academic school year and daily academic program, with the exception of areas under construction. Coordinate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Each prime contractor must understand all construction related timeline limitations and coordinate all phasing requirements with the School District of Philadelphia prior to placing any bids.

#### 1.11 MODIFICATIONS

A. Owner and Engineer of Record reserve the right to make changes in order and execution of Work of Contracts as, in the judgment of the Owner and Engineer of Record, may be necessary or expedient to carry out intent of design and Contract. No increase in prices over Contract rates will be paid to Contractor on account of such changes.

#### 1.12 PHYSICAL DATA

- A. Become fully informed concerning location of facilities, structures, and utilities which may interfere with the Project. Contractor must prepare bid and enter into Contract with full understanding of conditions to be encountered and responsibilities in connection with that.
- B. From investigations and field surveys, location of utilities and equipment have been brought to attention of Engineer as indicated on Drawings; however, locations of existing conditions are not guaranteed. Indication on Drawings of such items will not relieve the Contractors of any responsibilities with respect to it nor will Owner or Engineer of Record be held responsible for omissions or failure to give notice to Contractor of any other utilities or equipment

#### 1.13 DAMAGE

A. Restore any damage done by the Contractor to School District Property or adjacent property and right-of-way immediately to the School District's satisfaction at the Contractor's expense.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

### SECTION 01 1100 - ENVIRONMENTAL COORDINATION

PART 1 – GENERAL

NOTE: THE ENVIRONMENTAL REMEDIATION WORK PLAN INCLUDED IN SECTION 01-1135 SHALL BE THE RESPONSIBILITY OF THE <u>ELECTRICAL</u> CONSTRUCTION CONTRACTOR, UTILIZING THE SERVICES OF A LICENSED AND QUALIFIED ASBESTOS ABATEMENT CONTRACTOR (AAC).

NOTE: Abatement must be done when the school is not in operation. Due to Southwark being a year-round school, all environmental remediation will need to occur during the <u>third shift</u>. Additionally, due to current school occupancy - there are no identified swing spaces. Environmental remediation will need to be phased appropriately to safeguard adequate time for applicable environmental clearances.

NOTE: THE <u>ELECTRICAL</u> CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LEAD-BASED PAINT STABILIZATION IN ACCORDANCE WITH SECTION 01 1100 ENVIRONMENTAL COORDINATION, PART 4 - RENOVATION, REPAIR AND PAINTING - US EPA LEAD BASED PAINT RULE.

- 1.1 RELATED DOCUMENTS
  - A. Section 01 1000 Summary of Work
  - B. Section 01 1135 Asbestos Abatement Specifications
  - C. Section 01 1145 Soils Management Requirements
  - D. Section 01 1155 Underground Storage Tank Removal Requirements
  - E. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this section.
- 1.2 SUMMARY
  - A. If a prime contractor is responsible for any or all environmental remediation, it must utilize a qualified contractor licensed to perform the required remediation services.
  - B. All Contractors Shall Comply with The Requirements of Section 01 1100 Environmental Coordination and notify the District immediately whenever suspect material Is encountered.

#### 1.3 ASBESTOS INSPECTION REPORT (AIR)

A. The attached Asbestos Inspection Report (AIR), if one is included for this project, is not intended to be used for the preparation of bids. It is provided only because it is required by the City of Philadelphia Asbestos Control Regulations to be submitted to Licenses and Inspections with permit applications. It must be posted on site and available to all contractor personnel in order to avoid the unknowing disturbance to any asbestos containing materials.

- B. The Asbestos Abatement Technical Specifications, Soils Management and Underground Storage Tank Removal Requirements, if included in these bid documents may be used for bid purposes.
- C. All Prime Contractors and Subcontractors (Mechanical, General, Demolition, Electrical, Plumbing, etc.) shall inform themselves fully of the scope and scale of the Asbestos Inspection Report and the asbestos abatement as it relates to this project.
- D. At no time shall any Contractor/Subcontractor disturb asbestos-containing pipe/pipe fitting insulation, vinyl asbestos floor tile, asbestos containing floor tile mastic, or any other Asbestos Containing Material listed on the Asbestos Inspection Report.
- E. All Contractors and Subcontractors shall provide a copy of the Asbestos Inspection Report to all personnel from their Company upon admission to each construction project and work zone. A mandatory pre-commencement meeting shall be attended by all Prime Contractor(s) to discuss the Asbestos Inspection Report and the School District of Philadelphia's environmental compliance policies for all Contractors.

# 1.4 TRACE ASBESTOS MATERIALS: HANDLING MATERIALS WITH TRACE AMOUNTS OF ASBESTOS:

- A. The Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and City of Philadelphia Air Management Services (AMS) define an asbestos-containing material (ACM) as any material that contains greater than one percent (>1%) asbestos. Asbestos regulations of EPA and AMS do not apply to materials containing trace amounts (less than 1%) of asbestos, but some OSHA regulations apply to materials that contain any amount of asbestos, regardless of whether it is an ACM.
- B. The Contractor and Consultant are responsible for maintaining compliance with OSHA regulations. The District is not subject to OSHA and will not manage or direct OSHA compliance.
- C. The Contractor shall employ workers who are trained per 29 CFR 1926.1101(k)(9)(vii).
- D. Per 29 CFR 1926.1101(f)(2), the Contractor shall conduct an initial exposure assessment by monitoring at the beginning of the project, or produce a negative exposure assessment based on previous monitoring data.
- E. Contractor employees shall wear appropriate respiratory protection unless there is a negative exposure assessment showing that workers are not being exposed to asbestos above the permissible exposure limit (PEL) of 0.1 fibers per cubic

centimeter (f/cc) of air as an eight-hour time-weighted average or above the excursion limit of 1.0 f/cc as averaged over a sampling period of thirty (30) minutes.

- F. When handling trace asbestos materials, the Contractor shall use wet methods per 29 CFR 1926.1101(g)(1)(ii).
- G. Waste and debris contaminated with asbestos shall be cleaned up promptly and disposed of in leak-tight containers per 29 CFR 1926.1101(g)(1)(iii).
- H. Even with a negative exposure assessment, the following engineering controls are recommended to reduce potential exposure to workers and to reduce general construction dust.
  - 1. Critical barriers
  - 2. Protection of porous and difficult-to-clean surfaces such as carpets and fabric
  - 3. Negative pressure air filtration units

# 1.5 DUST AND ODORS

- A. The following related Environmental Coordination Sections shall apply to all contractors performing renovation and construction work under this contract to control all dust, odors and impact to the occupied portions of the building.
- B. Construction, Renovation and Maintenance Special Considerations Within this Facility and on School District Property.
  - 1. Construction, renovation and maintenance projects can generate large amounts of dust, particulates, odors and debris.
  - 2. All SDP contractors and Sub-contractors are responsible for preventing dust, particulates, odors and debris from impacting or reaching any occupied areas within the facility as a result of any and all aspects of their work activities on this site.
  - 3. All contractors shall submit a plan that identifies the location of all equipment, machines, tanks and/or vessels to be used on site and in addition documents for the inventory and storage plan and location of all chemicals that will be used on site. The plan must also include copies of all Material Safety Data Sheets (MSDS) for any products used on site.
  - 4. All SDP contractors and Sub-contractors shall avoid usage of any equipment and/or tools resulting in excessive noise or vibration that impacts the Educational Process during Occupied School Hours.
- C. During Construction Project

- Provide active means to prevent dust, particulates and odors in the air from dispersing into the occupied areas of the facility. All contractors and Sub-contractors must supply and install dust walk off pads/sticky mats at all exits to all work areas. The mat is mounted on a reusable, hard plastic, frame with a nonskid backing. When all layers of the mat are eventually used, a new refill pad can be easily installed on the reusable frame.
- 2. Alter/isolate the air handling system in the area where the work is being performed to prevent contamination of the duct system. The contractor staff shall be responsible for blocking off supply ducts and covering return air ducts to prevent contamination with dust and particulates.
- 3. Complete all construction barriers before construction work begins.
  - a. Where containment is possible; utilize building walls and doors (all doors except construction access doors), close and seal with duct tape to prevent dust and debris from escaping.
  - b. Where construction, demolition, or reconstruction is not capable of containment by utilizing existing building walls and doors, use one of the following methods of isolation:
    - i. Airtight plastic barriers extending from floor to ceiling decking, or ceiling tiles if not removed.
    - ii. Plastic barrier seams to be sealed with duct tape to prevent dust and debris from escaping.
    - iii. Drywall barriers. Seams or joints will be covered or sealed to prevent dust and debris from escaping.
    - iv. Seal holes, pipes, conduits and punctures to prevent dust migration.
- 4. Place isolation barriers at penetration of ceiling envelopes, chases and ceiling spaces to stop movement of air and debris.
- 5. When openings are made into existing ceilings in work areas, where possible, the decontamination unit should be used which will seal off openings and fit tightly from ceiling to floor.
- 6. Construct to maintain airflow from clean area through and into work area. Require all personnel to pass through this room. Create overlapping flap (minimum of 2 feet wide) at plastic enclosures for personnel access.
- 7. Maintain negative pressure within the work site including venting outside of the building.
- 8. Direct pedestrian traffic from construction areas away from occupied areas to limit opening and closing of doors (or other barriers) that may cause dust dispersion, entry of contaminated air, or tracking of dust to occupied areas.
- 9. Place dust mats (walk off pads) at entrance to work area and replace or clean regularly.

- 10. Contain construction waste before being transported in covered containers.
- B. Upon Completion of Project
  - 1. Do not remove barriers from the work area until completed project is thoroughly cleaned.
  - 2. Vacuum work area including barriers.
  - 3. Wet mop area and wipe down horizontal surfaces.
  - 4. Remove barrier material carefully to minimize spreading of dirt and debris associated with construction.
  - 5. Barrier material should be wet wiped before removal.
  - 6. Remove alterations to the air handling system in the area where the work is being performed.
- 1.6 DISPOSAL
  - A. Contain construction waste before being transported in covered containers
  - B. IMPORTANT The contract may include requirements to remove, handle and dispose of some pre-existing regulated materials as may be necessary to complete the work outlined in the summary of work.
  - C. The contract work may include selective demolition, abatement, and/or removal and disposal of pre-existing materials which are covered by occupational, environmental, health and safety regulatory programs.
  - D. Contractor(s) shall be obligated to perform the contract work in consideration of the presence of these materials at the project site and will be required to perform special handling and/or abatement.
  - E. Contractor shall integrate and sequence any required special handling and/or abatement activities within the Contractor's CPM Construction Cost and Manpower Loaded Schedule.
  - F. Proper procedures, precautions, protections and controls must be used with these materials in accordance with all applicable safety and environmental regulations as well as the Project Safety Manual and the Site Specific Safety Program.
  - G. All activities, including but not limited to, handling, abating, selective demolition, removal, surface preparation, or cleaning, involving the materials listed below are not excluded from the Contract Work per General Conditions:
    - 1. Friable and Non-Friable Asbestos Containing Materials are expected to be encountered in replacement or repair work involving this project.
    - 2. Lead Based Paint: All surface preparation prior to painting or other specified renovation work which may result in disturbance of LBP, and is not regulated as LBP abatement under applicable state and federal regulations, is included in the contract scope of work. In work involving LBP, Contractor shall follow and document all applicable procedures required by OSHA. In addition, for schools built prior to 1978 and defined as a child occupied facility (Children under age 6) contractors performing work must comply

with the US EPA LEAD Safety for Renovation, Repair and Painting (US EPA RRP) regulation. Refer to Part 4 of this section. Any and all waste material including waste water generated by any Lead Stabilization Activity shall be stored securely on site in 55 gallon drums supplied by the contractor. The Office of Environmental Management and Services shall be notified by the Construction Project Management team to schedule a HAZMAT pick up of drummed waste. The HAZMAT vendor will ensure the waste material is properly tested for waste characterization and proper disposal.

- 3. Avian Droppings: Pigeon or otherwise, if encountered during the execution of the work shall be addressed by the Contractor(s) according to the procedures of the School District of Philadelphia.
- 4. Used Lamps: The Contractor shall separate all used lamps removed for the project that contain mercury from other demolition waste and store them safely on site, in appropriate containers supplied by the contractor in a secure location, without breakage (breakage releases the mercury and may convert the resultant waste into "Hazardous Waste"). Mercury Containing Light bulbs include all Fluorescent bulbs, High Intensity Discharge, Mercury Vapor, Metal Halide, High-Pressure Sodium, and Low-Pressure Sodium. The storage containers supplied by the contractor must be labeled: "Used Lamps Universal Waste". Upon accumulation of the used lamps from a completed phase of demolition, the contractor shall notify the Project Manager to arrange for the SDP Office of Environmental Management and Services (OEM&S) to properly remove them from the site for reuse or recycling per the Universal Waste regulations.

# PART 2 – SILICA SPECIFICATION

# 2.1 FOR MASONRY GRINDING, CUTTING AND SAWING

A. Purpose

The purpose of this specification is to protect employees, the public, the environment and property from the detrimental effects of silica-containing dust generated from construction and restoration/maintenance activities.

B. Scope and Application

This specification applies to powered tools or equipment used to cut, grind, core or drill masonry or concrete materials.

- C. Definitions
  - Masonry Material For purposes of this specification includes, concrete block, brick, stones (natural and man-made), terra cotta tile, mortar and concrete made by mixing cement, and water with sand, and aggregate such as gravel or crushed stone. Material that is apparently stone-like in

appearance and texture shall be presumed to be concrete or masonry material, unless otherwise indicated by evidence as presented by the employer.

- 2. NIOSH REL The National Institute of Occupational Safety and Health Recommended Exposure Limit. For silica this is 0.05 milligrams per cubic meter (mg/c) averaged over a 10-hour time-weighted average.
- OSHA PEL The Occupational Safety and Health Administration's Permissible Exposure Limit is expressed as per 1926.55 - Gases, vapors, fumes, dusts, and mists - by the equation:

PEL = (10 mg/m3)/(% respirable quartz + 2)

- 4. Powered tools or equipment Tools in which the motive force that disrupts concrete or masonry materials is provided by a source other than human energy. Powered tools and equipment include those powered by electrical, combustion, hydraulic, chemical, or pneumatic energy.
- 5. Dust reduction system Technology that utilizes the application of water or local exhaust ventilation to reduce airborne dust generated by the use of powered tools or equipment. Local exhaust ventilation may include vacuum systems, dust collection systems, and dust exhaust systems.
- D. Controls
  - In all cases, engineering and/or work-practice or administrative controls that reduce dust at the source where it is being generated shall be the control of choice. In those instances where such controls cannot be used – even temporarily — employees shall be protected with respirators that are used as part of a respiratory protection program. Additionally, the contractor must document how they determined that engineering and/or work practice or administrative controls could not be used.
  - 2. Safety and Effectiveness of Dust Control Systems
    - a. Procedures shall be implemented to ensure that dust reduction systems maintain their effectiveness for dust reduction throughout the work shift.
    - b. Dust reduction systems shall be installed, operated, and maintained in accordance with manufacturer recommendations when there are such.
    - c. When electrical tools are used with water as a dust reduction system, it shall be done in accordance with applicable requirements of electrical safety.
  - 3. Dust Collection/Management
    - a. Dust shall be contained and disposed of in bags that can effectively hold dust without breaking.
    - b. Work surfaces and clothing shall be cleaned with vacuums and not by dry sweeping or the use of compressed air.
    - c. Respirators shall be worn when changing out bags or handling dust.

- B. Evaluating the Effectiveness of Controls
  - 1. The primary purpose of exposure monitoring and site inspections for the presence of dust is to ensure that engineering controls are effective in reducing silica dust generation. When personal air monitoring results are elevated or when there is visible dust, the contractor must intervene to determine the cause of the problem and fix it.
  - 2. As soon as possible after the beginning of cutting or grinding tasks, the contractor shall conduct personal air monitoring of workers performing the cutting/grinding tasks. An industrial hygienist shall perform the monitoring and must be consulted prior to the execution of work If personal air monitoring results indicate that the exposures are above the NIOSH Recommended Exposure Limits (REL) for silica, the contractor must ensure that the controls are functioning and being used properly. In all cases when the REL is exceeded, workers shall be provided with proper respiratory protection.
  - 3. Following modification of controls as described above, the contractor shall conduct personal air monitoring to verify the effectiveness of those modifications in reducing employee exposure to silica.
  - 4. If the contractor has done similar work in the past, has conducted exposure monitoring, and has records of this, the results can be used as a preliminary means to evaluate the effectiveness of controls. It is important that the previous jobs where the monitoring was conducted be similar to the current job, and that the control used be the same, including the manufacturer and model of the vacuum used.
  - 5. Periodic monitoring shall be performed to assure the effectiveness of controls over time.
  - 6. The contractor shall conduct daily visual inspections of the site for the presence of visible dust during grinding and cutting tasks. The presence of such dust is a sign that the controls are not doing their job.
- C. Training
  - 1. Employee training. An employer whose operations include using powered tools or equipment to cut, grind, core, or drill concrete or masonry materials shall provide training on the following topics to all employees prior to their assignment to jobs or work areas where the employer will be conducting these operations that potentially expose them to silica-containing dusts:
    - a. The potential health hazards of overexposure to airborne dust generated from concrete and masonry materials, including silicosis, lung cancer, chronic obstructive lung disease (COPD) and decreased lung function.
    - b. Methods used by the employer to control employee exposures to airborne dust from concrete and masonry materials, including wet

cutting, local exhaust ventilation systems, and process isolation, as applicable.

- c. Proper use and maintenance of dust reduction systems, including the safe handling and disposal of waste materials collected in connection with their use.
- d. The importance of good personal hygiene and housekeeping practices when working in proximity to dust from concrete and masonry materials including: not smoking tobacco products; appropriate methods of cleaning up before eating, and appropriate methods of cleaning clothes.
- e. OSHA requirements including permissible exposure limits, requirements for engineering controls, and respirator protection program requirements.
- 2. Supervisor training. Prior to supervision of employees who will be cutting, grinding, drilling, or coring concrete or masonry materials, supervisory employees shall be trained on the following topics:
  - a. The information required to be provided by subsection above. Identification of tasks the employees will perform, which may result in employee exposure to concrete or masonry dust.
  - b. Procedures for implementation of the measures used by the employer to reduce the exposure to concrete or masonry dust.
  - c. Measures for verifying the effectiveness of controls.
- 3. Periodic training. On jobs that last more than one year, the employer shall conduct the training required by this section at least annually.
- D. Training Records
  - 1. General Requirements: The contractor must maintain a record of all training required by this part within the preceding three (3) years for each person, who performs or directly supervises this specific job function (Masonry, Grinding, Cutting and Sawing). These training records must be maintained during the time that the person performs or supervises this job function (Masonry, Grinding, Cutting and Sawing). These training records must be kept for direct employees of the contractor as well as independent contractors, subcontractors and any other person who performs or directly supervises these job functions for the contractor.
  - 2. Location of Records: The contractor must retain the training records required by this part to include all initial and recurrent training received within the preceding three (3) years for all persons performing or directly supervising this job function (Masonry, Grinding, Cutting and Sawing). Records may be maintained electronically or by other acceptable means. When the person ceases to perform or directly supervise this job function (Masonry, Grinding, Cutting and Sawing) the contractor must retain the training records for an additional ninety (90) days.
  - Contents of Records: Each training record must contain the following:
     a. The individual's name;

- b. The most recent training completion date;
- c. A description, copy or reference to training materials used to meet training requirements;
- d. The name of the person or organization providing the training.
- E. Written Program
  - 1. The contractor shall have a site-specific, written program that contains the following elements:
    - a. Introduction: Project description, location, scope and schedule of work.
    - b. Personnel: Project manager, person in charge of silica program.
    - c. Silica dust-emitting activities: Tasks, equipment, materials, work crew.
    - d. Engineering and work-practice controls: Type of control, use and maintenance procedures and how effectiveness will be verified including personal air monitoring data and schedules for air monitoring.
    - e. Respiratory Protection Program.
    - f. Schedule: Timetable for implementing compliance program.
    - g. Hygiene procedures: Protective clothing (beside respirators) and equipment, housekeeping, hand washing stations.

## PART 3 - SOIL MANAGEMENT

(SEE SECTION 01 1145, IF APPLICABLE TO THIS PROJECT, FOR REQUIREMENTS)

PART 4 - RENOVATION, REPAIR AND PAINTING - US EPA LEAD BASED PAINT (LBP) RULE

- 4.1 Lead based paint (LBP) is assumed to be present on all painted surfaces throughout the building (i.e. walls, ceilings, pipework, ductwork, etc.). All renovation work, paint stabilization, and all other activities that impact painted surfaces shall be performed in accordance with the EPA Renovation, Repair, and Painting (RRP) rule under the Toxic Substances Control Act.
  - A. This includes all painted surfaces throughout the specified work areas.
  - B. Refer to the Architectural Floor Plans for approximate dimensions of work areas and surfaces/equipment to receive paint stabilization and repainting, if applicable.
- 4.2 Renovation work will involve scraping of loose and flaking paint from walls, ceilings and other surfaces, repairing of wall and ceiling plaster damage, and repainting. This section is intended to specify the acceptable methods for the stabilization of all painted surfaces throughout the building.
- 4.3 All moveable objects shall be removed from the work area. Movable objects shall be wet wiped & HEPA vacuumed prior to their relocation to a clean area.

- 4.4 Cover the floor surface surfaces with taped-down polyethylene sheeting ten (10) feet from the area of paint disturbance or a sufficient distance to contain the dust, whichever is greater. If a vertical containment system is constructed, the floor covering may stop at the vertical barrier, providing the barrier extends from floor to ceiling and is tightly sealed at floors, ceilings, and walls.
- 4.5 Close all windows and doors in the work area.
- 4.6 Construct an airlock at the entrance to the work area. The airlock consists of two sheets of polyethylene sheeting.
  - A. One sheet is completely taped along all four edges. The polyethylene sheeting is then cut down the middle.
  - B. The second sheet is only taped along the top and acts as a flap covering the slit in the first sheet of plastic.
- 4.7 Install tack-pads at all paint stabilization work area entrances and exits that are adjacent to areas occupied by other trades and school occupants.
- 4.8 De-energize all HVAC present in the work area or which pass through the work area. Close and cover all ducts openings in the work area with polyethylene sheeting.
- 4.9 Unauthorized persons must be prevented from entering the active work area by posting warning signs and by establishing barriers around the work area.
  - Post signs clearly defining the work area and warning occupants and other persons not involved in renovation activities to remain outside of the work area. These signs should be in the primary language of the occupants and should say "Warning Lead Work Area" and "Poison, No Smoking or Eating."
  - B. Utilize barrier tape in large areas and polyethylene sheeting on doorways.
- 4.10 Supply sufficient temporary lighting to illuminate the work area during paint removal and encapsulation (repainting). All electrical power shall be brought into the work areas from a temporary electric panel with ground fault interruption.
  - A. Sufficient lighting means all active work areas shall be lighted to not less than the minimum illumination intensities listed in OSHA Regulation 29 CFR 1926.56(a), Table D-3 for Indoors: warehouses, corridors, hallways, and exit ways (e.g. 5-foot candles).
- 4.11 Workers shall wear protective clothing including Tyvek suits, gloves and (minimum) NIOSH-certified disposable respirators with a HEPA (High-Efficiency Particulate Air) filter (N-100, R-100, or P-100) during paint stabilization operations.
- 4.12 Manually remove loose, flaking, peeling, and non-adhering paint only after misting with water. Remaining paint edges should be feathered.

- A. All paint chips and dust shall be packaged in polyethylene bags or water tight drums as removal occurs. No accumulations of removed paint shall be permitted to remain in the work area.
- B. Before and during manual paint scraping, spray water on painted surfaces to keep dust from spreading (referred to as wet-scraping). Sanding, drilling and cutting into lead-based paint are prohibited.
- 4.13 Removal of ceiling tiles littered with paint chips:
  - A. Lay plastic sheeting on the floor beneath the ceiling tiles to be removed extending at least ten (10) feet beyond the extents of removal. Carefully remove the ceiling tiles. While standing on the plastic sheeting, turn the ceiling tiles on their side and shake to allow settled plaster and paint chips to fall onto the sheeting below. Plastic sheeting may be moved and reused within a specific room. Once all ceiling tiles are removed and the paint chips emptied onto the sheeting, the sheeting shall be carefully rolled up for disposal.
- 4.14 Surfaces shall be HEPA- vacuumed to remove residual paint and dust. Any remaining paint shall be sound and exhibiting good adherence.
- 4.15 Utilize two buckets to fine clean the surfaces in which lead based paint was removed.
  - A. One bucket containing a trisodium phosphate (TSP) based cleaning solution and the other bucket for rinsing.
  - B. Change the rinse water frequently and replace rags, sponges, and mop heads often.
- 4.16 Repaint all surfaces as per manufacturer's recommendations.
  - A. Refer to the Architectural Specifications for new paint product requirements.
- 4.17 Perform a final cleaning of all surfaces utilizing HEPA vacuum and wet wiping techniques.
- 4.18 Mist the polyethylene sheeting floor coverings before folding it dirty side inward. Sheeting used to isolate contaminated rooms from non-contaminated rooms must remain in place until after the cleaning and removal of other sheeting.
- 4.19 The work area should be left clean at the end of every day and must be cleaned thoroughly at the end of the job. The area must be completely free of dust and debris.
  - A. Ensure that all personnel, tools, and other items, including the exteriors of containers of waste, are free of dust and debris before leaving the work area.
  - B. All paint chips, dust and materials used in the construction of the containment shall be packaged in polyethylene bags or watertight drums prior to leaving the work area.

- 4.20 Upon receipt of an acceptable final visual inspection, carefully dismantle materials used in the work area containment.
- 4.21 Removed lead-based paint and materials used in containment shall be disposed of in accordance with the Hazardous and Universal Waste Disposal Regulations set forth by the Resource Conservation and Recovery Act (RCRA); 40 CFR 260-299.
  - A. Any and all waste material including wastewater generated by any Lead Stabilization Activity shall be stored securely on site in 55 gallon drums supplied by the contractor.
  - B. The HAZMAT vendor will ensure the waste material is properly tested for waste characterization and proper disposal.

#### PART 5 – UNDERGROUND STORAGE TANK REMOVAL

(SEE SECTION 01 1155, IF APPLICABLE TO THIS PROJECT, FOR REQUIREMENTS)

PART 6 – PRODUCTS

NOT APPLICABLE

- PART 7 EXECUTION
- 7.1 EXAMINATION
  - A. Existing Conditions: the existence and location of Asbestos Containing Materials per the available Asbestos Inspection Report is not guaranteed to include all that may affect the major renovation.
  - B. Before construction, the contractor will inspect areas of work and notify the Construction Manager of any suspected ACM not previously identified for abatement or confirmed as not containing asbestos according to the AIR prepared for the project renovation.

#### 7.2 PERFORMANCE

- A. During the major renovation contract work, if the Contractor discovers or suspects ACM in the area of work, work will not proceed in that area. The Contractor will immediately notify the Project Manager and the School District's Office of Environmental Management and Services who will schedule testing and abatement if required.
- B. The contractor's renovation schedule must provide for the coordination and phasing of asbestos abatement activities with the renovation contract work. This shall include allowing for post-abatement final air clearance sampling as required by regulations, or as may be requested by the Philadelphia Federation of Teachers.

C. The Philadelphia Federation of Teacher's (PFT) Environmental Consultant shall have the option to conduct side by side final air clearance samples, within 24 hours notice of abatement project work area completion, with the Asbestos Project Inspector (API) for each work area. Samples will be collected, analyzed, and addressed, in accordance with all applicable Federal, State, and local regulations.

END OF SECTION 01 1100

SECTION 01 1135 - ASBESTOS ABATEMENT AND LEAD BASED PAINT STABILIZATION

# THIS SECTION CONSISTS OF

## SPECIFICATION FOR ASBESTOS ABATEMENT AND LEAD BASED PAINT STABILIZATION

# PREPARED BY THE VERTEX COMPANIES, LLC

Dated 1/14/25, 22 pages.

#### The Vertex Companies, LLC

#### ENVIRONMENTAL REMEDIATION WORK PLAN

Date Prepared:	January 14, 2025
Work Location:	Southwark Elementary School 1835 South 9 <sup>th</sup> Street Philadelphia PA 19148

Environmental Consultant: The Vertex Companies, LLC

#### **1.1 GENERAL REQUIREMENTS:**

**1.1.1** The following information is presented for the performance of environmental remediation activities for the abatement of designated asbestos containing materials (ACM) within the Southwark Elementary School located at 1835 South 9<sup>th</sup> Street in Philadelphia, Pennsylvania. Specifically, the project will entail drilling holes into plaster walls and/or ceilings to facilitate the installation of conduit and other related equipment. This work is being performed in conformance with all applicable Federal (AHERA), City of Philadelphia Asbestos Control Regulations, and with the policy(s) set forth by the School District of Philadelphia (SDP).

**1.1.2** The abatement contractor will be retained by either the School District of Philadelphia or one of its designees (i.e., General Contractor, Mechanical Contractor, etc.) for this project. The Vertex Companies, LLC (VERTEX) shall be acting as the School District of Philadelphia's representative for the purpose of coordinating environmental consulting, air monitoring/Asbestos Project Inspector (API), and laboratory services.

**1.1.3** All work shall be performed in accordance with:

- City of Philadelphia Asbestos Control Regulations
- USEPA 40.CFR Part 61
- AHERA Regulations
- OSHA 29.CFR Part 1926.1101
- Philadelphia Fire Code
- All other applicable Regulations
- Contract Documents

**1.1.4** Where a conflict is noted within any regulations or requirements, the most stringent provisions as detailed therein shall apply. The abatement contractor shall thoroughly review all contract documents, investigate the building, and work areas to determine the quantities of materials to be addressed and all conditions that may affect the work. The omission of any location, area or surface within the contracted work areas containing ACM/asbestos contamination shall not relieve the abatement contractor from performing an independent and detailed investigation before submitting the bid nor the remediation of these materials, consistent with the project intent, within the base contract amount.

**1.1.5** Before submitting a proposal, the abatement contractor shall fully inform themselves as to all existing conditions and limitations with respect to the site and work involved.

**1.1.6** The abatement contractor shall make a personal examination and accept all existing conditions unless an item is "concealed" by solid physical barriers and could not have been discovered during a diligent inspection of the work site. If conditions do exist that may be "concealed" and are not described herein to be incorporated as part of the work and cannot be accessed without performing some demolition, the abatement contractor should bring it to the attention of the School District of Philadelphia, its designees, and the Environmental Consultant for clarification prior to submitting a bid. The preparation and submission of the bid shall indicate that the abatement contractor has personally examined the work area and existing and anticipated conditions and accepts the building and work area "AS IS".

**1.1.7** Quantities of material(s) and areas referenced for this project are presented to assist the contractor/bidder in the preparation of a bid and are not intended to limit the scope of work. The contractor/bidder is responsible for confirming quantities and locations of all ACM, and resulting ACM related activities, prior to submitting their bid.

**1.1.8** The abatement contractor shall provide all required submittal documentation and shall have received non-disapproval of such submittal prior to commencing any work required under the contract.

**1.1.9** The Owner, its designees, or its Environmental Consultant may modify the Abatement Work Plan and/or required work during the period of the contract. All requests for changes to this work plan must be submitted in writing to the Project Designer for review and approval from the owner.

**1.1.10** The Abatement Contractor and Consultant will follow all Necessary Mandatory Covid Protocols Daily as per all School District of Philadelphia, City, State, and Federal Guidelines and will be strictly enforced.

**1.1.11** The Asbestos Abatement Contractor shall be a current pre-qualified contractor by the School District of Philadelphia and must demonstrate they have the necessary personnel, equipment, materials, and experience to complete a project of this nature in the required time period.

#### **1.2 SCOPE OF WORK**

The plaster ceilings on the third floor are asbestos (>1% chrysotile asbestos) and the plaster ceilings on other floors throughout the building contain trace levels of asbestos (<1% chrysotile asbestos). Plaster walls throughout the building on all floors contain trace levels of asbestos (<1% chrysotile asbestos). The stucco walls in the Tank Room with Roof Access contain trace levels of asbestos (<1% chrysotile asbestos). Although asbestos results less than 1% are not regulated by the US EPA/AHERA regulations, any amount of asbestos is hazardous under OSHA regulations.

VERTEX recommends using existing pathways (such as existing conduit holes) or utilize wood transom window frames above room doors to run fire alarm system equipment through to minimize plaster disturbances.

All workers will don appropriate personal protective equipment (PPE). Workers will be mandated to utilize tools with shrouds or containment systems that are equipped with HEPA vacuum attachments to collect dust and debris at the point of generation. Tools must be operated so that no visible dust or release of air occurs outside the shroud or containment system.

The abatement contractor will perform a final work area clean-up utilizing wet cleaning methods and HEPA vacuuming techniques after all demolition, waste removal, and alterations have been completed. Final PCM air sampling will be performed for documentation in each work area.

Contractors will not drill through shared walls with any pipe chase or utilize the main attics due to the presence of asbestos containing pipe insulation.

The fire alarm contractor will need to locate the exact locations of the equipment (including conduit anchors) so abatement at those locations can occur prior to the installation of the equipment. Reportedly, installations of fire alarm equipment will be mounted to some drop ceiling systems (i.e., non-asbestos tiles) where drop ceilings exist below plaster ceilings. The conduit installation route will remain below the ceiling tiles throughout the building.

The scope of work for this project shall entail drilling into plaster walls and/or ceilings to run conduit and install associated equipment throughout the building. Specifically, this project will entail the following:

#### 1.2.1 Space 107 – Classroom 107

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.2 Space H112 – Hallway from Main Office to Gym

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.3 Space H111 – Hallway from Classrooms 108 to 114

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.4 Space H110 - Hallway from Classrooms 115 to 116

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.5 Space 1A – Women's Restroom

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.6** Space 1B – Men's Restroom

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.7** Space 1C – New Building Engineer's Office

- 1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.
- 2. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains <1% Chrysotile Asbestos.

#### 1.2.8 Space 1D – Closet adjacent to Classroom 114

- 1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.
- 2. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains <1% Chrysotile Asbestos.

#### 1.2.9 Space 100A – Main Office

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.10 Space 100D – Main Office Storage

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.11 Space 100B – Computer Server in Main Office

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.12 Space H100B – Small Hallway between Main Office and Principal's Office

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.13** Space 100E – Community School Office

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.14** Space 100 – Principal's Office

#### 1.2.15 Space 101 – Office 101 (former BE Office)

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.16 Space 102 – Classroom 102

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.17 Space 103 – Classroom 103

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.18** Space 108 – Nurse's Office 108

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.19 Space 110 – Auditorium

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.20** Space **112** – Classroom **112**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.21** Space **113** – Classroom **113**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.22** Space **114** – Classroom **114**

#### 1.2.23 Space 115 – Classroom 115

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.24** Space 115B – Pre-K Restroom Corridor

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.25** Space **117** – Classroom **117**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.26** Space **116** – Classroom **116**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.27 Space 105 – Gym 104

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.28 Space S01-1 – Stairwell adjacent to Classroom 114

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.29 Space 217 – Teacher's Lounge

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.30 Space 217B – Teacher's Kitchen

#### 1.2.31 Space 218 – Women's Restroom

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.32 Space H210 – Hallway from Classrooms 215 to 216

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.33 Space 215 – Classroom 215

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.34 Space H211 – Hallway from Classrooms 208 to 214

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.35 Space 216 – Classroom 216**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.36 Space 214 – Classroom 214**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.37** Space 2C – Closet adjacent to Classroom 214

- 1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.
- 2. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains <1% Chrysotile Asbestos.

#### 1.2.38 Space S21 – Stairwell adjacent to Classroom 214

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.39 Space 213 – Classroom 213

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.40** Space **212** – Classroom **212**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.41** Space **211** – Classroom **211**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.42** Space **210** – Classroom **210**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.43 Space 207 – Classroom 207

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.44** Space 206 – Classroom 206

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.45** Space 205 – Library

#### **1.2.46 Space 2D – Closet adjacent to Library**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.47 Space 203 – Classroom 203

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.48** Space 202 – Classroom 202

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.49 Space 201 – Classroom 201**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.50 Space 200 – Classroom 200

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.51 Space 208 – Classroom 208

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.52** Space 2B – Office 208A

- 1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.
- 2. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains <1% Chrysotile Asbestos.

#### 1.2.53 Space 209 – Classroom 209

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.54 Space H212 – Hallway from Classrooms 200 to 205

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.55** Space 2E – Men's Restroom

- 1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.
- 2. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains <1% Chrysotile Asbestos.

#### **1.2.56** Space 3B – Women's Restroom

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.57** Space **310** – Classroom **310**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.58** Space 311 – Classroom 311

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.59 Space 312 – Classroom 312

#### 1.2.60 Space 313 – Classroom 313

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.61** Space **314** – Classroom **314**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.62** Space 308A – Office 308A

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.63** Space **315** – Classroom **315**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.64** Space **316** – Classroom **316**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.65 Space 300 – Office 300

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.66 Space 301 – Classroom 301

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.67 Space 302 – Classroom 302

#### 1.2.68 Space 303 – Classroom 303

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.69 Space S46 – Stairs to 401 City Year Room

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.70 Space 401 – 401 City Year Room

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.71 Space S04-3 – Stairwell adjacent to Classroom 303

1. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains >1% Chrysotile Asbestos.

#### 1.2.72 Space H311 – Hallway from Classrooms 308 to 314

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.73** Space S03-3 – Stairwell adjacent to Classroom 308

- 1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.
- 2. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains >1% Chrysotile Asbestos.

#### 1.2.74 Space S01-3 – Stairwell adjacent to Classroom 314

- 1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.
- 2. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains >1% Chrysotile Asbestos.

#### 1.2.75 Space H310 – Hallway from Classrooms 315 to 316

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.76** Space 3E – Men's Restroom

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.77 Space 314A – Office 314A

- 1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.
- 2. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains >1% Chrysotile Asbestos.

#### 1.2.78 Space 315A – Office 315A

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.79 Space 317 – Girl's Restroom

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.80 Space 315B – Closet 315B

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.81** Space **3C** – Closet adjacent to Classroom **304**

#### 1.2.82 Space H312 – Hallway from Classrooms 300 to 304

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.83** Space 304 – Classroom 304

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.84 Space 305 – Classroom 305

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.85** Space 306 – Classroom 306

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.86 Space 307 – Classroom 307

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.87 Space 320 – Boy's Restroom

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.88 Space 308 – Classroom 308

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.89** Space 309 – Classroom 309

#### 1.2.90 Space 22 – Closet B22

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.91 Space S05 – Stairwell near Room B-4

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.92** Space 5 – Classroom 005

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.93 Space 20 – Classroom 020**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.94 Space 020A – Classroom 020 Closet No. 2

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.95 Space 020B – Classroom 020 Closet No. 1

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### **1.2.96 Space 21 – Classroom 021**

1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.

#### 1.2.97 Space S01 – Stairwell across from Classroom 021

#### **1.2.98** Space 3 – Boiler Room Storage

- 1. Removal of less than 5 square feet of plaster wall (i.e., drilling holes into walls as marked out by fire alarm contractor). Plaster wall contains <1% Chrysotile Asbestos.
- 2. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains <1% Chrysotile Asbestos.

#### 1.2.99 Space 19 – Generator Room

1. Removal of less than 1 square foot of plaster ceiling (i.e., drilling holes into ceiling as marked out by fire alarm contractor). Plaster ceiling contains <1% Chrysotile Asbestos.

# Note 1: The fire alarm contractor will need to locate the exact locations of the holes needed to attach equipment to the walls and/or ceilings so the abatement contractor can perform the drilling at those locations.

#### **1.3** Additional Specifications

**1.3.1** Abatement contractor will remove any loose paint inside the abatement work areas as part of the precleaning process.

#### 1.4 SPECIAL CONDITIONS

The general description, specific requirements, and sequencing of the work to be performed is presented below. The abatement contractor is responsible for the performance of all required activities, whether stated herein or not, to complete the work consistent with the project intent.

**1.4.1 Project Schedule:** The abatement phase of this project shall be completed within the timeframe designated by the Owner. A work shift is defined as one 8-hour period. **Due to Southwark being a year-round school, all environmental remediation will need to occur during the third shift.** Additionally, due to current school occupancy - there are no identified swing spaces. Environmental remediation will need to be phased appropriately to safeguard adequate time for applicable environmental clearances. Work is scheduled to commence immediately upon notification from the Owner.

**1.4.2 Phasing**: The abatement contractor shall coordinate all abatement operations with the School District of Philadelphia, its designee, and the Environmental Consultant.

**1.4.3 Mobilization:** Building access and transportation of equipment and materials shall be using designated routes.

**1.4.4 Equipment:** All materials and equipment brought on to the site shall arrive clean and empty. Consumable supplies shall arrive onsite in their original packages, containers, or bundles bearing the name of the manufacturer. Equipment with questionable maintenance and/or obvious physical damage and/or visible surface debris will not be allowed onsite. Any delays due to these provisions shall be at the abatement contractor's cost.

**1.4.5 Permits/Notifications/Fees:** The abatement contractor shall secure all necessary permits, provide such notifications, and pay applicable fees in conjunction with material removal, transportation, and disposal and make timely notification, as may be required by applicable law. This includes, at minimum, City of Philadelphia Air Management Division, PA Department of Environmental Protection, the USEPA, and any other local authorities maintaining jurisdiction.

**1.4.6** Work Area Isolation: Upon mobilization by the abatement contractor, each work area shall be isolated in full accordance with the City of Philadelphia Asbestos Control and AHERA Regulations and this Work Plan. Any variance from these regulations must be approved by the School District of Philadelphia, its designee, the Environmental Consultant, and the City of Philadelphia Air Management Division.

**1.4.7 Respiratory Systems:** The abatement contractor shall provide all workers, supervisor, superintendents, authorized visitors, and inspectors personally issued and marked respiratory equipment in accordance with OSHA regulation 29 CFR 1926.1101 and 29 CFR 1910.134. When respirators with disposable filters are employed, abatement contractor shall provide a sufficient inventory of filters for replacement as necessary by the worker.

**1.4.8** Air Monitoring: Daily air monitoring shall be coordinated by VERTEX, retained as a third-party environmental consultant by the School District of Philadelphia for this project. Samples shall be collected both inside and outside the work area. All daily air samples shall be analyzed via Phase Contrast Microscopy (PCM) Methodologies unless SDP requests TEM air samples. 10% of the PCM air samples shall undergo laboratory QA/QC. All perimeter air samples (i.e., outside the work area) shall meet the 0.01 F/cc criteria. Should this level be exceeded, all work shall cease, and the abatement contractor shall be responsible to clean the affected area.

**1.4.9** Visual Inspection: Upon completion of removal operations, surface cleaning and transportation of waste from the work area, a visual inspection of the work area shall be performed by the API and the asbestos abatement contractor supervisor. In addition, the visual inspection will confirm that any penetrations created during the abatement process have been cleaned and sealed with spray foam or an equivalent material. All surfaces within the work area shall be dry prior to performing this inspection.

**1.4.10 Encapsulation:** Application of a lockdown encapsulant by the abatement contractor shall be made to visually coat the applied surface in its entirety and shall be subject to inspection by the Environmental Consultant. Preparation, mixing and application shall be in accordance with the manufacturer's instructions. Where deficiencies are observed in the applied application of the lockdown encapsulant, the abatement contractor shall correct such deficiency at no additional cost.

**1.4.11 Clearance Testing:** Upon successful completion of the application of a lockdown encapsulant, all surfaces are confirmed as dry (i.e., 24-hour drying period) and all interior wall and floor poly (where applicable) have been removed, aggressive air clearance testing shall be performed by the Environmental Consultant. Air clearance testing shall be performed in full accordance with City of Philadelphia Asbestos Control Regulations and AHERA Regulations. For this project, Phase Contrast Microscopy (PCM) will be utilized as applicable to the specific scope of work area.

**1.4.12 Final Inspection:** Upon completion of demobilization activities, a final inspection shall be performed by the School District of Philadelphia, its designee, its Environmental Consultant, and the asbestos abatement contractor supervisor to ensure demobilization has been completed. Where deficiencies are observed the abatement contractor shall correct such deficiencies at no additional cost.

**1.4.13 Disposal:** All generated wastes shall be disposed of by the abatement contractor in full accordance with all EPA and other applicable regulations.

**1.4.14 Variances:** Any variances requested in relation to this Work Plan must be approved by the School District of Philadelphia, its designee, and the Environmental Consultant. Once approved, the variance request(s) shall then be submitted to the City of Philadelphia Air Management Division for review and final approval.

#### 1.5 SPECIFIC ABATEMENT PLAN

**1.5.1** All plans pertaining to the application/installation of enclosures, barriers, and coverings associated with asbestos abatement operations must be submitted by the abatement contractor for approval by the School District of Philadelphia, its designee, and the Environmental Consultant before the commencement of work activity.

**1.5.2** The abatement contractor shall post required OSHA asbestos warning signs at all entrances to the Asbestos Control Area(s) and where waste materials are to be stored. These signs shall remain in place until the successful completion of visual inspection and final clearance testing. The signs shall be posted in such a manner and locations that a person may easily read the legend:

#### DANGER ASBESTOS CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

**1.5.3** Heating and ventilating systems in the Asbestos Controlled Area shall be shut down to the extent feasible by the School District of Philadelphia or its designee. Following pre-cleaning, the abatement contractor shall seal any opening with two independent layers of 6 mil plastic sheeting to prevent contamination and fiber dispersal to other areas of the building.

**1.5.4** A 3-stage decontamination system shall be constructed as applicable in full accordance with the City of Philadelphia's Asbestos Control Regulations. The decontamination system shall maintain at least 3 independent chambers equipped with a shower. The shower shall maintain operable hot and cold water. The decontamination system shall maintain a minimum of 1 shower chamber per 8 workers. Note: Upon approval from the Environmental Consultant and the City of Philadelphia Air Management Division, a variance may be requested for the use of a remote 3-stage decontamination system. The remote 3-stage decontamination unit will maintain negative pressure on the dirty room side of the system. Should this variance be approved, a 2-stage pop-up decontamination system will be installed at the entrance to each regulated work area that does not maintain an independent 3-stage decontamination system equipped with a shower. Workers will wear two suits while working in containments that use a remote 3-stage decontamination system. The outer suit will be removed in the decontamination system attached to the containment. The inner suit will be worn while workers proceed to the remote 3-stage decontamination system.

**1.5.5** Where applicable, negative air HEPA ventilation system shall be installed and operated in accordance with ANSI Z9.2. The AFDs shall be in sufficient quantity to provide a minimum of four air exchanges per hour and a pressure differential of -0.02 inches water column. The local exhaust system shall be operated continuously, 24-hours a day, until the enclosure of the asbestos control area is removed. Manometer readings shall be reviewed by the Environmental Consultant. The Environmental Consultant shall notify the abatement contractor and the School District of Philadelphia or its designee immediately of any variance in the pressure differential which would cause exposure of adjacent unsealed areas to asbestos fiber concentrations more than the action level.

**1.5.6** Prior to initiating asbestos removal activities, all non-essential and previously generated waste shall be removed from the Asbestos Controlled Area utilizing appropriate decontamination and/or disposal techniques.

**1.5.7** Prior to commencing asbestos operations, the abatement contractor shall pre-clean the entire work area of any/all gross or residual debris/material identified within the Asbestos Controlled Area.

**1.5.8** Removal/encapsulation of all asbestos material shall be performed following the successful completion of a pre-commencement visual inspection by the Environmental Consultant.

**1.5.9** Material from within the Asbestos Controlled Area shall not be permitted outside of the Asbestos Controlled Area except in asbestos identified sealed leak tight containers.

**1.5.10** All asbestos and asbestos containing waste shall be properly packaged. All waste shall be thoroughly wetted with amended water before being placed into containers for disposal.

**1.5.11** Bags and drums shall be marked with the label prescribed by 40 CFR, Section 61.152 and 29 CFR, Section 1926.58 of OSHA Regulations. The outside of all containers shall be wet cleaned, or HEPA vacuumed before leaving the Asbestos Controlled Area.

**1.5.12** All free water in contaminated areas shall be retrieved and placed in 6 mil plastics lined, leak tight drums, or added to the asbestos waste.

**1.5.13** Cleaning of the work area and subsequent visual inspections shall be performed in strict accordance with all applicable asbestos regulations.

**1.5.14** Upon completion of successful visual inspection, the application of a lockdown encapsulant by the abatement contractor shall be made to visually coat the applied surface in its entirety and shall be subject to inspection by the Environmental Consultant. Preparation, mixing, and application shall be in accordance with the manufacturer's instructions. Where deficiencies are observed in the applied application of the lockdown encapsulant, the abatement contractor shall correct such deficiency at no additional cost.

**General Note:** Once an area is regulated, only the abatement contractor's licensed and certified workers, the API, and any regulator certified to wear PPE will have access to the work area.

#### 1.6 FINAL TESTING

**1.6.1** Following the successful visual inspection by the Environmental Consultant and the appropriate drying time, in accordance with City of Philadelphia Asbestos Control and AHERA Regulations, aggressive final air testing shall be initiated at each regulated work area. Final air tests shall be analyzed utilizing PCM methodologies.

**1.6.2** Upon achieving a clean air level below the level designated within the City of Philadelphia Asbestos Control and AHERA Regulations, the work containment/regulated work area shall be dismantled and demobilized. The Environmental Consultant shall perform a final visual inspection to ensure that no residue or debris remains. Should the Environmental Consultant identify any residue or debris, the abatement contractor shall perform clean-up operations of this material.

#### 1.7 FINAL INSPECTION

**1.7.1** The Environmental Consultant shall perform a thorough inspection of the work area to ensure that all asbestos containing materials per the scope of work have been removed.

#### 1.8 WASTE

**1.8.1** All waste generated from this project shall be removed, transported, and disposed of in full accordance with all applicable regulations.

**1.8.2** Disposal manifests shall be submitted to the Environmental Consultant for review.

#### 1.9 LEAD PAINTED COMPONENTS

**1.9.1** Based on the age of the structure, lead-based paint is presumed to exist throughout the facility.

**1.9.2** Any painted surface that has lead content should <u>not</u> be sanded, demolished, or disturbed without the proper engineering controls and work methods, as spelled out under the OSHA's 29 CFR Part 1926.62 Lead Exposure in Construction, Interim Rule. Improper disturbance of any paint with lead content can cause lead to become airborne. The emphasis on controlling lead dust derives from the conclusion that lead dust appears to be the primary route of exposure of lead, especially of low-level exposure.

**1.9.3** The Environmental Protection Agency's (EPA) Renovation, Repair, and Painting Program Final Rule (40 CFR Part 745) (RRP Rule) mandates that if lead-based paint will be disturbed during renovation or painting activity then the work should be completed using lead-safe work practices as defined in the RRP Rule. The individual disturbing the lead-based paint must be certified as well as the firm with whom he/she is employed. In addition, the demolition/renovation contractor will be required to perform TCLP testing for proper waste streaming and disposal of generated waste.

#### 1.10 MOLD IMPACTED COMPONENTS

**1.10.1** At the time of this inspection, no visible mold was identified during the inspection of the school.

**1.10.2** Should suspect visible mold growth or moisture damage be encountered during abatement activities, the abatement contractor should bring this to the attention of the School District of Philadelphia or its designee.

# **ASBESTOS INSPECTION REPORT**

# (Not Required or to be Used for Bidding)

(To be Provided to Awarded Contractor(s) for Permit)

#### **SECTION 01 1145 – SOILS MANAGEMENT REQUIREMENTS**

#### PART 1 - GENERAL

#### 1.1 EXCAVATED SOIL MANAGEMENT

- A. The Contractor shall remove, and recycle or dispose of all excess soil. The removal and subsequent recycling or disposal of all excess soil needs to be managed in accordance with the PADEP Management of Fill Policy.
- B. The Contractor is responsible for all testing required by the landfill or other site selected for recycling or disposal of excavated soil.
- C. The excavation activities will be monitored by the Project Environmental Engineer on a continuous basis to advise the Contractor regarding the segregation of excavated soil. The Project Environmental Engineer is required to be onsite during all excavation activities.
- D. The Contractor shall stage all excavated soil to be potentially contaminated, on six-mil thick polyethylene plastic, and cover with same, pending analysis and subsequent disposal/recycling. A six- to eight-inch berm shall be placed at the perimeter of the staging area to prevent run-on/run-off.
- E. Soil samples shall be collected from the stockpiles by the testing entity selected by the Contractor and samples submitted to a PADEP-certified analytical laboratory for analyses. The Project Environmental Engineer will receive results back from the laboratory on a standard laboratory turnaround basis, typically 10 business days. The Contractor cannot claim a delay while soil samples are being analyzed. Expedited turnaround may be arranged for by the Contractor at no additional cost to the Owner.
- F. Soil that meets the definition of a non-hazardous soil as defined within the Resource Conservation Recovery Act, Title 40 of the CFR parts 239 through 259, that cannot be reused on-site, will be sampled and analyzed by the Contractor in order to obtain disposal approval at a landfill or recycling facility. Sampling and analysis of the soil will be at the Contractor's expense at no additional cost to the Owner.
- G. The Contractor shall provide a per ton Unit Price to transport and dispose of an estimated 400 tons of soil that does not meet the criteria to be certified as PADEP Clean Fill but meets the definition of a non-hazardous soil as defined within the Resource Conservation Recovery Act (RCRA), Title 40 of the CFR parts 239 through 259.
- H. All excess soil will be recycled or disposed off-site in a manner consistent with all applicable local, State, and Federal regulations. The disposal or recycling facility shall be approved by the Owner before the excess soil is transported off-site. The name of the proposed disposal or recycling facility is to be submitted to the Owner a minimum of 7 days prior to disposal.
- I. The Contractor must follow the recommendations concerning handling of excavated excess Soil onsite as presented in PADEP's Management of Fill Policy.

- J. In the event suspected contaminated soil is encountered that is unrelated to the excess soil described, the Contractor will notify the Owner. Following notification, the Owner will provide the Contractor with the necessary procedures to manage the handling and disposal of the suspected contaminated soil.
- K. Historical Environmental Data Reports: If available, the attached environmental soil report(s) have been provided to inform bidders of historical subsurface site conditions. However, it is possible that conditions could vary between or beyond the data evaluated. As such, constituents of concern identified (as applicable) are not meant to fully characterize the generated waste stream (excavated soil). As noted above, representative soil samples shall be collected from the stockpiles and managed in accordance with the PADEP Management of Fill Policy.

#### 1.2 SPECIAL CONDITIONS FOR SOIL MANAGEMENT

- A. The following Special Conditions apply to all Work to be conducted in order to complete this project:
  - 1. The Contractor shall make all required notifications and take all necessary precautions to ensure against damage including but not limited to access roads, sidewalks and driveways, utilities and structures. Any damage to such items shall be repaired or replaced by the Contractor at no additional cost to the Owner.
  - 2. The use of burning at the Site for the disposal of refuse and debris will not be permitted.
  - 3. The Contractor will furnish and install all fencing, barricades, warning signs, lights, etc., wherever necessary to protect the public during work on this project. Fencing, barricades, and other protection devices will remain in place until all tasks associated with the contract are completed.
  - 4. Procedures used to accomplish the Work shall be as specified herein unless submitted to the Project Environmental Engineer for approval prior to project implementation.
  - 5. Any alternative procedures submitted for approval shall provide for safe conduct of Work, careful removal and disposition of materials specified, and protection of property. The procedures submitted shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.
  - 6. All disposal or recycling shall be by the Contractor in accordance with local, State, and Federal regulations. Excess soil shall be disposed of at an Owner-approved recycling facility, or an owner approved landfill. The name of the proposed disposal or recycling facility is to be submitted to the Owner a minimum of 7 days prior to disposal.
  - 7. The Contractor shall install appropriate measures to control surface water run-on to and run-off from the stockpiled excess soil, and from any open excavation. Engineering controls and best-management practices must be utilized to prevent stormwater runoff from the stockpiled soil.

- 8. The Contractor shall maintain the job site in a neat and orderly condition. This includes the daily removal of rubbish, waste, tools, equipment, and material not required for the Work in progress.
- 9. The Contractor assumes all liability for soil that is transported off-site and shall indemnify and hold Owner harmless for improper transportation and disposal that is not in accordance with local, State and/or Federal regulations.

#### 1.3 TEST DOCUMENTATION AND REPORTING

- A. The Contractor shall document all testing and provide copies to the Owner and authorities having jurisdiction. Test records shall include:
  - 1. Date and time of tests;
  - 2. Name of person performing the tests;
  - 3. Location and depth of samples;
  - 4. Names of any inspectors present;
  - 5. Field observations and field screening procedures;
  - 6. Daily field notes, including photographs;
  - 7. Test procedures followed;
  - 8. Test results;
  - 9. A narrative describing how field tests were completed and sampling locations were chosen.
- B. The Contractor shall provide documentation to the Owner for all testing before the excess soil is transported off-site and with Contract close-out documentation to the Owner. The test documentation shall include, but not be limited to, laboratory analytical reports, laboratory chain of custody, Contractor field notes and daily logs.
- C. Laboratory analytical testing shall be completed by a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory.

#### 1.4 DISPOSAL OR RECYCLING DOCUMENTATION

- A. The Contractor shall provide the following to the Engineer and Owner upon completion of the Work:
  - 1. Excess excavated soil disposal or recycling documentation;
  - 2. Disposal facility profile sheets or acceptance forms;
  - 3. PADEP Form U (if applicable);

- 4. Manifests;
- 5. Bills of Lading.

#### 1.5 FUGITIVE EMISSIONS

- A. The following additional Special Conditions apply to all Work to be conducted in order to complete this project:
  - 1. The Contractor shall incorporate means to prevent the carryout or track out of soil and other materials from the area where work is being performed onto undisturbed areas of the School property and onto areas of public access, including but not limited to roads and sidewalks.
  - 2. The Contractor shall incorporate appropriate means to prevent fugitive dust emissions resulting from all construction activities, including but not limited to excavation, demolition, soil placement, stockpiling and transportation.
  - 3. The Contractor is solely responsible for preventing the generation of fugitive dust emissions resulting from wind and other natural and man-made forces. The Contractor shall control the speed of vehicles and equipment moving on the site as it relates to safety and the creation of fugitive dust and shall make appropriate use of wind screens and dust suppressants.
  - 4. No liquid dust suppressant other than water shall be used without the specific advanced approval of the School District. Information to be submitted to the School District for approval of any dust suppressant, other than water, shall include the product specification, manufacturer's usage instructions, information on environmental impacts associated with usage and approvals or certifications related to appropriate and safe usage for ground application.
  - 5. Any fugitive dust and/or soil materials which leaves the site in an uncontrolled form shall be immediately cleaned up by the Contractor to the satisfaction of the School District. At the discretion of the School District, cleanup may incorporate on-site or off-site environmental sampling, performed by the School District at the Contractor's sole expense.

#### PART 2 - PRODUCTS (Not Applicable)

#### PART 3 - EXECUTION (Not Applicable)

### SECTION 01 1155 – UNDERGROUND STORAGE TANK REMOVAL REQUIREMENTS (IF REQUIRED)

#### PART 1 - GENERAL

#### 1.01 SCOPE OF SERVICES

- A. The Contractor shall furnish all labor, materials, equipment, appurtenances, and incidentals required for the following:
  - I. At least 3 days prior to the planned start of excavation, the Contractor shall call Pennsylvania One Call at 800-242-1776 and provide the confirmation number to the School District of Philadelphia and the Environmental Consultant.
  - II. Prior to any excavation activities, install all erosion and control measures required for UST removal activities.
  - III. Remove and dispose of product, concrete, rinsate, and sludges from the existing heating oil UST.
  - IV. Remove and dispose of concrete pad/paving.
  - V. Dispose off-site of up to 400 tons of excess soil and/or fill material (if necessary). The excess soil and/or fill material shall be disposed of in accordance with the PADEP Management of Fill Policy.
  - VI. The Contractor shall be responsible for sampling to characterize all waste generated during the UST cleaning and removal activities. The sampling will assist the Contractor in determining proper disposal methods. Contractor shall meet all the sampling requirements of the disposal facility. Waste characterization sampling will be at the Contractors expense.
  - VII. Remove and dispose of heating oil UST and associated piping, pumps, valves and ancillary equipment.
  - VIII. Remove and dispose of concrete UST tie-down pads if encountered.

#### 1.02 RELATED DOCUMENTS

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

#### 1.03 RELATED SECTIONS

A. All material and removal sections relating to site preparation, site restoration, and other related Work not specified herein are covered in the appropriate Sections.

#### 1.04 DEFINITIONS

- A. The following words, terms, and abbreviations when used in this document shall have the following meanings unless the context clearly indicates otherwise.
  - I. BACKFILL MATERIAL: Consists of select-load bearing certified clean fill material. PADEP requires proof that the backfill is clean; analytical documentation; and the bill of lading documenting the source of the backfill material.
  - II. CITY: City of Philadelphia.
  - III. CLEAN FILL: Defined in the Municipal and Residual Waste Regulations Guidance Documents as "uncontaminated, non-water soluble, inert solid, non-decomposable material used to level an area or bring the area to grade." PADEP has developed clean fill levels for uncontaminated soils, rock, stone, gravel, unused brick and block, concrete, and used asphalt by establishing the maximum allowable chemical concentrations for both organic and inorganic chemicals. Use of fill material that does not meet PADEP's criteria is restricted and requires PADEP's approval for reuse.
  - IV. CONSTRUCTION DOCUMENTS: Consist of the general and supplemental conditions, Specifications, drawings, and any addenda issued prior to bidding.
  - V. CONTRACTING OFFICER: An authorized representative of the School District of Philadelphia.
  - VI. CONTRACTOR: The person, firm, or corporation hired by the School District of Philadelphia to perform the Work defined in these Contract documents. The Contractor shall be licensed in the City of Philadelphia. The Contractor shall submit documents confirming such license with the bid document.
  - VII. DEBRIS: Combustible and non-combustible wastes such as ashes, leaves, wood, and waste material resulting from construction or maintenance and repair work.
  - VIII. DEWATERING: The process of removing water from an excavation.
  - IX. DISCHARGE: Any intentional or unintentional action or omission resulting in the releasing, spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous substance or petroleum products onto the surface or groundwater or onto lands from which it might flow or drain into said waters or into the air.
  - X. DRAWINGS: The Contract Drawings.
  - XI. ENGINEERED FILL: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
  - XII. ENGINEERING CONTROLS: Any physical mechanism to contain or stabilize contamination or ensure the effectiveness of a remedial action. Engineering controls 01 1155 UNDERGROUND STORAGE TANK REMOVAL REQUIREMENTS

may include, without limitations, cap, covers, dikes, trenches, leachate collection systems, signs, fences, and physical access controls.

- XIII. ENVIRONMENTAL CONSULTANT: Owner's representative under the direction of the School District Office of Environmental Management and Services. See Project Environmental Consultant.
- XIV. EXCAVATION: The removal of encountered material as required by this Specification.
- XV. FILL MATERIAL: Any material that has been placed in an area by earthwork activities.
- XVI. FURNISH: The Contractor shall supply the item specified at the job site, unloaded, and secured against damage, vandalism or theft.
- XVII. GARBAGE: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.
- XVIII. HAZARDOUS CONTAMINATED MATERIAL: Excavated materials are considered hazardous when the following criteria are met: 1) The material tests positive for the characteristics of a hazardous waste defined in Title 40 Code of Federal Regulations (CRF) Part 261 Subpart C (261.21-262.24); 2) The material is a listed waste as per 40 CFR Part 261 Subpart D (261.31-261.33); and 3) The material is a mixture of solid waste (non-hazardous) and one or more hazardous wastes listed in 40 CFR Part 261 Subpart D (261.31-261.33).
  - XIX. INTERSTITIAL: Refers to the space between primary and secondary containment of tank, as well as the containment of the sump and piping.
  - XX. LOAD-BEARING FILL: Consists of inorganic and readily compactable borrow soils, inert rubble or rock fragments with a maximum 8-inch particle size with less than 20 percent passing a 200 sieve. The fill moisture content should be controlled to within five percent of optimum by wetting, aeration, or blending.
  - XXI. LOADING: The act of loading materials from the site to a truck.
- XXII. NON-HAZARDOUS IMPACTED MATERIAL: Also referred to as Impacted Material and Impacted Soil Contains metals and/or petroleum hydrocarbon levels above PADEP's Statewide Health Standards. The material includes, but is not limited to, inert rubble, concrete, debris, fill material, rock fragments, and soil. The material does not contain chemical components or chemical compounds, based on analytical laboratory analyses, which would qualify the material as hazardous waste under Title 40 Code of Federal Regulations (CRF) Part 261 Subpart C (261.21-262.24) and Subpart D (261.31-261.33).
- XXIII. OWNER: The School District of Philadelphia.
- XXIV. OILY WASTE: Petroleum products and bituminous material.
- XXV. PADEP: Pennsylvania Department of Environmental Protection. 01 1155 UNDERGROUND STORAGE TANK REMOVAL REQUIREMENTS

- XXVI. PENNDOT: Pennsylvania Department of Transportation.
- XXVII. PERSONNEL DECONTAMINATION AREA: A wash area for workers, typically consisting of a three-stage cube van: a dirty room, a shower station, and a clean room used to remove contaminated materials from the person upon exiting the Work area.
- XXVIII. PLANS: The Contract Drawings.
- XXIX. PLASTIC SHEETING: Polyethylene sheet material of the thickness indicated.
- XXX. PRECISION TESTING: Refers to testing the integrity of the tank in accordance with the test device manufacturer's instructions and U.S. EPA Technical Standards.
- PRODUCT: No. 2 and No. 4 heating oils. XXXI.
- XXXII. PROJECT ENVIRONMENTAL CONSULTANT: The Owner's environmental representative. The Project Environmental Consultant will perform oversight and confirm for the owner that the UST Removal has achieved a documented tank closure according to city and PADEP requirements.
- XXXIII. PROVIDE: The Contractor shall furnish and install the equipment specified and perform the work necessary to provide a complete and functional system.
- XXXIV. UST REMOVAL CONTRACTOR: The person, firm, or corporation retained by the School District of Philadelphia to perform the Work defined in the Contract Documents. The UST Removal Contractor shall be licensed in the State of Pennsylvania and shall submit documents confirming such license with the bid document.
- XXXV. REGULATED MATERIAL: Soil, rock, stone, dredged material, used asphalt, historic fill, and brick, block, or concrete from construction and demolition activities that is separated from other waste and recognizable as such that has been affected by a spill or release of a regulated substance and the concentrations of regulated substances exceed the values in tables of the PADEP Management of Fill Policy, # 258-2182-773, 1/1/2020.
- XXXVI. RELEASE: Spilling, leaking, pumping, pouring, emitting, escaping, or leaching of the regulated substance into the environment in a manner not authorized by the PADEP.
- XXXVII. RUBBISH: Combustible and noncombustible waste such as, but not limited to, paper, boxes, glass, crockery, metal, brick, cans, bottles, leaves, branches, trees, and bones.
- XXXVIII. SHORING: Measures that the Contractor shall be required to take to support the walls of the excavation.
  - XXXIX. SOIL: A natural body of mineral and organic matter, which changes or has changed in response to climate and organisms.
    - XL. SOIL REMOVAL: The act of transporting materials from the site to a suitable disposal facility.

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- XLI. SORBENTS: Carbon, clays, zeolites, and silicates.
- XLII. SPECIFICATIONS: The Technical Provisions, the Special Provisions, and/or the General Provisions.
- XLIII. STABILIZING MATERIAL: Cement, fine-grained siliceous, or pozzolanic materials, lime, and thermoplastic binders.
- XLIV. STOCKPILING: The act of placing soil and/or fill material into a pile.
- XLV. STRUCTURES: Building, footings, foundations, slabs, curbs, or other man-made stationary features constructed above or below the ground surface.
- XLVI. SUBGRADE: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- XLVII. SUBSTANTIAL COMPLETION: The stage in the progress of the Work when the Work or designated portion thereof is sufficiently completed in accordance with the Contract Documents so the Owner can utilize the Work for its intended use.
- XLVIII. SUITABLE FILL MATERIAL: On-site material consisting of inorganic and readily compacted uncontaminated site soil, inert rubble or rock fragments.
- XLIX. TEMPORARY FENCING: A minimum 8-foot high temporary chain-link fence.
  - L. TREATMENT: Excavated material is mixed with binding/stabilizing material, sorbents and water in appropriate ratio.
  - LI. UNAUTHORIZED EXCAVATION: Removal of materials beyond what is indicated in the Specification without direction by the School District of Philadelphia or the Environmental Consultant. Unauthorized excavation, as well as other remedial work not directed by the School District of Philadelphia or the Environmental Consultant, shall be at the UST Removal Contractor's expense.
  - LII. UTILITIES: On-site underground and aboveground pipes, conduits, ducts, cables, as well as other underground and aboveground services.
  - LIII. UNDERGROUND STORAGE TANK (UST): One or more combination of tanks, as set forth in 25 PA Code Ch. 245.1, including appurtenant piping, lines, fixtures, and other related equipment, used to contain an accumulation of hazardous substance or petroleum products, the volume of which, including the volume of appurtenant piping, lines, fixtures, and other related equipment is 10 percent or more below the ground.
  - LIV. WORK: All materials, equipment, labor, services, and other facilities necessary for the Contractor to complete the Contract.

- LV. WORK AREA: Area(s) of project that undergo removal of the existing storage tank and associated appurtenances, installation of a new UST system, remediation or are known to be contaminated.
- LVI. WORKING DAY: Monday through Friday and may include holidays that fall on any of those days.

#### 1.05 GENERAL REQUIREMENTS

- A. The Contractor shall ensure that all materials comply with the Specifications.
- B. The Contractor shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for safety precautions and programs.
- C. All electrical work shall conform to the National Fire Protection Association (NFPA) National Electric Code 70, 1993.
- D. At all times during which the Work is being performed under or affecting the Contract, the Contractor shall keep a competent superintendent approved by the Environmental Consultant constantly on the site from the commencement of the Work under this Contract until the completion thereof. The superintendent shall see that the instructions and directions of the Environmental Consultant are carried out at all times.
- E. The Contractor shall provide all labor, equipment, and material required to complete the required site UST Removal and/or activities by erecting 8-foot steel temporary fencing. The Contractor shall provide additional temporary fencing, if necessary, as a temporary staging area for potentially impacted soil excavated from the area around the existing UST.
- F. The Contractor shall coordinate his Work with any other Work being performed at the construction site and minimize interference with the Owner's normal activities that may continue during construction.
- G. The Contractor shall obtain necessary permits, arrange for inspections, and obtain approval of the appropriate agency having jurisdiction over the Work described. The costs for permits shall be included in the Base Fee. All approvals and permits shall be identified in the Contractors Work Plan for review by the Owner/ Environmental Consultant.
- H. The Contractor shall secure the Work Area during excavation, tank removal, and tank replacement activities by erecting 8-foot steel temporary fencing.

#### 1.06 STANDARDS

- A. The Contractor shall perform the Work in accordance with applicable Federal, State, and local fire protection, environmental and safety codes and regulations, and the latest version of the following industry standards:
  - I. Municipal Waste; Chapters 271-285 of Title 25 of the Pennsylvania Code.

- II. Hazardous Waste; Chapters 260-270 of Title 25 of the Pennsylvania Code.
- III. PADEP's Management of Fill Policy (Document Number 258-2182-773), January 1, 2020.
- IV. Hazardous Waste Operations and Emergency Response and Excavating, Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120 & 29 CFR 1926 Subpart P., Occupational Safety and Health Administration, U.S. Department of Labor, Region V, 230 S. Dearborn Street, Room 3244, Chicago, IL 60604.
- V. US EPA National Emission Standards for Hazardous Air Pollutants.
- VI. Pennsylvania Department of Environmental Protection Codes, Regulations and Guidance documents.
- VII. All State and Local Construction Codes.
- VIII. Rules and Regulations of all other Jurisdictional Authorities.
- IX. Flammable and Combustible Liquid Code, NFPA/30, Automotive and Marine Service Station Code, NFPA/30A, National Electrical Code, NFPA/70, and Underground Leakage of Flammable and Combustible Liquids, NFPA/329, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9904.
- X. Article 79-Flammable and Combustible Liquids, Uniform Fire Code, 1994 Edition, International Fire Code Institute, 5360 Workman Mill Rd, Whittier, CA 90601, (310) 699-0124.
- XI. Hazardous Waste Operations and Emergency Response and Excavating, Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120 & 29 CFR 1926 Subpart P., Occupational Safety and Health Administration, U.S. Department of Labor, Region V, 230 S. Dearborn Street, Room 3244, Chicago, IL 60604.
- XII. Occupational Safety and Health Standards, Flammable and Combustible Liquids, 29CFR 1910.106, Personal Protective Equipment 29CFR 1910 Subpart I, Excavations 29CFR 1926.650 Subpart P, U. S. Department of Labor, Occupational Safety and Health Administration (OSHA), Washington, D.C.
- XIII. Control of External Corrosion of Metallic Buried, Partially Buried, and Submerged Liquid Storage Systems, NACE Recommended Practice RP0285-95; Control of External Corrosion on Submerged Metallic Piping Systems, NACE Recommended Practice RP0169-92; National Association of Corrosion Engineers, P.O. Box 218340, Houston, TX 77213.

- XIV. UL Standard 58, "Steel Underground Tanks for Flammable and Combustible Liquids", 1996, "Control Equipment for Use With Flammable Liquid Dispensing Devices, UL1238, "Pipe Connectors for Flammable and Combustible Liquids and LP-Gas", UL567, "Pipe Unions for Flammable and Combustible Liquids and LP-Gas", UL567, "Power-operated Dispensing Devices for Petroleum Products", UL87, "Valves for Flammable Fluids", UL842, "Corrosion Protection for Underground Storage Tanks" UL1746, "UL Listed Non-Metal Pipe", UL971, Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062. (847) 272-8800.
- V. Underground Storage Tanks; Technical Requirements and State Program Approval; Final Rules, 40 CFR Parts 280 and 281, Part II, Federal Register, Friday, September 23, 1988, Musts for USTs: A Summary of the New Regulations for Underground Storage Tank Systems, and Hazardous Waste Management Standards, Federal Register July 14, 1986. U.S. Environmental Protection Agency, Office of Underground Storage Tanks, 401 M. Street, S.W., Washington, D.C. 20460.
- XVI. Installation of Underground Petroleum Storage Systems, API/1615, Cathodic Protection of Underground Petroleum Storage Tank and Piping Systems, API 1632, American Petroleum Institute, 1220 L Street, Washington, D.C. 20005.
- XVII. Installation Instructions, ACT-100-U, R821; Steel Tank Institute Recommended Practices for Corrosion Protection of Underground Piping NetWorks Associated with Liquid Storage and Dispensing Systems, R892; Steel Tank Institute Standard for Dual Wall Underground Steel Storage Tanks, F841; Steel Tank Institute, 570 Oakwood Road, Lake Zurich IL 60047 (847) 438-8265.
- XVIII. OSHA Standards.
  - XIX. US EPA National Emission Standards for Hazardous Air Pollutants.
  - XX. US EPA Regulation 40 CFR Part 61 (NESHAP Final Rule).
- B. Where differences exist between standards, the Contractor shall use the most conservative. If in doubt, describe differences in writing to the Owner for Owner's approval before performing the Work.
- C. The codes and standards listed above are believed to be the latest as of this publication. Codes and standards are continuously updated. The Contractor shall confirm the construction standard edition enforced by the authority having jurisdiction.

# 1.07 SUBMITTALS

- A. The Contractor shall provide the following to the School District Environmental Consultant and Owner for approval before commencing Work:
  - I. Employee training records.

- II. Insurance certificates.
- III. Proof that all necessary notifications have been submitted to State and local agencies.
- IV. Site-Specific Health and Safety Plan (HASP).
- V. Proof that all workers identified by the Contractor for completion of the Work (supervisors and laborers) have been given medical examinations within the past year, and obtained medical clearance, as required by appropriate OSHA regulations.
- VI. The Contractor shall design shoring consistent with appropriate OSHA requirements. The shoring shall be designed by a structural engineer licensed in the State of Pennsylvania and employed by the Contractor. The submitted plan shall bear a professional engineer's seal and signature. The excavation/shoring plans shall be submitted for review and approved by the School District's Geotechnical Contractor prior to the beginning of site work.
- VII. Copies of all notifications required in this Specification.
- VIII. Source(s) of backfill material and documentation that the material proposed by the Contractor as a backfill meets the PADEP Clean Fill Criteria and consists of load-bearing fill material, including physical and analytical test results.
- IX. Gradation tests on proposed backfill material.
- X. One optimum moisture-density curve (American Society for Testing and Materials, ASTM D-1557) for each type of material proposed for use as backfill.
- XI. Construction Schedule for completion of the Work. The Schedule shall be manpower-loaded so that the number of man-hours per activity, number of man-hours per day, and the number of man-hours per week are explicitly shown.
- XII. Waste Management and Disposal Plan specifying names of recycling or disposal facilities the Contractor will use for disposal of regulated material, address, and EPA and PADEP identification numbers (as appropriate), and the disposal facilities' required analyses to the Owner's Environmental Consultant prior to mobilization. If a change in either of these items occurs during the course of this project, the Contractor shall notify the School District and the Environmental Consultant.
- XIII. UST and Piping Removal and Disposal Plan, describing the following:
  - a. Means, methods, sequence of operations, and schedule to be employed in the pumping, cleaning, de-vaporizing, inspecting, excavating, removing, and disposing of the underground storage tank, appurtenances, and overburden.
  - b. Waste identification methods (e.g., labeling, marking containers, etc.).

- XIV. Guarantees/warranties with respect to the Work and product produced under this Contract. All warranties shall be as specified by the Manufacturer of the equipment.
- XV. The Contractor shall provide data sheets and descriptive material for shoring.
- XVI. The Contractor shall submit necessary permits and certifications for tank removal to the Owner and Environmental Consultant within 10 days of Notice to Proceed.
- XVII. The Environmental Consultant shall review the bid submittals specified herein and return them to the Contractor approved, or with appropriate comments within 10 days of receipt from the Owner.
- XVIII. Emergency Spill Response Plan (ESRP) for hazardous materials management. The ESRP must include evacuation procedures, source of medical assistance, and procedures to be used for access by medical personnel (examples: first aid squad and physician).
- B. The Contractor shall provide the following to the Environmental Consultant and Owner upon completion of the Work:
  - I. Excavated material disposal documentation including weight tickets with a signature of a receiving facility certifying receipt.
  - II. Product and sludge disposal documentation with a signature of a receiving facility certifying receipt.
  - III. Wash water disposal documentation with a signature of a receiving facility certifying receipt.
  - IV. Bills-of-lading certifying disposal or recycling of the tank, pumps, and piping with a signature of a receiving facility certifying receipt.
  - V. Documentation of in-place geotechnical testing of backfill, including date and time of tests, name of person performing the test, names of any inspector's present, test procedure(s) followed, quality assurance procedures, and test results.
  - VI. Documentation of source of off-site fill material, including analytical data from the supplier and bills-of-lading.
  - VII. Cumulative quantities of soil/fill material excavated during the tank and associated piping removal, beginning with start date.
  - VIII. Daily logs.
  - IX. Visitations; authorized and unauthorized.
  - X. Special or unusual events (e.g., emergency release or spill, contamination discovered during the tank removal activities, damage to utilities or nearby structures, etc.).

- C. The submittals shall be forwarded to the School District of Philadelphia Project Manager with concurrent copies of the submittals sent to the attention of the School District's Environmental Consultant.
- D. A formal letter of transmittal must accompany all submittals.

# 1.08 QUALITY ASSURANCE

- A. The Contractor shall perform all Work in accordance with applicable standards, including, but not limited to:
  - I. American Petroleum Institute (API).
  - II. American Wire Gauge (AWG).
  - III. Insulated Cable Engineers Association (ICEA).
  - IV. National Electrical Contractors' Association (NECA).
  - V. National Electrical Manufacturers' Association (NEMA).
  - VI. National Fire Protection Association (NFPA).
  - VII. OSHA Standards.
  - VIII. US EPA National Emission Standards for Hazardous Air Pollutants.
  - IX. PADEP.
  - X. United States Environmental Protection Agency (US EPA) Regulation 40 CFR Part 61 (NESHAP Final Rule).
  - XI. US EPA Regulation 40 CFR Part 761, Toxic Substances Control Act.
  - XII. Underwriters' Laboratories, Inc. (UL).
  - XIII. All State and Local Construction Codes.
  - XIV. Rules and Regulations of all other jurisdictional authorities.
  - XV. In case of differences between codes, specifications, state laws, local ordinances, industry standards, utility company regulations, and the Contract Documents, the most stringent shall govern.
- B. The Contractor shall engage a Professional Land Surveyor registered in the State of Pennsylvania to perform land surveying services required.
- C. The on-site Contractor and the on-site Contractor's employee(s) in charge shall have experience in the removal of tanks of similar size, type, and capacity and shall be certified by the appropriate regulatory authorities and the tank manufacturer to perform the Work. The 01 1155 UNDERGROUND STORAGE TANK REMOVAL REQUIREMENTS

Contractor shall submit a copy of the certifications to the Project Environmental Consultant prior to the start of Work.

# 1.09 PROJECT CONDITIONS

- A. Existing Utilities
  - I. The Contractor shall locate existing underground utilities in areas of the planned excavation work. The Contractor shall exercise every precaution to avoid damage to existing utilities including retaining services of a private utility locating company and/or employing soft digging in addition to One-Call. If utilities are indicated to remain in place, the Contractor shall provide adequate means of support and protection during the course of work. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, the Contractor shall consult Utility Owner immediately for direction. The Contractor shall cooperate with the Owner and Utility Company in keeping respective services and facilities in operation. The Contractor shall repair damaged utilities to the satisfaction of the Utility Owner. Should utilities need to be replaced or relocated, the Contractor shall prepare and submit a utility relocation/replacement plan to the Design Professional for review and approval.
- B. Electrical Cables, Conduit, Commercially Used Fiber Optic Cable, Junction Boxes, etc.
  - I. In conformance with the previous section, the Contractor shall locate and exercise every precaution to avoid damage to existing facilities (electrical cables, conduits and junction boxes, including commercially used fiber optic communication cables). Should any facilities become damaged or inoperable during construction operations and it is not to be removed as part of this Contract, the UST Removal Contractor shall immediately notify the School District of Philadelphia and the Environmental Consultant regarding the specifics of the damage. The Contractor shall be responsible for all costs incurred for the repairs of damaged utilities deemed necessary by the School District of Philadelphia and the Environmental Consultant. If a third party utility or a municipal facility is involved, the Contractor shall be responsible for all costs incurred for the repairs deemed necessary after consultation with said agency.
- C. Protection of Persons and Property
  - I. Provide proper signs, signals, and barricades for open excavations occurring as part of this Work in accordance with applicable regulations.
  - II. Protect the walls of the excavation from collapse.
  - III. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and silting, and other hazards created by Work covered in this Section.
  - IV. Protect sidewalks, pavements, and other facilities from silting caused by earthwork.

- V. If necessary, the Contractor shall be responsible for repairs to structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by Work covered in this Section.
- VI. Comply with API Recommended Practice 1604 for worker safety with respect to toxicity considerations.

# 1.10 SAFETY

- A. Safety requirements set forth in this section relate to the removal of the Underground Storage Tank. Safety requirements augment safety requirements presented in the General Conditions section of this bid package.
- B. The Contractor shall prepare and submit a written, detailed Site-Specific HASP to the Environmental Consultant, which addresses all health and safety concerns and hazards related to the removal of hazardous and non-hazardous petroleum-impacted material. The HASP shall be consistent with all applicable OSHA and other regulatory requirements. The HASP shall describe the physical and chemical hazards anticipated with the Work. The HASP must be implemented by the Contractor's Site Safety Officer.
- C. The Contractor shall be responsible for the safety of Contractor's employees on the site. The Contractor shall comply with the safety and health standards specified in OSHA 29 CFR 1926.1910, Federal, State and local laws and regulations. These laws and regulations are a condition of this Work and shall be made a condition of the Contract. Hazard Communication (OSHA 29 CFR 1926.1910) shall be a requirement of the Contract.
- D. The Contractor's superintendent shall monitor the Work to ensure safety, make frequent inspections of the Work Area and equipment, and take whatever corrective action is necessary to provide a safe workplace.
- E. If safety violations are not corrected immediately, the Contractor may be required by the Owner to shut down that portion of the project where the violations are occurring, until such time as the violations are corrected. Emergency telephone numbers shall be posted in a conspicuous place and carried in the Contractor superintendent's vehicle.
- F. The Contractor shall obtain all necessary construction and safety permits from the appropriate regulatory agencies for construction operations prior to the start of Work.
- G. Removal of the tank and associated fill and soil material shall be conducted in such a way to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
- H. The Contractor shall not close or obstruct streets, sidewalks, or other occupied or used facilities without permission from authorities having jurisdiction.

 The Contractor shall provide alternate routes around closed or obstructed traffic ways if required by governing regulations; and, traffic control if Contractor closes or obstructs streets, sidewalks, or other occupied or used facilities.

# 1.11 SEQUENCE OF OPERATIONS

A. Schedule requirements are specified in section entitled Submittals. The Contractor shall submit progress schedules to the Environmental Consultant during the bi-weekly construction progress meetings conducted by the District. The Contractor shall schedule his operations such that Work in any one location shall be carried out progressively and uninterrupted and that each phase of the Work will follow in a logical sequence. The progress schedules shall detail the sequence of operations for each phase of the Work.

# 1.12 COOPERATION WITH OTHER CONTRACTORS

A. The right is reserved by the School District of Philadelphia to do work with its own employees or by other Contractors within the limits of this project during the duration of this Contract. Complete cooperation with such other contractors is mandatory. The Contractor shall coordinate his schedule of operations with others.

# 1.13 DIRECTIVE TO THE CONTRACTOR

A. During the course of the Work to be accomplished under this Contract, certain directives or instructions may be issued to the Contractor by the Environmental Consultant and/or the School District of Philadelphia. These directives or instructions may be delivered and/or verified by written orders. The Contractor shall not assume or accept any directive or instruction not issued by the Environmental Consultant and/or the School District of Philadelphia as stated herein.

# PART 2 - PRODUCTS (not used)

# PART 3 - EXECUTION

# 3.01 GENERAL

- A. The Contractor shall remove and properly dispose of the existing top concrete pad, if applicable.
- B. The Contractor shall remove overburden material, bedding, and sufficient backfill around the UST to safely remove the UST.
- C. The Contractor shall be responsible for the removal and proper off-site disposal of up to 400 tons of excess regulated soil/fill material that may be generated during the excavation activities (if necessary). The excess material includes material which may exceed PADEP's Clean Fill Criteria and any petroleum impacted soil/fill material if encountered.
- D. The Contractor shall be responsible for collecting samples of the excess soil/fill material for laboratory analysis, if necessary, to establish proper disposal procedures.

- E. The Contractor shall remove the heating oil UST and associated pumps, piping, and all ancillary equipment.
- F. The Contractor shall be familiar with the locations of all public utility facilities and structures that may be present in the vicinity of the UST and take proper precautions to avoid damage. Should any damage occur due to the Contractor's operations, repairs shall be made at the Contractor's expense in a manner acceptable to the utility affected and the Owner.
- G. The Contractor shall provide notifications to local utilities prior to commencement of on-site Work so that known utilities can be identified and clearly marked before the Work commences.
- H. The Contractor shall be responsible for meeting all requirements established by the regulatory agencies and utility companies during implementing all stages of the Work.
- I. The Contractor and the company retained for removal of the UST must be certified by PADEP for tank closures and must be licensed in Philadelphia to remove USTs.
- J. The Contractor shall install a minimum of 8-foot high temporary chain-link fence to protect the UST area of work from vandalism.

# 3.02 NOTIFICATIONS AND PERMITS

- A. Notifications
  - I. The Contractor shall notify the City of Philadelphia Fire Marshal and the City of Philadelphia Department of Licensing and Inspection (L&I) at least 10 days prior to the tank removal. Provide a copy of this notification to the Project Environmental Consultant prior to initiating Work.
- B. Permits
  - I. The Contractor shall obtain any necessary City of Philadelphia permits prior to the start of Work. The costs for permits shall be included in the Base Fee.
  - II. Permits shall be displayed on-site for the duration of the project.

# 3.03 REMOVAL OF COVER/EXPOSURE OF UST TOP

- A. The Contractor shall break and remove all existing materials including concrete, asphalt pavement, or other materials required to expose the UST and associated piping sufficiently for safe removal.
- B. Use of pavement materials as backfill is prohibited.
- C. The overburden removed to expose the tank's upper surface and piping will be field screened by the Environmental Consultant using a photoionization detector (PID) or other comparable field screening equipment.

# 3.04 REMOVAL OF PRODUCT

A. The School District of Philadelphia will remove and transfer all viable product from the existing tank prior to the commencement of site activity.

# 3.05 TANK VAPOR PURGING

- A. The tank vapor purging operations shall be conducted in accordance with the API Recommended Practice 1604, "Removal and Disposal of Used Underground Storage Tanks" (API 1604) and API Publication 2015, "Safe Entry and Cleaning of Petroleum Storage Tanks" (API 2015).
- B. A combined combustible gas/oxygen gas indicator (LEL/O2 meter) shall be used and provided by the Contractor to determine the presence of vapors inside the UST.
- C. If explosive or combustible vapors are detected, the Contractor shall purge each tank of explosive or combustible vapors through the introduction of inert gas such as carbon dioxide, nitrogen or argon. The gas should be introduced at low pressure through the fill opening with the supply line placed at or near the bottom of the tank. This opening should be at the opposite end of the UST from the existing tank vent pipe.
- D. All vapors shall be vented at a minimum height of 12 feet above grade.
- E. The Contractor shall use a LEL/O2 meter indicator to determine when the tank has been purged of explosive vapors. The UST will remain below grade during vapor purging operations. Interior atmosphere monitoring will continue throughout the cleaning and removal process to ensure the safety of personnel working in or near the area.
- F. As concentrations of vapors in the tank, the excavation, or the Work Area may reach the flammable (explosive) range, refer to API Publication 2015 for proper procedures for purging of vapors and for control of sources of ignition. Take precautions to cover the following.
  - I. Eliminate potential sources of ignition.
  - II. Prevent static electricity discharges.
  - III. Prevent accumulation of vapors at ground level.

# 3.06 TANK AND PIPE CLEANING

- A. The UST shall be certified as "vapor free" prior to proceeding with further work.
- B. The cleaning and tank atmosphere testing of the UST shall be in accordance with API 1604 and API 2015.
- C. The Contractor shall drain and flush all pipe lines entering the tank. All wash water generated as a result of piping cleaning shall be drained back into the tank. If fill and distribution lines will

not drain back into the tank, proper containers must be used to prevent spillage onto the ground surface.

- D. The Contractor shall access the interior of the UST through an opening made with minimum dimensions of three- by three-feet. This opening shall be cold cut into the tank upper surface to allow safe access to the tank interiors by the Contractor. All personnel entering the tank shall be in Level "B" personnel protection and shall follow all procedures associated with confined space entry.
- E. All interior surfaces of the tank shall be cleaned by the contractor prior to removal. All interior surfaces will be wiped down by the Contractor.
- F. The Contractor shall be responsible for proper disposal of tank bottom, sludge, solids, and wastewater, generated during tank cleaning.
- G. The Contractor shall dispose of residuals including all sludge, solids, and wastewater in accordance with the results of waste characterization and all Federal, State, and local rules and regulations. The disposal facility must be approved by the Environmental Consultant 10 days prior to the tank cleaning activities.
- H. The Contractor shall provide disposal documentation and weight ticket of the residuals, sludge and wastewater.
- I. Upon determination by the Contractor that the concentrations of toxic, combustible, or explosive vapors are within acceptable limits and the tank purging is complete, the piping associated with the storage tank (fills, product, and vent lines) and pumps shall be disconnected. The Contractor will then remove the pumps and piping.

# 3.07 TANK REMOVAL

- A. The Contractor shall excavate a sufficient amount of soil/fill material from the area surrounding the tank to facilitate the removal of the UST from the ground.
- B. The Environmental Consultant shall field-screen the excavated material using a PID or comparable field screening equipment.
- C. Excavated material that exhibits elevated PID readings and/or staining shall be excavated and direct hauled to a proper off-site disposal facility.
- D. The Contractor shall remove the tank from the excavations and place them on a level surface in a secure area on the site, as directed by the Environmental Consultant.
- E. The sides of the tank shall be chocked in accordance with the manufacturer's requirements to prevent rolling.
- F. The outside of the tank shall be cleaned of all loose material to ensure future safe transport.
- G. The Contractor shall label the tank in accordance with API 1604 before removal from the site.

01 1155 UNDERGROUND STORAGE TANK REMOVAL REQUIREMENTS

- H. The Contractor shall render the clean tank unsuitable for future use in accordance with the requirements of API 1604.
- I. The Contractor shall provide the Environmental Consultant with receipts to verify that the tank, pumps, and associated piping were properly disposed of as scrap for recycling.

# 3.08 EXCAVATION/REMOVAL OF REGULATED SOIL/FILL MATERIALS

- A. The Environmental Consultant shall document the presence of possible subsurface regulated soil/fill material during excavating activities. The Environmental Consultant will be responsible for the collection of post-excavation soil samples. Post-excavation soil samples shall be collected from the excavations by the Environmental Consultant in accordance with the PADEP's Technical Document (Closure Requirements for Underground Storage Tank Systems). The Contractor shall assist the Environmental Consultant in soil screening and collection of soil samples as necessary.
- B. The Contractor will collect and submit samples representative of the excavated material for disposal to an analytical laboratory. The Contractor will receive results back from the laboratory within 5 full working days.
- C. Excavation shall proceed to the limits defined by the Environmental Consultant, and removal of regulated material, if encountered, will be confirmed by analytical results of post-excavation soil samples.
- D. The Contractor shall be responsible for the removal and disposal of up to 400 tons of non-hazardous regulated excess soil/fill material that may be generated during progress of the Work in accordance with all Federal, State, and local laws and regulations. The disposal facilities used must meet the Owner's approval.
- E. Once the tank is removed, the Environmental Consultant will collect post-excavation samples.
- F. The excavation activities will be monitored by the Environmental Consultant on a continuous basis to establish when the limits of petroleum impacted soil/fill material, if encountered, have been reached. When the limits of petroleum impacted soil/fill material have been reached or further excavation would disturb the shoring and threaten the structural integrity of any buildings, post-excavation soil samples will be collected.
- G. Excavated regulated excess soil/fill material will be sampled by the Environmental Consultant with samples submitted for laboratory analysis to establish the required disposal procedure and obtain disposal approval at a landfill or recycling facility.
- H. The Contractor shall transport and dispose of the regulated excess soil/fill material. The excess soil/fill material is to be disposed off-site in a manner consistent with all applicable local, State, and Federal regulations. The estimated tonnage of material to be disposed of is 400 tons (if necessary). The disposal facility shall be approved by the Owner 10 days prior to transport and disposal activities. Disposal of material impacted due to a release caused by the Contractor will be at the Contractor's expense.

- I. The Contractor must follow the recommendations concerning handling of excavated material on-site as presented in PADEP's Technical Document (Closure Requirements for Underground Storage Tank Systems).
- J. The Contractor shall remove and dispose of excavation water, if present, in a manner consistent with all applicable local, State, and Federal regulations.

# 3.09 RELEASE OF PRODUCT

- A. Should a release of product from the UST be observed, the Contractor shall immediately notify the Environmental Consultant. The Environmental Consultant will advise the Owner and the appropriate regulatory agencies.
- B. Should a release of product occur due to negligence of the Contractor, the Contractor shall be responsible for all costs associated with containment and remediation of the release.

# 3.10 SPECIAL CONDITIONS FOR UST REMOVAL AND SITE CLEARANCE

- A. The Contractor shall control the amount of dust resulting from the material removal and tank closure activities to avoid creation of a nuisance in the surrounding areas.
- B. The Contractor shall make all required notifications and take all necessary precautions to ensure against damage to access roads, utilities and structures. Any damage to such items shall be repaired or the damaged structures shall be replaced by the Contractor at no additional cost to the Owner.
- C. The use of burning at the site for the disposal of refuse and debris is strictly prohibited.
- D. The Contractor shall furnish and install all fencing, barricades, warning signs, signals, lights, etc., wherever necessary to warn and protect the public during the Work. Fencing, barricades, and other protection devices will remain in place until all tasks associated with the tank and material removal activities are completed.
- E. Procedures used to accomplish the Work shall be as specified herein unless submitted to the Environmental Consultant for approval prior to project implementation.
- F. The procedures used by the Contractor shall provide for safe conduct of Work, careful removal and disposition of materials specified, and protection of the property. The procedures shall include a detailed description of the methods and equipment to be used for each operation, method(s) of containing impacted water (from the tank and from the subsurface), and the sequence of operations.
- G. All disposal including, but not limited to, tank contents, residuals, rinsate, any regulated soil/fill material, and/or groundwater shall be by the Contractor in accordance with local, State, and Federal regulations. Regulated material disposal shall be to an Owner-approved recycling method, an approved recycling facility, or an approved non-hazardous landfill.

- H. Prior to any Work being performed, the Contractor shall purge the tank to remove flammable/combustible vapors. Accordingly, the Contractor shall use appropriate methods to assess the vapor concentration in the tank and the surrounding work area before initiating Work in the area.
- I. The Contractor shall install appropriate measures to control surface water run-on to and run-off from the open excavations and the material staging areas.
- J. Shoring during excavation shall be designed, furnished, installed, and maintained by the Contractor as necessary to protect workmen, banks, adjacent paving, structures and utilities. Shoring, bracing, and sheeting shall be removed, as the excavation is backfilled in such a manner as to prevent serious caving. Shoring, bracing, and sheeting shall be as required by OSHA regulations and to support structures. Shoring Plan must be submitted to the Owner for approval prior to commencement of shoring of excavations.
- K. The Contractor shall remove and dispose of the excavated materials (including but not limited to regulated soil, debris, and fill material) in accordance with all local, State, and Federal rules and regulations and as specified herein.
- L. The Contractor shall maintain the job site in a neat and orderly condition. This includes the daily removal of rubbish, waste, tools, equipment, and material not required for the Work in progress.
- M. Use appropriate vehicles and operating practices to prevent spillage or leakage of impacted materials from occurring during operations. Inspect vehicles leaving the Work Area to ensure that no impacted materials adhere to the wheels or undercarriage. The Contractor shall be responsible for any clean-up required as a result of leaks which result from damage or mishandling of the tank or fuel lines by the Contractor, at no additional cost to the Owner.

# 3.11 BACKFILLING AND COMPACTION

- A. The Contractor shall provide gradation tests on proposed backfill material prior to backfill.
- B. The Contractor shall provide one optimum moisture-density curve using American Society for Testing and Materials, ASTM D-1557 test method for each type of material proposed for use as backfill prior to backfilling.
- C. The Contractor shall provide clean fill documentation prior to placement of the clean fill.
- D. The Contractor shall backfill the excavation using select clean fill material with a maximum six-inch particle size with less than 20 percent passing a #200 sieve. The select clean fill shall be placed in six-inch lifts and shall be compacted to 95 percent of the modified proctor.
- E. The Contractor shall retain services of an independent properly certified testing and inspection agency to perform and verify compaction testing of all fill material placed at the site.
- F. In the event the compaction testing reveals the compaction does not meet requirements herein, the Contractor shall repeat the compaction and re-test the compacted area. The Contractor is

responsible for the costs associated with additional compaction and testing and meeting the compaction requirements.

# 3.12 TEST DOCUMENTATION AND REPORTING

- A. The Contractor shall document all testing and provide copies to the Environmental Consultant, the Owner, and authorities having jurisdiction. Test records shall include:
  - I. Date and time of tests;
  - II. Name of a firm and an inspector performing tests;
  - III. Names of persons witnessing inspections;
  - IV. Test procedures followed; and,
  - V. Test results.
- B. The Contractor shall provide documentation for all testing with Contract close-out documentation to the Owner.

# 3.13 DISPOSAL DOCUMENTATION

A. The Contractor shall provide disposal (or recycling) documentation to the Owner for the disposal of tank contents, tank and piping, regulated soil/fill material, cleaning fluids, and impacted groundwater (if any). This documentation shall be provided with Contract close-out documentation.

# SECTION 01 1200 – SPECIAL INSURANCE REQUIREMENTS

# PART 1 - GENERAL

# 1.01 RELATED DOCUMENTS

A. General Conditions Article GC-11 Insurance

# 1.02 SUMMARY

- A. This section includes special insurance coverage or policies in addition to those set forth in the General Conditions
  - I. Builder's Risk Insurance in the coverage and amounts set forth in GC-11

## a. NOT REQUIRED

II. Rigger's Liability Insurance in the coverage and amounts set forth in GC-11

## a. NOT REQUIRED

- III. Environmental Liability Insurance in the coverage and amounts stated in GC-11
  - a. Electrical Contractor: REQUIRED
- IV. Contractor's Pollution Insurance in the coverage and amounts stated in GC-11
  - a. Electrical Contractor: REQUIRED

# PART 2 - PRODUCTS (Not Applicable)

# SECTION 01 1300 – TIME OF COMPLETION, MILESTONES, SCHEDULING AND PHASING REQUIREMENTS

# PART 1 - GENERAL

# 1.01 RELATED DOCUMENTS

- A. General Conditions Article GC-6 Work Done By School District or by Separate Contractors
- B. General Conditions Article GC-8 Time
- C. General Conditions Article GC-9 Payments and Completion
- D. Supplementary Conditions Article SC-22 General Coordination
- E. Supplementary Conditions Article SC-23 Schedule and Reports

# 1.02 TIME OF COMPLETION

- A. Substantial Completion
  - I. All of the work of this project shall be substantially complete and fully ready for normal operation, as determined in accordance with General Conditions Article GC-8 Time no later than:

11 MONTHS AFTER NOTICE TO PROCEED

- B. Punch list Completion:
  - I. All punch list items must be completed by

12 MONTHS AFTER NOTICE TO PROCEED

- C. Final Completion
  - I. All of the work of this project shall be finally complete and fully ready for normal operation, as determined in accordance with General Conditions Article GC-9.8 Time no later than:

17 MONTHS AFTER NOTICE TO PROCEED

# 1.03 MILESTONES (INTERIM COMPLETION DATES)

A. Not Applicable

# 1.04 OWNER OCCUPANCY

- A. Owner intends to occupy portions of the existing building during the entire construction period. The Work shall be coordinated and done in phases in order to keep the School operational for the duration of the project.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

## 1.05 GENERAL PHASING AND SEQUENCING

- A. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
- B. Student testing or other noise-sensitive programs may take place during the construction period. Contractors may not be allowed to perform any work at the school while testing or other noise-sensitive programs are actually taking place. They may be allowed to work after test hours, at the sole discretion of the District.
- C. Hammers Down Period: Preparation of the school building begins approximately (2) weeks prior to the start of the academic year and up until three (3) weeks after the start of the academic year. This is referred to as the Hammers Down Period. The District reserves the right to stop any construction activity that interferes with school preparation during that period.
- D. All utility shutdowns must be scheduled in advance with the Project Manager. They may not be scheduled for any time when the building is occupied by staff, students and others for academic programs or before and after school activities.
- E. Coordinate and update construction schedule and operations with Owner on a bi-weekly basis.

# 1.06 SPECIFIC PHASING AND SEQUENCING REQUIREMENTS

A. Due to Southwark being a year-round school, all Work will need to occur during the <u>third shift</u>. Additionally, due to current school occupancy - there are no identified swing spaces. Environmental remediation will need to be phased appropriately to safeguard adequate time for applicable environmental clearances.

# PART 2 - PRODUCTS (Not Applicable)

SECTION 01 1400 – MODIFICATIONS TO GENERAL AND SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
  - A. Except as modified below, all provisions of the General and Supplementary Conditions shall remain in full force and effect
- 1.2 MODIFICATIONS TO THE GENERAL CONDITIONS
  - A. The following provisions modify the General Conditions only to the limited and specific extent stated:
    - 1. See MODIFICATIONS AND SUPPLEMENTS included after the SCHOOL DISTRICT/CONTRACTOR AGREEMENT.
- 1.3 MODIFICATIONS TO THE SUPPLEMENTARY CONDITIONS
  - A. NONE
- PART 2 PRODUCTS (Not Applicable)
- PART 3 EXECUTION (Not Applicable)

END OF SECTION 01 1400

## PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. General Conditions Article GC-4.12 Use of Site
- C. Supplementary Conditions Article SC-9 Sanitary Provisions
- D. Supplementary Conditions Article SC-10 Temporary Water Supply
- E. Supplementary Conditions Article SC-11 Temporary Heat and Ventilation
- F. Supplementary Conditions Article SC-12 Temporary Lighting and Power
- G. Supplementary Conditions Article SC-13 Temporary Fire Protection

## 1.2 SUMMARY

- A. This Section includes requirements for construction facilities and temporary controls, including support facilities, and security and protection.
- B. Support facilities include, but are not limited to, the following:
  - 1. Field offices and storage sheds.
  - 2. Temporary enclosures.
  - 3. Temporary elevator use.
  - 4. Waste disposal services.
  - 5. Rodent and pest control.
  - 6. Construction aids and miscellaneous services and facilities.
- C. Security and protection facilities include, but are not limited to, the following:
  - 1. Temporary fire protection.
  - 2. Barricades, warning signs, and lights.
  - 3. Environmental protection.

#### 1.3 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
  - 1. Building code or International Construction Code (ICC) requirements.
  - 2. Health and safety regulations.
  - 3. Police, fire department, and rescue squad rules.
  - 4. Environmental protection regulations.
- B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities".
  - 1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code". See Paragraph 51 of the Supplementary Conditions.
- 1.4 PROJECT CONDITIONS

- A. Temporary Utilities: Electric power and water exist at the Project site and will be provided to Contractor on an as-needed basis. Contractor will be responsible for temporary connections for construction purposes.
- B. Temporary Sanitary Facilities: Existing sanitary facilities will not be made available for Contractor's use. Contractor will be responsible for providing sanitary facilities for contractors' employees.
- C. Conditions of Use: Keep School District services and facilities clean and neat in appearance. Operate in a safe, efficient, and sanitary manner. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.
- D. Delivery and Storage of Materials: Obtain prior approval of material storage and staging areas from school personnel. Assure that Contractor's personnel are present to receive all deliveries. Coordinate delivery schedules with school personnel.
- E. See Article GC-4.12 Use of Site; Article SC-9 Sanitary Provisions; Article SC-10 Temporary Water Supply; Article SC-11 Temporary Heat and Ventilation; Article SC 12-Temporary Lighting and Power; Article SC-13 Temporary Fire for related requirements.

#### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. General: Provide new materials. If acceptable to the School District, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- C. Open-Mesh Fencing: Provide 0.120-inch- thick, galvanized 2-inch chain link fabric fencing 6 feet high with galvanized steel pipe posts, 1-1/2 inches I.D. for line posts and 2-1/2 inches I.D. for corner posts, mounted in heavy concrete bases.

#### 2.2 EQUIPMENT

- A. General: Provide new equipment. If acceptable to the School District, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
- B. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- C. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- D. Fire Extinguishers: In each area of Work, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS 01 1500 PAGE 2 of 4

SOUTHWARK ELEMENTARY SCHOOL - FIRE ALARM SYSTEM REPLACEMENT EC: NG10644-2640.001-E NFPA-recommended classes for the exposures. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

#### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work.
  - 1. Relocate and modify facilities as required. Schedule relocation of facilities in cooperation with School District Project Manager's and school Principal's advice about school operations and education activities.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed.

#### 3.2 SUPPORT FACILITIES INSTALLATION

- A. Locate storage sheds, if used, and other temporary construction and support facilities for easy access.
  - 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion.
- B. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
  - 1. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood or similar materials.
- C. Temporary Elevator Use: Existing elevator, if any, will not be available for Contractor's use.
- D. NOT USED
- E. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials for more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.
- F. Rodent and Pest Control: If rodents, roaches, or other pests infiltrate the site after commencement of construction activities, retain a local exterminator or pest control company to recommend practices to minimize attraction. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
- G. Rodent and pest control is the responsibility of the Mechanical Construction Contractor, per GC-4.15.9 of the General Conditions.
- 3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of the type needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations".
  - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher in each room where construction activities are occurring.
  - 2. Store combustible materials in containers in fire-safe locations.
  - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in all areas.
  - 4. Provide supervision of welding operations, and similar sources of fire ignition.
- B. Exterior Enclosure Fence: Before selective demolition work begins, install an enclosure fence with lockable entrance gates. Locate where necessary to be effective with construction operations. Install in a manner that will prevent people and animals from easily entering work areas, except by the entrance gates.
  - 1. Provide open-mesh, chain link fencing with posts set in heavy pre-cast concrete bases.
- C. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Assure that exterior door locations are secure and that intrusion protection systems are functional at the end of each working day. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
  - 1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- D. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons at the site.

## 3.4 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal.
- C. Termination and Removal: Remove each temporary facility when the need has ended or no later than Substantial Completion. Repair damage to facilities during use by Contractor. Clean **exposed surfaces and replace construction that cannot be satisfactorily repaired.**

#### SECTION 01 1600 - UNIT PRICES (IF APPLICABLE)

PART 1 GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.4 SUMMARY

B. This Section includes administrative and procedural requirements for unit prices.

#### 1.3. DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if actual quantities of Work required by the Contract Documents deviate from the estimated quantities in the Bid Proposal.
- B Unit prices include all costs of necessary labor, material and equipment, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit. Where unit price work also includes disposal of materials, it shall include all costs of demolition, excavation, extraction, handling, transportation, testing and permit fees.

#### 1.4. MEASUREMENT AND PAYMENT:

- A. Refer to individual Specification Sections for work that requires establishment of unit prices.
- B. List of Unit Prices: See Contract Bid Proposal Form for list of Unit Price Bid Items
- C. Prior to performing any unit price work, the Contractor shall submit in writing his proposed method of measurement of the units of work for approval by the Owner.
- D. Contractor shall submit documentation at the end of each workday of which unit price work was performed and the quantities of unit price work performed or completed that day as calculated by the approved method of measurement for verification by the Owner's authorized representative
- E. If the Contractor fails to submit his proposed method of measurement for approval by the District before performing Unit price work, or fails to provide documentation of the quantities of unit price work performed at the end of each workday for verification, the District may use any method for the measurement of units it deems reasonable.
- PART 2 PRODUCTS (Not Applicable)

# SECTION 01 1625 - ALTERNATES

## PART 1 - GENERAL

## 1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

## 1.02 SUMMARY

A. This Section includes administrative and procedural requirements governing Alternates.

## 1.03 DEFINITIONS

- A. Definition: An alternate is an amount proposed by a bidder and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
  - I. The cost or credit for each alternate is the NET addition to or deduction from the Contract Sum to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.

# 1.04 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent Work as necessary to completely and fully integrate that Work into the Project.
  - I. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate whether alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other Work of this Contract.
- D. List of Alternates: See the Bid Proposal Forms for the respective prime contractors for lists of Alternates. Specification sections or drawings referenced in the Alternate description contain requirements for materials or services described under each Alternate.

# PART 2 - PRODUCTS (Not Applicable)

## SECTION 01 1650 - ALLOWANCES (IF APPLICABLE)

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for allowances.
- B. An Allowance is a lump sum amount included in the Bid Form to be paid to the Contractor for materials or services to be provided by the contractor or others and described or shown elsewhere in the Contract Documents as work to be paid for as an allowance. The amount paid under an allowance shall be adjusted by appropriate modification for the actual amount of materials or services provided.

#### 1.3 PROCEDURES FOR ALLOWANCES

- A. Allowances for materials or services to be provided by the Contractor include all necessary costs of labor, materials and equipment plus cost for delivery, installation, insurance, applicable taxes, overhead and profit. Disposal of materials shall include all cost of demolition, excavation, handling, transportation, testing and permit fees. Compensation for allowances for materials or services provided by the Contractor shall paid in accordance with the provisions of GC-12.1.4.1
- B. Allowances for materials or services to be provided by others shall include the net amount invoiced by the other party without further markup.
- C. Allowances for materials or services to be provided by the Contractor shall be paid upon receipt of documentation that the materials have been provided or services covered by the allowance have been satisfactorily completed.
- D. Allowances for materials or services to be provided by others shall be paid upon receipt of the invoice(s) submitted to the Contractor by the other party providing the materials or services and proof of payment.
- E. List of Allowances: See the Bid Proposal Forms for the respective prime contractors for lists of Allowances. Specification sections or drawings referenced in the Allowance description contain requirements for materials or services described under each Allowance.

PART 2 - PRODUCTS (Not Applicable)

PART 1 - GENERAL

- 1.1 SUMMARY
  - A. Intent:
    - 1. Maintain minimum dust conditions in occupied spaces during construction.
    - 2. No visible dust in ductwork.
    - 3. Control dust in construction areas: responsibility of implementation and coordination by all prime contractors and subcontractors.
  - B. Section Includes:
    - 1. Submittals required at start.
    - 2. Construction Indoor Air Quality (IAQ) Management Plan.
    - 3. Construction area demarcation.
    - 4. Sealing of duct openings during construction
    - 5. HVAC air filters.
  - C. Related Sections:
    - 1. Section 01 1100 Environmental Coordination
    - 2. Section 01 1300 Scheduling and Phasing
    - 3. Section 01 1750 Project Cleanliness

#### 1.2 REFERENCES

- A. American Society of Heating, Refrigerating & Air Conditioning Engineers (ASHRAE):
  - 1. ASHRAE 52.2 Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size.
- B. Sheet Metal and Air Conditioning National Contractors Association (SMACNA):
  - 1. SMACNA IAQ 2nd Edition 2007 Guideline for Occupied Buildings under Construction, Chapter 3: Control Measures.

## 1.3 PLAN REQUIREMENTS

- A. Lead contractor to develop and implement Construction IAQ Management Plan according to SMACNA IAQ as approved by Owner for compliance at the start of every project.
- B. Furnish plan for owner and revise and submit as necessary until approval received in writing from owner.
- C. Intent:
  - 1. Prevent indoor air quality problems resulting from construction and renovation process.
  - 2. Protect HVAC system during construction and renovation, control pollutant sources, and interrupt contamination pathways.
  - 3. Training for contractor staff
  - 4. Furnish compliance documentation to owner representative.

#### 1.4 SUBMITTALS

- A. Product Data: Submit description and performance data for filters including minimum efficiency reporting value (MERV) ratings.
- B. Construction IAQ Management Plan: Submit plan describing methods and procedures for implementing and monitoring compliance as specified in this Section.
- C. Submit monthly construction photographs showing compliance with Construction IAQ Management Plan.

#### 1.5 CONSTRUCTION IAQ MANAGEMENT PLAN

- A. Furnish Implement Construction IAQ Management Plan within 10 days prior to mobilization.
- B. Plan shall be created by a qualified safety director by the lead contractor on any and all projects with multiple prime contractors.
- C. No work shall begin unless approved IAQ Management Plan is in place.
- D. Review Construction IAQ Management Plan at construction kickoff meeting and progress meetings specified in Section 013000 Administrative Requirements.
- E. Distribute approved Construction IAQ Management Plan to Subcontractors and others affected by plan requirements.
- F. Oversee plan implementation, instruct construction personnel about plan compliance, and document plan results.
- G. Include the following requirements in Construction IAQ Management Plan:
  - 1. Meeting or exceeding design approaches of SMACNA IAQ.
  - 2. Names of persons responsible for ensuring adherence to Environmental Protection Plan.
  - 3. Outline training program to meet requirements of Section 3 Execution
  - 4. Furnish photographs documenting compliance with IAQ management plan.
  - 5. Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
  - 6. Names and qualifications of persons responsible for training site personnel.
  - 7. Descriptions of environmental protection personnel training program.
  - 8. Walk-off mats shall be employed for medium and large scale dust generating projects at all worker entrances/exits. Purpose of these mats is to trap dust from equipment and shoes of personnel leaving the dust contaminated work zone. Mats shall be vacuumed daily, or more frequently as necessary, using HEPA filtered vacuums. Mats shall be of sufficient size to place both feet on mat at Plastic sheeting and taping for demarcation during phases of work.
  - 9. Sealing of ductwork
  - 10. Seal all penetrations with foam to prevent dust migration.
  - 11. Filter material over ductwork in construction areas in use.
  - 12. Temporary air scrubbers with HEPA filtration
  - 13. Negative pressure air scrubbers
  - 14. Permitting adequate airing-out of new materials.
  - 15. Proper curing of concrete before covering.
  - 16. Avoiding building occupancy while construction-related pollutants are present.

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- 17. Other dust control.
- 18. Debris removal.
- 19. Names of persons responsible for ensuring adherence to IAQ Management Plan.
- 20. Names and qualifications of persons responsible for training site personnel.
- 21. Descriptions of environmental protection personnel training program.
- 22. Include measures to protect the ventilation system components and air pathways against contamination during construction. The Plan must include cleaning procedures to be employed prior to the building being occupied, in the event that ventilation system components and air pathways are not adequately protected.
- 23. Keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the work. Identify the storage, disposal and Housekeeping practices to be applied to building supplies and waste materials to protect building systems from contamination.
- 24. Housekeeping: Must occur daily by all construction employees.
- 25. The location, type, amount, sequence and timing of the various control measures, including emergency procedures, and the labor, materials and time required to implement them.
- 26. Store building materials in a weather- tight, clean area protected from dust, debris and moisture damage.
- 27. Provide 100 percent outside air continuously during installation of materials and finishes, beginning after the building is substantially enclosed. Where a supply air system is already installed, it must have filters in place before work begins.
- 28. If Owner authorizes use of permanent heating, cooling, and ventilating systems during construction period the HVAC system may be used to move both supply and return air provided the following conditions are met:
  - a. Replace all construction-related filtration media used on permanent HVAC equipment at substantial completion of the work.
  - b. Confirm that all air filters, casing, coils, air scrubbers and ducts are clean, before TAB.
  - c. Permanent return air ducts must be inspected and/or cleaned to comply with minimum requirements of General Specifications for the Cleaning of HVAC Systems published by the National Air Duct Cleaning Association www.nadca.com.
  - d. Coordinate duct testing and cleaning procedures with the commissioning requirements set forth in Division <u>0</u>1, Section <u>019115</u> to ensure that they may be witnessed and documented by the commissioning authority.
  - e. If Owner authorizes the use of permanent heating, cooling, and ventilating systems during construction period the Contractor shall install filter media having a MERV 8 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction.
- 29. The IAQ plan will also outline the use of local recirculation air scrubbers with HEPA filtration and/or negative pressure air scrubbers.
- 30. All HEPA filter air scrubbers must have the pre-filters changed monthly or more frequently as needed. The IAQ plan will document change out.
- 31. Negative pressure air scrubbers have a provision for flexible to duct to outside the demarcation area of construction, but NOT to occupied school areas.

## 1.6 CONSTRUCTION AREA DEMARCATION

- A. Each area of work as defined by phasing plan that does not have natural barriers shall have plastic barrier installed.
- B. Plastic barrier shall be installed in such a manner that tape alone is not holding it in place.
- C. Tape shall only be used to seal edge of barrier or openings, not support or retain the barrier horizontally or vertically.

#### 1.7 SEALING AREAS

A. Besides plastic barriers foam seal shall be used to provide a more thorough method of preventing dust migration during construction.

#### 1.8 SEQUENCING

- A. Section 01 1000 Summary: Requirements for sequencing.
- B. Sequence material delivery and installation to avoid exposing insulation, carpeting, acoustical ceilings, gypsum board, and other absorptive materials to contamination and moisture.
  - 1. Enclose building before storing and installing moisture-sensitive products within building under construction.
  - 2. Sequence deliveries to match phases of work

## PART 2 – PRODUCTS

#### 2.1 PLASTIC SHEETING

- A. Provide demarcation of work area of work area and isolation from occupied areas.
- B. Must be fire resistant type only.
- C. Provide entrance way that closes to contain work environment.
- D. Plastic sheet: minimum 6 mil thickness.
- E. Zipwall products are acceptable.
- 2.2 WALK OFF MATS
  - A Walk Off Mats for Construction Surface Use
    - 1. Zipwall
    - 2 Mad Matter
    - 3 Or equal

#### 2.3 DUST CONTROL AIR SCRUBBERS

- A. Plug in style portable air scrubber with HEPA filtration
  - a. BuildClean HEPA 360° AIR SCRUBBER
  - b. Novair F2100 Air scrubber
  - c. B-Air RA-650 HEPA Air scrubber
  - d. Or equal
- B Negative pressure air scrubber
  - 1. B-Air RA-650 HEPA Air scrubber
  - 2. MOUNTO AF500 1/3hp 500cfm Industrial HEPA Air scrubber Air Filtration System Dust Air Cleaner Negative Air Machine

- 3. Abatement Technologies H2KM Negative Air Machine
- 4. XPOWER X-2580 Commercial 4 Stage Filtration HEPA+ Activated Carbon Filter Purifier System, Negative Air Machine
- 5. BlueDri BD-AS-550-BL Negative Machine
- 6. Or equal

#### 2.4 HVAC AIR FILTERS FOR PERMANENT HVAC SYSTEMS DURING CONSTRUCTION

- A. Return Filters: Filtration media rated for MERV when tested according to ASHRAE 52.2.
  - 1. Construction Return Filters: MERV of 8.
  - 2. Flush-Out Return Filters: MERV of 13.
  - 3. Permanent Filters: MERV of 13 or as specified in Section 234000 HVAC Air Cleaning Devices.
- B Supply Filters: As specified in Section 234000 HVAC Air Cleaning Devices.

#### PART 3 – EXECUTION

#### 3.1 PRE-WORK ACTIVITIES

- A. The contractor shall ensure the following prior to commencing work:
  - a. Specific dust generating activities and associated controls shall be addressed in the Site Specific Health and Safety Plan.
  - b. Workforce, including sub-contractors, must be made aware of the site dust control requirements.
  - c. Check the various work zones within the building and adjacent areas to confirm the area are clean.
  - d. Access to all active work areas shall be restricted to authorized contractors.
  - e. For occupied buildings, dust generating activities shall be performed after normal hours of operations, unless prior permission if received from the Owner's Representative.

#### 3.2 WORK ACTIVITIES

- A. Dust producing projects shall be classified as small scale, medium scale or large scale projects, as detailed in paragraph 3.3.
- B. For all dust generating activities, Contractor is required to have Site Safety Officer present to ensure dust control procedures are properly followed.
- C. Any dust related complaints brought to the Contractors attention, must be immediately reported to Owner's Representative, and an incident investigation must be initiated to prevent reoccurrence.
- D. Where practical, dust generation should be eliminated or minimized through the use of proper engineering controls (i.e. containment at source such as drilling wall surface through a wet sponge, wet suppression, use of HEPA vacuum equipped tools, etc.).
- E. Dust generating power tools shall be equipped with HEPA filtered dust collectors where practical. Power tools capable of generating dust without dust collection shall only be used in conjunction with suitable work area containment and with Owner's Representative approval.
- F. Walk-off mats shall be employed for medium and large scale dust generating projects at all worker entrances/exits. Purpose of these mats is to trap dust from equipment and

shoes of personnel leaving the dust contaminated work zone. Mats shall be vacuumed daily, or more frequently as necessary, using HEPA filtered vacuums. Mats shall be of sufficient size to place both feet on mat at once.

## 3.3 PROJECT CLASSIFICATION

- A. Small Scale Project: (Dust producing activities disturbing less than one (1) square yard of material. These are small scale, short duration jobs generating minimal dust.
  - 1. Examples include:
    - a. Installing wires or cables, sanding/repairing small section of wall, cutting out gypsum board to install receptacles.
  - 2. Carry out Work as follows:
    - a. Remove all furniture, fixtures and belongings from the work area to a minimum of 5 feet in all directions.
    - b. Restrict access to immediate work area. Keep all doors closed where practical. Post "Dust Hazard Area – Do Not Enter" signs at all entrances to work area. In common areas use barrier tape to establish the regulated area.
    - c. Place a drop cloth of polyethylene sheeting immediately underneath the work area extending a minimum of 5 feet in each direction (unless flooring is easily cleanable).
    - d. Cover all air return or exhaust vents if within 5 feet of the work area with polyethylene sheeting and duct tape.
    - e. Complete the task, minimizing dust production, as prescribed in paragraph 3.2 Work Activities.
    - f. When the work is completed, wet-wipe polyethylene sheeting and flooring and if necessary, other areas close by with a damp rag.
    - g. Visually inspect the area for any remaining dust and wet wipe as necessary.
    - h. If installed, remove polyethylene sheeting from air return and exhaust vents.
    - i. Where practical, transport debris after hours using least congested and most direct routes. If any debris is spilled outside the work area, immediately wet-wipe debris.
    - j. Clean all tools and equipment before removal from the work area.
- B. Medium Scale Project (Dust producing activities disturbing greater than twenty five (25 square feet and less than 300 square feet of material) with anticipated moderate dust levels that are typically one shift or more in duration.
  - 1. Examples include:
    - a. Sanding several sheets of gypsum board.
    - b. Electrical work above ceiling tiles where general debris is known above the ceiling.
    - c. Removing numerous ceiling tiles in an area.
    - d. New wall construction.
  - 2. Carry out the Work as follows:
    - a. Determine the most effective way of isolating the work area from occupants (i.e. using plastic barriers or by sealing off doors).
    - b. Complete all items specified under small scale projects.
    - c. While performing the work, limit the dust generated by removing the

materials in sections, lightly misting the material as necessary. Debris shall be bagged immediately for disposal. In addition to wet wiping, HEPA filtered vacuum systems shall be employed where practical to limit airborne dust.

- d. When the task is completed, HEPA vacuum and/or wet wipe the polyethylene sheeting.
- e. Prior to removing any temporary wall partitions from floor to ceiling or polyethylene barriers, a final inspection shall be performed by the Site Safety Officer or designate to ensure proper cleanup has been completed. This inspection shall be documented by the Contractor and made available at the request of the Owner's Representative.
- f. Establishment of containment may result in the accumulation of dust within the enclosure. As such, the need for respiratory protection and decontamination would be greater than for small scale projects (i.e. face mask).
- **C.** Large Scale Projects (Dust Producing Activities disturbing greater than 300 square feet of material with anticipated high dust levels and typically involves multiple work shifts.
  - 1. Examples include:
    - **a.** Major demolition or construction.
    - **b.** Extensive renovations to wall or ceiling surfaces.
    - **c.** Generating significant amounts of concrete dust.
  - **2.** Carry out the Work as follows:
    - **a.** Complete all items as prescribed under the Medium Scale Projects section.
    - b. If the work produces dust that cannot be limited by removal in sections or misting and the work area configuration allows, use HEPA filtered negative air units with the intake directly across from the dust generating activity. Exhaust the HEPA unit outside the building.
    - **c.** If using a disposal cart or container to transport debris within the building, ensure the lid is tightly secured and the wheels are clean prior to exiting the work area.
    - **d.** If local source capture is employed (i.e. HEPA filtered power tool) and no significant debris anticipated then treat as a medium scale project.
    - e. Negative air units shall be left operating at the completion of cleanup, for the duration stipulated in Table 4, CAN/CSA Z317.13-F07.
    - **f.** Windows, doors, exhaust vents and supply intakes shall be sealed off in dust generating areas. Upper seals must be employed where necessary to prevent the spread of dust into adjacent areas.
    - **g.** The contractor must be able to show that the work zone is negatively pressurized in relation to adjacent occupied areas.

## 3.4 SUBMIT IAQ PLAN

- A. Furnish plan for owner approval and revise as necessary as per Section 1 and below.
- B. Written dust control (IAQ) Program
  - 1. The contractor shall have a site-specific, written program that contains the following elements:
    - a. Introduction: Project description, location, scope and schedule of work.
    - b. Personnel: Project manager, person in charge of dust control program.
    - c. Dust control dust-emitting activities: Tasks, equipment, materials, work crew.

- d. Engineering and work-practice controls: Type of control, use and maintenance procedures and how effectiveness will be verified including personal air monitoring data and schedules for air monitoring.
- e. Schedule: Timetable for implementing compliance program.
- f. Hygiene procedures: Protective clothing (beside masks) and equipment, housekeeping, hand washing stations.

#### 3.5 DOCUMENTATION

- A. Photograph construction operations to show compliance with SMACNA IAQ and Construction IAQ Management Plan.
- B. Section 013300 Submittal Procedures: Requirements for construction photographs.
  - 1. Take photographs of trainer and housekeeping training sessions.
  - 2. Take minimum of six photographs on minimum of three different occasions during construction to show consistent adherence with specified requirements.
  - 3. Identify photographs as required in Section 013300 Submittal Procedures and identify SMACNA IAQ approach illustrated in each photograph.
  - 4. Submit photographs of each and every instance of HEPA air scrubber pre-filter replacement.

#### 3.6 TRAINING

- A. Training
  - 1. Employee training: An employer whose operations include using powered tools or equipment to cut, grind, core, or drill concrete or masonry materials shall provide training on the following topics to all employees prior to their assignment to jobs or work areas where the employer will be conducting these operations that potentially expose them to dust control-containing dusts:
    - a. The potential health hazards of overexposure to airborne dust generated from concrete and masonry materials, including silicosis, lung cancer, chronic obstructive lung disease (COPD) and decreased lung function.
    - b. Methods used by the employer to control employee exposures to airborne dust from concrete and masonry materials, including wet cutting, local exhaust ventilation systems, and process isolation, as applicable.
    - c. Proper use and maintenance of dust reduction systems, including the safe handling and disposal of waste materials collected in connection with their use.
    - d. The importance of good personal hygiene and housekeeping practices when working in proximity to dust from concrete and masonry materials including: not smoking tobacco products; appropriate methods of cleaning up before eating, and appropriate methods of cleaning clothes.
    - e. Meet or exceed OSHA requirements including permissible exposure limits, requirements for engineering controls, and mask protection

program requirements.

- 2. Supervisor training. Prior to supervision of employees who will be cutting, grinding, drilling, or coring concrete or masonry materials, supervisory employees shall be trained on the following topics:
  - a. The information required to be provided by subsection above. Identification of tasks the employees will perform, which may result in employee exposure to concrete or masonry dust.
  - b. Procedures for implementation of the measures used by the employer to reduce the exposure to concrete or masonry dust.
  - c. Measures for verifying the effectiveness of controls.
- 3. Periodic training. On jobs that last more than one year, the employer shall conduct the training required by this section at least annually.

## 3.7 TRAINING RECORDS

- A. General Requirements: The contractor must maintain a record of all training required by this part within the preceding three (3) years for each person who performs or directly supervises this specific job function (Masonry, Grinding, Cutting and Sawing). These training records must be maintained during the time that the person performs or supervises this job function (Masonry, Grinding, Cutting and Sawing). These training records must be kept for direct employees of the contractor as well as independent contractors, subcontractors and any other person who performs or directly supervises these job functions for the contractor.
- B. Location of Records: The contractor must retain the training records required by this part to include all initial and recurrent training received within the preceding three (3) years for all persons performing or directly supervising this job function (Masonry, Grinding, Cutting and Sawing). Records may be maintained electronically or by other acceptable means. When the person ceases to perform or directly supervise this job function (Masonry, Grinding, Cutting and Sawing) the contractor must retain the training records for an additional ninety (90) days.
- C. Contents of Records: Each training record must contain the following:
  - a. The individual's name;
  - b. The most recent training completion date;
  - c. A description, copy or reference to training materials used to meet training requirements;
  - d. The name of the person or organization providing the training.

#### 3.8 DEMARCATION OF WORK AREA

A. Provide active means to prevent dust, particulates and odors in the air from dispersing into the occupied areas of the facility. <u>All contractors and Sub-contractors must supply</u> and install dust walk off pads/sticky mats at all exits to all contractor work areas. The mat(s) are mounted on a reusable, hard plastic, frame with a nonskid backing. When all layers of the mat are eventually used, a new refill pad can be easily installed on the reusable frame.

- 1. The contractor shall conduct daily visual inspections of the site for the presence of visible dust during grinding and cutting tasks. The presence of such dust is a sign that the controls are not doing their job.
- 2. Alter/isolate the air handling system in the area where the work is being performed to prevent contamination of the duct system. The contractor staff shall be responsible for blocking off supply ducts and covering return air ducts to prevent contamination with dust and particulates.
- 3. Construct plastic barrier to maintain airflow from clean area through and into work area. Require all personnel to pass through this room. Create overlapping flap (minimum of 2 feet wide) at plastic enclosures for personnel access.
- 4. Complete all construction barriers before construction work begins.
  - b. Where demarcation of work area is possible; utilize building walls and doors (all doors except construction access doors), close and seal with duct tape to prevent dust and debris from escaping.
  - c. Where construction, demolition, or reconstruction is not capable of demarcation of work area by utilizing existing building walls and doors, use one of the following methods of isolation:
    - 1) Airtight plastic barriers extending from floor to ceiling decking, or ceiling tiles if not removed.
    - 2) Plastic barrier seams to be sealed with duct tape to prevent dust and debris from escaping.
    - 3) Drywall barriers. Seams or joints will be covered or sealed to prevent dust and debris from escaping.
    - 4) Seal holes, pipes, conduits and punctures to prevent dust migration.
    - 5) Place isolation barriers at penetration of ceiling envelopes, chases and ceiling spaces to stop movement of air and debris.
    - 6) When openings are made into existing ceilings in work areas, where possible, the decontamination unit should be used which will seal off openings and fit tightly from ceiling to floor.
    - 7) Construct to maintain airflow from clean area through and into work area. Require all personnel to pass through this room. Create overlapping flap (minimum of 2 feet wide) at plastic enclosures for personnel access.
    - 8) Maintain negative pressure within the work site including venting outside of the building.
    - 9) Direct pedestrian traffic from construction areas away from occupied areas to limit opening and closing of doors (or other barriers) that may cause dust dispersion, entry of contaminated air, or tracking of dust to occupied areas.
    - 10) Place dust mats (walk off pads) at entrance to work area and replace or clean regularly.
    - 11) Contain construction waste before being transported in covered containers.

## 3.9 DUST CONTROL AIR SCRUBBERS

- A. Install portable air scrubber(s) with HEPA filters at locations within construction area to maintain 4 air changes per hour. Check pre-filters weekly and replace as required.
- B. Install negative pressure air scrubbers to move a minimum of 25 percent air volume of construction space per hour out of construction area. (For example a 100 feet by 100 feet area of construction with 10 foot floor to deck has 100,000 cubic feet volume. The negative pressure air scrubber must move 25,000 cubic feet per hour or minimum 417 CFM.)
- C. Maintain negative pressure within the work site including venting outside of the building.
- D. Where venting to outside is not possible the end of each duct must discharge into a bucket

of water (below water level) to remove any remaining particles.

## 4.0 FILTER INSTALLATION AND REPLACEMENT

- A. Install construction return filter at each return grille before operating permanent air handlers during construction.
- B. Replace filters after completing construction and before conducting building flush-out.
  - 1. Replace construction return filters with flush-out return filters.
  - 2. Replace supply filters.
- C. Replace filters after completing construction and before occupancy.
  - 1. Replace construction return filters with permanent filters.
  - 2. Replace supply filters.

#### 4.1 HOUSEKEEPING

- A. Section 01 7000 Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Progress Cleaning: clean in accordance with Section 01 1750.
  - 1. Leave Work area clean at end of each day.
- C. All SDP contractors and Sub-contractors shall avoid usage of any equipment and/or tools resulting in excessive noise or vibration that impacts the Educational Process during Occupied School Hours.
- D. Provide active means to prevent dust, particulates and odors in the air from dispersing into the occupied areas of the facility. All contractors and Sub-contractors must supply and install dust walk off pads/sticky mats at all exits to all contractor work areas. The mat is mounted on a reusable, hard plastic, frame with a nonskid backing. When all layers of the mat are eventually used, a new refill pad can be easily installed on the reusable frame.
- E. Direct pedestrian traffic from construction areas away from occupied areas to limit opening and closing of doors (or other barriers) that may cause dust dispersion, entry of contaminated air, or tracking of dust to occupied areas.
- F. Place dust mats (walk off pads) at entrance to work area and replace or clean regularly.
- G. Contain construction waste before being transported in covered containers.
- H. In all cases, work-practice or administrative controls that reduce dust at the source where it is being generated shall be the control of choice. In those instances where such controls cannot be used even temporarily employees shall be protected with masks that are used as part of a mask protection program. Additionally, the contractor must document how they determined that work practice or administrative controls could not be used.
- I. Safety and Effectiveness of Dust Control Systems:
  - 1. Procedures shall be implemented to ensure that dust reduction systems maintain their effectiveness for dust reduction throughout the work shift.
  - 2. Dust reduction systems shall be installed, operated, and maintained in accordance with manufacturer recommendations when there are such.
- J. When electrical tools are used with water as a dust reduction system, it shall be done in accordance with applicable requirements of electrical safety.
- K. Dust Collection/Management:
  - 1. Dust shall be contained and disposed of in bags that can effectively hold dust without breaking.
  - 2. Work surfaces and clothing shall be cleaned with vacuums and not by dry sweeping or the use of compressed air.
  - 3. Masks shall be worn when changing out bags or handling dust

## 4.2 CLOSEOUT

A. Upon Completion of Project:

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- 1. Do not remove barriers from the work area until completed project is thoroughly cleaned.
- 2. Vacuum work area including barriers.
- 3. Wet mop area and wipe down horizontal surfaces.
- 4. Barrier material should be wet wiped before removal.
- 5. Remove barrier material carefully to minimize spreading of dirt and debris associated with construction.
- 6. Remove alterations to the air handling system in the area where the work is being performed.
- 7. Contain construction waste before being transported in covered containers.

## END OF SECTION

## **END OF SECTION**

#### SECTION 01 1750 PROJECT CLEANLINESS

#### PART 1 - GENERAL

- 1.1 PROJECT CLEANLINESS
  - A. Each contractor on a project is responsible for each section.
  - B. Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
  - C. Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site.
  - D. Clear snow and ice from access to building, bank/pile snow in designated areas only.
  - E. Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
  - F. Provide on-site containers for collection of waste materials and debris.
  - G. Remove waste material and debris from site and deposit in waste container at end of each working day.
  - H. Dispose of waste materials and debris off site.
  - I. Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
  - J. Store volatile waste in flammable and combustible containers, and remove from premises at end of each working day.
  - K. Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
  - L. Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
  - M. Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.
  - N. Use HEPA vacuum to clean up work generated debris when working in occupied building.
  - O. Operator must use mask when using power tools that may generate dust at a minimum in accordance with health and safety plan.

## 1.2 FINAL CLEANING

- A. When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining work.
- B. Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

- C. Prior to final review, remove surplus products, tools, construction machinery and equipment.
- D. Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site.
- E. Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- F. Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors, doors and ceilings.
- G. Clean lighting reflectors, lenses, and other lighting surfaces.
- H. Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- I. Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- J. Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- K. Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- L. Remove dirt and other disfiguration from exterior surfaces.
- M. Sweep and wash clean paved areas.
- N. Clean equipment and fixtures to a sanitary condition; clean or replace filters of mechanical equipment.
- PART 2 Products
- 2.1 NOT USED

#### PART 3 - Execution

3.1 NOT USED

## END OF SECTION

SECTION 01 1800 – SYSTEM CHECKOUT, STARTUP AND TESTING (IF APPLICABLE)

PART 1 – GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. General Conditions Article GC-7.27 Reference Standards and Industry Specifications for application construction industry standards
- C. General Conditions Article GC-7.5 and Supplementary Conditions SC-25 for warranty and bond requirements.
- D. Supplementary Conditions Article SC-30 Operation and Maintenance Data for operation and maintenance manual requirements.
- E. Supplementary Conditions Article SC-31 Demonstration and Training
- F. Divisions 2 through 17, for specific technical requirements.

# 1.2 SUMMARY

A. This specification section specifies administrative and procedural requirements for the system checkout, startup and performance testing process, including but not necessarily limited to the following:

## 1.3 DESCRIPTION

A. Abbreviations. The following are common abbreviations used in the Specifications.

AOR - Architect of Record and AOR Subcontractors (Subconsultants), Architect/Engineer **BAS – Building Automation System** CC - Controls Contractor Contractor - Prime Contractor, Contractor and their Subcontractors and Vendors EMS – Energy Management System FT- Functional performance test HVAC - Heating, Ventilation and Air Conditioning MEP – HVAC, Mechanical, Electrical, and Plumbing Contractors MR – Manufacturers' Representative NC - Normally Closed NO - Normally Open PM – Project Manager PO - Plant Operators/Building Engineers SDP - School District of Philadelphia SCST-System Checkout, Startup and Testing SUBS - Subcontractors to Single or Multi-Prime Contractors

- TAB Test, Adjust and Balancing
- B. System Checkout, Startup and Testing is a systematic process of ensuring that selected equipment and building systems perform interactively according to the design intent for the School District of Philadelphia's (SDP's) operational needs. The process encompasses and coordinates the traditionally separate functions of system documentation, installation, inspection, quality control and quality assurance, equipment startup, control system calibration, testing and balancing, performance testing and training.
- C. This specification section describes the process, the responsibilities common to all parties and specific responsibilities of the contractor and. The unique responsibilities of the various parties in the process are detailed in the technical specifications.

- D. System Checkout, Startup and Testing during the construction phase is intended to achieve the following specific objectives in accordance with the Contract Documents:
  - 1. Verification that applicable equipment and systems are installed in accordance with contract documents, manufacturer's recommendations, and meet industry standards. In addition, equipment and systems shall receive adequate operational checkout by installing Contractor.
  - 2. Verification and documenting the proper performance of equipment and systems through functional testing.
  - 3. Verification that O&M documentation provided to the SDP is complete and useable.
  - 4. Verification that the SDP's Plant Operators/Building Engineers (PO) are adequately trained.
- E. The System Checkout, Startup and Testing process does not take away from or reduce the responsibility of the Architect of Record (AOR) or Contractor(s) to provide finished and fully functioning equipment and systems.
- F. The AOR shall oversee implementation of the System Checkout, Startup and Testing process for this project.

## 1.4 COORDINATION

- A. The System Checkout, Startup and Testing Team Team members include the PM, AOR and their sub-consultants, SDP, contractors and their subcontractors and/or PO and others that shall be required during the construction and acceptance phases of the contract. Team members shall be added or deleted to suit the individual project's requirements.
- B. Management. The AOR provides oversight of the activities of team members in the System Checkout, Startup and Testing process including the development of any required plans and reports. The AOR reports to the PM and informs the team of its findings. All members of the team shall work together to fulfill their contracted responsibilities and meet the objectives of the Contract Documents.
- C. Scheduling. The Contractor schedules system checkout, startup and testing activities with the AOR and other team members according to established protocols within the Contract Documents. The Contractor in coordination with the AOR shall integrate all commissioning activities into the CPM project schedule. As construction proceeds, the Contractor shall update activities in the CPM project schedule.
  - 1. The AOR, PM and the Contractor shall define the initial schedule of primary system checkout, startup and testing events at the work scope meeting with team members.
  - 2. The system checkout, startup and testing activities schedule and updates shall be incorporated in the CPM project schedule.

## 1.5 SYSTEM CHECKOUT, STARTUP AND TESTING PROCESS

- A. System Checkout, Startup and Testing Plan. This plan provides guidance in the execution of the system checkout, startup and testing process. Following the initial work scope meeting the system checkout, startup and testing team shall finalize the Plan. The plan may be supplemented as the project progresses at the direction of the PM or AOR.
- B. Process Overview. The following provides a brief overview of the typical system checkout, startup and testing tasks and the general order in which they occur.
  - 1. System Checkout, Startup and Testing during the construction phase begins with a work scope meeting conducted by the AOR and PM where the process is reviewed with the team members.

- 2. The Contractor develops the preliminary system checkout, startup and testing plan for review by the AOR.
- 3. The AOR schedules additional meetings throughout the construction phase with team members to plan, scope, coordinate, schedule future activities and resolve problems.
- 4. The Contractor develops the preliminary System Checkout, Startup and Testing Plan in coordination with the AOR. Equipment submittals/documentation shall be submitted to AOR by the Contractor during the normal submittal process and shall include detailed checklist and start-up procedures from equipment suppliers/vendors. The AOR provides accepted documentation for inclusion in the Final System Checkout, Startup and Testing Plan.
- 5. In general, the checkout and performance verification proceeds from the component level to systems and intersystem levels with checklists and start-up being completed by the Contractor before functional performance testing.
- 6. Functional performance testing is completed after the checklists and startup is completed. The TAB subcontractor shall perform testing at all operating settings including diversification from which the design is based.
- C. The Contractor(s) shall develop a detailed plan for executing checkout, start-up and functional performance tests. The PM and AOR review the contractors' plan to ensure it is compatible with the construction schedule for the overall project.
- D. The AOR reviews O&M documentation for completeness and indicates its acceptance. O&M documentation is required to be submitted and accepted by the AOR prior to conducting checkout, start-up, or functional performance testing unless determined otherwise by the PM. The AOR verifies and documents this process.
- E. The Contractor, under their own direction, executes the checkouts and performs start-up. The Contractor documents that the checkouts and start-up were completed according to the accepted System Checkout, Startup and Testing Plan. When deemed necessary, the PM and the AOR (as necessary), and other team members as required shall witness start-up of equipment.
- F. The functional performance test procedures shall be executed by the Contractor. These tests shall be witnessed by the AOR. Others including the PM and SDP will be requested to attend as applicable.
- G. Items of non-compliance in material, installation, setup or performance shall be corrected by the Contractor at their own expense within 5 calendar days or as agreed to by the AOR and the system retested as required due to deficiencies noted or failure to pass any portions of checkout and start-up for individual items of equipment or functional performance testing protocols.
- H. The contractor(s) provide their training plan for review and acceptance by the AOR and the PM. The AOR coordinates demonstration and training sessions with the PM, PO, SDP, and the Contractor(s). The AOR participates in O&M training with the contractor(s) and SDP. Upon completion of the training, the AOR verifies and documents to the SDP that the training has been completed.
- I. System Checkout, Startup and Testing according to the Plan requires completion of checkout and start-up (pre-functional, and functional testing and training before issuance of a letter of Substantial Completion.
- J. Deferred testing shall be conducted as specified or required.
- K. A System Checkout, Startup and Testing Report shall be provided to the SDP by the AOR upon completion of the process.
- 1.6 RESPONSIBILITIES

- A. The detailed responsibilities of the Contractor in the System Checkout, Startup and Testing process are provided in the following paragraphs and in Division 2 through Division 17 inclusive and are detailed within the contract documents. Specific responsibilities of the AOR, PM and SDP are detailed in the System Checkout, Startup and Testing Plan..
- B. All Parties to the System Checkout, Startup and Testing process are responsible for the following:
  - 1. Follow the Plan.
  - 2. Attend work scope meeting and additional meetings as required by the contract documents and the AOR and PM.
- C. Contractor
  - 1. Construction and Acceptance Phase
    - a. Attends a System Checkout, Startup and Testing work scope meeting and other necessary meetings scheduled by the PM or AOR to facilitate the process,
    - b. Ensures that System Checkout, Startup and Testing activities are scheduled into the CPM project schedule,
    - c. Includes the cost of System Checkout, Startup and Testing in the total contract price and as a separate line item on their Schedule of Values,
    - d. Develops an enhanced start-up and initial systems checkout plan in coordination with the AOR.
    - e. Provides all requested submittal data, including vender checklists and detailed start-up procedures, and specific responsibilities of the SDP to keep warranties in force,
    - f. Provides information requested by the AOR and PM regarding equipment sequence of operation and testing procedures,
    - g. Furnishes a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to tested equipment to the AOR,
    - h. Executes all system checkout, startup and testing activities according to the Contract Documents and schedule,
    - i. Includes all testing equipment, special tools and instruments (only available from vendor specific to a piece of equipment) required for testing in accordance to the Contract Documents. **Special tools and instruments shall become the property of SDP.**
    - j. The Contractor shall forward them to the SDP via the AOR.
    - k. Implements test procedures for equipment installed by factory representatives,
    - I. Performs all equipment and system testing
    - m. Corrects deficiencies and makes necessary adjustments to O&M manuals and as-built
    - n. Implements and documents the training of SDP PO pursuant to the contract requirements,
    - o. Prepares and submits O&M manuals in accordance with the Contract Documents. All information included shall clarify and update the original sequences of operation to as-built conditions
    - p. Provides 3 ring binders containing all system checkout, startup and testing related documents as noted in the Plan
  - 2. Warranty Period
    - a. Performs seasonal or deferred functional performance testing witnessed by the AOR and PM according to the specifications,

- b. Corrects deficiencies and makes necessary adjustments to O&M manuals and as-built drawings for applicable issues identified during testing (includes seasonal testing),
- c. 10 months but not later than 11months after Final Completion of the Project, participates with SDP and AOR in guarantee/warranty review of Project.
- d. Corrects construction contract related deficiencies as a result of guarantee/warranty inspection in addition to other required corrective actions for deficiencies attributable to the contractor.
- e. Corrections shall be made within seven (7) calendar days or as agreed to with the SDP.

## 1.7 DEFINITIONS

- A. Basis of Design The basis of design is the documentation of the primary thought processes and assumptions behind design decisions that were made to meet the design intent. The basis of design describes the systems, components, conditions and methods chosen to meet the design intent.
- B. BAS Building Automated System
- C. Architect of Record (AOR) Provides oversight of system checkout, startup and testing activities and monitors their implementation.
- D. System Checkout, Startup and Testing Plan An overall plan that provides the structure, schedule and coordination planning for the system checkout, startup and testing process.
- E. System Checkout, Startup and Testing Final Report A final report to the SDP that summarizes the activities during the system checkout, startup and testing process, includes documentation of those activities including acceptance testing, evaluates the process and includes recommendations for improvement.
- F. Data logging monitoring flows, currents, status, pressures, etc. of equipment using stand-alone data loggers separate from the control system.
- G. Design Intent a dynamic document that provides the explanation of the ideas, concepts and criteria that were considered to be very important to the SDP.
- H. Check-out and Start-up initial activities performed by manufacture's representative to verify proper installation of equipment.
- I. Functional Performance Test (FT) test of the dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. Functional testing is the dynamic testing of systems (rather than just components) under full operation (e.g., the chiller pump is tested interactively with the chiller functions to see if the pump ramps up and down to maintain the differential pressure set point). Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarm, power failure, etc. The systems are run through all the control system's sequences of operation and components to verify that they respond and interlock as required.
- J. Indirect Indicators indicators of a response or condition (e.g. the reading from a control system screen reporting a damper to be 100% closed.)
- K. Monitoring the recording of parameters (flow, current, status, pressure, etc.) of equipment operation using data loggers or the trending capabilities of control systems.
- L. Over-written Value writing over a sensor value in the control system to see the response of a system (e.g., changing the outside air temperature value from 50F to 75F to verify

economizer operation).

- M. Checkout a list of items to inspect and elementary component tests to conduct that verify proper installation of equipment. Checkouts are primarily static inspections and procedures to prepare the equipment or system for initial operation (e.g., belt tension, oil levels OK, labels affixed, gages in place, sensors calibrated, etc.). However, some checkouts entail simple testing (startup) of the function of a component, a piece of equipment or system (such as measuring the voltage imbalance on a three phase pump motor of a chiller system).
- N. Trending monitoring using the building control system.

## PART 2 – PRODUCTS

#### 2.1 TEST EQUIPMENT

- A. All standard testing equipment required to perform startup and initial checkout and required functional performance testing shall be provided by the Contractor for the equipment being tested. For example, the Mechanical Contractor performing the work specified in Division 15 shall be responsible for all standard testing equipment for the HVAC system and control systems specified therein, except for equipment specific to and used by the TAB subcontractor in their testing and balancing responsibilities. Two-way radios shall be provided by the Contractor.
- B. Special equipment, tools and instruments (only available from vendor for specific equipment) required for testing according to the Contract Document shall be included in the contract and turned over to the SDP prior to substantial completion.
- C. Data-logging equipment and software required to test equipment shall be provided by the Contractor (excludes specialized tools and instruments) but shall not become the property of the Owner.
- D. All testing equipment shall be of sufficient quality and accuracy to test and or measure system performance within the tolerances specified in the Contract Documents. If not otherwise noted, the following minimum requirements apply: Temperature sensors and digital thermometers shall have a certified calibration within the past year and a resolution of + or 0.1°F. Pressure sensors shall have an accuracy of + or 2.0% of the value range being measured (not full range of meter) and have been calibrated within the last year. All equipment shall be calibrated according to the manufacturer's recommended intervals. Damaged testing equipment shall be replaced immediately. Calibration tags shall be affixed or certificates readily available.

## PART 3 – EXECUTION

#### 3.1 MEETINGS

- A. Scoping Meeting –Prior to the commencement of construction, the AOR shall schedule, plan and conduct a system checkout, startup and testing scoping meeting with the entire team in attendance, at a time deemed reasonable to the team. Meeting minutes shall be distributed.
- B. Miscellaneous Meetings Other meetings shall be planned and conducted by the AOR as construction progresses as often as deemed necessary to complete System Checkout, Startup and Testing process. These meetings shall cover coordination, deficiency resolution and planning issues with particular Contractors relating to these requirements.

## 3.2 REPORTING

- A. The AOR regularly communicates with all members of the System Checkout, Startup and Testing Team, keeping them apprised of progress and scheduling changes through memos and progress reports.
- B. Testing, review acceptances and non-conformance and deficiency reports are made regularly with the review and testing as described in later sections of the specification.
- C. A System Checkout, Startup and Testing Final Report by the AOR shall be provided to the SDP focusing on evaluating commissioning process issues and identifying areas where the process could be improved. All acquired documentation, logs, minutes, reports, deficiency lists, communications, findings, unresolved issues, etc., shall be compiled in appendices and provided with the summary report. Checkout and startup certification and functional test results shall be part of the final report.

#### 3.3 SUBMITTALS

- A. The Contractor shall provide submittal documentation required to facilitate the system checkout, startup and testing work. These requests shall be integrated into the normal submittal process and protocol of the construction team. At a minimum, the request shall include the manufacturer and model number, the manufacturer's printed installation instructions, checkout, and detailed start-up procedures, full sequences of operation, and O&M data, performance data and performance curves, any performance test procedures, control drawings and details of owner contracted tests and warranty information.
- B. Submittals shall be reviewed and accepted by the AOR for conformance to the Contract Documents. The AOR shall notify the Contractor of items missing or areas that are not in conformance with the Contract Documents of which require resubmission.
- C. The O&M manuals are the responsibility of the Contractor. The AOR shall review them and confirm whether or not they are acceptable.

### 3.4 CHECKOUT AND START-UP

- A. The following procedures apply to all equipment to be checked out, started up and tested. Some systems that are not comprised so much of actual dynamic machinery, e.g., electrical system power quality, may have very simplified checkout and start-up requirements.
  - 1. Checkout and Start-up
    - a. the contractor responsible for the purchase of specific equipment shall provide vendor information for use in supplementing equipment checkout specified in the technical sections of the contract.
    - b. checkout of equipment as specified and as required by the manufacturer are important to ensure that the equipment and systems are operational.
    - c. by reviewing equipment installation against the checkout requirements ensures that functional performance testing may proceed without unnecessary delays.
    - d. each piece of equipment shall receive full checkout. No sampling strategies are to be used.
    - e. checkout and equipment start-up must be successfully completed prior to formal functional performance testing of equipment or sub-systems of the given system.
    - f. parties responsible for completing checkout and start-up are identified in the

commissioning plan.

- g. the Contractor(s) shall complete the checkout and start-up, and provide documentation to the AOR.
- 2. Full Start-up Plan
  - a. the Contractor coordinates development of full start-up plans with their Subs and Vendors.
  - b. the plans must include checklists and procedures with specific boxes and/or lines for recording and documenting the inspection and results.
  - c. the plans must also include a place to record a summary statement and a signature block at the end of the plan.
  - d. the start-up plans shall be submitted to the AOR for acceptance prior to their implementation.
  - e. the PM and AOR (as required) shall witness the full start-up of equipment and systems.
  - f. once start-up is completed and accepted, the AOR will document the results to for incorporation into the Final Report.
  - g. the full start-up plan shall include the following:
    - 1) Checkout and start-up.
      - 2) The manufacturer's standard written start-up procedures copied from the installation manuals with check boxes by each procedure and a signature block added by hand at the end.
      - 3) The manufacturer's normally used field checkout sheets.
- B. Sensor Calibration: Control system PC checkout and calibration of all sensors shall be included as part of the checkout and start-up performed by the CC according to the following procedures:
  - 1. All Sensors: Verify that sensors with shielded cable are grounded only at one end. For sensor pairs that are used to determine a temperature or pressure difference, make sure they are reading within 0.2°F of each other for temperature and within a tolerance of equal to 2% of the reading of each other, for pressure. Tolerances for critical applications shall be stricter.
  - Sensors without Transmitters Standard Application: Make a reading with a calibrated test instrument within 6 inches of the site sensor. Verify that the sensor reading (via the permanent thermostat, gage or building automation system (BAS) is within the tolerances in Table 3.4.B. of the instrument measured value. If not, calibrate or replace sensor.
  - 3. Sensors with Transmitters Standard Application: Disconnect sensor. Connect a signal generator in place of the sensor. Connect ammeter in series between transmitter and BAS control panel. Using manufacturer's resistance-temperature data simulate minimum desired temperature. Adjust transmitter potentiometer zero until 4mA is read by the ammeter. Repeat for the maximum temperature matching 20mA to the potentiometer span or maximum and verify at the BAS. Reconnect sensor. Make a reading with the calibrated test instrument within 6 inches of the site sensor. Verify that the sensor reading (via the permanent thermostat, gage or BAS) is within the tolerances in the Table 3.4.B. of the instrument-measured value. If not, replace sensor and repeat. For pressure sensors, perform a similar process with a suitable signal generator.
  - 4. Valve and Damper Stroke Setup and Check Procedures
    - a. Readout. For all valve and damper actuator positions checked, verify the actual position against the readout.
    - b. Set pumps or fans to normal operating mode. Command valve or damper

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E closed, visually verify that valve or damper is closed and adjust output zero signal as required. Command valve or damper open, verify position is full open and adjust output signal as required. Command valve or damper to a few intermediate positions. If actual valve or damper position doesn't reasonably correspond, replace actuator or add pilot positioner (for pneumatics).

- c. Closure for heating coil valves (NO): Set heating set point 20°F above room temperature. Observe valve open. Remove control air or power from the valve and verify that the valve stem and actuator position do not change. Restore to normal. Set heating set point to 20°F below room temperature. Observe the valve close. For pneumatics, by override, increase pressure to valve by 3 psi (do not exceed actuator pressure rating) and verify valve stem and actuator position does not change. Restore to normal. Closure for cooling coil valves (NC): Set cooling set point 20°F above room temperature. Observe the valve close. Remove control air or power from the valve and verify that the valve stem and actuator position do not change. Restore to normal. Set cooling set point to 20°F below room temperature. Observe valve stem and actuator position do not change. Restore to normal. Set cooling set point to 20°F below room temperature. Observe valve open. For pneumatics, by override, increase pressure to valve by 3 psi (do not exceed actuator pressure rating) and verify valve stem and actuator position do not change. Restore to normal. Set cooling set point to 20°F below room temperature. Observe valve open. For pneumatics, by override, increase pressure to valve by 3 psi (do not exceed actuator pressure rating) and verify valve stem and actuator position does not change. Restore to normal.
- C. Execution of Checkout and Start-up Procedures
  - 1. Four (4) weeks prior to start-up, the Contractor shall schedule start-up with the AOR. The performance of the checkout and start-up are directed and executed by the Contractor. The AOR shall review and accept the procedures for each piece of primary equipment.
  - The AOR shall observe, at minimum, the procedures for each piece of primary equipment (Sampling is not permitted during equipment checkout).
  - 3. The Contractor shall provide the AOR with a signed and dated copy of the completed checkout and start-up certification with a copy of the field quality control requirements initialed when completed and equipment manufacturer's checkout form is completed.
  - 4. Only individuals that have direct knowledge and witnesses that a line item task on the checkout and start-up shall initial or check that item off.
- D. Deficiencies, Non-Conformance and Acceptance in Checklists and Start-up Procedures
  - 1. The Contractor shall clearly list any outstanding items of the initial checkout and start-up procedures that were not completed successfully on an attached sheet. The procedures form and any outstanding deficiencies shall be provided to the AOR within two (2) days of test completion for review.
  - 2. The AOR shall review the report and submit it with his comments to the Contractor. The AOR shall oversee the Contractor in collecting and retesting deficiencies or uncompleted items. The Contractor shall correct all areas that are deficient in the checklists and tests within 5 calendar days or as mutually agreed to between the Contractor and AOR. The Contractor shall notify the AOR as soon as outstanding items have been corrected and resubmit an updated start-up report and a Statement of Correction on the original non-compliance report. When satisfactorily completed the AOR recommends acceptance of the execution of checkout and start-up of each piece of equipment to the Contractor using a standard form.
  - Items left incomplete, which later cause deficiencies or delays during functional SYSTEM CHECKOUT, STARTUP AND TESTING 01 1800 PAGE 9 of 16

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testing, may result in back charges to the responsible party.

- 3.5. FUNCTIONAL PERFORMANCE TESTING
  - A. This subsection applies to all functional testing for all technical divisions of the specifications.
  - B. Objectives and Scope: The objective of functional performance testing is to demonstrate that each system is operating according to the documented design intent and Contract Documents. Functional testing facilitates bringing the systems from a state of substantial completion to full dynamic operation. Additionally, during the testing process, areas of deficient performance are identified and corrected, improving the operation and functioning of the systems.
    - 1. Development of Test Procedures: Before test procedures are written, the contractor shall submit to the AOR all requested documentation, equipment and systems, current change orders, updated points list, program code, control sequences and parameters. Specific test procedures based on the Design Intent to verify and document proper operation of each piece of equipment and system shall be implemented. The AOR reviews documentation from the contractor that verifies that the tests were satisfactorily completed and includes the documentation in the Final Plan.
    - 2. The AOR shall review owner-contracted, factory testing or required owner acceptance tests, including documentation format, and shall determine what further testing or format changes may be required to comply with the Specifications. Redundancy of testing shall be minimized.
    - 3. The purpose of any given specific test is to verify and document compliance with the stated criteria of acceptance.
    - 4. All test results shall include the following information:
      - a. system and equipment or component name(s)
      - b. equipment location and ID number
      - c. unique test ID number, and reference to unique checkout and start-up documentation ID numbers for the piece of equipment:
      - d. date of test
      - e. project name
      - f. participating parties
      - g. a copy of the specification section describing the test requirements
      - h. a copy of the specific sequence of operations or other specified parameters being verified
      - i. formulas used in any calculations
      - j. required pre-test field measurements
      - k. instructions for setting up the test, if necessary.
      - I. special precautions, alarm limits, etc.
      - m. specific step-by-step procedures to execute the test, in a clear, sequential and repeatable format
      - n. Test results shall clearly indicate if the test passed or failed.
      - o. a section for comments
      - p. signatures and date block for the PM, AOR and PO
  - C. Test Methods
    - 1. Functional performance testing and verification shall be achieved by a combination of manual testing (persons manipulate the equipment and observe performance) and simultaneous monitoring of the performance via the BAS. Analysis of the

# SOUTHWARK ELEMENTARY SCHOOL - FIRE ALARM SYSTEM REPLACEMENT

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E results may also include using the control system's trend log capabilities or stand-alone data loggers. The AOR shall determine with the Contractor which method is most appropriate for tests that do not have a method specified.

- 2. Simulated Conditions: Simulating conditions (not by an overwritten value) shall be allowed, though timing the testing to experience actual conditions is encouraged wherever practical.
- 3. Overwritten Values: Overwriting sensor values to simulate a condition, such as overwriting the outside air temperature reading in a control system to be something other than it really is, shall be allowed, but shall be used with caution and avoided when possible. Such testing methods often can only test a part of a system, as the interactions and responses of other systems shall be erroneous or not applicable. Simulating a condition is preferable, e.g., for the above case, by heating the outside air sensor with a heat source rather than overwriting the value or by altering the appropriate set point to see the desired response.
- 4. Simulated Signals: Using a signal generator which creates a simulated signal to test and calibrate transducers and DDC constants is generally recommended over using the sensor to act as the signal generator via simulated conditions or overwritten values.
- 5. Altering Set Points: Rather than overwriting sensor values, and when simulating conditions is difficult, altering set points to test a sequence is acceptable. For example, to see the AC compressor lockout work at an outside air temperature below 55°F, when the outside air temperature is above 55°F, temporarily change the lockout set point to be 2°F above the current outside air temperature.
- 6. Indirect Indicators: Relying on indirect indicators for responses or performance shall be allowed only after visually and directly verifying and documenting, over the range of the tested parameters, that the indirect readings through the control system represent actual conditions and responses. Much of this verification is completed during checkout and start-up.
- 7. Setup: Each function and test shall be performed under conditions that simulate conditions as close as is practically possible. The Contractor shall provide all necessary materials, system modifications necessary to produce the required flows, pressures, temperatures, or other parameters. Necessary to execute the test according to the specified conditions. Upon completion of the test, the Contractor shall return all affected building equipment and systems, due to these temporary modifications, to their pre-test condition.
- 8. Sampling: Multiple identical pieces of non-life-safety or otherwise non- critical equipment may be functionally tested using a sampling strategy. Significant application differences and significant sequence of operation differences in otherwise identical equipment invalidates their common identity. A small size or capacity difference, alone, does not constitute a difference. The specific sampling rates shall be done in accordance with industry standards and will be included in the Cx Plan.
- 9. If at any point, frequent failures are occurring and testing is becoming more troubleshooting than verification, the PM shall stop the testing and require the Contractor to perform and document a checkout of the remaining units prior to continuing with functional testing of the remaining units.
- D. Coordination and Scheduling: The Contractor shall include all system checkout, startup and testing activities in their construction schedules. This will enable the AOR to manage checkout and start-up of equipment and functional testing of systems. The Contractor

- E. In general, functional performance testing shall be conducted after checkout and start-up.
  - 1. The control system is sufficiently tested and accepted by the AOR before it is used for Testing, Adjusting and Balancing or to verify performance of other components for systems. Testing proceeds from components to subsystems to systems. When the proper performance of all interacting individual systems has been achieved, the interface or coordinated responses and interlocks between systems is checked. The AOR shall document the functional testing of all equipment and systems. The Contractor shall execute the tests.
- F. Problem Solving: The AOR shall recommend solutions to problems found; however, the burden of responsibility to solve, correct and retest is the Contractor's. Design related issues shall be referred to the AOR for resolution.

#### 3.6 DOCUMENTATION, NON-CONFORMANCE AND ACCEPTANCE OF TESTS

- A. Documentation: The AOR witnesses all functional performance tests by the contractor along with the PO (when required). The AOR shall include the completed test reports in the System Checkout, Startup and Testing Final Report.
- B. Non-Conformance:
  - 1. The Contractor shall record the results of the functional performance test on the test forms. All deficiencies or non-conformance issues shall be noted and reported to the AOR on a standard non-compliance form.
  - 2. Corrections of minor deficiencies identified may be made during the tests at the discretion of the AOR. In such cases, the deficiency and resolution shall be documented on the procedure form.
  - 3. Every effort shall be made to expedite the testing process and minimize unnecessary delays, while not compromising the integrity of the procedures.
  - 4. As tests progress and if a deficiency is identified, the Contractor discusses the issue with the AOR.
    - a. when there is no dispute on the deficiency and the Contractor accepts responsibility to correct it:
      - 1) The AOR documents the deficiency and the Contractor's response and intentions, and they go on to another test or sequence. After a days work, the AOR submits the non-compliance reports to the Contractor for signature. A copy is provided to the Contractor. The Contractor corrects the deficiency within 5 calendar days or as agreed to between the Contractor and the AOR, signs the statement of correction at the bottom of the non-compliance form certifying that the equipment is ready to be tested and sends it back to the AOR.
      - 2) The Contractor reschedules the test with the AOR and the test is repeated.
    - b. if there is a dispute about a deficiency, regarding whether it is a deficiency or who is responsible:
      - 1) The deficiency shall be documented by the AOR with the Contractor's response and a copy given to the Contractor
      - 2) Resolutions shall be made at the lowest management level possible. Other parties are brought into the discussions as needed. Final interpretive authority is with the AOR. The AOR documents the

resolution process for incorporation in the Plan.

- 3) Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency within 5 calendar days or as agreed to between the Contractor and the AOR, signs a statement of correction and provides it to the AOR. The AOR reschedules the test, and the test is repeated until satisfactory performance is achieved.
- c. cost of retesting
  - 1) The entire cost of all retesting shall be borne by the Contractor when it is determined to be their responsibility.
  - 2) For a deficiency identified, not related to checkout or start-up, the following shall apply:
    - a) The AOR shall direct the Contractor to retest at no cost to the SDP.
    - b) the time/cost for the AOR to direct any retesting required because a specific checkout or start-up reported to have been successfully completed, but determined during functional testing to be faulty, shall be back-charged to the Contractor.
    - c) The Contractor shall respond in writing to the AOR at least as often as system checkout, startup and testing meetings are being scheduled concerning the status of each apparent outstanding discrepancy identified during the process. Discussions shall cover explanations of any disagreements and proposals for their resolution
    - d) The AOR retains the original non-conformance forms until the end of the project.
- d. Failure due to Manufacturer's Defects: If 10% or three (3), whichever is greater, of identical pieces of equipment (size alone does not constitute a difference) fail to perform in accordance with the Contract Documents (mechanically or substantively) due to a manufacturing defect (not allowing it to meet its submitted performance specification) then all identical units may be considered unacceptable by the AOR. In such case, the Contractor shall provide the AOR with the following:
  - Within one (1) week of notification from the AOR, the Contractor or manufacturer's representative shall examine all other identical units making a record of the findings. The findings shall be provided to the AOR within two (2) weeks of the original notice.
  - 2) Within two (2) weeks of the original notification, the Contractor or manufacturer shall provide a signed and dated, written explanation of the problem, cause of failures, etc. and all proposed solutions which shall include full equipment submittals. The proposed solutions shall comply with the specification requirements of the original installation.
  - 3) The AOR shall determine whether a replacement of all identical units or a repair is acceptable.
  - 4) Proposed solution(s) shall be installed by the Contractor and the Contractor at the direction of the AOR shall be allowed to test the installations for up to one week, upon which the AOR shall decide whether to accept the solution.
  - 5) Upon acceptance, the Contractor shall replace or repair all identical items, at their expense and extend the warranty accordingly, if the SYSTEM CHECKOUT, STARTUP AND TESTING

SOUTHWARK ELEMENTARY SCHOOL - FIRE ALARM SYSTEM REPLACEMENT EC: NG10644-2640.001-E original equipment warranty had begun. The replacement/repair work shall proceed with reasonable speed beginning within one week from when parts can be obtained.

- e. Acceptance
  - The AOR verifies each satisfactorily demonstrated function on the test form. Formal acceptance of the functional test is made later after review by the AOR. The AOR gives final acceptance on each test using the same form, providing a signed copy to the Contractor and a record copy to the Final Report.
- 3.7 OPERATION AND MAINTENANCE MANUALS Standard O&M Manuals
  - A. The specific content and format requirements for the standard O&M manuals are detailed in Supplementary Conditions SC-30 and in the technical sections of the specifications. Special requirements for the CC and TAB subcontractors are found in their respective sections of the specifications.
  - B. REVIEW
    - Prior to substantial completion, the AOR shall review the O&M manuals, documentation and redline as-built for systems that were commissioned and verify compliance with the Specifications. The AOR shall communicate deficiencies in the manuals to the Contractor. Upon receipt of necessary revisions and a successful review of the corrections, the AOR recommends acceptance of the O&M manuals. The AOR also review each equipment warranty and verify that all requirements to keep the warranty valid by the SDP are clearly stated.

#### 3.8 SYSTEM CHECKOUT, STARTUP AND TESTING RECORD

- A. The process shall be documented by a final report prepared by the AOR in conjunction with the contractor. The report shall contain the following information:
  - 1. A description of the Owner's project requirements
  - 2. A description of the project specifications
  - 3. Verification of installation
  - 4. Functional performance test results
  - 5. O & M documentation evaluation
  - 6. Training program evaluation
  - 7. Summary of the commissioning process
  - 8. Unresolved issues

#### 3.9 TRAINING OF DISTRICT PERSONNEL

- A. The Contractor shall be responsible for training, coordination and scheduling and ultimately for ensuring that training is complete in accordance with Supplementary Conditions SC-31, the requirements that follow and in the technical sections of the Specifications.
  - 1. The AOR shall coordinate between SDP, PO and Contractors for the training sessions.
  - 2. The Contractor(s) shall develop and submit a written training plan to the AOR for review and acceptance prior to training. The plan shall cover the following elements and any other elements noted in Supplementary Conditions SC-31.
  - 3. All equipment in which training is specified (includes commissioned and non SYSTEM CHECKOUT, STARTUP AND TESTING 01 1800 PAGE 14 of 16

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commissioned equipment)

- a. intended audience
- b. location of training
- c. objectives
- d. subjects covered (description, duration of discussion, special methods, etc.)
- e. methods (classroom lecture, video, site walk-through, actual operational demonstrations, written handouts, etc.)
- f. instructor qualifications are noted in the Supplementary Conditions SC-31.
- 4. All training sessions shall be video taped or DVD recorded by the contractor as required by Supplementary Conditions SC-31 for future use by the SDP.
  - a. under no circumstances shall the faces of SDP personnel be Video taped or DVD recorded during training sessions in the classroom or at other training stations.
  - b. where Video tapes or DVD recordings show the faces of SDP personnel, they shall be edited to ensure that the faces of school district personnel do not appear.
- 5. For the primary HVAC equipment, the CC shall provide a short discussion of the control of the equipment during the mechanical or electrical training conducted by others.

## 3.10 DEFERRED TESTING

- A. Seasonal Testing: During the warranty period, seasonal testing (test delayed until weather conditions are closer to the system's design) specified in other sections of the specifications (e.g. Testing and Balancing) shall be completed as part of this contract. The AOR shall coordinate this activity. Tests shall be executed, documented and deficiencies corrected by the appropriate Contractor with facilities staff and the AOR witnessing. Any final adjustments to the O&M manuals and as-built drawings due to the testing shall be made by the Contractor.
- B. Unforeseen Deferred Tests: If any check or test cannot be completed due to the building structure, required occupancy condition or other deficiency, execution of checkout and start-up, and functional testing may be delayed upon acceptance by the AOR. These tests shall be conducted in the same manner as the seasonal tests as soon as possible.

#### A.11 WRITTEN WORK PRODUCTS

- A. The System Checkout, Startup and Testing process generates a number of written work products described in various parts of this specifications.
- B. The Construction Phase System Checkout, Startup and Testing Plan, lists all the formal written work products, describes briefly their contents, who is responsible to create them, their due dates, who receives and accepts them and the location of the specification to create them. In summary, the written products include, but necessarily limited to the following:

	PRODUCT	DEVELOPED BY:
1	Preliminary Plan	SCST Team
2	Final Plan	SCST Team

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		EPLACEMENT EC: NG10644-2640.001-E
3	Meeting Minutes	AOR
4	Commissioning Schedules	AOR and Contractor
5	Equipment Documentation Submittals	Contractor
6	Sequence Clarifications	Contractor
7	Startup and Initial Checkout Plan	Contractor and AOR
8	Certification for Startup and Initial Check Out	Contractor
9	Functional Test Plan	Contractor
10	Final Testing, Adjusting and Balancing Report	TAB Subcontractor (AOR approved)
11	Issues Log (Deficiencies)	AOR
12	Commissioning Progress Record	AOR
13	Deficiency Reports	AOR
14	Functional Test Reports	Contractor
15	O&M Manuals	Contractor (AOR approved)
16	Commissioning Record	AOR
17	Training Plan(s)	AOR
18	Training Agendas	AOR
19	Training Manual(s) and Video(s)	Contractor
20	Final Report	AOR
21	Misc. Acceptances	AOR

# 3.12 SYSTEM/EQUIPMENT TO BE CHECKED OUT, STARTED UP AND TESTED

A. Complete Electrical System Installation is included in this project.

END OF SECTION 01 1800

# **COVID-19 PRECAUTIONS PLAN**

Dated May 1, 2020, Revised May 15,2020, 37pages

# NOT APPLICABLE TO THIS PROJECT

# TECHNICAL SPECIFICATIONS (DIVISIONS 2 THRU 36) (AS APPLICABLE)

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# SECTION 024119 - SELECTIVE DEMOLITION

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Demolition and removal of selected portions of building or structure.
  - 2. Verification of existing conditions.
  - 3. Remove designated building equipment and fixtures.
  - 4. Remove designated partitions, ceilings, components and other existing items shown.
  - 5. Cap and identify utilities.
  - 6. Temporary partitions to allow building occupancy.
  - 7. and salvaged, or removed and reinstalled.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.

## 1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

# 1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
  - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

# 1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
  - 1. Inspect and discuss condition of construction to be selectively demolished.
  - 2. Review structural load limitations of existing structure.
  - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
  - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
  - 5. Review areas where existing construction is to remain and requires protection.

# 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Engineering Survey: Submit engineering survey of condition of building.

- C. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
- D. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
  - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
  - 3. Coordination for shutoff, capping, and continuation of utility services.
  - 4. Use of elevator and stairs.
  - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- F. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.
- 1.7 CLOSEOUT SUBMITTALS
  - A. Inventory: Submit a list of items that have been removed and salvaged.
- 1.8 FIELD CONDITIONS
  - A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
  - B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  - 1. Hazardous materials will be removed by Owner before start of the Work.
  - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.

# 1.9 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

# PART 2 - PRODUCTS

- 2.1 PERFORMANCE REQUIREMENTS
  - A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
  - B. Standards: Comply with ASSE A10.6 and NFPA 241.

# PART 3 - EXECUTION

- 3.1 EXAMINATION
  - A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
  - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- E. Survey of Existing Conditions: Record existing conditions by use of measured drawings and preconstruction photographs or video
  - 1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
  - 2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

# 3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

# 3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

- 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
- 2. Arrange to shut off utilities with utility companies.
- 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
- 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
  - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
  - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
  - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
  - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
  - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
  - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
  - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

# 3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

- 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
- 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
- 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.
- 3.5 SELECTIVE DEMOLITION, GENERAL
  - A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
    - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
    - Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
    - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
    - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
    - 5. Maintain fire watch during and for at least hours after flame-cutting operations.

- 6. Maintain adequate ventilation when using cutting torches.
- 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
- 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
- 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- 10. Patch areas immediately adjacent to selected demolition if disturbed. Patching shall match the area surrounding the disturbed area.
- 11. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Reinstalled Items:
  - 1. Clean and repair items to functional condition adequate for intended reuse.
  - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  - 3. Protect items from damage during transport and storage.
  - 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

# 3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

# 3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPAapproved construction and demolition waste landfill acceptable to authorities having jurisdiction.
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.

# 3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 072120 - MISCELLANEOUS BUILDING INSULATION

# PART 1 - GENERAL

## 1.1 DESCRIPTION OF WORK

- A. Provide all miscellaneous insulation (thermal and/or acoustic, rigid, blanket, or batt) not explicitly specified in other Sections.
- B. Provide miscellaneous building insulation where indicated on the Drawings, where required for proper completion of the Work, and at the following locations:

## 1.2 REFERENCES

- A. References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.
- B. American Society for Testing and Materials (ASTM)

# 1.3 SUBMITTALS

- A. Samples
  - 1. Submit 12" x 12" sample of each type of insulation.
  - 2. Sample shall clearly indicate manufacturer's label and material designation.
- B. Manufacturer's Catalog Information

Provide current manufacturers' catalog information and data sheets on each type of insulation furnished.

C. Certificate

When the miscellaneous building insulation is a component of a fire-rated assembly, or is required by local regulations to meet certain characteristics, furnish NFPA certificates

- 1.4 DELIVERY, STORAGE, AND HANDLING
  - A. Materials shall be properly identified with manufacturer's name and, where required, BSA or MEA approval number.

- B. Store materials on the site in a dry area protected from the weather.
- C. Protect moisture sensitive insulation materials with polyethylene film or waterproof covering. Do not leave foam plastic insulation exposed to direct sunlight.
- D. Do not leave exposed in areas where traffic might cause mechanical damage to product.

## PART 2 – PRODUCTS

- 2.1 MANUFACTURER
  - A. Dow Chemical U.S.A
  - B. UC Industries, Inc.
  - C. Thermafiber Corporation

## 2.2 MATERIALS

- A. Mineral Fiber Blanket or Batt (ASTM C665)
  - 1. Sound Attenuation: Type I, thickness as indicated on the Drawings. Density: 2.5 lbs/cubic foot minimum. Thermafiber, Corp.; Roxul, Inc.
  - Foil-backed insulation: Type III, Class A, thickness and R-value as indicated on the Drawings. Density: 3 lbs/cubic foot minimum. R-value: 3.7 min. per inch of thickness. Foil backing shall be omitted from blankets in assemblies indicated to include other vapor retarding materials. Thermafiber, Corp.
  - 3. Blanket and batt insulation units shall be manufactured with a minimum of 20% of pre-consumer content materials.
  - 4. Fungi Resistance: Insulation and facing shall be fungi resistant when tested in accordance with ASTM C1338-00

## PART 3 - EXECUTION

## 3.1 EXAMINATION

A. Verify that surfaces are free of defects or protrusions and ready to receive insulation. Do not begin installation until defects are remedied.

# 3.2 INSTALLATION

A. Install insulation as shown on Drawings and in accordance with manufacturer's instructions.

- B. Butt units tightly.
- C. Shape insulation around obstructions by means of saw, knife, or other sharp tool.
- D. Where insulation is part of the exterior envelope of the building, install insulating material to form a continuous building enclosure without gaps.
- E. For insulation installed as part of the radiant floor system with a Self-leveling underlayment overlay, refer to Section 03542.
- F. For insulation installed as part of a radiant floor system with a cast-in-place concrete overlay, install in insulation manufacturer recommended adhesive.

END OF SECTION

## SECTION 078413 - PENETRATION FIRESTOPPING

## PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Penetration firestopping systems for the following applications:
    - a. Penetrations in fire-resistance-rated walls.
    - b. Penetrations in horizontal assemblies.
    - c. Penetrations in smoke barriers.

#### 1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site concurrent with architect job site meetings.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Sustainable Design Submittals:
  - 1. Product Data: For sealants, indicating VOC content.
  - 2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.
- C. Product Schedule: For each penetration firestopping system. Include location, illustration of firestopping system, and design designation of qualified testing and inspecting agency.
  - 1. Engineering Judgments: Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping system, submit illustration, with modifications marked, approved by penetration firestopping system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly. Obtain approval of authorities having jurisdiction prior to submittal.

#### 1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.

#### 1.5 CLOSEOUT SUBMITTALS

A. Installer Certificates: From Installer indicating that penetration firestopping systems have been installed in compliance with requirements and manufacturer's written instructions.

#### 1.6 QUALITY ASSURANCE

A. Installer Qualifications: A firm that has been approved by FM Approval according to FM Approval 4991, "Approval of Firestop Contractors," or been evaluated by UL and found to comply with its "Qualified Firestop Contractor Program Requirements."

## PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics:
  - 1. Perform penetration firestopping system tests by a qualified testing agency acceptable to authorities having jurisdiction.
  - 2. Test per testing standards referenced in "Penetration Firestopping Systems" Article. Provide rated systems complying with the following requirements:
    - a. Penetration firestopping systems shall bear classification marking of a qualified testing agency.
      - 1) UL in its "Fire Resistance Directory."
      - 2) Intertek Group in its "Directory of Listed Building Products."
      - 3) FM Approval in its "Approval Guide."

#### 2.2 PENETRATION FIRESTOPPING SYSTEMS

- A. Penetration Firestopping Systems: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. 3M Fire Protection Products.
    - b. Hilti, Inc.
    - c. Specified Technologies, Inc.
    - d. Tremco, Inc.

- B. Penetrations in Fire-Resistance-Rated Walls: Penetration firestopping systems with ratings determined per ASTM E814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa).
  - 1. F-Rating: Not less than the fire-resistance rating of constructions penetrated.
- C. Penetrations in Horizontal Assemblies: Penetration firestopping systems with ratings determined per ASTM E814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa).
  - 1. F-Rating: At least one hour, but not less than the fire-resistance rating of constructions penetrated.
  - 2. T-Rating: At least one hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.
  - 3. W-Rating: Provide penetration firestopping systems showing no evidence of water leakage when tested according to UL 1479.
- D. Penetrations in Smoke Barriers: Penetration firestopping systems with ratings determined per UL 1479, based on testing at a positive pressure differential of 0.30-inch wg (74.7 Pa).
  - 1. L-Rating: Not exceeding 5.0 cfm/sq. ft. (0.025 cu. m/s per sq. m) of penetration opening at and no more than 50-cfm (0.024-cu. m/s) cumulative total for any 100 sq. ft. at both ambient and elevated temperatures.
- E. Exposed Penetration Firestopping Systems: Flame-spread and smoke-developed indexes of less than 25 and 450, respectively, per ASTM E84.
  - 1. Architectural Sealants: 250 g/L.
  - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
  - 3. Sealant Primers for Porous Substrates: 775 g/L
- F. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping system manufacturer and approved by qualified testing and inspecting agency for conditions indicated.

## PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
- B. General: Install penetration firestopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications.

- C. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings.
  - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not forming permanent components of firestopping.
- D. Install fill materials by proven techniques to produce the following results:
  - 1. Fill voids and cavities formed by openings, forming materials, accessories and penetrating items to achieve required fire-resistance ratings.
  - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
  - 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

## 3.2 IDENTIFICATION

- A. Wall Identification: Permanently label walls containing penetration firestopping systems with the words "FIRE AND/OR SMOKE BARRIER PROTECT ALL OPENINGS," using lettering not less than 3 inches high and with minimum 0.375-inch strokes.
  - 1. Locate in accessible concealed floor, floor-ceiling, or attic space at 15 feet from end of wall and at intervals not exceeding 30 feet.
- B. Penetration Identification: Identify each penetration firestopping system with legible metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of penetration firestopping system edge so labels are visible to anyone seeking to remove penetrating items or firestopping systems. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:
  - 1. The words "Warning Penetration Firestopping Do Not Disturb. Notify Building Management of Any Damage."
  - 2. Contractor's name, address, and phone number.
  - 3. Designation of applicable testing and inspecting agency.
  - 4. Date of installation.
  - 5. Manufacturer's name.
  - 6. Installer's name.

#### 3.3 FIELD QUALITY CONTROL

- A. Contractor to engage a qualified third party testing agency to perform tests and inspections according to ASTM E2174.
- B. Where deficiencies are found or penetration firestopping system is damaged or removed because of testing, repair or replace penetration firestopping system to comply with requirements.

C. Proceed with enclosing penetration firestopping systems with other construction only after inspection reports are issued and installations comply with requirements.

END OF SECTION 078413

## SECTION 078446 - FIRE-RESISTIVE JOINT SYSTEMS

## PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Joints in or between fire-resistance-rated constructions.
  - 2. Joints at exterior curtain-wall/floor intersections
  - 3. Joints in smoke barriers.
- B. Related Sections:
  - 1. Section 078413 "Penetration Firestopping" for penetrations in fire-resistance- rated walls, horizontal assemblies, and smoke barriers.
- 1.2 ACTION SUBMITTALS
  - A. Product Data: For each type of product indicated.
  - B. Product Schedule: For each fire-resistive joint system. Include location and design designation of qualified testing agency.
    - 1. Where Project conditions require modification to a qualified testing agency's illustration for a particular fire-resistive joint system condition, submit illustration, with modifications marked, approved by fire-resistive joint system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.
- 1.3 INFORMATIONAL SUBMITTALS
  - A. Qualification Data: For qualified Installer.
  - B. Installer Certificates: From Installer indicating fire-resistive joint systems have been installed in compliance with requirements and manufacturer's written recommendations.
  - C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for fire-resistive joint systems.

#### 1.4 QUALITY ASSURANCE

A. Installer Qualifications: A firm that has been approved by FM Global according to FM Global 4991, "Approval of Firestop Contractors," or been evaluated by UL and found to comply with UL's "Qualified Firestop Contractor Program Requirements."

- B. Installer Qualifications: A firm experienced in installing fire-resistive joint systems similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance. Qualifications include having the necessary experience, staff, and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its fire-resistive joint system products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.
- C. Fire-Test-Response Characteristics: Fire-resistive joint systems shall comply with the following requirements:
  - 1. Fire-resistive joint system tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.
  - 2. Fire-resistive joint systems are identical to those tested per testing standard referenced in "Fire-Resistive Joint Systems" Article. Provide rated systems complying with the following requirements:
    - a. Fire-resistive joint system products bear classification marking of qualified testing agency.
    - b. Fire-resistive joint systems correspond to those indicated by reference to designations listed by the following:
      - 1) UL in its "Fire Resistance Directory."
- D. Preinstallation Conference: Conduct conference at Project site.

#### 1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install fire-resistive joint systems when ambient or substrate temperatures are outside limits permitted by fire-resistive joint system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Install and cure fire-resistive joint systems per manufacturer's written instructions using natural means of ventilation or, where this is inadequate, forced-air circulation.

#### 1.6 COORDINATION

- A. Coordinate construction of joints to ensure that fire-resistive joint systems are installed according to specified requirements.
- B. Coordinate sizing of joints to accommodate fire-resistive joint systems.
- C. Notify Owner's testing agency at least seven days in advance of fire-resistive joint system installations; confirm dates and times on day preceding each series of installations.

## PART 2 - PRODUCTS

2.1 FIRE-RESISTIVE JOINT SYSTEMS

- A. Where required, provide fire-resistive joint systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which fire-resistive joint systems are installed. Fire-resistive joint systems shall accommodate building movements without impairing their ability to resist the passage of fire and hot gases.
- B. Joints in or between Fire-Resistance-Rated Construction: Provide fire-resistive joint systems with ratings determined per ASTM E 1966 or UL 2079:
  - 1. Joints include those installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies.
  - 2. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of construction they will join.
  - 3. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Grace Construction Products.
    - b. Hilti, Inc.
    - c. RectorSeal Corporation.
    - d. Specified Technologies Inc.
    - e. 3M Fire Protection Products.
    - f. Tremco, Inc.; Tremco Fire Protection Systems Group.
- C. Joints at Exterior Curtain-Wall/Floor Intersections: Provide fire-resistive joint systems with rating determined by ASTM E 119 based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa) or ASTM E 2307.
  - 1. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of the floor assembly.
  - 2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Grace Construction Products.
    - b. Hilti, Inc.
    - c. Johns Manville.
    - d. RectorSeal Corporation.
    - e. Specified Technologies Inc.
    - f. 3M Fire Protection Products.
    - g. Tremco, Inc.; Tremco Fire Protection Systems Group
- D. Joints in Smoke Barriers: Provide fire-resistive joint systems with ratings determined per UL 2079.
  - 1. L-Rating: Not exceeding 5.0 cfm/ft of joint at 0.30 inch wg (74.7 Pa) at both ambient and elevated temperatures.
  - 2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Grace Construction Products.
- b. Hilti, Inc.
- c. Johns Manville.
- d. RectorSeal Corporation.
- e. Specified Technologies Inc.
- f. 3M Fire Protection Products.
- g. Tremco, Inc.; Tremco Fire Protection Systems Group.
- E. Exposed Fire-Resistive Joint Systems: Provide products with flame-spread and smokedeveloped indexes of less than 25 and 450, respectively, as determined per ASTM E 84.
- F. VOC Content: Fire-resistive joint system sealants shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
  - 1. Architectural Sealants: 250 g/L.
  - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
  - 3. Sealant Primers for Porous Substrates: 775 g/L.
- G. Accessories: Provide components of fire-resistive joint systems, including primers and forming materials, that are needed to install fill materials and to maintain ratings required. Use only components specified by fire-resistive joint system manufacturer and approved by the qualified testing agency for systems indicated.

#### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for joint configurations, substrates, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Surface Cleaning: Clean joints immediately before installing fire-resistive joint systems to comply with fire-resistive joint system manufacturer's written instructions and the following requirements:
  - 1. Remove from surfaces of joint substrates foreign materials that could interfere with adhesion of fill materials.
  - 2. Clean joint substrates to produce clean, sound surfaces capable of developing optimum bond with fill materials. Remove loose particles remaining from cleaning operation.
  - 3. Remove laitance and form-release agents from concrete.
- B. Priming: Prime substrates where recommended in writing by fire-resistive joint system manufacturer using that manufacturer's recommended products and methods. Confine

primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

C. Masking Tape: Use masking tape to prevent fill materials of fire-resistive joint system from contacting adjoining surfaces that will remain exposed on completion of the Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove stains. Remove tape as soon as possible without disturbing fire-resistive joint system's seal with substrates.

## 3.3 INSTALLATION

- A. General: Install fire-resistive joint systems to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming materials and other accessories of types required to support fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
  - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of fire-resistive joint system.
- C. Install fill materials for fire-resistive joint systems by proven techniques to produce the following results:
  - 1. Fill voids and cavities formed by joints and forming materials as required to achieve fire-resistance ratings indicated.
  - 2. Apply fill materials so they contact and adhere to substrates formed by joints.
  - 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

## 3.4 IDENTIFICATION

- A. Identify fire-resistive joint systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches (150 mm) of joint edge so labels will be visible to anyone seeking to remove or penetrate joint system. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:
  - 1. The words "Warning Fire-Resistive Joint System Do Not Disturb. Notify Building Management of Any Damage."
  - 2. Contractor's name, address, and phone number.
  - 3. Designation of applicable testing agency.
  - 4. Date of installation.
  - 5. Manufacturer's name.
  - 6. Installer's name.

## 3.5 FIELD QUALITY CONTROL

A. Where deficiencies are found or fire-resistive joint systems are damaged or removed due

to testing, repair or replace fire-resistive joint systems so they comply with requirements.

- B. Proceed with enclosing fire-resistive joint systems with other construction only after inspection reports are issued and installations comply with requirements.
- 3.6 CLEANING AND PROTECTING
  - A. Clean off excess fill materials adjacent to joints as the Work progresses by methods and with cleaning materials that are approved in writing by fire-resistive joint system manufacturers and that do not damage materials in which joints occur.
  - B. Provide final protection and maintain conditions during and after installation that ensure fire-resistive joint systems are without damage or deterioration at time of Substantial Completion. If damage or deterioration occurs despite such protection, cut out and remove damaged or deteriorated fire-resistive joint systems immediately and install new materials to produce fire-resistive joint systems complying with specified requirements.
- 3.7 FIRE-RESISTIVE JOINT SYSTEM / FIRESTOP JOINT SYSTEM SCHEDULE
  - A. Where UL-classified firestop joint systems are indicated, they refer to alphanumeric designations listed in UL's "Fire Resistance Directory" under product Category XHBN.

Firestop Joint System Location	Basis- of- Design	Assembly Rating	Nominal Joint Width	Movement Capabilities <sup>2</sup>
Floor-to-Wall				
Rated concrete masonry wall construction intersection with adjacent floor construction	FW-D- 1012, FW-D- 1013	1 hour or 2 hours <sup>1</sup>	As indicated, or required by tested assembly	Class II
Head-of-Wall				
Rated gypsum wall construction intersection with steel floor deck above	HW-D- 0087, or HW-D- 0089	1 hour or 2 hours <sup>1</sup>	As indicated, or required by tested assembly	Class II or III,

Rated gypsum wall construction intersection with concrete floor deck above	HW-D- 0083, HW-D- 209	1 hour or 2 hours <sup>1</sup>	As indicated, or required by tested assembly	Class II
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Rated concrete masonry wall construction intersection with steel floor deck above	HW-D- 0081, or HW-D- 0098	1 hour or 2 hours <sup>1</sup>	As indicated, or required by tested assembly	Class II
Rated concrete masonry wall construction intersection with concrete floor deck above	HW-D- 0268, HW-D- 0097	1 hour or 2 hours <sup>1</sup>	As indicated, or required by tested assembly	Class II
Bottom-of-Wall				
Rated gypsum wall construction intersection with concrete floor	BW-S- 0002	1 hour or 2 hours <sup>1</sup>	As indicated, or required by tested assembly	Static

- 1. Rating to match wall construction.
- 2. Class UL2079

1

A. Where another type of construction is encountered, or if field conditions vary from those described in the U.L. System listed (i.e. annular space is greater/smaller, insulation type varies, etc.), provide firestopping systems which are appropriate, and U.L. tested, for that condition.

## 3.8 PERIMETER FIRE-CONTAINMENT-FIRESTOP SYSTEMS

A. Where perimeter Fire-Containment-Firestop systems are indicated, they refer to alphanumeric designations listed in UL's "Fire Resistance Directory" under product Category XHDG.

Perimeter Fire-Containment, Firestop System Location	Basis-of- Design	Integrity Rating	Insulation Rating	Linear opening Width

Aluminum Curtainwall	CW-D- 2046	[1 hour] [2 hours]	[ <b>1/4</b> ] hour	8 inches, maximum
Gypsum Sheathed Curtain	CW-S- 1001	[1-1/2 hour]	[ <b>3/4</b> ] [1] hour	8 inches, maximum

END OF SECTION 078446

## SECTION 079200 - JOINT SEALANTS

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Silicone joint sealants.
  - 2. Nonstaining silicone joint sealants.
  - 3. Urethane joint sealants.
  - 4. Mildew-resistant joint sealants.
  - 5. Latex joint sealants.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. Sustainable Design Submittals:
  - 1. Product Data: For sealants, indicating VOC content.
    - a. Laboratory Test Reports.
  - 2. For sealants, indicating compliance with requirements for low-emitting materials.
    - a. VOC Content: Sealants and sealant primers shall comply with the following:
    - b. Architectural sealants shall have a VOC content of [250] g/L or less.
    - c. Sealants and sealant primers for nonporous substrates shall have a VOC content of [250] g/L or less.
    - d. Sealants and sealant primers for porous substrates shall have a VOC content of [775] g/L or less.
- C. Samples: For each kind and color of joint sealant required.
  - 1. Provide full range color option samples from manufacturer for Architect initial selection for each type of sealant. Printed color charts or plastic representations are not acceptable.
  - 2. A. For each kind and color of joint sealant required, and based upon Architect initial selections, provide 24" long in-place mockups. Samples for Architect review and approval with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants prior to commencing work.
- D. Joint-Sealant Schedule: Include the following information:
  - 1. Joint-sealant application, joint location, and designation.
  - 2. Joint-sealant manufacturer and product name.
  - 3. Joint-sealant formulation.

4. Joint-sealant color.

## 1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Preconstruction laboratory test reports.
- C. Preconstruction field-adhesion-test reports.
- D. Field-adhesion-test reports.
- E. Sample warranties.

#### 1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C1021 to conduct the testing indicated.

#### 1.5 PRECONSTRUCTION TESTING

- A. Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
  - 1. Adhesion Testing: Use ASTM C794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
  - 2. Compatibility Testing: Use ASTM C1087 to determine sealant compatibility when in contact with glazing and gasket materials.
- B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.

#### 1.6 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

## 2.1 JOINT SEALANTS, GENERAL

- A. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.
- B. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- C. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food; provide products that comply with 21 CFR 177.2600.

## 2.2 SILICONE JOINT SEALANTS

- A. A.Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT. Reference 3.7A, 3.7C, 3.7D, and 3.7E.
  - 1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Dow Corning Corporation; 795.
    - b. GE Advanced Materials Silicones; SilPruf NB SCS9000.
    - c. Pecora Corporation; 864.
    - d. Sika Corporation, Construction Products Division; SikaSil-C995.
    - e. Tremco Incorporated; Spectrem 3.
- B. Mildew-Resistant, Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT. Reference 3.7H.
  1. Products: Subject to compliance with requirements, provide available products that may be incorporated into the Work include, but are not limited to, the following:
  - a. Pecora Corporation; 898.
  - b. Tremco; Tremsil 600 White.
- C. Mildew-Resistant, Single-Component, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT. Reference 3.7H.
  1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
  - a. BASF Building Systems; Omniplus
  - b. Dow Corning Corporation; 786 Mildew Resistant.
  - c. GE Advanced Materials Silicones; Sanitary SCS1700.
  - d. Tremco Incorporated; Tremsil 200 Sanitary.

## 2.3 URETHANE JOINT SEALANTS

- A. Multicomponent, Nonsag, Urethane Joint Sealant: ASTM C 920, Type M, Grade NS, Class 50, for Use NT. Reference 3.7B, 3.7F, 3.7G, 3.7I, and 3.7L.
  - 1. Products: Subject to compliance with requirements, provide one of the following: a. Pecora Corporation; Dynatrol II.

- b. Polymeric Systems, Inc.; PSI-270.
- c. Tremco Incorporated; Dymeric 240.

## 2.4 LATEX JOINT SEALANTS

- A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF. Reference 3.7J.
  - 1. Products: Subject to compliance with requirements, provide one of the following:
    - a. BASF Building Systems; Sonolac.
    - b. Bostik, Inc.; Chem-Calk 600.
    - c. Pecora Corporation; AC-20+.
    - d. Schnee-Morehead, Inc.; SM 8200.
    - e. Tremco Incorporated; Tremflex 834.

#### 2.5 SOLVENT-RELEASE-CURING JOINT SEALANTS

- A. Butyl-Rubber-Based Joint Sealant: ASTM C 1311. Reference 3.7M.
  - Products: Subject to compliance with requirements, provide one of the following:
    - a. Bostik, Inc.; Chem-Calk 300.
    - b. Pecora Corporation; BC-158.
  - c. Tremco Incorporated; Tremco Butyl Sealant.

#### 2.6 ACOUSTICAL JOINT SEALANTS

1.

- A. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90. Reference 3.7N.
  - 1. 1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Pecora Corporation; AC-20 FTR.
    - b. 2.USG Corporation; SHEETROCK Acoustical Sealant.

## 2.7 JOINT-SEALANT BACKING

- A. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type B (bicellular material with a surface skin), or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
  - 1. <u>Manufacturers:</u> Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
    - a. <u>BASF Corporation</u>.
    - b. <u>Construction Foam Products; a division of Nomaco, Inc.</u>

- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.
- 2.8 MISCELLANEOUS MATERIALS
  - A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
  - B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
  - C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

#### PART 3 - EXECUTION

## 3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove laitance and form-release agents from concrete.
  - 2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.

#### 3.2 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with ASTM C1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 1. Provide concave joint profile per Figure 8A in ASTM C1193 unless otherwise indicated.

## 3.3 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
  - 1. Extent of Testing: Test completed and cured sealant joints as follows:
    - a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
    - b. Perform one test for each 1000 feet of joint length thereafter or one test per each floor per elevation.
  - 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.
- B. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

## 3.4 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior vertical and horizontal non-traffic construction joints in cast-in-place concrete.
  - 1. Joint Sealant: Low Modulus Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- B. Joint-Sealant Application: Exterior horizontal traffic isolation and contraction joints in cast-in-place concrete slabs.

- 1. Joint Sealant: Multi-component, nonsag, urethane sealant.
- 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- C. Joint-Sealant Application: Exterior vertical control and expansion joints in unit masonry. All joints in cast stone materials.
  - 1. Joint Sealant: Low Modulus Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- D. Joint-Sealant Application: Exterior vertical and horizontal joints between different materials.
  - 1. Joint Sealant: Low Modulus Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- E. Joint-Sealant Application: Exterior perimeter joints between walls and frames of doors windows and louvers.
  - 1. Joint Sealant: Medium Modulus Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- F. Joint-Sealant Application: Vertical control and expansion joints on exposed interior surfaces of exterior walls.
  - 1. Joint Sealant: Non-Traffic, Multi-component nonsag urethane sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- G. Joint-Sealant Application: Interior perimeter joints of exterior openings.
  - 1. Joint Sealant: Non-Traffic, Multi-component nonsag urethane sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- H. Joint-Sealant Application: Interior joints between plumbing fixtures and adjoining walls, floors, and counters.
  - 1. Joint Sealant: Single-component mildew-resistant neutral or acid-curing silicone sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- I. Joint-Sealant Application: Vertical joints on exposed surfaces of interior unit masonry and concrete walls and partitions.
  - 1. Joint Sealant: Non-Traffic Multi-component nonsag urethane sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

- J. Joint-Sealant Application: Perimeter joints between interior wall surfaces and frames of interior doors and Windows All perimeter joints between interior wall surfaces and metal edge molding trim of Acoustical Panel Ceiling assemblies. All joints between elevator entrances and wall surfaces.
  - 1. Joint Sealant: Latex sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- K. Joint-Sealant Application: Interior control, expansion, and isolation joints in horizontal traffic surfaces of concrete slab flooring
  - 1. Joint Sealant: Multi-component pourable urethane sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- L. Joint-Sealant Application: Interior vertical and horizontal joints between different materials.
  - 1. Joint Sealant: Non-Traffic, Multi-component nonsag urethane sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- M. Joint-Sealant Application: Bedding joint applications.
  - 1. Joint Sealant: Butyl-Rubber-Based Solvent-Release Joint Sealant.
  - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- N. Joint-Sealant Application: Interior acoustical joints in vertical surfaces and horizontal nontraffic surfaces.
  - 1. Joint Location:
    - a. Acoustical joints where indicated.
    - b. Other joints as indicated.
  - 2. Joint Sealant: Acoustical.
  - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 079200

#### SECTION 099000 - PAINTING

#### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK

- A. This Section includes surface preparation and field painting of the following:
  - 1. Exposed exterior items and surfaces.
  - 2. Exposed interior items and surfaces.
  - 3. Surface preparation, priming and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- B. Paint exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the paint schedules do not specifically mention an item or a surface, paint the item or surface as directed by the Architect. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.
  - 1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.
- C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels as described in Article 2.05A.
- D. When removing or disturbing existing paint on surfaces that have not been tested by the School District for lead content, assume that the existing paint contains lead. Take necessary precautions to protect workers. Provide measures to separate paint removal work areas from occupied areas, and clean-up and disposal as specified in Specifications Section S01900 - Existing Premises Work.

#### 1.2 REFERENCES

- A. References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.
  - 1. Federal Specifications (FS)
  - 2. American Society of Testing and Materials (ASTM)

- 3. IBC Department of Environmental Conservation
- 4. U.S. Department of Labor
- 5. Occupational Safety and Health Administration (OSHA)
- 6. Steel Structures Painting Council (SSPC)
- 7. Department of Defense (DOD)

## 1.3 DEFINITIONS

- A. The term "Painting" as used in this Section, means the application of all coatings such as paint, primer, enamel, varnish, shellac, oil, etc. as listed in the Painting Schedules.
- B. The term "Painting" also includes preparation of surfaces for such applications, and the clean-up as hereinafter specified.
- C. The term "Walls" means all surfaces from floor, or top of base, or top of wainscot, to ceiling or hung ceiling.
  - 1. Include pilasters, breaks, jambs, reveals, returns, arches.
  - 2. Include hardboards, pegboards.
  - 3. Include free standing columns, low partitions.
  - 4. Include masonry, plaster or gypsum board interiors of wardrobes or closets, cupboards and other enclosed spaces.
- D. The term "Ceilings" means the general overhead horizontal surfaces.
  - 1. Include cornices, arches, soffits, stair soffits.
  - 2. Include beam and girder haunches.
  - 3. Include primed metal cover and border strips.
  - 4. Include metal frame of ceiling lights and ceiling equipment.
  - 5. Include side faces of hung or furred ceiling.
- E. Touching-up bare spots specified for previously primed or painted surfaces is in addition to the coats specified for the paint system.

- F. Finishes:
  - 1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
  - 2. Satin refers to low-sheen finish with a gloss range between 15 and 35 when measured at a 60-degree meter.
  - 3. Semigloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
  - 4. Full gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.
- G. Concealed: The term "concealed" refers to surfaces, piping, ducts or conduit which cannot be accessed without moving a building element such as within a chase, wall or ceiling.
  - 1. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
    - a. Furred areas.
    - b. Ceiling plenums.
    - c. Duct shafts.
    - d. Elevator shafts.
- H. The term "exposed" refers to any item which is not concealed.
  - 1. The term "exposed to public view" means situated so that it can be seen from eye level from a public location. A public location is that which is accessible to persons not responsible for operation or maintenance of the building.

## 1.4 SUBMITTALS

A. Product Data

Provide manufacturers' product literature for all materials specified and material manufacturer's printed directions and recommendations for environmental conditions, surface preparation, priming, mixing, reduction, spreading rate, application, storage and VOC content, as applicable for each of the materials specified.

- B. Samples
  - 1. Initial Selection

Submit manufacturer's color charts for each type of finish for approval by the Project Architect. Verify colors specified with manufacturers' color charts for availability and notify the Project Architect if any discrepancies should occur.

- 2. Verification prior to installation
  - a. Contractor shall furnish color chips for surfaces to be painted.
  - b. Submit two samples of each color and finish selected on 12" x 12" hardboard.
  - c. Two samples of finish on concrete masonry and metal surfaces.
- 3. Submit samples of stained and varnished wood in triplicate for approval. Samples shall be 4" x 8" samples of the species of wood specified, stained and varnished as required and clearly labeled with type of coating, number of coats applied, etc.
- 4. All samples shall be labeled; and include the following information:
  - a. Manufacturer's name
  - b. Type of paint/stain/hardener
  - c. Manufacturer's stock number
  - d. Color: name and number
  - e. Federal Specification number, as specified
  - f. Federal regulations for amount of lead in paint.
  - g. VOC content
- C. Quality Assurance
  - 1. Certification that materials for each system are obtained from a single manufacturer.

- 2. Certification that Work shall be performed by personnel with a minimum of three years experience who meet the qualifications set forth in OSHA, 29 CFR 1926.62 (Lead In Construction Standard).
- 3. Certification that material meets or exceeds the performance requirements of Federal Specifications.
- 4. Certification that materials comply with International Building Code regulations for Volatile Organic Compounds.
- D. Testing

Toxicity Characteristic Leaching Procedure (TCLP) testing per Article in Part 3 titled "Disposal of Painted Waste and Debris from Existing Buildings".

E. Guarantee

Provide Guarantee per Article 1.08.

- F. Low Emitting Materials Compliance Submittals:
  - 1. Provide documentation for each coating to be used on the building interior indicating that the coatings comply with low V.O.C. requirements as stated in Specification Section G01600.

#### 1.5 QUALITY ASSURANCE

- A. General
  - 1. All painting materials shall arrive at the job ready-mixed.
  - 2. Varnish containers shall not exceed 5 gallon capacity.
  - 3. Remove all rejected materials from the premises immediately.
  - 4. All thinning and tinting materials shall be as recommended by the manufacturer. Generally, all paints shall not require additional thinning.
  - 5. Verify that the specified shop prime paint for each applicable item in this Project is compatible with the total coating system, prior to application.
  - 6. Materials selected for each system type shall be products of a single manufacturer.
- B. Qualifications

- 1. Work of this Section shall be performed by personnel with a minimum of three years experience in performing this type of Work.
- 2. The Contractor shall ensure that all employees meet the qualifications set forth in OSHA, 29 CFR 1926.62 (Lead In Construction Standard).
- C. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.
- D. Regulatory Requirements
  - 1. IBC Building Code, latest edition
  - 2. IBC for (VOC) Volatile Organic Compounds.
  - 3. Steel Structures Painting Council (SSPC).
  - 4. U.S. Department of Labor, Occupational Safety and Health Administration, Construction Industry Standards (29 CFR 1926/1910) Revised 10/1/79, Washington, D.C.
  - 5. Occupational Safety and Health Administration (OSHA) 29 CFR 1926.62 (Lead In Construction Standard).
  - 6.
  - 7. Philadelphia Department of Environmental Protection Waste water disposal permitting requirements.
- E. Certifications

Federal Specifications: When materials are specified to comply with Federal Specifications, products will be accepted which meet or exceed the performance requirements of such Federal Specifications and comply with all regulations currently in effect.

- 1. Indicate that material complies with Federal Specifications by including the Federal Specifications number on the container label or on the product literature, or submit a statement with the Product Data stating that material meets or exceeds the performance requirements of the Federal Specifications.
- 2. Photoluminescent paint is required to listed by MEA, OTCR, or have certification of required test results by an Approved Agency.

- F. Field Samples
  - 1. Provide samples of each color and finish, under natural lighting conditions, in a location where each finish is to be applied.
  - 2. School District will request review of first completed room, space or item of each color scheme required by the Project Architect for color, texture and workmanship.
  - 3. First acceptable room, space or item will be used as project standard for each color scheme, or finish.
  - 4. Primer coat is to be inspected and approved in all locations before any subsequent finish coats are applied.
  - 5. Provide complete paint system on wall sample specified in Section 09260 Gypsum Board Assemblies. Wall field sample shall be a corridor wall at least 30 feet long or a location of equal or greater size as selected by the School District's representative. Provide lighting at the time of inspection, equivalent to the lighting to be in place upon project completion. The sample will be inspected by the Architect for proper finish. Inspections will occur before and after painting the sample, with the final evaluation occurring after painting.
  - 6. In existing building locations; repair of existing base surface is to be approved prior to commencement of painting.

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery

Deliver materials to the site in original, unopened containers bearing manufacturers name and label containing the following information:

- 1. Product name or title of material
- 2. Manufacturer's stock number, batch number, VOC content in grams per liter and date of manufacture.
- 3. Manufacturer's name
- 4. Federal Specification number, if applicable.
- 5. Federal regulations for amount of lead in paint (less the 0.06% lead in non-volatile ingredients)
- 6. Contents by volume for major pigment and vehicle constitutions

- 7. Thinning instructions
- 8. Application instructions
- 9. Color name and number
- B. Storage
  - 1. School District's Representative will designate space on premises for storage of materials. Contractor shall restrict storage in this area to paint materials and related equipment, and provide the following:
    - a. Provide one (1) approved chemical dry fire extinguisher equal to 20 lb. CO<sub>2</sub> rating in all assigned rooms or locations where painting materials are stored. Fire extinguisher shall bear the label of the National Board of Fire Underwriters and tag of most recent inspection.
    - b. Provide three (3) standard size red fire pails with clean sand in above locations. At the completion of project, fire extinguishers and pails shall become property of Contractor.
  - 2. Maintain storage area in clean condition, store materials not in use in tightly covered containers. Remove oily rags, waste and empty containers from site each night.
  - 3. Provide School District's Representative with one key for each space if spaces are to be kept locked when not in use.
  - 4. Protect all materials from freezing.

## 1.7 PROJECT CONDITIONS

- A. Environmental Requirements
  - 1. Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be applied.
  - 2. Do not apply finish in areas where dust is being generated or will be generated while the material is drying.
  - 3. Provide paint and coating products to comply with applicable environmental regulations, VOC requirements and local authorities.

- 4. In all areas, spaces and rooms being painted, the Contractor shall ensure that there is adequate ventilation to ensure proper paint drying, along with minimizing paint odors. See Section S01900 also for requirements regarding fumes, ventilation and Material Safety Data Sheets.
- 5. The Contractor shall ensure that all requirements of OSHA 29 CFR 1926.62 (Lead in Construction Standard) are adhered to during the project. In addition, the Contractor shall ensure that proper work area protection and clean-up procedures (as described in this Section) are strictly adhered to during all phases on the project.

#### 1.8 GUARANTEES

- A. Adherence of workmanship and materials to Specifications requirements shall be maintained for the one year Contract guarantee period. These requirements shall include the following:
  - 1. There shall be no evidence of blistering, peeling, crazing, alligatoring, streaking, staining, or chalking.
  - 2. Dirt shall be removed without blemishing the finish by washing with mild soap and water.
  - 3. Colors of surfaces shall remain free from serious fading; the variation, if any, shall be uniform.
- B. Correct all defects, appearing within the guarantee period, by removal of the defective work and replacement as directed.
- C. All corrective measures shall be the Contractor's responsibility, and shall be made at no extra cost to the School District. The requirements set forth in Part 3 of these Specifications shall be strictly adhered to.

## PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

## A. Basis of Design Manufacturer: The Sherwin William Company.

- B. Subject to compliance with specified requirements, provide "First Line" or "Top Quality" products of one of the following manufacturers:
  - 1. Benjamin Moore and Co.
  - 2. PPG Industries, Pittsburgh Paints Inc.

- 3. The Sherwin-Williams Co.
- 4. BASF Corpoation

#### 2.2 MATERIALS

- Provide products which meet all IBC Part 205-VOC requirements for applications Α. outlined herein and comply with low V.O.C. requirements as stated in Specification Section G01600.
- В. Provide products which meet all Federal regulations for amount of lead in paint (less than 0.06% lead in non-volatile ingredients).
- C. Provide best quality grade of various types of coatings as regularly manufactured by the paint materials manufacturers. Materials not displaying manufacturers' identification as a standard, best-grade product will not be acceptable.
- Use only thinners approved by paint manufacturers for applications intended and D. use only within recommended limits.

#### 2.3 **REFERENCE STANDARDS**

Paint materials shall meet or exceed the requirements of the following standards: Α.

#### Federal Specifications

Primers, Sealers, Undercoats				
a.	Metal Primer for Galvanized surfaces	6:	FS TT-P-001984 FS TT-P-650-C	
b.	Metal Primer Aluminum or Steel surfa	aces:	FS TT-P-57B	
C.	Primer Sealer, Latex Base:		FS TT-P-650C	
d.	Alkyd Primer (Corrosion Inhibiting) Lead and Chromate Free, VOC Complying		FS TT-P664C	
e.	Acrylic Primer	TT-P-	650-C	
f.	Wood Primer, Exterior:		FS TT-P-25	

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2. Finish Paints

3.

4.

a.	Exterior Alkyd Modified Paint; Gloss:	FS TT-P-102E, Type II and Type III
b.	Ext. Acrylic Latex Paint; Flat: FS TT-P-19	
с.	Gloss Acrylic Latex Enamel:	FS TT-P-1511-B
d.	Flat Vinyl Acrylic Latex Interior:	TT-P-29J
e.	Semi-Gloss Vinyl Acrylic Latex Enamel, Interior:	TT-P-1511-B
f.	Alkyd Odorless Semi-Gloss Enamel: FS TT-E-509C for white and tints; Class A for deep colors.	FS TT-E-529
g.	Aluminum Paint (Ready Mixed):	FS TT-P-38D.
h.	Heat Resistant Semi-Gloss Enamel (400°F max. surface temperature):	FS TT-E-496
i.	Asphalt Varnish:	FS TT-V-51
j.	Smokestack Black Paint:	FS TT-E-496
Transp	parent and Semi Transparent Finishing Syster	ns
a.	Spar Varnish: FS TT-V-121, Water Resisting	l
b.	Spar Varnish: FS TT-V-119, Phenolic Resin	
с.	Stain; Interior Oil Type:	FS TT-S-711
d.	Polyurethane Coating (Satin Finish)	FS TT-C-001951
е.	Gloss Varnish	1311-0-001931
Floor F	Finishing Systems	
a.	Rubber Base Paint:	FS TT-P-91

For use over concrete and masonry

b. Cement Floor Hardener - Magnesium Zinc and Fluosilicate type as specified in Section 03300 of this Specification.

C.	Urethane Floor Paint:	FS TT-C-542, Type II
d.	Polyamide Epoxy Paint	FS TT-C535B Type II

- 5. Lettering Enamel: Interior/Exterior full gloss enamel: FS TT-E-489
- 6. Fire Retardant Paint: Latex Fire Retardant Paint: FS TT-P-26P Rated Class A by Underwriters Laboratories.
- 7. Miscellaneous Materials:
  - a. Mineral Spirits (Petroleum Paint Thinner): FS TT-T-291
  - Color Pigments: Pure, non-fading, finely ground pigments, at least 99 percent passing a 325 mesh sieve. Color pigments that are to be used on masonry, concrete and plaster shall be lime proof - FS-TT-P-381.
  - c. Putty: Linseed-Oil type for Wood Sash Glazing -FS-TT-P-791B.
  - d. Shellac: Two pound cut shellac, FS TT-S-300
  - e. Paste Wood Filler: FS TT-F-336
  - f. Plastic Wood Filler: FS TT-F-340C.
  - g. Surface Sealer: Pigmented Oil for Plaster & Wallboard FS-TT-S-179.
  - h. Linseed Oil: (Boiled) FS A-A-371A
  - i. Linseed Oil: aw) FS A-A-379A
  - j. Lacquer (Brushing) Clear and Pigmented: FS-TT-L-26C.

- k. Lacquer, Rubbing, Clear: FS-TT-L-57C
- I. Lacquer, Spraying Clear and Pigmented for Interior and Exterior Use: FS-TT-L-58E.
- B. Miscellaneous Standards and Requirements
  - 1. Turpentine: ASTM D13.
  - 2. Cold Galvanizing Compound: Single component material conforming to ASTM A780 giving 96% pure zinc in the dried film.
  - 3. Cleaning Solvents: Low toxicity; flash point in excess of 100°F.
  - 4. Spackling Compound: ASTM C475.
  - 5. Polyester Filler: Polyester resin base autobody filler standard weight or finishing grade required by conditions; Marson's "White Lightning" and "Topcoat."
  - 6. Photoluminescent Paint: Comply with requirements of the International Building Code for exit path markings, including but not limited to testing for brightness, washability, toxicity, radioactivity, and flame spread.

Paint system shall be certified and listed by an Approved Agency in accordance with International Building Code rules, indicating that the materials as regulated by the International Building Code are acceptable for the intended use. Test methods shall be stated in the certification. Prior approvals are acceptable for materials conforming to current Building Code requirements.

## 2.4 COLORS

- A. Selection
  - 1. Paint colors, surface treatments and finishes will be selected by the Project Architect.
  - 2. Color Schedule will be issued to the Contractor after award of the Contract.
    - a. Final acceptance of colors will be from actual job applications.
- B. Maximum Number of Colors and Tints
  - 1. Number of colors selected by the Project Architect will not exceed those listed in Schedule below.

- 2. Tint each undercoat a slightly different shade than the succeeding coat to permit easy identification of the separate coats.
- 3. In general, Project Architect will vary the color scheme in various classrooms, and all other locations so that numerous color schemes will be used throughout the building.
- 4. The number of paint color and tints which will be used in a school project is given in the schedule below. All colors are to be "custom".

	Max. No. of Colors (Deep Tones)	Max. No. of Tints (Pastel or Mid Shades)
Wall and Ceiling Colors	10	20
Corridors and Toilets	0	10
Trim Colors (doors, etc.)	10	10
Exterior	5	-
Colors & Tints per Room:		
Room of Instruction, etc.	2	2
Auditorium	2	2
Gymnasium	2	2
Lunch-Playroom	2	2
Cafeteria	2	2

## 2.5 PAINTING SCHEDULE

- A. Surfaces not to be painted, unless specifically indicated otherwise:
  - 1. Polished or bright metals: Aluminum, bronze, brass, chrome, nickel, stainless steel, copper.
  - 2. Exterior: Brick, Stone, Masonry, Concrete
  - 3. Glass

- 4. New galvanized Chain Link Fence Work
- 5. Galvanized members not exposed to public view
- 6. Ceramic Materials
- 7. Factory Pre-Finished Masonry Block.
- 8. Resilient Flooring Materials; Wood Floors.
- 9. Terrazzo; Marble; Bluestone
- 10. Acoustical Tile
- 11. Chalk Boards; Cork Boards; Bulletin Boards; Plastic Laminate
- 12. Mechanical Equipment, Steel Shelving, and Cabinets, which are factory finished.
- 13. General Construction Items with factory applied final finish.
- 14. Factory finished Wood Doors.
- 15. Acoustic Tile & Metal Pan Ceiling
- 16. Pipe and duct Spaces and utility tunnels, including items within the space such as pipes, ducts and conduits.
- 17. Oil Tank Enclosure including items within the space such as pipes, ducts and conduits.
- 18. Meter Room including items within the space such as pipes, ducts and conduits.
- 19. Concealed Ducts, Pipes, and Conduit.
- 20. Metal Lockers
- 21. Toilet Compartments
- 22. Light Fixtures
- 23. Electrical Distribution Cabinets
- 24. Foundation Spaces

- 25. Furred Areas
- 26. Ceiling Plenums
- 27. Valve and Damper Operators
- 28. Mechanical Linkages
- 29. Sensing Devices
- 30. Motor and Fan Shafts
- 31. Light Switch and Electrical Outlet Covers
- 32. Labels: Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.
- B. Interior Finish Schedule Standard
  - 1. All new and previously unpainted, surfaces shall receive one (1) prime coat and two (2) finish coats unless otherwise specified.
  - All previously painted surfaces shall be spot primed as needed and receive (2) finish coats unless otherwise specified.
  - 3. First or Prime coats shall vary with substrates and are outlined in Article 2.07 Interior Paint Systems.

Finish coats in areas indicated shall have the sheen and gloss levels specified below

	Location	Туре
a.	Class Rooms, Rooms of Instruction (except as otherwise specified), Stair Enclosures, Vestibules, Offices and Office Closets, Library, Teachers Rooms	(Semi Gloss)
b.	Entrance Hall/Lobby, Corridors, Lunch Playrooms, Cafeteria, Gymnasium, Auditorium, Kindergartens and Kindergarten Store Rooms, Shops, Photocopy Room, Toilets, Telephone Closet, Locker Rooms, Medical Suite, Guidance Suite, Laboratories, Preparation Rooms, Apparatus Rooms, Acid Rooms, Dark Room,	

				Emergency Room, Laundry		(Semi Gloss)
			C.	Shower Room and Dressing Ro Economics, Dishwashing Room, K Rooms, Can Washing Room, Ja Closets, Sink Closets	Kitchen Store anitor's Sink	(Gloss)
			d.	All plaster and gypsum board ceiling white		(Flat)
			e.	All interior plaster, gypsum board, co or block surfaces of walls throughou not otherwise specified	t the building	(Semi Gloss)
l	INTE	ERIOR	PAINTS	SYSTEMS		
	A.	Concr	ete			
		1.	Semi-	Gloss Finish:		
		1st Co		yl Acrylic Latex Primer ealer (Flat)	1.0 Mils DFT	
				ats- inyl Acrylic Latex		1.3 Mils DFT each coat
	В.	Interio	r Concr	ete Flooring		
		1.	Semi-	gloss Finish:		
			1st Co	at – Waterborne Epoxy-Amine		3.0 to 4.0 Mils DFT
			2nd C	oat - Waterborne Epoxy-Amine		3.0 to 4.0 Mils DFT
			Equal	to Tnemec Series-287 "Enviro-Pox".		DET
	C.	Concr	ete Mas	conry Units		

1. Semi-Gloss Finish:

2.6

\*1st Coat - Vinyl Acrylic Latex Block Filler, or 100% acrylic resin block filler/surfacer as recommended by manufacturer of succeeding coats.

**1st Coat - Vinyl Acrylic Latex Primer-Sealer (Flat)	 1.0 Mils DFT
2nd & 3rd Coats - Semi-Gloss Vinyl Acrylic Latex Enamel	 1.3 Mils DFT each coat

#### 2. Gloss Finish:

\*1st Coat - Vinyl Acrylic Latex Block Filler, or 100% acrylic resin block filler/surfacer as recommended by manufacturer of succeeding coats.

**1st Coat - Vinyl Acrylic Latex Primer-Sealer (Flat)	 1.0 Mils DFT
2nd & 3rd Coats - Gloss Acrylic Latex Enamel	 1.2 Mils DFT each coat

\*Apply filler coat on new and previously unpainted concrete masonry units at a rate to ensure complete coverage with all pores filled. If required, provide in two (2) or more coats.

\*\* Spot prime previously painted concrete masonry unit surfaces as needed.

### D. Gypsum Drywall and Plaster:

1.	Flat Finish (ceilings only):	
	1st Coat - Vinyl Acrylic Latex Primer Sealer (Flat)	 1.0 Mils DFT
	2nd & 3rd Coats - Flat Vinyl Acrylic Latex	 1.3 Mils DFT each coat
2.	Semi-Gloss Finish:	
	1st Coat - Vinyl Acrylic Latex Primer Sealer	 1.0 Mils DFT
	2nd & 3rd Coats - Semi-Gloss Vinyl Acrylic Latex Enamel	 1.3 Mils DFT each coat

Gloss Finish: 3.

	1st Coat - Vinyl Acrylic Latex Primer Sealer	 1.0 Mils DFT
	2nd & 3rd Coats - Gloss Acrylic Latex Enamel	 1.2 Mils DFT each coat
4.	For use over existing oil based paints	
	100% Acrylic Primer Tinted as required to approximate Finish color	 1.0 mils DFT
	2nd & 3rd Coats - Semi-Gloss Vinyl Acrylic Latex Enamel	 1.3 Mils DFT each coat
OR		
	2nd & 3rd Coats - Gloss Acrylic Latex Enamel	 1.2 Mils DFT

#### Gloss Acrylic Latex Enamel --1.2 Mils DF I each coat

#### F. Ferrous Metal:

1. Flat Finish: Metal ceilings, jamb and head sections, coat and hat rack, metal shelves.

*1st Coat - Alkyd Modified Acrylic Rust Preventive Latex Primer	 1.6 Mils DFT
2nd & 3rd Coats Flat Vinyl Acrylic Latex	 1.3 Mils DFT each coat

2. Semi-Gloss Finish: Convector enclosures, grilles, access doors, frames, Steel Doors and Frames, Trim, Partitions, Screens, Demountable Office Partitions, Office Railings, Wire mesh work.

*1st Coat - Alkyd Modified Acrylic Rust Preventive	
Latex Primer	 1.6 Mils DFT

2nd & 3rd Coats -

	Semi-Gloss Vinyl Acrylic Latex Enamel	 1.3 Mils DFT each coat
3.	Gloss Finish:	
	*1st Coat - Alkyd Modified Acrylic Rust Preventive Latex Primer	 1.6 Mils DFT
	2nd & 3rd Coats - Gloss Acrylic Latex Enamel	 1.2 Mils DFT each coat

\* Provide full prime coat on new and previously unpainted surfaces. Spot prime previously painted surfaces, including shop-primed items, as needed. Items shop primed with modified alkyd equal to Tnemec 10-99 primer shall be touched up with same primer. See related specification sections.

- G. Zinc-Coated Metal
  - 1. Flat Finish:

	1st Coat (New) - Alkyd Modified Vinyl Acrylic Latex Primer	 1.2 Mils DFT
	*1st Coat (Repaint) - Alkyd Modified Acrylic Rust Preventive Latex Primer	 1.6 Mils DFT
	2nd & 3rd Coats Flat Vinyl Acrylic Latex	 1.3 Mils DFT each coat
2.	Semi-Gloss Finish: Railings, wire-mesh work.	
	1st Coat (New) - Alkyd Modified Vinyl Acrylic Latex Primer	 1.2 Mils DFT
	*1st Coat (Repaint) - Alkyd Modified Acrylic Rust Preventive Latex Primer	 1.6 Mils DFT
	2nd & 3rd Coats Semi-Gloss Vinyl Acrylic Latex Enamel	 1.3 Mils DFT each coat

3. Gloss Finish:

		1st Coat (New) - Alkyd Modified Vinyl Acrylic Latex Primer		1.2 Mils DFT
		*1st Coat (Repaint) - Alkyd Modified Acrylic Rust		-
		Preventive Latex Primer 2nd & 3rd Coats -		1.6 Mils DFT
		Gloss Acrylic Latex Enamel		1.2 Mils DFT/ each coat
	* Spot	prime as needed.		
H.	Paintee	d Woodwork and Hardboard		
		window trim, chair rails, wood door frames and trim, e ed to be stained.	unless o	therwise
	1.	Semi-Gloss Enamel Finish:		
		1st Coat - Vinyl Acrylic Latex Enamel Underbody		1.1 Mils DFT
		2nd & 3rd Coats - Semi-Gloss Vinyl Acrylic Latex Enamel		1.3 Mills DFT/each coat
I.		d Woodwork (Transparent or semi-transparent fiect's sample).	nish to	match Project
	1.	Stained-Varnish Rubbed Finish:		
		Stain Coat - Oil Type		0.9 Mils DFT
		1st Coat - Cut Shellac		
		Filler Coat -Paste wood filler (for open grain wood)		
		2nd & 3rd Coats - Oil Rubbing Varnish		1.0 Mil DFT/each coat
J.	Interior	<sup>-</sup> Woodwork		

Pegboard, library display units, kindergarten clothing lockers.

Ι.

1. Flat Finish:

1st Coat - Vinyl Acrylic Latex Enamel Underbody	 1.1 Mils DFT
2nd & 3rd Coats - Flat Vinyl Acrylic Latex	 1.3 Mils

## K. Interior Woodwork

Oak woodwork (except wood flooring and doors)

- 1. 1 Coat Spar Varnish over specified prime coats; 1.1 Mils DFT.
- L. Interior Woodwork

White birch in Kindergartens, front of Auditorium platform and stage.

1. 1 Coat Polyurethane clear coating (Satin Finish)

## M. Interior Woodwork

Red or White birch throughout.

1. Semi Gloss Finish:

1st Coat - Vinyl Acrylic Latex Enamel Underbody	 1.1 Mils DFT
2nd & 3rd Coats - Vinyl Acrylic Latex Enamel	 1.3 Mils DFT

N. Interior Woodwork

О.

Wood stairs for Auditorium platform stage (treads, risers, and trim-moldings)

1. 2 Coats interior gloss varnish.

	, ,	 1.0 Mil DFT/each coat
Interior Woodwork		

## 1 Coat interior gloss varnish -- 1.0 Mil DFT 1 Coat cabinet rubbing varnish, rub to dull

each coat

DFT/each coat

finish with fine pumice and oil.

1.0 Mil DFT

P. MEP Equipment and Piping

See Sections 15501, 15502, 15431 and 16010 for MEP Equipment and Piping painting requirements.

Q. Existing Concrete Sealer.

## PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verification of Conditions
  - I. The application of painter's finish to any surface shall be taken to indicate that the Contractor considers such surfaces suitable for a first-class finish.
  - 2. Do not apply painter's finish in any locations until the Work of other Contractors that might damage the new finish is completed.
  - 3. Notify the School District in writing regarding Work by others that does not provide a suitable surface for the new finish.
  - 4. In case of dispute regarding the suitability of any surface, the School District's decision shall be final and conclusive upon all concerned.
  - 5. Contractor shall check the compatibility of previously painted surface with the new coating by applying a test panel 4 foot wide x wall height. Allow test panel to dry thoroughly; verify proper adhesion before proceeding with painting Work.

#### 3.2 PREPARATION AND APPLICATION - EXISTING BUILDING

- A. Protection
  - 1. In cases where the painting of surfaces involves removal or disturbance of existing paint and the paint is known or assumed to be lead-based paint, the following protection requirements shall apply:
    - a. All objects near or adjacent to the surface(s) to be painted shall be moved a minimum of three feet away from that surface(s). Any immovable object, and the floor, within the three foot "work area" shall be covered with one layer of 6-mil polyethylene, sealed on all edges to prevent the penetration of dust and debris. If the ceiling is

to be painted, all objects in the room and the floor of the room shall be covered in this manner.

- b. All objects bordering the three-foot work area shall be completely covered with clean cloths, heavy building paper or clean plastic covering.
- c. If, during the removal of existing paint, the Contractor notices paint chips or other debris related to the ongoing work on objects beyond the border of the three foot work area, these objects shall be cleaned by HEPA vacuuming and wet-wiping and then covered as described in (b) above.
- d. For exterior metal surfaces on the building or site the ground beneath the work area shall be surrounded on all sides by a washable construction tarp or 10-mil polyethylene. The covering need not be airtight; however, it must be of adequate size and durability to completely enclose the work area and prevent the dispersal of any paint chips or dust during paint removal activities. Any dust and debris shall be contained in the work area and shall be removed immediately upon generation. Protect from damage landscaping, paving, and other improvements near the building. Protect and seal all windows and openings within the work area with a minimum of 1 layer of 6-mil polyethylene sheeting.
- e. The protection shall remain in place during all paint removal activities.
- f. All protection is to be carefully removed, cleaned or discarded after painting is complete.
- 2. In cases where the painting of surfaces does not involve the removal or disturbance of existing paint or the paint is not lead-based as determined by testing by the School District, the following protection requirements shall apply:
  - a. In each area to be painted, cover and protect furniture, equipment and floors from damage with clean cloths, heavy building paper or clean plastic covering secured in place. All protection is to be carefully removed, cleaned or discarded after painting is complete.
- B. Removal of Existing Work
  - 1. Remove wire guards, screens, grilles and similar items as necessary to paint properly all surfaces, windows and doors, behind these items.

- a. These items shall be HEPA vacuumed and wet-cleaned once removed. Once cleaned, the items shall be placed on 6-mil polyethylene sheeting (or equivalent) and covered with a second layer of 6-mil polyethylene sheeting.
- b. If paint is to be removed from these items, the contractor shall ensure that the items are taken to a separate, non-occupied space prior to scraping and repainting.
- 2. Remove and paint behind pictures, signs, shades, drapes, furniture, cabinets, lockers and similar items that are not secured to walls.
- 3. Unless otherwise specified, radiators, convectors, univents need not be removed providing all visible surfaces of these items and visible surfaces behind them are properly painted.
- 4. Carefully mark removed work for identification and replace in the original location unless otherwise directed.
- C. Surface Preparation
  - 1. Gently wet mist the surface to be scraped with water, then remove all loose paint with scraper and putty knife.
  - 2. Sand existing surfaces to dull sheen and gloss. Before sanding, wet mist the area to be sanded. (Power sanding without a HEPA-filtered vacuum recovery system is not allowed).
  - 3. Remove dust by washing with water, using damp sponge or cloth.
  - 4. After washing, spot prime grease and water stains; magic markers marks, crayon marks, lipstick marks, etc; with a quick-drying alcohol base primer sealer to prevent bleeding.
  - 5. Fill all cracks and holes with appropriate filler material, wet mist and sand flush with adjacent surfaces and spot prime. (Power sanding without a HEPA-filtered vacuum recovery system is not allowed).
  - 6. Existing paint that was not removed with scraper and which appears to be sound shall receive spackling compound around perimeter high spots and feathered out so that surface is smooth. Repair gouges created by the scraping process and other imperfections in the existing surface with spackling compound to provide a smooth, even finished surface.
  - 7. Apply number of finish coats specified herein or as many as may be necessary to obtain the proper finish and completely cover the substrate.

- 8. Cement Plaster: Coat surfaces to be patched with an approved bonding agent. Patch with an approved mortar patching mix and finish to match texture of adjacent surfaces.
- 9. Existing Woodwork:
  - a. Prepare surfaces as indicated in Art. 3.02, C., Subparagraphs 1., 2., 3., 4., above.
  - b. Puttying: Fill cracks, open joints, nail holes and similar defects in existing woodwork specified to be painted or varnished with putty or plastic filler. Putty stop nail holes in all new woodwork specified to be painted or stained and varnished. Prime or seal all surfaces in contact with new putty. Color interior putty to match the finish.
  - c. Touch-Up
    - 1. Spot prime defects in existing Work and Work primed under other Paragraphs of Work as necessary to produce an even plane in the new finish.
    - 2. All worn, scaled, blistered, crackled and discolored places in the existing stained and varnished work specified to be revarnished shall be wet-misted prior to being scraped or sanded, then filled and touched up with stain as required to equalize the color. (Power sanding without a HEPA-filtered vacuum recovery system is not allowed).
    - 3. Touch-up and equalize the color of new woodwork specified to be stained and varnished where damaged, due to job fitting and trimming.
    - 4. Touch-up all pitch streaks and knots in woodwork with shellac.
- 10. Existing Metal:
  - a. Prepare surfaces as indicated in Art. 3.02,C., Subparagraphs 1., 2., 3., 4., above.
  - b. Machine tool clean exposed steel to an SSPC-SP3 surface preparation.

- b. For steel surfaces exposed to view, repair defects in surfaces to provide for an even plane in the new finish. Use auto-body filler to even out surface and sand smooth.
- 11. Wood Sash: Clean and oil pulley stiles of wood sash with one coat of stained, boiled linseed oil at completion of painting of sash.
- 12. Glazing Repairs
  - a. Cut out loose and cracked putty on doors and windows. Replace cut out and missing putty with elastic glazing compound. If the putty contains asbestos, the Contractor shall abate the putty in accordance with the procedures specified in Section 02081 -Asbestos Abatement.
  - b. Prime Surfaces before applying glazing compound.
- 3.3 Not Used
- 3.4 APPLICATION
  - A. General
    - 1. No Work shall be performed where cement or plaster is being applied or is in the process of drying.
    - 2. No Work shall be performed in spaces that are not broom clean and free of dust and waste.
    - 3. Apply paint materials to produce smooth finished surfaces, free of brush or roller marks, drops, runs, or sags.
    - 4. Paint materials shall be kept at a proper and uniform consistency.
    - 5. Thin only when necessary to achieve best results.
    - 6. Thinners shall be material recommended by manufacturer of paint, and in quantity as recommended.
    - 7. Excessive use of thinner as indicated by variation in absorption, lack of "hide", thickness of dry film, mottled or streaky coat, shall be cause for rejection. Correct as directed.
    - 8. Thinning of varnish or aluminum paint prohibited.

- 9. Apply all coats with brush or roller, varying slightly the color of succeeding coats. Spraying will not be permitted.
  - a. If recommended by manufacturer, 100% acrylic resin concrete block filler may be spray applied and shall be backrolled as necessary to work material into substrate surface.
- 10. Brush out or roll on first or prime coat; work well into surface.
- 11. Each coat shall be inspected, approved and dry before proceeding with additional coats.
- 12. Allow at least 48 hrs for enamels and exterior oil paint to dry.
- 13. The surfaces of interior woods and metals shall be sanded or rubbed between coats to assure smooth finish and proper adhesion of subsequent coats.
- 14. Avoid lapping of paint on glass, hardware, or other adjoining surfaces.
- 15. Apply no paint to operating units where sliding contact of metals is necessary for proper functioning of unit.
- 16. Painting is not required on walls or ceilings in concealed and inaccessible areas.
- 17. Moving parts of operating units will not require finish painting unless otherwise required.
- 18. Do not paint over any code-required labels, such as Underwriter's Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plate.
- 19. Finish doors on tops, bottoms and side edges same as exterior faces.

#### 3.5 FIELD QUALITY CONTROL

- A. The School District reserves the right to require the following material testing procedures at any time, and any number of times during period of field painting:
  - 1. Measurement of dry film thickness (DFT) by use of a dry film thickness gauge in accordance with use and calibration requirements of Structural Steel Painting Council [SSPC], "Method of Measurement of Dry Paint Thickness with Magnetic Gauges".

- 2. Engage services of an independent testing laboratory, recommended by the School District, to sample paint being used. Samples of materials delivered to construction site will be taken, identified and sealed, and certified in presence of Contractor
- 3. Testing laboratory will perform appropriate tests for any or all of the following characteristics: Abrasion resistance, apparent reflectivity, flexibility, washability, absorption, accelerated weathering, dry opacity, accelerated yellowness, recoating, skinning, color retention, alkali resistance and quantitative materials analysis.
- 4. If test results show that material being used does not comply with specified requirements, Contractor shall be directed to stop painting Work, and remove non-complying paint; repaint surfaces coated with rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are non-compatible.
  - a. If the samples do not comply with requirements of the Specifications, costs of testing and remediation of rejected work shall be borne by Contractor.
  - b. If the tests find that the samples do comply with the requirements of the Specifications, the cost of the testing will be borne by the School District.
- B. The School District will engage the services of a Special Inspection agency to inspect the installation of the photoluminescent stair markings.

## 3.7 CLEANING

A. General

Contractor shall clean-up behind each paint crew such that painting and clean-up will be a continuous uninterrupted operation. The practice of one general clean-up after completion of all painting will be strictly prohibited. This clean-up will include, but not be limited to the following:

- 1. Remove spots or defacement resulting from Work of this Section.
- 2. Retouch all damaged surfaces to leave Work in perfect finished condition.
- 3. If spots or defacement cannot be satisfactorily removed and retouched, refinish the surfaces as directed.
- 4. Within the three foot work area created for removal and painting where existing paint is known or assumed to be lead-based all objects and

surfaces shall be thoroughly HEPA vacuumed, wet-cleaned and HEPA vacuumed again. In rooms where the ceiling has been painted all surfaces and objects in the room shall be cleaned in this manner.

- 5. The contractor shall ensure that the objects and surfaces under protective covering are free of any dust or debris created during painting activities. If necessary, these objects and surfaces shall be wet cleaned and HEPA vacuumed.
- 6. The contractor shall conduct any cleaning deemed necessary by the independent environmental consultant.
- 7. Free all operating units of painted materials and leave them clean and in proper working order.
- 8. Remove from premises all surplus paint materials, debris and any other rubbish resulting from the Work.
- 9. Leave storage space clean and in condition required for equivalent spaces in project.

## 3.8 PROTECTION

- A. Provide caution tape and/or locked entryways during paint removal activities in existing buildings to prevent access to the work area from unauthorized personnel.
- B. Provide "Wet Paint" signs to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their Work after completion of painting operations.
- C. At the completion of Work of other trades, touch-up and restore all damaged or defaced painted surfaces as directed by the School District.

#### 3.9 DISPOSAL OF PAINTED WASTE AND DEBRIS FROM EXISTING BUILDINGS

A. Testing

Perform Toxicity Characteristic Leaching Procedure (TCLP) testing of all painted waste and debris generated from existing painted objects and surfaces.

B. Storage and Disposal

Storage and disposal shall be in accordance with Specifications Section S01900 - Existing Premises Work, Article titled "Disposal of Painted Waste and Debris".

#### END OF SECTION 099000

## SECTION 233300 - AIR DUCT ACCESSORIES

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Smoke dampers.
  - 2. Flange connectors.
  - 3. Turning vanes.
  - 4. Duct-mounted access doors.
  - 5. Duct access panel assemblies.
  - 6. Duct accessory hardware.
- B. Related Requirements:
  - 1. Section 283111 "Addressable Fire-Alarm Systems, Voice Notification" for ductmounted fire and smoke detectors.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. For duct silencers, include pressure drop, dynamic insertion loss, and self-generated noise data. Include breakout noise calculations for high-transmission-loss casings.
- B. Sustainable Design Submittals:
  - 1. Product data showing compliance with ASHRAE 62.1.
- C. Shop Drawings: For duct accessories. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Detail duct accessories' fabrication and installation in ducts and other construction. Include dimensions, weights, loads, and required clearances; and method of field assembly into duct systems and other construction. Include the following:

- a. Special fittings.
- b. Manual volume damper installations.
- c. Control-damper installations.
- d. Fire-damper, smoke-damper, combination fire- and smoke-damper, ceiling, and corridor-damper installations, including sleeves; and duct-mounted access doors and remote damper operators.
- e. Duct security bars.
- f. Include diagrams for power, signal, and control wiring.

## 1.3 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, or BIM model, drawn to scale, and coordinated with each other, using input from installers of the items involved.
- B. Source quality-control reports.
- 1.4 CLOSEOUT SUBMITTALS
  - A. Operation and maintenance data.
- PART 2 PRODUCTS
- 2.1 PERFORMANCE REQUIREMENTS
  - A. Comply with NFPA 90A and NFPA 90B.
  - B. Comply with SMACNA's "HVAC Duct Construction Standards Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.
- 2.2 SMOKE DAMPERS
  - A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1. Greenheck Fan Corporation.
    - 2. Pottorff.

- 3. Ruskin; Air Distribution Technologies, Inc.; Johnson Controls, Inc.
- B. General Requirements:
  - 1. Label to indicate conformance to UL 555 and UL 555S by an NRTL.
  - 2. Label to indicate conformance to NFPA 80 and NFPA 90A by an NRTL.
  - 3. Unless otherwise indicated, use parallel-blade configuration.
  - 4. Factory or field assemble multiple damper sections to provide a single damper assembly of size required by the application.
  - 5. Factory install damper actuator by damper manufacturer as integral part of damper assembly. Coordinate actuator location, mounting, and electrical requirements with damper manufacturer.
- C. Performance:
  - 1. AMCA Certification: Test and rate in accordance with AMCA Publication 511.
  - 2. Leakage:
    - a. Class IA: Leakage shall not exceed 3 cfm/sq. ft. (15.2 L/s per sq. m) against 1inch wg (250-Pa) differential static pressure.
    - b. Class I: Leakage shall not exceed 4 cfm/sq. ft. (20 L/s/ per sq. m) against 1inch wg (250-Pa) differential static pressure.
    - c. Class II: Leakage shall not exceed 10 cfm/sq. ft. (51 L/s per sq. m) against 1inch wg (250-Pa) differential static pressure.
  - Pressure Drop: 0.05 inch wg (12.5 Pa) at 1500 fpm (7.6 m/s) across a 24-by-24-inch (600-by-600-mm) damper when tested in accordance with AMCA 500-D, Figure 5.3.
  - 4. Velocity: Up to 3000 fpm (15 m/s).
  - 5. Temperature: Minus 25 to plus 180 deg F (Minus 32 to plus 83 deg C).
  - 6. Pressure Rating: Damper close-off pressure equal to fan shutoff pressure with a maximum blade deflection of 1/200 of blade length.
- D. Construction:
  - 1. Suitable for horizontal or vertical airflow applications.
  - 2. Linkage out of airstream.

- 3. Frame:
  - a. Hat shaped.
  - b. Galvanized sheet steel, with interlocking, gusseted or mechanically attached corners.
  - c. Gauge in accordance with UL listing.
- 4. Blades:
  - a. Roll-formed, horizontal, galvanized sheet steel.
  - b. Maximum width and gauge in accordance with UL listing.
- 5. Blade Edging Seals:
  - a. Silicone rubber.
- 6. Blade Jamb Seal: Flexible stainless steel, compression type.
- 7. Blade Axles: 1/2-inch (13-mm) diameter; galvanized steel; blade-linkage hardware of zinc-plated steel and brass; ends sealed against blade bearings. Linkage is to be mounted out of airstream.
- 8. Bearings:
  - a. Stainless steel sleeve.
- E. Mounting Sleeve: Factory-installed, galvanized sheet steel; length to suit wall or floor application; gauge in accordance with UL listing.
- F. Damper Actuator Electric:
  - 1. Electric 120 V ac.
  - 2. UL 873, plenum rated.
  - Designed to operate in smoke-control systems complying with UL 555S requirements.
  - 4. Fully modulating with fail-safe spring return.
    - a. Sufficient motor torque and spring torque to drive damper fully open and fully closed with adequate force to achieve required damper seal.
    - b. Maximum 15-second full-stroke closure.

- c. Minimum 90-degree drive rotation.
- 5. Clockwise or counterclockwise drive rotation as required for application.
- 6. Environmental Operating Range:
  - a. Temperature: Minus 40 to plus 130 deg F (Minus 40 to plus 55 deg C).
  - b. Humidity: 5 to 95 percent relative humidity noncondensing.
- 7. Environmental Enclosure: NEMA 2.
- 8. Actuator to be factory mounted and provided with single-point wiring connection.
- G. Controllers, Electrical Devices, and Wiring:
  - 1. Comply with requirements for electrical devices and connections specified in Section 230923 "Direct Digital Control (DDC) System for HVAC."
  - 2. Electrical Connection: 115 V, single phase, 60 Hz.
- H. Accessories:
  - 1. Auxiliary switches for fan control or position indication.
  - 2. Test and reset switches, damper mounted.
  - 3. Smoke Detector: Integral, factory wired for single-point connection.

## 2.3 FLANGE CONNECTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. CL WARD & Family Inc.
  - 2. Ductmate Industries, Inc; a DMI company.
  - 3. DynAir; a Carlisle Company.
  - 4. Elgen Manufacturing.
  - 5. Ward Industries; a brand of Hart & Cooley, LLC.
- B. Description: Add-on or roll-formed, factory fabricated, slide-on transverse flange connectors, gaskets, and components.

- C. Material: Galvanized steel.
- D. Gauge and Shape: Match connecting ductwork.

## 2.4 DUCT-MOUNTED ACCESS DOORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Ductmate Industries, Inc; a DMI company.
  - 2. Elgen Manufacturing.
  - 3. Flexmaster U.S.A., Inc.
  - 4. McGill AirFlow LLC.
  - 5. Ruskin; Air Distribution Technologies, Inc.; Johnson Controls, Inc.
  - 6. Ward Industries; a brand of Hart & Cooley, LLC.
- B. Duct-Mounted Access Doors: Fabricate access panels in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible"; Figure 7-2 (7-2M), "Duct Access Doors and Panels," and Figure 7-3, "Access Doors - Round Duct."
  - 1. Door:
    - a. Double wall, rectangular.
    - b. Galvanized sheet metal with insulation fill and thickness as indicated for duct pressure class.
    - c. 24-gauge- (0.70-mm-) thick galvanized steel or 0.032-inch (0.81-mm) thick aluminum or 24-gauge- (0.70-mm-) thick stainless steel door panel.
    - d. Vision panel.
    - e. Hinges and Latches: 1-by-1-inch (25-by-25-mm) butt or piano hinge and cam latches.
    - f. Fabricate doors airtight and suitable for duct pressure class.
  - 2. Frame: Galvanized sheet steel, with bend-over tabs and foam gaskets.
    - a. 24-gauge- (0.70-mm-) thick galvanized steel or 0.032-inch- (0.81-mm-) thick aluminum frame.
  - 3. Number of Hinges and Locks:

- a. Access Doors Less Than 12 Inches (300 mm) Square: No hinges and two sash locks.
- b. Access Doors up to 18 Inches (460 mm) Square: Two hinges and two sash locks.
- c. Access Doors up to 24 by 48 Inches (600 by 1200 mm): Three hinges and two compression latches with outside and inside handles.
- d. Access Doors Larger Than 24 by 48 Inches (600 by 1200 mm): Four hinges and two compression latches with outside and inside handles.
- C. Pressure Relief Access Door:
  - 1. Door and Frame Material: Galvanized sheet steel.
    - a. 24-gauge- (0.70-mm-) thick galvanized steel or 0.032-inch- (0.81-mm-) thick aluminum or 24-gauge- (0.70-mm-) thick stainless steel door panel.
  - 2. Door: Double wall with insulation fill with metal thickness applicable for duct pressure class.
  - 3. Operation: Open outward for positive-pressure ducts and inward for negative-pressure ducts.
  - 4. Factory set at 3.0 to 8.0 inches wg (800 to 2000 Pa).
  - 5. Doors close when pressures are within set-point range.
  - 6. Hinge: Continuous piano.
  - 7. Latches: Cam.
  - 8. Seal: Neoprene or foam rubber.
  - 9. Insulation Fill: 1-inch- (25-mm-) thick, fibrous-glass or polystyrene-foam board.

# 2.5 DUCT ACCESS PANEL ASSEMBLIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. CL WARD & Family Inc.
  - 2. Ductmate Industries, Inc; a DMI company.
  - 3. Flame Gard, Inc.

- B. Access panels used in cooking applications:
  - 1. Labeled compliant to NFPA 96 for grease duct access doors.
  - 2. Labeled in accordance with UL 1978 by an NRTL.
- C. Panel and Frame: Minimum thickness 16-gauge (1.6-mm) carbon steel.
- D. Fasteners: Stainless steel. Panel fasteners shall not penetrate duct wall.
- E. Gasket: Comply with NFPA 96, grease-tight, high-temperature ceramic fiber, rated for minimum 2000 deg F (1093 deg C).
- F. Minimum Pressure Rating: 10 inches wg (2500 Pa) positive or negative.

## 2.6 DUCT ACCESSORY HARDWARE

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Ductmate Industries, Inc; a DMI company.
  - 2. Duro Dyne Inc.
  - 3. DynAir; a Carlisle Company.
  - 4. Elgen Manufacturing.
  - 5. Ventfabrics, Inc.
  - 6. Ward Industries; a brand of Hart & Cooley, LLC.
- B. Instrument Test Holes: Cast iron or cast aluminum to suit duct material, including screw cap and gasket. Size to allow insertion of pitot tube and other testing instruments and of length to suit duct-insulation thickness.
- C. Adhesives: High strength, quick setting, neoprene based, waterproof, and resistant to gasoline and grease.
- 2.7 MATERIALS
  - A. Galvanized Sheet Steel: Comply with ASTM A653/A653M.
    - 1. Galvanized Coating Designation: G60 (Z180).

- 2. Exposed-Surface Finish: Mill phosphatized.
- B. Stainless Steel Sheets: Comply with ASTM A480/A480M, Type 304, and having a No. 2 finish for concealed ducts and finish for exposed ducts.
- C. Aluminum Sheets: Comply with ASTM B209 (ASTM B209M), Alloy 3003, Temper H14; with mill finish for concealed ducts and standard, one-side bright finish for exposed ducts.
- D. Extruded Aluminum: Comply with ASTM B221 (ASTM B221M), Alloy 6063, Temper T6.
- E. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts; compatible materials for aluminum and stainless steel ducts.
- F. Tie Rods: Galvanized steel, 1/4-inch (6-mm) minimum diameter for lengths 36 inches (900 mm) or less; 3/8-inch (10-mm) minimum diameter for lengths longer than 36 inches (900 mm).

## PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. Install duct accessories in accordance with applicable details in SMACNA's "HVAC Duct Construction Standards Metal and Flexible" for metal ducts and in NAIMA AH116 for fibrous-glass ducts.
- B. Install duct accessories of materials suited to duct materials; use galvanized-steel accessories in galvanized-steel and fibrous-glass ducts, stainless steel accessories in stainless steel ducts, and aluminum accessories in aluminum ducts.
- C. Install control dampers at inlet of exhaust fans or exhaust ducts as close as possible to exhaust fan unless otherwise indicated.
- D. Where multiple damper sections are necessary to achieve required dimensions, provide reinforcement to fully support damper assembly when fully closed at full system design static pressure.

- E. Install volume dampers at points on supply, return, and exhaust systems where branches extend from larger ducts. Where dampers are installed in ducts having duct liner, install dampers with hat channels of same depth as liner, and terminate liner with nosing at hat channel.
  - 1. Install steel volume dampers in steel ducts.
  - 2. Install aluminum volume dampers in aluminum ducts.
- F. Set dampers to fully open position before testing, adjusting, and balancing.
- G. Install test holes at fan inlets and outlets and elsewhere as indicated and as needed for testing and balancing.
- H. Install fire and smoke dampers in accordance with UL listing.
- I. Install duct access doors on sides of ducts to allow for inspecting, adjusting, and maintaining accessories and equipment at the following locations:
  - 1. On both sides of duct coils.
  - 2. Upstream and downstream from duct filters.
  - 3. At outdoor-air intakes and mixed-air plenums.
  - 4. At drain pans and seals.
  - 5. Downstream from manual volume dampers, control dampers, backdraft dampers, and equipment.
  - 6. Adjacent to and close enough to fire or smoke dampers, to reset or reinstall fusible links. Access doors for access to fire or smoke dampers having fusible links shall be pressure relief access doors and shall be outward operation for access doors installed upstream from dampers and inward operation for access doors installed downstream from dampers.
  - 7. At each change in direction and at maximum 50-ft. (15-m) spacing.
  - 8. Upstream and downstream from turning vanes.
  - 9. For grease ducts, install at locations and spacing as required by NFPA 96.
  - 10. Control devices requiring inspection.
  - 11. Elsewhere as indicated.

- J. Install access doors with swing against duct static pressure.
- K. Access Door Sizes:
  - 1. One-Hand or Inspection Access: 8 by 5 inches (200 by 125 mm).
  - 2. Two-Hand Access: 12 by 6 inches (300 by 150 mm).
  - 3. Head and Hand Access: 18 by 10 inches (460 by 250 mm).
  - 4. Head and Shoulders Access: 21 by 14 inches (530 by 355 mm).
  - 5. Body Access: 25 by 14 inches (635 by 355 mm).
  - 6. Body plus Ladder Access: 25 by 17 inches (635 by 430 mm).
- L. Label access doors according to Section 230553 "Identification for HVAC Piping and Equipment" to indicate the purpose of access door.
- M. Install flexible connectors to connect ducts to equipment.
- N. For fans developing static pressures of 5 inches wg (1250 Pa) and more, cover flexible connectors with loaded vinyl sheet held in place with metal straps.
- O. Install duct test holes where required for testing and balancing purposes.
- P. Install thrust limits at centerline of thrust, symmetrical on both sides of equipment. Attach thrust limits at centerline of thrust and adjust to a maximum of 1/4-inch (6-mm) movement during start and stop of fans.
- 3.2 FIELD QUALITY CONTROL
  - A. Tests and Inspections:
    - 1. Operate dampers to verify full range of movement.
    - 2. Inspect locations of access doors, and verify that size and location of access doors are adequate to perform required operation.
    - 3. Operate fire, smoke, and combination fire and smoke dampers to verify full range of movement and that proper heat-response device is installed.
    - 4. Inspect turning vanes for proper and secure installation, and verify that vanes do not move or rattle.
    - 5. Operate remote damper operators to verify full range of movement of operator and damper.

END OF SECTION 233300

## SECTION 260000 - GENERAL ELECTRICAL PROVISIONS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Definitions
  - 2. Scope of Work
  - 3. Work Not Included
  - 4. Intent of Drawings
  - 5. Pre-Bid Site Visit
  - 6. General Standards of Materials
  - 7. Products and Substitutions
  - 8. Applicable Codes
  - 9. Guarantees and Certificates
  - 10. Quiet Operation and Vibration Control
  - 11. Temporary Shutdown of Existing Systems
  - 12. Coordination
  - 13. Shop Drawings, Product Data, and Samples
  - 14. Owner Instruction

# 1.3 DEFINITIONS

- A. Specific terminology, as used herein, shall have the following meanings:
  - 1. "Furnish"...Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar subsequent requirements.
  - 2. "Install"...Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar requirements.
  - 3. "Provide"...Furnish and install, complete and ready for intended use.

- 4. "Concealed, Interior"...Concealed from view and protected from physical contact by building occupants.
- 5. "Concealed, Exterior" ...Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures.
- 6. "Exposed, Interior"...Exposed to view indoors (not concealed).
- 7. "Exposed, Exterior"...Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions.
- 8. "Finished Space" ... Space other than mechanical rooms, electrical rooms, furred spaces, pipe chases, unheated spaces immediately below roof, space above ceilings, unexcavated spaces, crawl spaces, tunnels, and interstitial spaces.
- 9. "Conditioned"...Spaces directly provided with heating and cooling.
- 10. "Unconditioned"...Spaces without heating or cooling including ceiling plenums.
- 11. "Indoors"...Located inside the exterior walls and roof of the building.
- 12. "Outdoors"...Located outside the exterior walls and roof of the building.

# 1.4 SCOPE OF WORK

- A. The scope of the work included under Division 26 of the specifications shall include complete systems as shown in the Contract Documents and specified herein. Any work reasonably inferable or required to result in a complete installation or the intended operation and performance of the systems, shall be included in the Base Bid except where there is specific reference to exclusion and incorporation in other quotations.
- B. A brief written Scope of Work appears in Division 01.
- C. Without limiting or restricting the volume of work and solely for convenience, the work to be performed will, in general, comprise of the following:
  - 1. Demolition.
  - 2. Grounding
  - 3. Branch circuits.
  - 4. Fire Alarm System

D. Items of labor, material, and equipment not specified in detail or shown on drawings, but incidental to or necessary for the complete installation and proper operation of the several branches of work and described herein, or reasonably implied in connection herewith, shall be furnished as if called for in detail by the specifications or drawings. This includes electrical work associated with mechanical and plumbing work whether indicated on electrical drawings or not.

## 1.5 WORK NOT INCLUDED

- A. The following items of Electrical Construction are not included in this contract:
  - 1. Certain low voltage wiring of mechanical equipment shall be done by the respective Contractor.
  - 2. Certain line voltage electrical apparatus such as switches, starters, controllers, transformers, etc., furnished by others shall be delivered to the curb by the Contractor furnishing the equipment, unless specifically noted otherwise. Unload and transport to installation location.

## 1.6 INTENT OF DRAWINGS

A. Provide complete and functional systems for the project. The systems shall conform to the details stated in the specifications and shown on the drawings. Items or work not shown or specified, but required for complete systems, shall be provided and conform with accepted trade practices. The drawings and specifications are presented to define specific system requirements and serve to expand on the primary contract requirements of providing complete systems. The drawings are diagrammatic and indicate the general arrangement and routing of the systems included in this contractor's work.

- B. Unless specifically dimensioned, the work shown on the drawings is diagrammatic, and is intended only to show general arrangement. Do not scale the drawings. Because of the scale of the drawings, it is not possible to indicate offsets, fittings, or similar items which may be required to provide complete operating systems. Carefully investigate conditions affecting the work associated with this project. Check and verify dimensions and existing conditions at the site. Install systems in such a manner that interferences between pipes, conduit, ducts, equipment, architectural and structural features are avoided. Provide items required to meet the project conditions without additional cost to the owner.
  - 1. These documents may not explicitly disclose final details required for a complete systems installation; however, contractors shall possess the expertise to include the necessary appointments of complete operating systems.
  - 2. Bidders shall have sufficient expertise in this type of construction to realize the extent of the work required.

## 1.7 PRE-BID SITE VISIT

A. Bidders shall visit the site and become completely familiar with existing conditions prior to submitting their bid. No extra charges shall be allowed as a result of existing conditions. To schedule a site visit, contact Owner at least 48 hours in advance of desired time of visit.

#### 1.8 GENERAL STANDARDS OF MATERIALS

- A. The specifications and drawings establish the standards of quality required, either by description or by references, to brand name, name of manufacturers and/or manufacturer's model number.
- B. Equipment and materials, unless otherwise noted, shall be new and of first quality, produced by manufacturers who have been regularly engaged in the manufacture of these products for a period of not less than five years.
- C. Equipment of one type shall be the products of one manufacturer; similar items of the same classification shall be identical, including equipment, assemblies, parts and components.

- D. Materials furnished shall be determined safe by a nationally recognized testing organization, such as Underwriters' Laboratories, Inc., or Factory Mutual Engineering Corporation, and materials shall be labeled, certified or listed by such organizations. Where third party certification is required for packaged equipment, the equipment shall bear the appropriate certification label.
- E. With respect to custom made equipment or related installations which are constructed specially for this project, the manufacturer shall certify the safety of same on the basis of test data. The Owner shall be furnished copies of such certificates.

## 1.9 PRODUCTS AND SUBSTITUTIONS

- A. Where a specific manufacturer's product is specified, the Contract Amount shall be based on that product only. Any substitutions from the specified product shall be offered as a Substitution Request. Refer to Division 01 for requirements. Substitutions shall not be permitted after the bidding phase without a Substitution Request Form included with the bid.
- B. Where several manufacturer's products are specified, the Contract Amount shall be based upon the specified products only. Any substitutions from the specified products shall be offered as a Substitution Request. Refer to Division 01 for requirements. Substitutions shall not be permitted after the bidding phase without a Substitution Request Form included with the bid.
- C. Where only one manufacturer's product is specified, the associated systems have been designed on the basis of that product. Where several manufacturer's products are specified, the associated systems have been designed on the basis of the first-named manufacturer's product. When products other than those used as the basis of design are provided, the contractor shall pay all additional costs related to submissions review, redesign, and system and/or structure modifications necessary to use that product. Such additional costs shall be identified at the time such substitutions are proposed.
- D. It is the intent of these specifications that service organizations such as testing agencies follow the above substitution procedures.

## 1.10 APPLICABLE CODES

A. Materials furnished and work installed shall comply with applicable codes listed in Division 01, with the requirements of the local utility companies, and with the requirements of governmental departments or authorities having jurisdiction.

## 1.11 GUARANTEES AND CERTIFICATES

- A. The contractor and equipment manufacturers shall jointly guarantee all wiring and equipment to be free of defects in workmanship and material for a period of one year from the date of final acceptance, unless otherwise noted.
- B. Defective equipment, materials or workmanship, including damage to the work provided under other divisions of this contract resulting from same, shall be replaced or repaired at no extra cost to the Owner for the duration of the stipulated guarantee periods.
  - 1. Unless specifically indicated otherwise, the duration of the guarantee period shall be one (1) year following the date of Substantial Completion. Temporary operation of the equipment for temporary conditioning, testing, etc., prior to occupancy will not be considered part of the warranty period.

## 1.12 QUIET OPERATION AND VIBRATION CONTROL

- A. Equipment and associated items shall operate under conditions of load without sound or vibration deemed objectionable by the Architect. In the case of moving equipment, sound or vibration noticeable outside of the room in which it is installed, or noticeable within the room in which it is installed, shall be deemed objectionable. Sound or vibration deemed objectionable shall be corrected in an approved manner at no extra cost to the Owner. Vibration control shall be provided by means of approved vibration isolators and installed in accordance with the isolator manufacturer's recommendations.
- B. The sound pressure levels around mechanical and electrical equipment (fans, pumps, motors, etc.) in equipment spaces shall not exceed 85 dBA at any point three (3) feet from the equipment, with all equipment in the room operating. The sound criteria applies to the complete range of each piece of equipment.

## 1.13 TEMPORARY SHUTDOWN OF EXISTING SYSTEMS

- A. Plan installation of new work and connections to existing work to insure minimum interference with regular operation of existing systems. Some temporary shutdown of existing systems may be required to complete the work.
- B. Submit to the Owner in writing for approval, proposed date schedule, time, and duration of necessary temporary shutdowns of existing systems. Submit schedule at least fifteen (15) calendar days in advance of intended shutdown. Shutdowns shall be made at such times as shall not interfere with regular operation of existing facilities and only after written approval of Owner. The Owner reserves the right to cancel shutdowns at any time prior to the shutdowns. To ensure continuous operation, make necessary temporary connections between new and existing work. Bear costs resulting from temporary shutdowns and temporary connections. No additional charges shall be allowed for Owner-canceled shutdowns that must be rescheduled.
- C. Shutdowns must be performed by the Owner. Do not shut-down any system. The Owner reserves the right to require a walk-through of any shutdown prior to the shutdown. Following electrical shutdowns, verify that affected motors are rotating in the proper direction. Bear costs associated with reverse rotated motors.

## 1.14 COORDINATION

- A. Coordinate and furnish in writing to the Architect information necessary to permit the work to be installed satisfactorily and with the least possible interference or delay.
- B. Coordination drawings shall be prepared as defined in Division 1. No installation of permanent systems shall proceed until the coordination drawings are reviewed by the Architect. No extra charges shall be allowed for changes required to accommodate installation of systems provided under other divisions of this contract.
- C. Coordination drawings shall be developed from individual system shop drawings and contractor fabrication drawings. Electronic or other reproduced engineering design drawings used as coordination drawings are not acceptable.
- D. When work is installed without proper coordination, changes to this work deemed necessary by the Architect shall be made to correct the conditions without extra cost to the Owner.

- E. The value of the coordination drawings shall be identified as a line item in the Schedule of Values. If the coordination drawings are not submitted as required, their value shall be credited to the Owner in accordance with the provisions of Article 7 of the General Conditions. The value of coordination drawings shall be a minimum of two (2.0) percent of this Contract Amount.
- 1.15 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES
  - A. Shop drawings, product data, and samples shall be submitted in accordance with the provisions of Division 01.
  - B. The following shall be submitted by the Contractor for review:
    - 1. Scale shop drawings showing system components with sizing indicated, including but not limited to:
      - a. Equipment locations.
      - b. Raceways
      - c. Insert and sleeve locations
      - d. Hangers, anchors and guides
      - e. Expansion joints
      - f. Access doors
      - g. Wiring requirements
    - 2. Product data for system components and materials (including construction standards).
  - C. The value of shop drawings, product data and samples shall be identified as a line item in the Schedule of Values. If the shop drawings, product data and samples are not submitted as required, their value shall be credited to Owner in accordance with the provisions of Article 7 of the General Conditions. The value of these items shall be a minimum of one (1.0) percent of this Contract Amount.

## 1.16 OWNER INSTRUCTION

- A. After final tests and adjustments have been completed, furnish the services of qualified personnel to instruct representatives of the Owner in the operation and maintenance procedures for equipment and systems installed as part of this project. Operation and maintenance instructions for major items of equipment shall be directly supervised by the equipment manufacturer's representative. Supply qualified personnel to operate equipment for sufficient length of time as required to meet governing authorities' operation and performance tests and as required to assure that the Owner's representatives are properly qualified to take over operation and maintenance procedures. Minimum instruction period shall be 10 man hours. The instruction period shall be broken into segments at the discretion of the Owner.
  - 1. Notify the Architect, the Owner's representative and equipment manufacturers' representatives, by letter, as to the time and date of operating and maintenance instruction periods approved by the Owner at least one (1) week prior to conducting same.
  - 2. Forward to the Architect the signatures of all those present for the instruction periods.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 260000

### SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

#### PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Electrical equipment coordination and installation
  - 2. Sleeves for raceways and cables
  - 3. Sleeve seals
  - 4. Grout
  - 5. Common electrical installation requirements
  - 6. Demolition
  - 7. Waterproofing
  - 8. Cutting and Patching
  - 9. Protection of Floors
  - 10. Painting
  - 11. Equipment Foundations, Supports, Piers and Attachments
  - 12. Equipment Guards and Rails
  - 13. Cleaning, Protecting and Adjusting
  - 14. Welding

#### 1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.
- C. Wiring: Cable and/or wire installed in Raceway.

#### 1.4 SUBMITTALS

A. Product Data: For sleeve seals.

### 1.5 DEMOLITION

- A. Review the demolition drawings, to determine the affected areas of the existing structure. Remove electrical appurtenances in the affected areas not to be reused including wire, conduit, switches, outlets, light fixtures, and fittings. If any existing electrical items are to be removed, either patch area as required or provide a blank cover plate over boxes to remain.
- B. Any conduit or wiring that is not to be permanently removed or that feeds other remaining sections of the building shall be relocated as necessary and rerouted and reconnected as required.
- C. Items removed above shall become the property of the Owner unless otherwise noted. If the Owner has no use for any of the items, remove them from the site.
- D. Maintain the continuity of any present circuits that may be interrupted by these alterations even though they may not be indicated on the drawings. Furnish the labor and necessary materials required to restore the circuit.
- E. Where circuits are looped and outlets are removed, make adjustments and connections to restore the circuits.
- F. Where existing electrical devices and items are to be removed, ceilings, floors, wall partitions, etc., are to be patched by the Electrical Contractor. Particular attention must be paid to associated construction types and methods of affected areas. All patching for these areas is to match the existing and intended finishes for that area no matter what the type of construction. Coordinate all patching work fully with the Architect and General Contractor. Blank cover plates over demolished items will not be acceptable.

### 1.6 WATERPROOFING

A. Where work pierces waterproofing, including waterproof concrete, the method of installation shall be approved by the Architect prior to performing the work. Furnish necessary sleeves, caulking and flashing required to make openings absolutely watertight.

# 1.7 WEATHERPROOFING LOCATIONS (WP)

- A. Electrical apparatus, such as outlet boxes, switches, thermal switches or manual starters, disconnect switches, combination switches and starters, motor control centers, and motor starters shall be weatherproof gasketed type, NEMA Types 3 or 4 in the following instances:
  - 1. On surface of exterior face of building, including areas where not under canopies, cast boxes with threaded hubs must be used and under canopies steel boxes with gasket connections to devices.
  - 2. In any areas where specifically noted "WP" or required by the NEC or Electrical Regulations mentioned herein.
  - 3. Within air conditioning enclosures.
  - 4. In underground splice boxes.
  - 5. On building roof.
- 1.8 CUTTING AND PATCHING
  - A. Provide cutting and patching necessary to install the work specified herein. Patching shall match adjacent surfaces. Refer to Division 01, Cutting and Patching for specific directions.
  - B. No structural members shall be cut without prior approval of the Architect; such cutting shall be done in a manner directed by him.
  - C. Provide ceiling removal and replacement where work above ceilings is required. Replace ceiling components damaged in the process.
  - D. Provide patching where electrical devices are removed from walls, ceilings or floors.
  - E. Cutting and patching shall be performed only by tradesmen familiar with the construction involved.
- 1.9 ACCESSIBILITY OF EQUIPMENT
  - A. Coordinate to ensure the sufficiency of the size of shafts, and chases, and the adequacy of clearances in hung ceilings and other areas required for the proper installation of this work.

B. Locate equipment which must be serviced, operated or maintained in fully accessible positions. Locations in ceilings requiring access shall be coordinated with, but not limited to lighting. Equipment requiring access shall include, but is not necessarily limited to, motors, junction boxes, controllers, etc.

### 1.10 PROTECTION OF FLOORS

A. Protect existing flooring from damage during the construction period. Provide plywood or similar material under equipment or materials stored on floors, and in areas where construction may damage the floor surfaces. Floor surfaces (including sealer) damaged during the construction shall be replaced at the cost of the Contractor at fault.

## 1.11 PROTECTION OF SERVICES

A. Repair, replace and maintain in service any new or existing utilities, facilities or services (underground, overground, interior or exterior) damaged, broken or otherwise rendered inoperative during construction. The method used in repairing, replacing or maintaining the services shall be approved by the Owner and Architect.

### 1.12 PAINTING

- A. Painting requirements of this section shall conform to Section 099000 Painting.
- B. Provide surface preparation, priming, and final coat application in strict accordance with manufacturer's recommendations.
- C. Provide prime coat painting for the following:
  - 1. Indoor miscellaneous steel and iron provided under this Division of the specifications.
  - 2. Indoor hangers and supports provided under this Division of the specifications.

### 1.13 CLEANING, PROTECTING AND ADJUSTING

- A. General cleaning requirements are specified in Division 01.
- B. Materials shall be stored in a manner that shall maintain an orderly, clean appearance. If stored on site in open or unprotected areas, equipment and material shall be kept off the ground by means of pallets or racks, and covered with tarpaulins.

- C. Equipment and material, if left unprotected and damaged, shall be repainted or otherwise refurbished at the discretion of the Owner. Equipment and material is subject to rejection and replacement if, in the opinion of the Architect or the manufacturer's engineering department, the equipment has deteriorated or been damaged to the extent that its immediate use or performance is questionable, or that its normal life expectancy has been curtailed.
- D. During the construction period, protect equipment from damage and dirt.
- E. Vacuum cabinets, switchboards, switchgear, lighting and power panels, etc., after completion of work.
- F. Adjusting
  - 1. After the entire installation has been completed, make required adjustments to balance panelboards and adjust lighting fixtures until performance requirements are met.
- 1.14 SPECIAL TOOLS
  - A. Provide the Owner's representative with two (2) sets of special tools required for operation and maintenance of equipment provided.
- PART 2 PRODUCTS
- 2.1 SLEEVES FOR RACEWAYS AND CABLES
  - A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
  - B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
  - C. Sleeves for Rectangular Openings: Galvanized sheet steel.
    - 1. Minimum Metal Thickness:
      - For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side more than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).

For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches (1270 mm) and 1 or more sides equal to, or more than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

### 2.2 SLEEVE SEALS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Advance Products & Systems, Inc.
    - b. Calpico, Inc.
    - c. Metraflex Co.
    - d. Pipeline Seal and Insulator, Inc.
  - 2. Sealing Elements: EPDM interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
  - 3. Pressure Plates: Stainless steel. Include two for each sealing element.
  - 4. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements. Include one for each sealing element.

# 2.3 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

### PART 3 - EXECUTION

- 3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION
  - A. Comply with NECA 1.
  - B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.

- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Coordinate all locations of equipment, prior to rough-in, since final locations may differ from that indicated on the drawings. Obtain detailed and specific information regarding the installation locations. Outlets, equipment or wiring improperly placed because of failure to obtain this information shall be relocated and reinstalled without additional expense to the Owner. Determine the actual direction of door swings, so that local switches and other controls shall be installed at the latch side of doors, unless otherwise noted. Improperly located switches shall be relocated without additional expense to the Owner.
- F. The design shall be subject to such revisions as may be necessary to overcome building obstructions. No changes shall be made in location of outlets or equipment without written consent of the Architect and Owner.
- G. Unless otherwise mentioned or indicated, mounting heights of outlets are shown on the drawings or in the specification. Dimensions given shall be considered to be from center of outlet to finished floor.
- H. Coordinate the location and elevation of all electrical devices and fixtures with the architectural interior elevation plan and reflective ceiling plan prior to installation.
- I. Properly coordinate the rough-in of the electrical conduit and equipment under this contract. Modify as required for coordination during the construction period.
- 3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS
  - A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.

- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.
- F. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level.
- G. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and raceway or cable, unless indicated otherwise.
- H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
  - 1. Promptly pack grout solidly between sleeve and wall so no voids remain.
  - 2. Tool exposed surfaces smooth; protect grout while curing.
- Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Division 07 Section "Joint Sealants."
- J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials. Comply with requirements in Division 07 Section "Through-Penetration Firestop System."
- K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel or cast-iron pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.

M. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

### 3.3 SLEEVE-SEAL INSTALLATION

- A. Install to seal exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### 3.4 FIRESTOPPING

A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Through-Penetration Firestop System."

### 3.5 DUST, DIRT AND NOISE

- A. Carry out new work and make changes, relocations, and installations with a minimum of noise. Site areas and new equipment, floors and walls, shall be adequately protected from dust and dirt caused by the work. Protection shall include suitable temporary barriers or coverings. The exterior and interior premises of each building shall be kept clean as possible during construction. Damages to surfaces or equipment as a result of negligence shall be re-placed or corrected as required.
- B. School activities will be under way during much of the construction period. It is imperative that school functions and activities are given priority and the highest level of respect. Con-tractor functions which may be excessively noisy or disruptive shall be scheduled for times when school functions will not be interrupted or disturbed.

### 3.6 ENVIRONMENTAL AIR PLENUMS

A. In spaces over hung ceiling which are used for environmental air handling purposes as defined by Article 300.22C of the National Electric Code, power data and communications cable must be in conduit or of the type cable rated for air plenum use. Cable type and/or raceway is generally indicated on the electrical drawings and specifications although the Contractor shall be responsible to clearly define ceiling space used for environmental air purposes.

END OF SECTION 260500

### 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 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Building wires and cables rated 600 V and less.
  - 2. Connectors, splices, and terminations rated 600 V and less.
  - 3. Sleeves and sleeve seals for cables.
- B. Related Sections include the following:
  - 1. Division 26 Section "Common Work Results for Electrical".
  - 2. Division 26 Section "Raceway and Boxes for Electrical Systems" for cable-in-conduit for exterior branch circuits.

#### 1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.
- 1.4 SUBMITTALS
  - A. Product Data: For each type of product indicated.
  - B. Qualification Data: For testing agency.
  - C. Field quality-control test reports.

### 1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.
  - 1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.
- B. 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.
- C. Comply with NFPA 70.

## 1.6 COORDINATION

- A. Set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- PART 2 PRODUCTS
- 2.1 CONDUCTORS AND CABLES
  - A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - 1. American Insulated Wire Corp.; a Leviton Company.
    - 2. General Cable Corporation.
    - 3. Cablec Continental Cable Company.
    - 4. Southwire Company.
  - B. Copper Conductors: Comply with NEMA WC 70.
  - C. Conductor Insulation: Comply with NEMA WC 70 for Types THHN/THWN-2.

# 2.2 CONNECTORS AND SPLICES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Hubbell Power Systems, Inc.
  - 3. O-Z/Gedney; EGS Electrical Group LLC.
  - 4. 3M; Electrical Products Division.
  - 5. Thomas & Betts Corp.
- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

### PART 3 - EXECUTION

- 3.1 CONDUCTOR MATERIAL APPLICATIONS
  - A. Feeders: Copper: Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
  - B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
  - C. Wire smaller than No. 12 AWG shall not be used for lighting or power circuits.
- 3.2 INSTALLATION OF CONDUCTORS AND CABLES
  - A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
  - B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
  - C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
  - D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

- E. Support cables according to Division 26 Section "Hangers and Supports for Electrical Systems."
- F. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems."
- G. Metal Clad Cabling shall be secured every six feet and within 12 inches of every box or termination as required by code. Installation of metal clad cabling shall be done in a neat and workmanlike manner and follow or be perpendicular to building lines.

### 3.3 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches (300 mm) of slack.
- D. Copper conductors #10 AWG and smaller shall be terminated and spliced with wire nut connectors. The nylon self-insulated type shall be used to isolate the termination from other metal parts and equipment.
- E. Copper conductors #8 AWG and larger shall be terminated, spliced, and tapped with color-keyed compression connectors. The manufacturers recommended tools and dies shall be used.
- F. Copper cable lug connections #8 and larger to copper bus bar mains and branches shall use copper solderless connectors having either 2-bolt cast copper clamps or compression connectors, with manufacturer's recommended hexagonal dies and hydraulic compression tools.

G. Where terminal strips are indicated, provide strips having each terminal equipped with two clamp type pressure lugs or two washer bead binding screws. Use terminal strips having 20 ampere minimum terminal ratings. Provide a white marking strip along the center line of each row of terminals for identification. Use strips having plastic barriers between adjacent terminals. Provide terminal quantities indicated. If quantity is not indicated, provide one terminal for each conductor entering enclosure plus 20 percent spare terminals. Type or otherwise mark the identification strip to identify each connected circuit. Relate identification to wiring diagrams, panel schedules and other terminals in a logical manner, where specific identification requirements are not indicated. Under no circumstances shall more than one wire be terminated under each terminal. Use only approved type jumper to mechanically connect terminals to each other.

### 3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- B. Perform tests and inspections and prepare test reports.
- C. Tests and Inspections:
  - 1. After installing conductors and cables and before electrical circuitry has been energized, test for compliance with requirements.
    - a. 600 volt feeders
  - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- D. Test Reports: Prepare a written report to record the following:
  - 1. Test procedures used.
  - 2. Test results that comply with requirements.
  - 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

E. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION 260519

## SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes methods and materials for grounding systems and equipment, plus the following special applications:
  - 1. All feeders and branch circuits.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Qualification Data: For testing agency and testing agency's field supervisor.
- C. Field quality-control test reports.

### 1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.
  - 1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association to supervise on-site testing specified in Part 3.
- B. 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.
- C. Comply with UL 467 for grounding and bonding materials and equipment.

### PART 2 - PRODUCTS

### 2.1 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
  - 1. Solid Conductors: ASTM B 3.
  - 2. Stranded Conductors: ASTM B 8.
  - 3. Tinned Conductors: ASTM B 33.
  - 4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
  - 5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
  - 6. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
  - 7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

### 2.2 CONNECTORS

- A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressuretype, with at least two bolts.
  - 1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

### PART 3 - EXECUTION

### 3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 10 AWG and smaller, and stranded conductors for No. 8 AWG and larger, unless otherwise indicated.
- B. Conductor Terminations and Connections:
  - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  - 2. Connections to Structural Steel: Exothermic welded connectors.

### 3.2 EQUIPMENT GROUNDING

- A. Provide insulated equipment grounding conductors with all feeders and branch circuits.
- B. Provide insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
  - 1. Branch circuits.
  - 2. Receptacle circuits.
  - 3. Flexible raceway runs.
  - 4. Metal-clad cable runs.
- C. Air-Duct Equipment Circuits: Provide insulated equipment grounding conductor to ductmounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

#### 3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
  - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

- 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.
- 3. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.

### 3.4 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing and inspecting agency to perform the following field tests and inspections and prepare test reports:

END OF SECTION 260526

### SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

#### PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
  - A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
  - A. This Section includes the following:
    - 1. Hangers and supports for electrical equipment and systems.

#### 1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. IMC: Intermediate metal conduit.
- C. RMC: Rigid metal conduit.
- 1.4 PERFORMANCE REQUIREMENTS
  - A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
  - B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
  - C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
  - D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

### 1.5 SUBMITTALS

- A. Product Data: For the following:
  - 1. Steel slotted support systems.
- B. Welding certificates.
- 1.6 QUALITY ASSURANCE
  - A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code Steel."
  - B. Comply with NFPA 70.

### PART 2 - PRODUCTS

- 2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS
  - A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
    - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      - a. Allied Tube & Conduit.
      - b. Cooper B-Line, Inc.; a division of Cooper Industries.
      - c. ERICO International Corporation.
      - d. GS Metals Corp.
      - e. Thomas & Betts Corporation.
      - f. Unistrut; Tyco International, Ltd.
    - 2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
    - 3. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
    - 4. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.

- 5. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
  - 1. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
    - a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
      - 2) Empire Tool and Manufacturing Co., Inc.
      - 3) Hilti Inc.
      - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - 5) MKT Fastening, LLC.
  - 2. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
  - 3. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.

- 4. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
- 5. Toggle Bolts: All-steel springhead type.
- 6. Hanger Rods: Threaded steel.

## PART 3 - EXECUTION

- 3.1 APPLICATION
  - A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
  - B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
  - C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future with-out exceeding specified design load limits.
    - 1. Secure raceways and cables to these supports with single-bolt conduit clamps.
  - D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.
- 3.2 SUPPORT INSTALLATION
  - A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
  - B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).

- C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To Wood: Fasten with lag screws or through bolts.
  - 2. To New Concrete: Bolt to concrete inserts.
  - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 4. To Existing Concrete: Expansion anchor fasteners.
  - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
  - 6. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
  - 7. To Light Steel: Sheet metal screws.
  - 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.
  - 9. Items mounted to walls with steel studs space 16" on center: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices shall be secured to steel stud framing, blocking and/or structural elements within the wall.
- D. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

### 3.3 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
  - Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).

- B. Touchup: Comply with requirements in Division 09 painting sections for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529

### SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

#### PART 1 - GENERAL

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

#### 1.2 SUMMARY

A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

#### 1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. FMC: Flexible metal conduit.
- C. LFMC: Liquidtight flexible metal conduit.
- 1.4 SUBMITTALS
  - A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
  - B. Shop Drawings: For the following raceway components. Include plans, elevations, sections, details, and attachments to other work.
    - 1. Custom enclosures and cabinets.
  - C. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
    - 1. Structural members in the paths of conduit groups with common supports.
    - 2. HVAC and plumbing items and architectural features in the paths of conduit groups with common supports.

- D. Qualification Data: For professional engineer and testing agency.
- E. Source quality-control test reports.

#### 1.5 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.
- PART 2 PRODUCTS

### 2.1 METAL CONDUIT AND TUBING

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Alflex Inc.
  - 3. Allied Tube & Conduit; a Tyco International Ltd. Co.
  - 4. Anamet Electrical, Inc.; Anaconda Metal Hose.
  - 5. Electri-Flex Co.
  - 6. Manhattan/CDT/Cole-Flex.
  - 7. Maverick Tube Corporation.
  - 8. O-Z Gedney; a unit of General Signal.
  - 9. Wheatland Tube Company.
- B. EMT: ANSI C80.3.
  - 1. Connectors: Compression type EMT connectors are to be used. Set screw and indentor type are NOT allow.
- C. FMC: Zinc-coated steel.
- D. LFMC: Flexible steel conduit with PVC jacket.

- E. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
  - 1. Utilize wet location listed fittings for damp and wet locations, and boiler rooms.

## 2.2 METAL WIREWAYS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Cooper B-Line, Inc.
  - 2. Hoffman.
  - 3. Square D; Schneider Electric.
- C. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, unless otherwise indicated.
- D. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- E. Wireway Covers: Screw-cover type.
- F. Finish: Manufacturer's standard enamel finish.
- 2.3 BOXES, ENCLOSURES, AND CABINETS
  - A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - 1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
    - 2. EGS/Appleton Electric.
    - 3. Erickson Electrical Equipment Company.

- 4. Hoffman.
- 5. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
- 6. O-Z/Gedney; a unit of General Signal.
- 7. RACO; a Hubbell Company.
- 8. Robroy Industries, Inc.; Enclosure Division.
- 9. Scott Fetzer Co.; Adalet Division.
- 10. Spring City Electrical Manufacturing Company.
- 11. Thomas & Betts Corporation.
- 12. Walker Systems, Inc.; Wiremold Company (The).
- 13. Woodhead, Daniel Company; Woodhead Industries, Inc. Subsidiary.
- 14. Carlon Electrical Products.
- B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- C. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- D. Cabinets:
  - 1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
  - 2. Hinged door in front cover with flush latch and concealed hinge.
  - 3. Key latch to match panelboards.
  - 4. Metal barriers to separate wiring of different systems and voltage.
  - 5. Accessory feet where required for freestanding equipment.

### PART 3 - EXECUTION

- 3.1 RACEWAY APPLICATION
  - A. Comply with the following indoor applications, unless otherwise indicated:
    - 1. Exposed, Not Subject to Physical Damage: EMT.
    - 2. Exposed, Not Subject to Severe Physical Damage: EMT.
    - 3. Concealed in Ceilings and Interior Walls and Partitions: EMT.
    - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.

- 5. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel in damp or wet locations.
- 6. Color Coding:

Colo	r	Application
Red		Emergency, Fire Alarm, Security
Silve	r	Normal Power, Lighting

In exposed areas, as indicated to blend in with architecture, conduits to be painted to match structure or as directed by Architect.

- B. Minimum Raceway Size: 3/4-inch (21-mm) trade size.
- C. Raceway Fittings: Compatible with raceways and suitable for use and location.
  - 1. EMT: Compression and Compression watertight.
  - 2. FMC: Set screw or thread-in type as approved by the enforcing Code.
- D. Use fittings made of the same material as the raceway except:
  - 1. Malleable iron and steel are interchangeable.
  - 2. Die cast fittings may be used for flexible steel conduit, and for factory manufactured offsets.
  - 3. Use plastic insulated bushings for conduit sizes larger than 1 inch.
  - 4. Use steel insulated throat connectors for electrical metallic tubing where entering panel boards, switchboards, etc.
- E. Use steel fittings that are galvanized, cadmium-plated, or have other approved similar protective coating.
- F. Use double locknuts for terminating rigid conduit at sheet metal enclosures and equip conduit ends with bushings.

G. Provide expansion fittings on every raceway larger than 1-1/2 inches, and use a 2 foot piece of seal tight on all conduit 1-1/2 inches and smaller where it crosses any building expansion joints. Verify exact location of building expansion joints shown on architectural and/or electrical drawings prior to installation of raceway.

### 3.2 INSTALLATION

- Comply with NECA 1 for installation requirements applicable to products specified in Part
   2 except where requirements on Drawings or in this Article are stricter.
- B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Support raceways as specified in Division 26 Section "Hangers and Supports for Electrical Systems."
- E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.
- F. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which two 90-degree bends are allowed.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.
- H. Conduit required for slab on grade installations shall be installed in gravel sub-base, below the vapor barrier.
- I. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- J. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.
- K. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 24 inches (600 mm) of slack at each end of pull wire.

- L. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
  - 1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
  - 2. Where otherwise required by NFPA 70.
- M. Expansion-Joint Fittings (Metallic conduit): Provide expansion fittings on every raceway larger than 1-1/2 inches, and use a 24 inch piece of LFMC on all conduit 1-1/2 inches and smaller where it crosses any building expansion joints. Verify exact location of building expansion joints shown on architectural and/or electrical drawings prior to installation of raceway.
- N. Flexible Conduit Connections: Use maximum of 72 inches (1830 mm) of flexible conduit for recessed and semi-recessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
  - 1. Use LFMC in damp or wet locations subject to severe physical damage.
  - 2. Use LFMC in damp or wet locations not subject to severe physical damage.
- O. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.

### 3.3 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
  - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

END OF SECTION 260533

### SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Identification for raceway.
  - 2. Identification for conductors.
  - 3. Equipment identification labels.
  - 4. Miscellaneous identification products.

#### 1.3 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.
- C. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.
- 1.4 QUALITY ASSURANCE
  - A. Comply with ANSI A13.1 and ANSI C2.
  - B. Comply with NFPA 70.
  - C. Comply with 29 CFR 1910.145.

## 1.5 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in the Contract Documents, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual, and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.
- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.
- D. Install identifying devices before installing acoustical ceilings and similar concealment.

### PART 2 - PRODUCTS

- 2.1 RACEWAY AND METAL-CLAD CABLE IDENTIFICATION MATERIALS
  - A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
  - B. Color for Printed Legend:
    - 1. Power Circuits: Black letters on an orange field.
    - 2. Fire Alarm Circuits: Red letters on natural field.
    - 3. Legend: Indicate system or service and voltage, if applicable.
  - C. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- 2.2 EQUIPMENT IDENTIFICATION LABELS
  - A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a black background. Minimum letter height shall be 3/8 inch (10 mm).
- 2.3 MISCELLANEOUS IDENTIFICATION PRODUCTS
  - A. Cable Ties: Fungus-inert, self-extinguishing, 1-piece, self-locking, Type 6/6 nylon cable ties.

- 1. Minimum Width: 3/16 inch (5 mm).
- 2. Tensile Strength: 50 lb (22.6 kg), minimum.
- 3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
- 4. Color: Black, except where used for color-coding.
- B. Paint: Paint materials and application requirements are specified in Division 01 painting Sections.
- C. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

### PART 3 - EXECUTION

#### 3.1 APPLICATION

- A. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 90 A: Identify with orange self-adhesive vinyl label. With panelboard and circuit number.
  - 1. Label raceways at panelboards.
  - 2. Label raceways where conduits penetrate walls.
- B. Accessible Raceways and Cables of Auxiliary Systems: Identify the following systems with color-coded, self-adhesive vinyl tape applied in bands:
  - 1. Fire Alarm System: Red.
  - 2. Fire-Suppression Supervisory and Control System: Red and yellow.
  - 3. Combined Fire Alarm and Security System: Red and blue.
  - 4. Security System: Blue and yellow.
  - 5. Mechanical and Electrical Supervisory System: Green and blue.
- C. Junction Box covers: Identify panelboard and circuit number with permanent marker or machine printed labels.
  - 1. Exposed in finished areas: Label on inside of cover.

- D. Power-Circuit Conductor Identification: For primary and secondary conductors No. 1/0 AWG and larger in vaults, pull and junction boxes, manholes, and handholes use writeon tags. Identify source and circuit number of each set of conductors. For single conductor cables, identify phase in addition to the above.
- E. Branch-Circuit Conductor Identification: Where there are conductors for more than three branch circuits in same junction or pull box, use color-coding conductor tape. Identify each ungrounded conductor according to source and circuit number.
- F. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, signal, sound, intercommunications, voice, and data connections.
  - 1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
  - 2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
  - 3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and Operation and Maintenance Manual.
- G. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Comply with 29 CFR 1910.145 and apply self-adhesive warning labels. Identify system voltage with black letters on an orange background. Apply to exterior of door, cover, or other access.
  - 1. Equipment with Multiple Power or Control Sources: Apply to door or cover of equipment including, but not limited to, the following:
    - a. Power transfer switches.
    - b. Controls with external control power connections.
  - 2. Equipment Requiring Workspace Clearance According to NFPA 70: Unless otherwise indicated, apply to door or cover of equipment but not on flush panelboards and similar equipment in finished spaces.

- Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
  - 1. Labeling Instructions:
    - a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a five lines of text:
      - 1) First Line: 1/2-inch (13-mm) letters on the first line stating equipment name.
      - 2) Second line (if applicable): 3/8-inch (10-mm) letters stating the existing equipment name in Parentheses ().
      - 3) Third line: 3/8-inch (10-mm) letters stating voltage/phase.
      - 4) Fourth line: 3/8-inch (10-mm) letters stating the breaker number, panel name and room number/name (Owner's room number) from which the equipment is fed.
      - 5) Fifth line: 3/8-inch (10-mm) letters stating function and/or equipment which it controls.
    - b. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
    - c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
  - 2. Receptacle Labeling: Label shall be using Dymo Posiprinter, black lettering on clear tape stating panelboard and circuit number from which it is fed.
  - 3. Equipment to be Labeled:
    - a. Panelboards, electrical cabinets, and enclosures.
    - b. Disconnect switches.
    - c. Enclosed circuit breakers.
    - d. Fire-alarm control panel and annunciators.
    - e. Security and intrusion-detection control stations, control panels, terminal cabinets, and racks.

- f. Monitoring and control equipment.
- g. Receptacles
- h. Raceways
- i. Junction boxes

#### 3.2 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach non-adhesive signs and plastic labels with screws and auxiliary hardware appropriate to the location and substrate.
- F. System Identification Color Banding for Raceways and Cables: Each color band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.
- G. Color-Coding for Phase and Voltage Level Identification, 600 V and Less: Use the colors listed below for ungrounded service, feeder, and branch-circuit conductors.
  - 1. Colors for 240/120-V Circuits:
    - a. Phase A: Black.
    - b. Phase B: Red.
    - c. Neutral: White.
  - 2. Colors for 208/120-V Circuits:
    - a. Phase A: Black.
    - b. Phase B: Red.

- c. Phase C: Blue.
- d. Neutral: White.
- 3. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

END OF SECTION 260553

## SECTION 260580 - ELECTRICAL POWERED EQUIPMENT

#### PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specifications sections, apply to this section.

#### 1.2 DESCRIPTION

- A. This section of the specifications describes the principal electrical work related to the installation, connection, and control of electrical powered equipment furnished under other divisions. Should examination of related work indicate discrepancies or omissions, request clarification prior to performing or omitting any electrical work.
- B. Examine Contract Drawings and other divisions of these specifications to ascertain the extent of powered equipment covered by the drawings and specifications and the method by which each item of equipment shall be furnished, delivered to the site, installed, and the amount of electrical work which shall be included with the powered equipment. Verify the voltage and frequency requirements of electrical equipment as it is delivered to the site. If voltage and frequency are not compatible with the building electrical system, immediately inform the Architect in writing. Particular attention is called to the following items:
  - 1. Electric motors
  - 2. Mechanical equipment

## 1.3 DEFINITIONS

A. Power Wiring: Contactors, conduit, enclosures, connections, labor and miscellaneous items to supply power to powered equipment and their associated controls for proper operation.

## PART 2 - PRODUCTS

#### 2.1 MATERIALS

A. Refer to other related sections of Division 26 for applicable materials.

## PART 3 - EXECUTION

## 3.1 ELECTRIC MOTORS

- A. Motor Installation and Connections: Utility motors such as fans, pumps, etc., are provided under applicable sections of the specifications. Provide power wiring, including a check for correct rotation. Connect each motor to a separate branch circuit, except where shown otherwise. Terminate conduit to motors in final connection with liquid-tight flexible conduit.
- B. Control Devices and Wiring: Control devices (such as pressure switches, floats, electrodes, P.E. switches, E.P. switches, relays, thermostats, etc.), prewired in packaged type equipment and/or control panels shall be provided by the appropriate contractor.
- C. Verify motor rotation for equipment before it is turned over to other contractors or the Owner.

## 3.2 ELECTRICAL WORK FOR MECHANICAL EQUIPMENT

- A. Motors and Motor Controls: Pre-wired packaged type equipment, control devices, control panels and alarm panels for Mechanical Work, shall be furnished and installed under other divisions of the specifications and wired under this section of the specifications, except as otherwise noted. Control devices which have piping connections shall be installed under other divisions of the specifications. Where wall space is not available, provide suitable angle iron framework supports for mounting of starters and controls. Power wiring shall be provided to motors, starters, motor control centers, Engineer's Console, and each refrigeration machine, electric boilers, and auxiliaries. Perform required adjustments, wiring modifications, in conjunction with any testing and operational system start-up procedures. In general, starters, disconnects, switches and fuses shall be furnished under Divisions 21, 22, and 23 and wired under this division.
- B. Responsibility: Electrical work specified in Divisions 21, 22, and 23 as "by the Electrical Contractor" is an obligation of this contractor, the same as if specified herein.
  - 1. Electric Heaters: electric heaters are furnished under other Sections. Provide power wiring at heaters. Thermostats for heaters furnished under other sections.

- 2. Control Wiring for HVAC Systems: control wiring of HVAC equipment shall be under Division 23 unless noted otherwise on electrical drawings.
- 3. Smoke Dampers: smoke dampers are furnished under other Sections. Provide power and fire alarm wiring of smoke dampers for smoke damper operation in accordance with Division 23.

END OF SECTION 260580

## SECTION 260810 - ELECTRICAL ACCEPTANCE TESTING

#### PART 1 - GENERAL

## 1.1 SCOPE OF WORK FOR ELECTRICAL DIVISION

- A. The intent of this section is to specify the Division 26 electrical acceptance testing scope.
  - 1. The Electrical Contractor shall provide an independent organization that is professionally independent of the manufacturers, suppliers, and installers of the equipment or systems being evaluated to conduct electrical systems acceptance testing and is a member company of the InterNational Electrical Testing Association (NETA) or is a Nationally Recognized Testing Laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to the authorities having jurisdiction. The name of the proposed testing organization shall be submitted to Engineering Services for approval.
    - a. Testing shall be performed on electrical equipment and systems to assure that equipment and systems are operational and within applicable standards and manufacturer's tolerances. Testing should verify that equipment and systems are installed in accordance with design specifications. All testing shall occur at the building site.
    - b. Qualified technicians who are trained and regularly employed for testing services shall do all testing. Submit technician qualifications.
    - c. The testing organization shall conform to the general guidelines of section 5 of the latest NETA Acceptance Testing Specifications, in their entirety. This includes the following:
      - 1) Safety and Precautions
      - 2) Suitability of Test Equipment
      - 3) Test Instrument Calibration
      - 4) Test Report

## 1.2 ELECTRICAL ACCEPTANCE TESTING SCOPE OF WORK

A. Perform Megger tests on all service entrance and feeder conductors.

- B. Inspect and test all applicable electrical equipment listed below in accordance with the latest version of NETA ATS.
  - 1. Cables: Low Voltage
  - 2. Low Voltage Circuit Breakers:
    - a. Insulated Case/Molded Case (100 amp frame and larger)
  - 3. Grounding Systems

# 1.3 RELATED WORK

- A. All start-up and testing procedures and documentation requirements specified within Division 26.
  - 1. Put all electrical systems into full operation and continue the operation during each working day of testing, adjusting, balancing and commissioning.
  - 2. Provide labor and material to make corrections when required, without delay.

# PART 2 - PRODUCTS (NOT USED)

# PART 3 - EXECUTION

# 3.1 WORK PRIOR TO TESTING

- A. Complete all phases of work so the system can be started, tested, adjusted, and balanced. Division 26 has primary start-up responsibilities with obligation to complete systems, including all sub-systems so they are fully functional. This includes the complete installation of all equipment, materials, conduit, wire, insulation, controls, etc. per the contract documents and related directives, clarification, change orders, etc.
- B. Provide normal start-up services required to bring each system in a fully operational state.

## 3.2 ELECTRICAL ACCEPTANCE TESTING

A. In addition to or in conjunction with the commissioning process, the electrical contractor's independent testing organization shall perform electrical acceptance testing as described above and herein.

- Provide Megger testing on all 600V service entrance and feeder conductors. Provide report in the Megger "Power DB" program. Furnish one (1) original, editable electronic (.mdb format), one (1) electronic PDF copy, and Four (4) paper copies of the completed report to Engineering Services. Have the testing firm contact Engineering Services to procure PSU standard Power DB testing forms.
- 2. Notify Engineering Services at least seven (7) days in advance of any testing. A representative of Engineering Services shall witness testing.
- 3. Visual Tests:
  - a. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- 4. System function Tests:
  - a. Perform system function tests upon completion of equipment tests as defined in this section. It is the purpose of the system function tests to prove the correct interaction of all sensing, process, and action devices.
  - b. Verify the correct operation of all safety devices for fail-safe functions in addition to design function.
  - c. Verify the correct operation of all sensing devices, alarms, and indicating devices.
- 5. Voltage Drop Testing
  - a. A voltage test shall be made at the last receptacle of each branch circuit of each Panelboard. Total voltage drop shall not exceed 3% of the initial voltage measured at the end of that branch circuit. The test shall be made using a 12A load attached to the furthest receptacle. Contractor is responsible to correct any installation with a voltage drop of greater than 3%. If a branch circuit fails the test, all other branch circuits on that panel shall be tested. Submit all test results to Engineering Services.
  - b. Documentation of the results shall be provided to Engineering Services.
  - c. Any non-conforming branch circuits shall be corrected.
- 6. Grounding System
  - a. Perform the following tests and inspections and prepare test reports:

- b. Retain subparagraphs and associated subparagraphs below with either of last two paragraphs above. Edit to suit Project. Delete if testing will be performed by Owner-engaged testing and inspecting agency. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
  - 1) Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at individual ground rods. Make tests at ground rods before any conductors are connected.
    - a) Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    - b) Perform tests by fall-of-potential method according to IEEE 81.
- 7. Receptacles
  - a. Perform tests and inspections and prepare test reports.
    - 1) Test Instruments: Use instruments that comply with UL 1436.
    - 2) Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated LED indicators of measurement.
    - 3) Tests for Convenience Receptacles:
      - a) Line Voltage: Acceptable range is 105 to 132 V.
      - b) Ground Impedance: Values of up to 2 ohms are acceptable.
      - c) GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
      - d) Using the test plug, verify that the device and its outlet box are securely mounted.

- e) The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct failing circuit conditions and replace malfunctioning units with new ones. Retest corrections as specified above.
- 8. Enclosed Switches and Circuit Breakers
  - a. Perform the following field tests and inspections and prepare test reports:
    - Retain subparagraphs below with either of last two paragraphs above. Edit to suit Project. Delete subparagraphs if testing will be performed by Owner-engaged testing and inspecting agency.
    - Retain subparagraph below if seismic criteria apply or if anchorage device testing is required by Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
    - 3) Tests referenced in first subparagraph below are from NETA ATS, 1999 edition, and include inspection procedures to verify proper operation. They also include tests and measurements of insulation resistance and, for circuit breakers, trip currents to ensure proper calibration. The cost of extensive testing may not be warranted for some projects.
    - Perform each electrical test and visual and mechanical inspection stated in NETA ATS, Section 7.5 for switches and Section 7.6 for molded-case circuit breakers. Certify compliance with test parameters.
    - 5) Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
    - 6) Retain subparagraph and associated subparagraphs below if required for Project.
- 9. Instruments, Equipment and Reports:

a. Prepare a certified report that identifies enclosed switches and circuit breakers included and describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

END OF SECTION 260810

## SECTION 270528 - PATHWAYS FOR COMMUNICATIONS SYSTEMS

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Provide a system of raceways for the Division 27 Communications Systems including but not limited to the following:
  - 1. Conduit
  - 2. Junction boxes
  - 3. Pull boxes
  - 4. Outlet boxes
  - 5. Conduit sleeves
  - 6. Miscellaneous device backboxes
  - 7. Pull strings
- B. Related Sections:
  - 1. Division 26 Section "Raceway and Boxes and Electrical Systems"
- C. It is the responsibility of the Communications Contractor to understand the work provided by the Electrical Contractor. Some Communications pathways and boxes are provided by the Electrical Contractor.
- D. Provide raceways as required for the following low voltage systems:
  - 1. Data/Voice Premise Wiring System
- E. All raceways for voice/video/data systems shall adhere to ANSI/TIA/EIA 569 and recommendations of BICSI Telecommunications Distribution Methods Manual, latest edition.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

A. Refer to related Division 26 Sections for raceways and boxes requirements.

# PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. Raceway to data/voice/video outlets shall be 1" EMT minimum or larger if required by TIA/EIA 569 conduit fill requirements unless otherwise stated. Refer to drawings for conduit configuration details.
- B. All cabling is to be installed in raceways. Provide EMT conduit for all the data/voice outlet locations to in all locations, unless otherwise stated. Flexible metal conduit can be used in areas that are not accessible and need to be fished through existing construction.
- C. Each and every raceway shall be left with a nylon measuring fish line (200 pound test) tagged at each end.
- D. Coordinate exact location of backboxes with Architectural drawings prior to installation of raceways and backboxes and before construction of walls and floors.
- E. All recessed wall outlet backboxes shall be double ganged, 4" x 4" x 2 1/8" minimum size. Provide trim ring on outlet box as required for specific wall construction and size of faceplate.
- F. Do not install any Division 27 raceway or conduit below slab on grade unless shown or stated otherwise or approved by the Engineer.
- G. Each telecommunication system wall outlet shall have a dedicated outlet box and not be ganged together with power receptacles unless otherwise stated.
- H. Do not "daisy-chain" conduit between outlet back boxes for data/voice systems unless otherwise stated in specific cases.

- I. Coordinate the length and routing of raceway runs to meet cabling length requirements of TIA/EIA 568/569 Standards.
- J. Provide metal sleeves through floors and walls for routing communications cabling. Where size of sleeves are not indicated, size to 40% maximum fill capacity.

END OF SECTION 270528

## SECTION 283111 – ADDRESSABLE FIRE ALARM SYSTEM, VOICE NOTIFICATION

#### PART 1 - GENERAL

## 1.1 SCOPE

A. Work covered by this section includes the furnishing of labor, equipment, and materials for installation of the fire alarm system as indicated on the schematic design drawings and related construction documents including General and Supplementary Conditions and Division 01 General Requirements, shall be included in, and made part of this Section.

## 1.2 DESCRIPTION OF WORK

- A. The School District is concerned with its ability to protect building occupants as well as property from the threat of undetected and/or uncontrolled fire. In addressing this concern, the School District has provided a level of fire detection and alarm notification in numerous buildings for a number of years. It is the School District's long-term objective to provide similar addressable fire alarm systems and compatible remote supervising stations at all campus buildings. While the School District does not have a formal NFPA 72 certification program, key criteria for installation and operation of a proprietary fire alarm system, as defined in NFPA 72, have been adopted by the School District to ensure maximum life safety and property protection.
- B. This section describes an addressable Fire Detection and alarm signaling system. The control panel shall be intelligent device addressable, analog detecting, low voltage and modular, with digital communication techniques to form a complete coordinated system ready for operation. Equipment quantity and locations shall be furnished per the contract documents and installed in full compliance with all applicable codes and standards. The features and capacities described in this specification are required as a minimum for this project.

- 1. The system shall be a new addressable fire detection and voice signaling system in accordance with the schematic design drawings. It shall utilize distributed modular control panels that utilize digital communications to provide optimal fault-tolerance and support future modification and expansion with a minimum of future wiring and hardware additions, in full compliance with all applicable codes and standards. The features and capacities described in this specification are required as a minimum for this project and shall be furnished by the successful contractor. All materials and equipment used shall be standard components, regularly manufactured for this and/or other systems and not custom designed specifically for this project.
  - a. The existing fire alarm system is to be replaced with a new system, do not remove existing fire alarm system until new system has been installed, tested, approved and under operation.
- 2. The system shall be scalable in nature and shall permit expansion of both capacity and functionality. It shall include all necessary hardware, software and peripheral devices to perform the following functions, but not limited to:
  - a. Fire and smoke detection
  - b. Manual alarm activation
  - c. Occupant audible, visual and auxiliary notification
  - d. Automatic and manual one-way emergency and mass notification voice communications
  - e. Life safety functions to include:
    - 1) Smoke management and smoke control
    - 2) Smoke door release service
  - f. Integration with and status monitoring of related systems as required and specified:
    - 1) Fire protection suppression systems
    - 2) HVAC and building automation systems (BAS)
    - 3) Security, communications and information technology systems
  - g. Report system events to the Listed Supervising Station via the approved means.

- h. System programming and re-programming of all changes as necessary to accommodate the phased construction, alteration and demolition activities.
- 3. The system shall be installed per the Engineer of Record's schematic design drawings, project specifications and installed in full compliance with National, State and local Codes. These published editions of following reference standards shall be used in system design, installation, operation and maintenance unless the applicable legally referenced standard provides more stringent requirements:
  - a. Pennsylvania Uniform Construction Code International Building Code 2018 Edition
  - b. Pennsylvania Electrical Code National Electric Code 2018 edition.
  - c. Philadelphia School Code
  - d. Underwriters Laboratories (UL) Listings.
  - e. City of Philadelphia Fire Department Regulations
  - f. Americans with Disabilities Act (ADA), the Architectural Barriers Act (ABA), and Accessibility Regulations of the local jurisdiction.
  - g. Applicable FM Global (Factory Mutual) Property Loss Data sheets.
- 4. The system shall include all required hardware, raceways, interconnecting wiring and software to accomplish the requirements of this specification and the schematic design drawings, whether or not specifically itemized herein. All devices installed outdoors or within areas exposed to unconditioned spaces or wet locations shall be listed for "outdoor use". Electrical raceway, fittings and enclosures shall be NEMA Type 4.
- 5. All equipment furnished shall be new and the latest state-of-the-art products of a single manufacturer, engaged in the manufacturing and sale of analog fire detection devices for over 20 years.
- 6. Provide the services of qualified system designers to generate shop drawings, and field technicians to provide installation oversight during construction and system startup. Technicians shall inspect, program, test and make any necessary adjustments to the completed system, to ensure compliance with the manufacturer's recommended practices and the approved shop drawings.
- 7. The system as specified shall be supplied, installed, tested and approved by the local Authority Having Jurisdiction, and turned over to the owner in an operational condition.

- 8. In the interest of job coordination and responsibilities the installing contractor shall contract with a single supplier for fire alarm equipment, engineering, programming, inspection and tests. All control panel assemblies and connected field appliances shall be provided by the same system supplier, and shall be designed and tested to ensure that the system operates as specified.
- 9. The manufacturers listed within this specification have been preselected for use on this project, with Siemens Desigo Modular as the basis of design. Being listed as an acceptable Manufacturer for this project in no way relieves obligation to provide all equipment and features in accordance with these specifications. No submittal will be accepted from a manufacturer other than those specified. All system components shall be the products of one manufacturer, except where otherwise dictated or permitted. In such instances, equipment by multiple manufacturers must be recognized compatible by both manufacturers. Approved Manufacturer Suppliers:
  - a. Honeywell International, Inc.
  - b. Notifier; Honeywell International, Inc.
  - c. Siemens Industry, Inc., Building Technologies Division.
  - d. Silent Knight; Honeywell International, Inc.
  - e. Fire-Lite; Honeywell International, Inc.
- 10. An Emergency Responder Radio Communications System (ERRCS), also known as a Public Safety/ First Responder Distributed Antenna System/ Auxiliary Radio Communication ARC System/ Public Safety Signal Booster, may be required per site conditions to boost weak emergency responder radio signals. The exact ERRCS system requirements shall be determined as required per a radio strength site survey once substantial construction is complete. Certain building elements are known to reduce radio signal strength, including metal-clad roofing, pre-cast concrete panels, metal-clad siding, low emissivity (Low-E) glass and levels located below grade. This is a separate system, but if installed, does require fire alarm monitoring.
- 11. Strict conformance to this specification is required to ensure that the installed and programmed system will function as design and will accommodate the future requirements and operations of the building owner. All specified operational features must be met without exception.

## 1.3 DEFINITIONS AND ACRONYMS

- A. Acoustically Distinguishable Space (ADS). An emergency communications system notification zone, or subdivision thereof, that might be an enclosed or otherwise physically defined space, or that might be distinguished from other spaces because of different acoustical, environmental, or use characteristics, such as reverberation time and ambient sound pressure level.
- B. AHJ: Authority Having Jurisdiction, the individual or agency that has legal responsibility for reviewing the design for conformance with local codes and regulations.
- C. ASME: American Society of Mechanical Engineers.
- D. Beneficial Use: This shall mean that the Owner's operators are able to use the facility and receive reliable information therefrom in their normal work schedules for all inputs and outputs in this system network in which this Contractor has completed work.
- E. Broadcast Media: The speakers, radio, cell phone, and other media that will carry the selected message to the selected audience.
- F. EoR: The Engineer of Record responsible for the Schematic Design drawings and project specifications
- G. ERRCS: Emergency Responder Radio Communications System also known as a Public Safety or First Responder Distributed Antenna System.
- H. FACP: Fire alarm control panel.
- I. FM: FM Global (Factory Mutual).
- J. Furnish: To supply the stated equipment or materials.
- K. Install: To set in position and connect or adjust for use.
- L. LED: Light-emitting diode.
- M. LOC: Local Operating Console.
- N. MNS: Mass Notification System.
- O. NAC Booster: Notification Appliance Circuit audio and/or visual auxiliary power supply controlled and supervised by the FACP
- P. NFPA: National Fire Protection Association. Definitions in NFPA 72 apply to fire alarm terms used in this Section.

- Q. NICET: National Institute for Certification in Engineering Technologies.
- R. Schematic design drawings: drawings which establish the objectives and design criteria of the system along with locations of fire alarm equipment, a system concept riser diagram, identification of interface(s) required with fire safety functions, and identification of all initiating device and notification appliance locations.
- S. Provide: To furnish and install the stated equipment or materials.
- T. UL: Underwriters Laboratories.
- 1.4 PERFORMANCE-BASED DESIGN REQUIREMENTS
  - A. The FACP and auxiliary power panels shall provide power, annunciation, supervision and control for the system. The voice evacuation system amplifiers shall be configured as either bulk or distributed audio. Provide a multi-channel system if sequence of operations requires partial evacuations. Strobes shall be synchronized throughout the entire building.
  - B. Provide electrical supervision of the primary power (AC) supply, presence of the backup battery status, battery voltage, and system modules within control panels.
  - C. Fire alarm technicians must be able to perform comprehensive tests on the system with minimum disruption to occupants. Fire alarm system control must originate from the control panel and/or programmable field devices. Individual bypass switches located at the main control panel must provide system wide bypass for each type of output to accommodate testing with minimal disruption.
  - D. Field located transponders, NAC power booster panels, and terminal cabinets as required to support the project, if locations not specifically provided on the design drawings. Good access must be provided for testing and maintenance requirements. When NAC is used to activate an auxiliary notification booster panel, no other appliances shall be installed on that circuit.

- E. NFPA 72 10.4.4 require smoke detection coverage above critical fire alarm components. The quantity of required NAC booster panels vary between manufactures and their installation location(s) are determined by the Installation Contractor. If area smoke detection is not provided in the vendor-selected NAC booster panel location, then a dedicated smoke detector shall be provided above the panel. These locations shall be shown on the installation shop drawings and approved by the EoR and AHJ prior to installation.
- F. SLC Circuit Design: Ground Fault Detection
  - For addressable loops, ground fault detection shall be employed which can detect a ground fault on both the positive and negative side of each circuit. The ground fault detector shall operate the general trouble devices as specified but shall not cause an alarm to be sounded. Ground faults shall not interfere with normal operation, such as alarm, or other trouble conditions.
  - 2. In compliance with NFPA 72, section 23.6.1, provide fault isolation for every 50 devices on any SLC, limited to a maximum area of a floor or fire/smoke barrier compartment boundaries. Provide separate ground gault detection for each floor/ level.
  - 3. A single fault on a pathway connected to the addressable devices shall not cause the loss of the devices in more than one zone or area. If a floor of the building is subdivided into multiple zones by fire or smoke barriers and the fire plan for the protected premises allows relocation of occupants from the zone of origin to another zone on the same floor, each zone on the floor shall be considered a separate zone.
  - 4. Dedicated isolator modules or ground fault detection integrated into an addressable device may be used to ensure
  - 5. Acceptable wiring designs
    - a. Install SLC loops with no more than 50 addressable devices circuit, homerun back to the panel. Each SLC must be internally isolated from shorts.
    - b. Provide field circuit isolation with loop isolator devices installed as the first device and keeping the isolated legs of the circuit to fewer than 50 devices.
- G. Initiating Device Installation

- 1. Coordinate smoke detector locations with ceiling diffusers; none maybe closer than 3 feet.
- 2. For ceiling tile applications, center detectors in the tile, in line with other ceiling fixtures.

## 1.5 SEQUENCE OF OPERATIONS

- A. Alarm Sequence of Operation:
  - 1. Activation of a manual fire alarm box, automatic detector, or fire suppression system shall initiate the system to enter "alarm" mode including the following operations:
    - a. Flash local LED red on the associated addressable device.
    - b. Provide local English language annunciation of device location, address and condition, and audible and visual alarm signal at control panel and remote annunciators.
    - c. Provide manual "acknowledge" function at control panel to silence audible alarm signal, visual signal remains displayed until initiating alarm is cleared.
    - d. Transmit "alarm" signal to off-premises equipment to notify monitoring company.
    - e. Activate fire alarm notification appliances.
    - f. Alarm functions shall override trouble or supervisory functions. Supervisory functions shall override trouble functions.
- B. Supervisory Sequence of Operation:
  - 1. Flash local LED red on the associated addressable device.
  - 2. Activation of gas detection, fire sprinkler tamper, pressure switch, duct mounted smoke detector or residential smoke detector with local audible base causes system shall initiate the system to enter "supervisory" mode including the following operations:
    - a. Provide local English language annunciation of device location, address and condition, and audible and visual supervisory signal at control panel and remote annunciators.

- b. Provide manual "acknowledge" function at control panel and remote annunciators to silence audible supervisory signal, visual signal remains displayed until initiating supervisory is cleared. If AHJ approved, a supervisory condition may be programmed as self-restoring.
- c. Transmit "supervisory" signal to off-premises equipment to notify monitoring company.
- d. For HVAC smoke detection applications: transmit signal to shut down air associated air handling unit and close associated fire/smoke dampers.
- e. For CO area detection applications: activate local NFPA 72 temporal-4 notification tone.
- f. For HVAC CO detection applications: transmit signal to shut down air associated air handling unit and close associated fire/smoke dampers.
- C. Trouble Sequence of Operation:
  - 1. System trouble, including single ground or open of supervised circuit, or power or system failure, initiate the system to enter "trouble" mode including the following operations:
    - a. Flash local LED amber on the associated addressable device.
    - b. Provide local English language annunciation of device location, address and condition, and audible and visual trouble signal at control panel and remote annunciators.
    - c. Provide manual "acknowledge" function at control panel and remote annunciators to silence audible trouble signal, visual signal remains displayed until initiating trouble is cleared.
    - d. Transmit "trouble" signal to off-premises equipment to notify monitoring company.

## 1.6 SYSTEM INSTALLATION

- A. This project is for the replacement of an existing fire alarm system
  - 1. The new fire alarm system shall be installed in parallel (tandem) with the existing fire alarm system. Temporary relocation/ mounting of equipment in order to maintain functionality is permitted. The existing fire alarm system must stay active during construction, meeting the following:

- a. Maintain manual fire alarm operation throughout the entire building (including areas under construction). Mark all non-operational manual pulls stations (existing, proposed, and/or temporary) 'OUT OF SERVICE'.
- b. Maintain audible signaling devices to adequately warn building occupants and construction personnel (visual signaling is not required to comply with the ADA during construction).
- c. Maintain service to automatic fire detection as much as practical. Automatic heat detection may be temporarily substituted for smoke detection, as required. Automatic fire detection is not required to operate in areas of construction at times when construction personnel are present (who can activate manual fire alarms). Other shutdowns of automatic fire detection may be considered, if approved in writing by the owner.
- d. Whenever HVAC duct smoke detection systems are not operational during construction, the electrical contractor is responsible for maintaining clear and unobstructed access to HVAC controls and/or disconnecting means (to facilitate manual operation in the event of a fire).
- e. Upon approval from the AHJ, the new system may be partially commissioned to accommodate phasing schedules. The new system shall be wired in such a way that when either the new or old system go into alarm, both systems go into alarm. The E.C. shall be responsible to ensure that spaces being monitored by the existing fire alarm continue to be monitored by the existing alarm until such time that they are switched over to monitoring by the new system.
- f. Whenever unable to meet the above requirements, provide a continuous fire watch per AHJ requirements.
- g. To satisfy requirements above, any existing and proposed life safety systems may be used as much as practical. Where requirements cannot be satisfied using existing/proposed systems, provide suitable temporary life safety systems (including all associated temporary wiring) as required. Where existing wiring is reused provide a written guarantee that it is acceptable for use with the equipment provided under this contract.

- 2. BEFORE ESTIMATING WORK, VISIT THE PROJECT SITE AND VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS AFFECTING THE WORK. The contractor is fully responsible for the correctness of all measurements and for any connections to existing work. Submission of bid is considered evidence that this contractor has visited and examined the site. No extra consideration, claims, charges, or compensation will be granted under any circumstance for extra work as a result of the contractor's failure to visit the site or verify conditions and measurements.
- 3. Upon completion of all spaces being switched over to the new fire alarm system, the existing system shall be de-commissioning and removal of all related panels, field equipment and wire.

# 1.7 FIRE CONTROL PANEL

- A. The system shall be a complete, electrically supervised fire detection and notification system, with a microprocessor-based operating system having the following capabilities, features, and capacities:
- B. The system shall be complete, electrically supervised evacuation system using one-way communication with microprocessor-based operating system having the following capabilities, features and capacities:
  - 1. Listed for emergency and non-emergency use.
  - 2. Listed for MNS from any control point to 'Request/Grant/Deny' and integrated with FC2025-2050 and FV2025-2050 (no separate MNS panel)
  - 3. Ability to support up to two microphones per FV2025-2050 control panel for one-way paging, and up to 64 microphones in a voice network.
  - 4. Ability to provide manual voice control.
  - 5. Two channel message player supporting 300 messages (38 pre-recorded). The system supports MP3 and WAV files.
  - 6. Minimum of (2) simultaneous audio channels for each networked panel.
  - 7. Amplifiers shall be rated for 25V or 70.7V RMS, 50 watts. Voice amplification shall be supervised and backed up with like amplifiers. Back up shall be one or two per node.
  - 8. Ability to provide separate booster amplifier. Amplifiers shall be rated for 25V or 70.7V RMS, 100 watts.
  - 9. The system shall have the capability to support Peer-to-Peer or Master-Slave network and voice configurations.

- 10. Multiple nodes shall provide peer-to-peer voice capability in order to eliminate a single point of failure.
- 11. Audio shall be synchronized between nodes in order to take into account common areas.
- 12. Speakers shall have the ability to play coded audio tones.
- 13. The system shall provide status indicators and control switches for all of the following functions:
  - a. Audible and visual notification alarm circuit zone control.
  - b. Speaker circuit zone control.
  - c. Status indicators for sprinkler system water flow and valve supervisory devices.
  - d. Remote Alarm Transmission By-pass Switch: Shall prevent transmission of all signals to the main fire alarm control unit when in the "off" position. A system trouble signal shall be energized when switch is in the off position.
  - e. Drill Switch: Shall activate all notification devices without tripping the remote alarm transmitter. This switch is required only for general evacuation systems specified herein.
  - f. Door Holder By-Pass Switch: Shall prevent doors from releasing during fire alarm tests. A system trouble alarm shall be energized when switch is in the abnormal position.
  - g. Elevator recall By-Pass Switch: Shall prevent the elevators from recalling upon operation of any of the devices installed to perform that function. A system trouble alarm shall be energized when the switch is in the abnormal position.
  - h. HVAC/Smoke Damper By-Pass: Provide a means to disable HVAC fans from shutting down and/or smoke dampers from closing upon operation of an initiating device designed to interconnect with these devices.
- 14. Each intelligent addressable device or conventional zone on the system shall be displayed at the main fire alarm panel and each local fire alarm remote annunciator by a unique alphanumeric label identifying its location.

- 15. The system shall be capable of remote monitoring via a proprietary software system that provides a graphical representation of the fire alarm control panel at a remote PC when connected via Ethernet to the system. The display will show the exact state of the panel, including blinking LEDs, and with menu buttons for control.
- 16. In networked systems, each of 4 control panels shall be configurable to be a global annunciator, capable of viewing all other control panels on the network.
- 17. The system shall provide an off-normal warning prior to reset for all active devices.
- 18. The system shall provide a field test function where one person can test the complete system or a specific area while maintaining full operational function of other areas not being tested.
- C. The system shall be complete, electrically supervised voice evacuation system having the following capabilities, features and capacities:
  - 1. Voice amplification shall be supervised, redundant (backed-up) amplifiers are not required.
  - 2. Amplifiers shall be rated for 25V or 70.7V RMS.
    - a. Amplifiers shall be sized as minimum, to accommodate speakers in mechanical spaces at 2 watts and other locations 1 watt. Minimum 25% space capacity.
  - 3. Audio shall be synchronized between panels in order to take into account common areas.
  - 4. The network, and audio, risers between nodes shall be copper and support Class A loop configuration to allow communication to continue in the event of a fault.
  - 5. Speakers shall have the ability to play both voice and coded audio tones, including low frequency 520Hz required for sleeping areas.
  - 6. The system shall provide status indicators and control switches for all of the following voice functions:
    - a. Audible and visual notification alarm circuit zone control.
    - b. Speaker circuit zone control.

## 1.8 CIRCUIT AND PATHWAY PERFORMANCE REQUIREMENTS

A. Circuits and Pathways

- 1. The number of circuits and wire gauge shall be coordinated with the supplier's shop drawings.
- 2. Pathway survivability not required, sequence of evacuation for this project is total evacuation upon any alarm condition.
- 3. Fire Alarm Backbone/ Network Communications and vertical trunk wiring: all data wiring and audio risers shall be Class A, circuits as defined in NFPA 72, utilizing physically separated outgoing and return loops.
- 4. Addressable Signaling Line Circuit (SLC) wiring shall be configured as Class B circuits, with a minimum Level 1.
  - a. Provide ground fault isolation detection and install NFPA 72 Class X circuit if quantity of addressable devices exceed 50 per circuit per NFPA 72 SLC survivability requirements.
  - b. Provide separate SLC homeruns for each level or fire zone. A single wire fault shall not affect the operation of devices serving other areas.
- 5. SLC capacity shall not exceed 80% of the number of each type of device the circuit is capable of supporting.
- 6. Visual Notification Appliance Circuit (NAC) wiring shall be configured as Class B circuits.
  - a. The system shall be provided with a minimum of two (2) visual NACs for each floor, evacuation zone or smoke compartment; whichever is greater. The actual number of circuits to be installed shall be coordinated with the supplier's shop drawings. Appliance circuits shall be zoned to correspond with the building fire barriers and other building features.
- 7. Speaker Notification Appliance Circuits (NAC) shall be configured as Class B circuits. Appliance circuits shall be zoned to correspond with the building fire barriers and other building features. The system shall be provided with the minimum listed speaker circuits as follows:
  - a. Minimum (1) speaker circuits for each evacuation signaling zone or smoke compartment; whichever is greater.
  - b. Speaker circuits shall be individually selective by evacuation signaling zones and shall be zoned to correspond with the building fire barriers and other building features.

- B. The sequence of evacuation for this facility utilizes total evacuation. The system components and circuits shall be designed and installed such that attack by fire within an evacuation signaling zone does not impair control and operation of the notification appliances outside the evacuation signaling zone.
- C. The system shall provide a field test function where one person can test the complete system or a specific area while maintaining full operational function of other areas not being tested. Alarms, supervisory signals and trouble signals shall be logged on the system printer and in system history during the walktest.
- D. Alarm functions shall override trouble or supervisory functions. Supervisory functions shall override trouble functions.

## 1.9 SUBMITTALS

- A. The equipment supplier responsibilities will include the selection of equipment, devices and materials based on the schematic design drawings and project requirements, and their proper application based on the manufacturer's limitations, operating characteristics and recommended practices.
  - 1. Equipment quantities and locations shown on the schematic design drawing floorplans shall not be altered or modified without written approval of the Engineer of Record. Any deviation from the Engineer's coordinated layout or design intent will constitute the submission as incomplete and shop drawings will not be approved.
  - 2. Minor deviations, variations, changes, and corrections from layouts shown on the drawings (based on coordination, conditions, manufacturer's instructions, codes and standards, shop drawings, and verification of measurements and conditions) are permitted to facilitate construction provided the changes do not represent potential changes in scope of work and provided the changes are acceptable to the owner, architect, and engineer.
  - 3. The equipment supplier shall coordinate the installation and system operation with the work of related trades.
- B. Catalog manufacturer's product data sheets for all equipment, accessories and wiring with all applicable components being submitted for this project clearly noted. All equipment shall be subject to approval and no equipment shall be ordered without prior approval.

- 1. Data Sheets with multiple product shall highlight or identify the specific products utilized for this project.
- C. System Calculations Circuit calculations shall use the end-loading or point-to-point method described in NFPA recommended practices including both standby and active conditions. Complete calculations shall be provided which show the electrical load for all equipment and field circuits. (identify all mathematical formulas, variables, and constants used in all calculations) on the following system components:
  - 1. Voice amplifier wattage, speaker loads and spare capacity.
  - 2. Strobe 24VDC loads and spare capacity.
  - 3. Show wire size, estimated circuit length, and maximum allowable wiring distance as designed. Voltage drop calculations for wiring runs demonstrating worst-case condition.
  - 4. Power supply rating justification showing power requirements for each of the system power supplies. Power supplies shall be sized to furnish the total connected load in a worst-case condition plus 25% spare capacity.
  - 5. NAC circuit (audible and visual) design shall incorporate a 20% spare capacity for future expansion.
- D. The shop drawing submittal shall clearly indicate all proposed equipment and devices (type and quantity), with wiring diagrams, detailed operational sequences, and interfaces to related systems. They shall be prepared in accordance with NFPA 72 recommended practices and include the following:
  - 1. Floor plans showing all devices and equipment to be installed with corresponding field settings, circuit, and device designations noted. Settings shall include the device address and candela rating as applicable. Circuit identifiers, device numbers and symbols used shall be clearly defined and consistent between all related documents. Whenever possible, the drawings shall reflect other components of the building such as air diffusers, HVAC returns, etc. to determine compliance or reference the associated mechanical design drawings.
    - a. Floor plans at a scale of 1/8"=1'-0"
    - b. When candela ratings are not shown on the schematic design drawings, utilize NFPA 72 visual coverage area tables to select coverage.

- 2. Complete point-to-point riser diagrams showing all equipment including size, type, number and reference designations for all circuits and devices. Each device shall be shown with address numbers or any other required field device settings including candela rating of notification appliances.
  - a. For multiple panel configurations, proved a separate block diagram to show the overall network system architecture with interconnection network circuits.
- 3. System panel drawings showing cabinet dimensions, internal module placement, field wiring terminations with spare capacity allowances, and any applicable operator's display and panel switch label assignments. Where multiple equipment cabinets are used in a single location these shall be shown together in elevation for coordination of equipment installation and wireways, and to ensure proper space allocation.
- 4. Provide a complete sequence of operation in the form of an NFPA Input/Output programming matrix for the entire system as shown in NFPA 72. The matrix shall reflect each unique programmed sequence, whether the sequence is initiated by an individual or common group of similar devices. Matrix shall illustrate alarm input/out events in association with initiation devices. Matrix summary shall include system supervisory and trouble output functions.
- 5. Installation drawings shop drawings, and as-built drawings shall be prepared by a NICET II or higher individual experienced with the work specified herein.
- 6. Incomplete submittals shall be returned without review, unless with prior approval of the Engineer.
  - a. Disposition of shop drawings shall not relieve the Contractor from responsibility for deviations from drawings and specifications, unless the deviations are specifically noted in writing at the time of submission, and written acknowledgement has been received from the Engineer or Record. The disposition of shop drawings shall not relieve the Contractor from responsibility for errors in shop drawings or schedules.
  - b. Copies of the approved shop drawings shall be maintained on-site to serve as working documents during installation for preparing as-builts.

E. Delegated Design Review of Shop Drawings: As required per the AHJ, in addition to items listed above, provide a compliance and code review by an individual with the required credentials and submit documentation, including any evaluation analysis of the shop drawing submittal. Provide the required review's credentials and seal/ signature by the qualified professional engineer responsible for the preparation, as required. The equipment supplier's shop drawings shall not be stamped or sealed by an Engineer unless the work is performed under their direct supervision and control.

## 1.10 QUALITY ASSURANCE

- A. The following shall be adhered:
  - 1. State and Local Building Codes as adopted and/or amended by The Authority Having Jurisdiction, ADA, and/or State and local equivalency standards as adopted by The Authority Having Jurisdiction.
  - 2. Owner's best practices for fire alarm installations/ operations including compliance with site standard operating procedures (SOP's).
- B. Equipment Supplier Qualifications
  - The supplied products must utilize multi-channel product distribution on a national basis to be considered for this bid. The distribution shall be from factory branches as well as independent distributors to allow the end user with the ability to utilize factory trained and authorized competitive service providers after system installation and commissioning. Single source system suppliers are not acceptable. The initial installation and commissioning shall be provided by a factory direct branch to ensure a high level of quality for the customer.
  - 2. A service office must be within 50 miles of the project site.
  - 3. The manufacturer shall provide evidence of successfully installed similar fire detection and notification systems on comparable size and scope. The owner reserves the right to reject any installer's bid for which evidence of a successful prior installation by the contractor cannot be provided.
    - a. The equipment and service provider shall have a minimum of 10 years experience in the fire protective signaling systems industry.
  - 4. Shall be licensed in the jurisdiction, if required.

- 5. The equipment supplier shall have a licensed fire protection engineer on staff to assist with all aspects of the installation including interfacing with the local AHJ and code consulting.
- 6. The technician shall supervise installation, software documentation, adjustment, preliminary testing, final testing and certification of the system. The technician shall provide the required instruction to the owner's personnel in the system operation and maintenance.
- 7. The Equipment Supplier shall have in-house engineering and project management capability consistent with the requirements of this project. Factory trained representatives of the system manufacturer shall perform the detailed engineering of the system.
- C. Installer Qualifications:
  - 1. Before commencing work, submit data showing that the manufacturer has successfully installed fire alarm systems of the same scope, type and design as specified.
  - 2. The contractor shall submit copies of all required licenses and bonds as required in the State having jurisdiction.
  - 3. The system installer shall work with the system supplier/designers to ensure all equipment is installed as shown in the Shop Drawings and manufacturer's requirements, and programmed to comply with the project requirements.
  - 4. The installing contractor is responsible for coordination with related trades, and complete (1st party) testing of the system as installed, to include verification that the system performs as intended, and all devices and fault conditions are properly supervised and reported as specified herein.
- D. Testing Agency Qualifications: Qualified for testing indicated.
- E. Source Limitations for fire alarm equipment: Obtain fire alarm equipment from single source.
- 1.11 DELIVERY, STORAGE, AND HANDLING
  - A. Deliver products to project site in original, unopened packages with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture, and shelf life if applicable.

B. Store materials inside, under cover, above ground, and kept dry and protected from physical damage until ready for use. Remove from site and discard wet or damaged materials.

## 1.12 PROJECT CONDITIONS

- A. Installed products or materials shall be free from any damage including, but not limited to, physical insult, dirt and debris, moisture, and mold damage.
- B. Environmental Limitations: Do not deliver or install products or materials until spaces are enclosed and weather-tight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

## 1.13 ACCEPTANCE OF SYSTEM

A. Total acceptance of the system will only be made after the required tests, complete record document package and the instruction period have been provided.

## 1.14 GUARANTEE

- A. Guarantee the labor, materials and equipment provided under this contract against system defects for a period of three (3) years after the date of final acceptance of this work by the Owner.
- B. Provide service by the equipment supplier during the guarantee period, seven (7) days a week, including holidays, within four (4) hours after notification. Repairs shall be affected within twenty-four (24) hours of notification.
- C. Should the Contractor fail to comply with the above requirements, the Owner will then have the option to make the necessary repairs and back charge the Contractor without any loss of warranty or guarantee as provided by the contract.
- D. Any guarantee which is in conflict with the above will not be acceptable.

#### 1.15 WARRANTY

- A. Warranty: Contractor shall warrant the complete fire alarm system installation against defective materials or faulty workmanship for a period of THREE (3) YEARS from the date of acceptance.
- B. Maintenance and Re-certification Service: Contractor shall also provide THREE (3) YEARS of factory-authorized maintenance and re-certification service from the date of acceptance, including any required maintenance or repairs, hardware and software updates, annual testing and re-certifications.
- C. Required Response:
  - Emergency Calls: Contractor shall provide factory-authorized service within FOUR
     (4) HOURS after notification by the District's Maintenance Department of system trouble or failure.
  - 2. Non-Emergency Calls: Contractor shall provide factory-authorized service within EIGHT(8) HOURS after notification by the District's Maintenance Department of system trouble or failure.

#### 1.16 SOFTWARE SERVICE AGREEMENT

A. THE PHILADELPHIA SCHOOL DISTRICT SHALL RETAIN COMPLETE RIGHTS AND OWNERSHIP TO ALL SOFTWARE RUNNING IN THE SYSTEM. The fire alarm equipment vendor shall provide useable hard and soft copies of the software database to the Philadelphia School District at the end of the warranty period. The database provided shall be useable by any authorized and certified distributor of the product line and shall include all applicable passwords necessary for total and unrestricted use and modification of the database.

#### 1.17 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. The following spare material, rounded to the next highest quantity, shall be supplied as applicable to this project:
  - 1. Two (2) keys for each locked or tamper proofed cabinet.

- 2. Nine (9) of standard type smoke detector installed.
- 3. One (1) duct mounted smoke detector.
- 4. Five (5) of addressable combination type heat detector.
- 5. Three (3) of conventional type heat detector, for high ceiling areas.
- 6. Three (3) of each type of pull stations installed.
- 7. Ten (10) of each type of standard notification appliance(s) (speaker, strobe & combination) installed.
- 8. Two (2) of each type of replaceable surge suppression modules installed.
- 9. Two (2) of each type of replaceable fuses installed in the system. Provide in a box or cabinet with compartments marked with fuse types, sizes and equipment locations.

#### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. The equipment and service described in this specification are those supplied and supported by Siemens Industry and represent the base bid for the equipment.
  - 1. Being listed as an acceptable Manufacturer in no way relieves obligation to provide all equipment and features in accordance with these specifications.
- B. Must have multi-channel distribution for both products and equipment service. The owner shall have the ability change service provider or sales outlets. Proprietary manufactures such as single-channel suppliers are not acceptable.
  - 1. The initial installation shall be completed by a factory direct office.

#### 2.2 CONTROL PANEL

- A. The fire alarm control panel shall be microprocessor-based using multiple microprocessors throughout the system, providing rapid processing of smoke detector and other initiation device information to control system output functions.
- B. There shall be a watchdog circuit, which shall verify the system processors and the software program. Problems with either the processors or the system program the panel shall activate a trouble signal and reset the panel.

- C. The signal line circuits (SLC) shall be polarity insensitive for all addressable devices. This permits the fire detection devices to operate even when detector and module wiring polarity are inverted on the wrong screw terminals.
- D. The standard Operator Interface shall have the ability to view events, acknowledge, silence, and reset the system and any networked Desigo Fire Safety control panels, when configured as a global PMI. The standard operator interface can acknowledge, silence, and reset panels via Global PMI.
- E. The system shall have the capability to provide a 100-message capacity with 100 minutes of recording time, and enables multi-layered and custom (pinpoint specific) messages.
   The format shall support MP3 and WAV files.
- F. System response time from alarm to output shall be an average of three (3) seconds.
- G. To expedite system troubleshooting, the system cards shall have ground fault detection and diagnostic LEDs by card.
- H. All system cards and modules shall have Flash memory for downloading the latest module firmware.
- I. Passwords:
  - 1. Maintenance/Control Password There shall be a 5 character password that a user must enter into the control panel in order to perform such maintenance- and control-related functions.
- J. Networking Command and Control:
  - 1. A bidirectional data communications network transmitting multiplexed input and output signals, which shall be electronically supervised, shall connect all control panel nodes on a dedicated fire alarm network. The communication network shall consist of a communication circuits transmitting all system operations in a digitally encoded format.
  - Digital two-way communication capabilities supporting Style 4 (Class B) or Style 7 (Class A) communications using either hard-wired copper or fiber optics technologies or combinations of both as required for the control panels to communicate.

- 3. The system shall be designed such that in the event of a network communications failure, any remaining interconnected panels will operate as a sub-network and any isolated panels will operate in standalone mode. Upon communications failure, a trouble condition will be reported across the network and the disconnected panel shall continue to function in standalone mode.
- 4. Capability shall exist within the system to extend the network at any node. The system shall support a maximum of two network extension circuits in series on any system branch, extending the inherent distance limitations for network communications.
- Communication protocol shall be of the CSMA/CD (carrier sense, multiple access, collision detect) type, eliminating delays incorporated into other protocols.
   Communication techniques using token passing and requiring sensing of delays and re-generation of the token to re-establish network communications in the event of a fault shall not be acceptable.
- K. Digital Voice Command: In addition to the voice controls on the main fire control panel, they system shall support up to 5 mirrored Local Operating Command Centers.
- L. Software Modifications: The system structure and software shall place no limit on the type or extent of software modifications on-site. Modification of software shall not require power-down of the system or loss of system fire protection while modifications are being made. Systems that require the use of external programmers or change of EPROMs are not acceptable.
- M. Mass Notification Non-fire Interface: The fire alarm control panel shall be capable of connection to external and internal building paging subsystems UL2572 Mass Notification system.
  - 1. In additional to the FACP microphone, the Voice Evacuation/Mass Notification panel shall have the ability to support optional auxiliary remote live-voice sources:
    - a. Local Operator Console with remote microphone with controls
    - b. Remote Page Unit utilizing 3-party public address system
    - c. Telephone/ PBX interface
  - 2. Ability to interface with wide-area mass notification (outdoor high-powered speaker arrays) to provide real-time information to exterior areas.

#### FIRE ALARM SYSTEM REPLACEMENT, SOUTHWARK ELEMENTARY SCHOOL SDP CONTRACT NO. ELECTRICAL CONSTRUCTION NG10644 – 2640.001

- N. Logic: The fire alarm system shall support generic functions that deal with binary states (True/False, high/low), and produce desired outputs from one or more binary inputs (for example, alarm outputs from spot detectors, VESDA detectors, monitor modules or manual station inputs). AND, OR, NOT, Any N, D Latch, RS Latch, Time Base Control, Start Timer, Restart Timer are generic functions. Generic functions can be used as inputs to other function. The system shall support 2500 logic functions.
- O. History: The system shall store 5000 events in history while in straight mode and 4500 in circular mode. In straight mode, trouble warnings will occur at 4000 and 4500 events. In circular mode, the control panels shall maintain a 2000 event Alarm History buffer, which consists of the 2000 most recent alarm events from the 4500 event history file.

#### 2.3 PRIMARY POWER SUPPLY

- A. The control panels, transponders, NAC power booster panels, system workstation, and any other fire alarm equipment shall receive their primary power from a dedicated 120VAC disconnect circuit.
  - 1. The circuit must be properly sized and protected in accordance with NEC requirements.
  - 2. This requirement does not limit that one dedicated branch circuit to serving only one power supply within a system. The dedicated branch circuit could supply several fire alarm power supplies within a control unit or within multiple interconnected control units that serve the signaling system.
    - a. The dedicated circuit can be supplied from any properly installed electrical panel board or sub-panel.
  - 3. The circuit disconnecting means shall be labeled 'FIRE ALARM' and any other local identification requirements. Its location must be listed at the point of connection to the fire alarm control equipment. Provide a dedicated breaker lock unless the breaker is located in locked panel board or if it is in a locked electrical room.

- B. The fire alarm control panel and transponder panel power supply/charger (PSC) shall be a 12-amp supply with battery charger. The power supply shall be filtered and regulated. The power supply shall have a minimum of 1 power limited output rated at 4 amps, and a minimum of 1 output rated at 12 amps. Each panel shall have the capacity to be expanded up to 48 amps. The auxiliary power supply module shall share common batteries with the primary power supply. The system power supply shall have 4 relays, 1 for common alarm, one for common trouble and two programmable relays. The power supply shall be rated for 120/240V AC 50/60 Hz.
  - 1. Provide sufficient capacity to operate the complete alarm system and 100% of the notification appliances in alarm operated at the same time, under both the primary (AC) power conditions. Under no circumstances shall the power supplies exceed a MAXIMUM of 70% of the power supplies battery capabilities throughout the entire project.
  - 2. The primary power supply shall be sized by the equipment vendor
  - 3. The battery charger shall be able to charge the system batteries up to 100 AH batteries. Battery charging shall be microprocessor controlled and programmed with an optional thermistor for monitoring battery temperature to control charging rate shall be available. All battery charging and recharging operations shall be automatic.
    - a. The system batteries shall be supervised so that a low battery or a depleted battery condition, or disconnection of the battery shall be indicated at the control unit and displayed for the specific fault type.
  - 4. The power supply shall have a plug for an AC adapter cable, which allows a technician to plug in a laptop computer for up or downloading program information or test equipment.
  - 5. Transfer from AC to battery power shall be instantaneous when AC voltage drops less than 90% or brown out conditions it is not sufficient for normal operation.
- C. Loss of primary AC power shall sound a trouble signal at the FACP. The FACP shall indicate when the system is operating on an alternate power supply.

#### 2.4 SECONDARY POWER SUPPLY

- A. When the primary AC power is lost, the system shall automatically switch to the secondary power supply.
- B. The control panels, transponders, and NAC power booster panels shall receive their secondary power from batteries.
  - 1. Battery shall be of the sealed lead-acid, maintenance free type, 24-volt nominal, suitable for life safety application.
  - 2. Provide sufficient capacity to operate the complete alarm system in quiescent standby load (system operating in a non-alarm condition) for a period of 4 hours and shall have sufficient capacity to operate all alarm notification appliances and all other connected loads for a period of 15 minutes.
  - 3. Batteries shall be secured in seismic areas 2B, 3, or 4 as defined by the Building Code.

#### 2.5 SYSTEM ENCLOSURE

- A. The control unit shall be housed in a cabinet suitable for both recessed and surface mounting. Cabinet and front shall be corrosion protected, given a rust resistant prime coat, and manufacturer's standard finish. The outer doors shall be capable of being a left hand open or a right hand open. The inner door shall have a left-hand opening. System enclosure doors shall provide where required ventilation for the modules or cards in the enclosure.
- B. Enclosure needed to hold all the cards and modules as specified with at least 25% spare capacity for extra cards.
- C. Provide system enclosure for all amplifiers. Where required by the manufacturer, provide means for venting heat from the enclosure either by having enclosure sides and top vented or the doors vented.

#### 2.6 DOCUMENT STORAGE BOX

- 1. With every new system, a documentation cabinet shall be installed at the system control unit or at another approved location at the protected premises. Where the documentation cabinet is not in the same location as the system control unit, its location shall be identified at the system control unit. It shall meet NFPA 72's record maintenance requirements and the following criteria:
  - a. Enclosure to accommodate standard 8-1/2-by-11 inch and loose document records. Legend sheet will be permanently attached to door for system required documentation, key contacts, and system information.
  - b. Provide two key ring holders with location to mount standard business cards for key contact personnel.
  - c. Material and Finish: 18-gauge cold-rolled steel; four mounting holes.
  - d. Color: Red powder-coat epoxy finish.
  - e. Labeling: Permanently screened with 1 inch high lettering "SYSTEM RECORD DOCUMENTS" with white indelible ink.
  - f. Security: Locked with 3/4 inch barrel lock. Provide solid 12 inch stainless steel piano hinge.

#### 2.7 INITIATING DEVICES

- A. General
  - 1. The initiating device shall provide an alarm indication within less than four (4) seconds.
  - 2. All initiation devices shall be insensitive to initiating loop polarity. Specifically, the devices shall be insensitive to plus/minus voltage connections.
  - 3. Operating Voltage: 24 VDC, nominal.
- B. Multi-criteria Smoke Detectors Addressable

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- 1. The multi-criteria fire detectors shall be an intelligent digital photoelectric detector with a programmable heat detector. Detectors shall be listed for use as open area protective coverage, in-duct installation and sampling assembly installation and shall be insensitive to air velocity changes. The detectors' communications shall allow the detectors to provide alarm input to the system and alarm output from the system within four (4) seconds. So as to minimize the effort required by the installing and maintenance technician to appropriately configure the detector to ensure optimal system design, the detectors shall be programmable as application specific. Application settings shall be selected in software for a minimum of 19 environmental fire profiles unique to the devices installed location.
  - a. UL Listed as "direct in-duct" mounting.
- Smoke detectors shall be analog sensors that utilize photoelectric-type sensing principles mounted within a smoke chamber to detect particles of combustion. They must provide at least 3 environmental parameter sets to assist the device sensitivity configuration.
- 3. The control panel shall continually analyze the analog signal from each sensor to determine calibration, sensitivity and environmental changes that may affect sensor operation. The analog values from each device shall be displayed (in terms of percent of obscuration) at the control panel upon command.
- 4. The detectors shall have a tri-color LED to streamline system maintenance/inspection by plainly indicating detector status as follows: green for normal operation, amber for maintenance required, red for alarm. Each detector shall include an LED that will flash periodically to indicate an active polling cycle. When the sensor reaches a predetermine alarm threshold (2% obscuration unless otherwise directed), the detector shall latch in LED shall flash continuously until reset at the control panel.
  - a. The system shall have the ability to disable the detector's LED.
- 5. The detectors shall be UL listed for operation in a 95% relative humidity (RH) environment.

- 6. The intelligent smoke detector shall be capable of providing three distinct outputs from the control panel. The outputs shall be from an input of smoke obscuration, a thermal condition or a combination of obscuration and thermal conditions. The detector shall be designed to eliminate calibration errors associated with field cleaning of the chamber.
- 7. The detector shall be designed to eliminate the possibility of false indications caused by dust, moisture, RFI/EMI, chemical fumes, and air movement while factoring in conditions of ambient temperature rise, obscuration rate changes and hot/cold smoke phenomenon into the alarm decision to give the earliest possible real alarm condition report.
- 8. The detectors shall support the use of a relay, or LED remote indicator without requiring an additional software address.
- 9. Where indicated on the schematic design drawings, provide remote indicator lamps and identification plates for detectors concealed from view. Each indicator will illuminate when the detector is in alarm. Locate the remote indicator lamps and identification plates flush mounted on walls so they can be observed from a normal standing position in the nearest common corridor or otherwise designated on the floorplans.
- 10. The multi-criteria detector with CO sensor shall support the use of an ambient Carbon Monoxide (CO) warning signal at the panel. This ambient CO level shall be user-configurable in parts per million (PPM) for the set threshold of the warning and event type generated by the warning. This event can be used to trigger system logic.
- 11. The detectors shall support the use of an ambient temperature warning signal at the panel. This temperature shall be user-configurable for the set temperature of the warning and the event type generated by the warning. This event can be used to trigger system logic.
- C. Heat Detectors Addressable
  - Thermal Detectors shall be analog/addressable sensors individually programmable for either fixed temperature, rate-of-rise or combined operation, except where otherwise dictated. The thermal detector shall be Model FDT421 and have the following temperature settings:
    - a. Fixed temperature at 135°F, 145°F, 155°F, 165°F, 174°F
    - b. Rate of Rise at 15°F/ min at 135°F

- c. Rate of Rise at 15°F/ min at 174°F
- 2. Analog sensors will also provide a low temperature warning (Supervisory condition) when the ambient temperature in a protected area reaches 40°F.
- 3. The detectors shall have a tri-color LED to streamline system maintenance/inspection by plainly indicating detector status as follows: green for normal operation, amber for maintenance required, red for alarm. Each detector shall include an LED that will flash periodically to indicate an active polling cycle.
- 4. Where ambient conditions dictate, provide conventional fixed temperature, weatherproof or explosion-proof heat detectors in lieu of analog detectors. Conventional devices shall be individually addressable via a dedicated addressable monitor module which shall be installed in an appropriately heated, ventilated location.
- 5. The detectors furnished shall have a listed spacing for coverage on smooth ceiling rating of up to 2,500 square feet and shall be installed according to the requirements of NFPA 72 for open area coverage.
- D. Duct Smoke Detectors Addressable
  - 1. The system supplier shall select the appropriate detector type, quantity and environmental configuration based on the manufacturer limitations, code requirements and the project HVAC system operating characteristics for air flow, velocity and environmental conditions.
  - 2. Photoelectric type FDBZ-Series, with sampling tube of design and dimensions as recommended by the manufacturer for the specific duct size and installation conditions where applied. Where required there shall be available a duct housing with an on-board relay for fan shutdown.
    - a. Environmental compensation, programmable sensitivity settings, status testing, and monitoring of sensor dirt accumulation for the duct smoke sensor shall be provided by the FACP.
    - b. The detector shall be mounted in a duct detector housing listed for that purpose. The duct detector shall support the use of a remote test switch, relay or LED remote indicator.
    - c. Duct Housing shall have a transparent cover to monitor for the presence of smoke. Cover shall secure to housing by means of four (4) captive fastening screws.

- d. Duct Housing shall provide two (2) Test Ports for measuring airflow and for testing. These ports will allow aerosol injection in order to test the activation of the duct smoke sensor.
- Duct smoke detector housing shall allow use in duct systems with air velocity ranging from 100 to 4,000 feet per minute, within temperature ranges of 32°F to 120°F per minute, and with relative humidity ranging from 0 to 95%.
- 3. Provide a remote LED indicator associated with the duct detector, as shown on the design drawings
- 4. Where duct detectors are exposed to the weather a weatherproof enclosure shall be available. A NEMA-3R and NEMA-4X option shall be available. The duct housing cover shall include a test port for functional testing of the detector without cover removal. The duct housing shall include a cover removal switch capable of indicating cover removal status to the fire alarm control panel.
- 5. Traditional area detectors may be substituted on ducts with access hatches within the manufacturer's limitations and applicable standards. When mounted directly in the HVAC air stream, detectors shall be rated for airflows ranging from 0 1000 feet per minute. Utilize pendant mounting to get the device in the center of the air flow. It must be mounted to an appropriate electrical box mounted rigidly to withstand the pressure and resonant vibrations caused by the air velocity. The box pendant extension arrangement should be mounted from either the top or side walls extending to the center of the air duct stream. The access hatch shall be labeled to identify both the detector and HVAC unit it protects.
- E. Detector Bases Addressable
  - 1. The plug-in detector bases shall be UL compatible with the selected detector head. They shall utilize screw clamp terminals and field circuits shall terminate directly to the base. Bases shall be installed directly on an industry standard 3 1/2-inch, 4inch octagon boxes, and 4-inch square boxes (with or without plaster). Position decorative ring around the base as required per the manufacture. Provide the ability to make the detector base tamperproof to prevent the removal of the detector head without the use of a tool.
    - a. The standard DB-11 base shall be 6" version.

#### F. Carbon Monoxide Detectors

- Carbon Monoxide Detectors: Provide Analog/Addressable sensors that include a CO sensing element where shown and required. Detectors may be either standalone sensors, or employ multi-sensing technology integrated with smoke sensors, and shall be Listed to the appropriate ANSI/UL standards, including UL 2075 (carbon monoxide), UL 268 (smoke) and UL 521 (thermal) as applicable.
- 2. The CO element shall operate between 30-560 parts per million (ppm), with a standard set point of 70ppm for exposure of 60 minutes accordance with NFPA 720. CO Sensors shall operate on non-resettable 24vdc power provided by the FACP, and provide full analog values directly to the FACP. The detector shall have associated programmable control module outputs, and an integral piezo horn that produces 85dbA at 10ft. Activation of a CO Detector shall initiate a Priority 2 Supervisory CO Alarm event at the local Control Unit and Fire Response Center, and remote system Annunciators as described herein.
- 3. Multi-Criteria Fire Detector Model FDOOTC441 shall be listed as providing CO detection in duct application.
- 4. CO Sensors that are integrated into Mechanical Systems shall be designed for duct mounting or area detection, with a CO Alarm set point of not less than 50ppm, and be appropriately Listed by a Nationally-Recognized Testing Laboratory.
- 5. Sensors shall be provided and installed in accordance with the manufacturer's instructions. Sensors shall be monitored by the local Fire Alarm System for multiple alarm thresholds with corresponding addressable outputs to initiate equipment shutdown procedures and related life safety functions. Sensors will support periodic functional testing.
- 6. CO Sensors shall be monitored and programmed for Supervisory CO Alarm reporting in accordance with NFPA 720 and applicable code.
- G. Manual Pull Stations Addressable
  - 1. Provide single-action addressable manual stations where shown on the schematic design drawings, to be flush or surface mounted as required. Manual stations shall contain the intelligence for reporting unique numeric address, identity, alarm and trouble to the fire alarm control panel.

- a. Provide a sign to each manual pull station. The sign shall be mounted immediately adjacent to the manual pull station. The sign shall read "IN CASE OF FIRE: SOUND ALARM AND CALL THE FIRE DEPARTMENT".
- b. Station will mechanically latch upon operation and remain so until manually reset by opening with a supplied alien wrench.
- c. Stations shall be of single action pull down type with suitable operating instructions provided on front in raised or depressed letters, and clearly labeled "FIRE".
- d. The manual station shall be equipped with terminal strip and pressure style screw terminals for the connection of field wiring. Flying lead terminals are not permitted.
- e. Surface mounted stations where indicated on the drawings shall be mounted using a manufacturer's prescribed matching red enamel outlet box.
- 2. Where shown on the schematic design drawings, provide a protective shield.
  - a. Shall be constructed of a clear LEXAN shield and red frame that easily fits over manual pull stations.
  - b. When shield is lifted to gain access to the station, a battery powered piercing warning speaker shall be activated. The horn shall be silenced by lowering and realigning the shield. The horn shall provide 85dB at 10 feet and shall be powered by a 9 VDC battery.
- 3. Where required, there shall also be available pull stations with break glass, capable of explosion proof installation, capable of weatherproof installation, reset key operation, and metal housings.
- H. Addressable Monitoring and Control Modules
  - 1. Addressable Interface Devices shall be provided to monitor contacts for such items as water-flow, tamper, and PIV switches connected to the fire alarm system. These interface devices shall be able to monitor a single or dual contacts. An address will be provided for each contact. Where remote supervised relay is required, the interface shall be equipped with a SPDT relay rated for 4 amps resistive and 3.5 amps inductive. The addressable interface modules shall be model number HTRI or FDCIO Series.

- a. The modules shall support two operation modes: an isolator (polarity sensitive) or non-isolator (polarity insensitive) mode. The module shall be capable of being wired for either mode. During the isolator mode, the built-in dual isolators will work at both sides of the module to isolate the line short in front or behind the module.
  - 1) Supports up to 252 addressable points per SLC devices loop, and in mixed mode up to 30 devices between isolated devices.
- b. Modules shall support NFPA 72 survivability requirements for shorts and provide information as to the location of the fault.
- c. Each Model XTRI-series device has a multi-color LED that flashes when GREEN operating in Normal mode; AMBER if the unit is in a `Trouble' condition, and RED to indicate a change of status.
- d. Provide non-obstructive front-end access to programming port and wiring terminals.
- 2. Waterflow and tamper switches in the sprinkler systems and the tamper switches on valves for the sprinkler systems will be provided under the Fire Protection Division. Coordinate with Fire Protection Division as to the proper type and number of contacts required on the sprinkler water flow and tamper switch devices. These devices shall be connected to individually zoned, addressable modules.
- 3. Isolator Module: Isolator module provides short circuit isolation for addressable notification appliance SLC wiring. Isolator shall be listed to UL 864. The Isolator shall mount directly to a minimum 2 1/8" deep, standard 4" square electrical box, without the use of special adapter or trim rings. Power and communications shall be supplied by the Addressable Controller channel SLC; dual port design shall accept communications and power from either port and shall automatically isolate one port from the other when a short circuit occurs. The following functionality shall be included in the Isolator module:
  - a. Report faults to the host FACP.
  - b. On-board Yellow LED provides module status.
  - c. After the wiring fault is repaired, the Isolator modules shall test the lines and automatically restore the connection.

#### 2.8 DEVICE PROGRAMMING / TEST UNIT

- A. The device programming unit is a tool used for installation, commissioning, maintenance and servicing of addressable devices. It shall program the intelligent devices with the assigned addresses and provide an electronic test to ensure proper operation. Programming dipswitches and/or rotary switches shall not be acceptable. The portable unit shall provide the following features:
  - 1. Liquid-crystal display (LCD) screen with keypad
  - 2. Built in addressable base as well as two external terminals for use with all other addressable ancillary devices.
  - 3. Powered from on-board standard NiMH' rechargeable batteries or standard 'AA' Alkaline battery or an external AC adaptor.
  - 4. Reads analogue values of addressable loops and preform maintenance features such as ground fault detection.
  - 5. nonvolatile Flash memory with ability to download software upgrades.
- B. The equipment supplier shall furnish a device programming unit to the installer for the duration of the project.

#### 2.9 NOTIFICATION APPLIANCES

- A. General requirements: Provide combination or individual audible and visual notification appliances as shown and permitted. All appliances shall be direct-wired; devices that utilize a multi-part assembly with swipe or non-mechanical pressure-type contact connections will not be considered acceptable.
  - 1. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes
  - 2. Appliances shall have no identifying labels and have a red or white finish as directed by the Architect.
  - 3. The contractor shall provide fitted surface mount backboxes supplied by the appliance manufacturer and outdoor-rated appliances where site conditions dictate.
- B. Audible Speaker Appliances:

- a. Speaker appliances shall be SLSPC and SLSPSC series appliances or approved equals for maximum output (at minimum wattage) across a sizeable frequency range, 300 to 8000 Hz.
  - 1) High-fidelity speakers UL Listed (for indoor use under Standard 1971 and 464).
  - 2) Wall-mounted Speakers: Provide multi-tapped cone speakers with square or rectangular grille with where shown or required. Each speaker shall have selective 1/4, 1/2, 1, or 2 watt taps. Each speaker shall produce a sound output level of 84dbA at 10' (1 watt setting).
  - 3) Ceiling-mounted Speakers: Provide multi-tapped cone speakers with 7" round white grille and the appropriate backbox/baffle and ceiling tile bridge assemblies for ceiling mounting where shown or required. Each speaker shall have selective 1/4, 1/2, 1, or 2 watt taps. Each speaker shall produce a sound output level of 84dbA at 10' (1 watt setting).
- b. Provide high output re-entrant-type speakers with the appropriate weatherproof listings in outdoor or other high ambient noise areas, as shown on the schematic design drawings.
  - 1) Multiple tap setting up to 15 watts.
- c. Speakers shall be UL Listed under Standard 1480 for Fire Protective Service, and speakers equipped with strobes shall be listed under UL Standard 1971 for Emergency Devices for the Hearing-Impaired. Speaker with strobes shall be certified to meet the requirements of FCC Part 15, Class B.
- d. All speakers shall be designed for a field-selectable input of either 25 or 70 VRMS.
- C. Visual Strobe Appliances:
  - Visual-notification appliances shall meet and be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service.
  - b. Strobe shall be listed for indoor use, and shall meet the requirements of FCC Part 15 Class B.

- c. LED multi-candela strobe shall have field-selectable settings, and be rated per UL Standard 1971 for:
  - 1) Wall-mount: 15/30/75/110cd
  - 2) Ceiling mount: 15/30/75/95cd or 115/177cd
- 2. The LED portions of the strobes shall meet the 20 millisecond light-pulse duration requirements of the 2016 edition of NFPA 72.
- 3. All inputs shall be compatible with standard, reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP)
- 4. The selector switch for selecting the candela shall be tamper resistant
- 5. The strobes shall not drift out of synchronization at any time during operation
  - a. If the sync module or Power Supply fails to operate, (i.e. contacts remain closed), the strobe shall revert to a non-synchronized flash rate

#### 2.10 MAGNETIC DOOR HOLD OPEN DEVICES

- A. Door Hold Open Devices: Door hold open devices shall be operate from 120vAC power supplied by the local FACP. The Contractor shall coordinate the proper voltage of these devices with the door hardware supplier to ensure that all required hardware and wiring is provided
  - 1. Electromagnets: Require no more than 3W to develop 25-lbf (111-N) holding force.
  - 2. Wall-Mounted Units: Flush mounted unless otherwise indicated.
- B. Material and Finish: Match door hardware.

#### 2.11 REMOTE ANNUNCIATOR

- A. Description: Annunciator functions shall match those of fire-alarm control unit for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control unit, including acknowledging, silencing, resetting, and testing.
  - 1. Mounting: Flush Surface cabinet, NEMA 250, Type 1.
- B. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

#### 2.12 DIGITAL COMMUNICATOR

- A. The commercial fire alarm off-site communicator shall provide general (alarm/ trouble/ supervisory) and ability for contact/ grouped event ID reporting from the fire alarm control panel (FACP). It shall be UL864 listed to provide point identification of alarm, supervisory, security and trouble events to a Central or Remove Receiving Station. It shall offer three selectable reporting paths which include: Cellular only, IP only, or IP primary/cellular backup. The Comminutor shall receive its power and supervision from the FACP.
  - 1. For this project, utilize cellular communications as the primary means of communication, per NFPA 72 requirements. IP communications for owner selected/provided future option.
  - 2. The dual path communicator shall be provided with a local cellular antenna. When the minimum cellular signal strength required by the manufacture's installation instructions cannot be met, provide an external antenna located and installed per field conditions, with the owner's approval.
  - 3. Cellular operates over the following communication protocols:
    - a. HSPA+ (4G)
    - b. HSPA (HSDPA &HSUPA) + (3G)
    - c. EDGE (2G GPRS) (2G).
  - 4. Selectable reporting paths and supervision intervals to meet NFPA 72, chapter 26 requirements.
  - Cellular provide capability: With broadest coverage footprint available in Verizon Network Certified<sup>™</sup> or AT&T networks.
  - 6. Future IP communication works over any type of customer provided Ethernet 10/100 based network connection (LAN or WAN), DSL modem or cable modem.
  - 7. Shall supports both dynamic (DHCP) or Public and Private Static IP addressing.

#### PART 3 - EXECUTION

#### 3.1 EXAMINATION

A. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the work.

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

#### 3.2 INSTALLATION

- A. Perform work in accordance with the requirements of NFPA 70, NFPA 72, NFPA 13, NFPA 2001, and NECA, Standard of Good Workmanship in Electrical Contracting.
- B. Fasten equipment to structural members of building or metal supports attached to structure, or to concrete surfaces.
- C. Backing Boards: Provide 3/4-inch marine plywood backing boards for support of all fire alarm equipment panels surface mounted on masonry walls.
  - 1. Paint both sides of boards with two (2) coats of Gray enamel, including all edges.
- D. Wiring Methods:
  - 1. All cabling is to be installed in raceways.
  - 2. Conceal raceways and cables where possible.
  - 3. All exposed and accessible installation locations shall utilize EMT conduit with compression connectors. Set screw connectors are not allowed. Accessible locations include:
    - a. Accessible ceiling systems
    - b. New gypsum board partitions
    - c. New gypsum board ceilings
  - 4. Flexible armored fire alarm cable assembly method may be used where concealed within consoles, cabinets, desks, counters, existing ceilings, and existing partitions.
- E. Wiring Integrity and survivability requirements Specified on shop drawings per NFPA72, Chapter 12
- F. Provide Surge Protection Devices (SPD) on all fire alarm wiring, which extends beyond the main building. Locate the SPD as close as practicable to the point at which the circuit leave or enter the building where the Fire Alarm Control Panel is located. Protection devices shall be shown on the schematic design drawings and shall be UL listed or in accordance with written manufacturer's requirements.

- 1. Provide equipment ground and connected to the building grounding electrode system per NEC.
- 2. Provide a dedicated enclosure to house the SPD and label it.
- G. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.
- H. Provide primary power for each panel from normal/ emergency panels as indicated on the Electrical Power Plans. Power shall be 120V AC service, transformed through a twowinding, isolation type transformer and rectified to low voltage DC for operation of all circuits and devices.

#### 3.3 BOXES, ENCLOSURES AND WIRING DEVICES

- A. All fire detection and alarm system devices, control units and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas. Existing areas with block and concrete construction shall use surface mounting and is to be coordinated prior to rough-in with owner and EoR.
- B. Fire Alarm: Terminal cabinets shall be provided in locations shown and as otherwise required to support wiring terminations, troubleshooting and future tenant fit-up. Cabinets shall be painted red and contain terminal blocks to support the system wiring where the Control Panels are remote from the devices served. Cabinets shall include accommodation for all wiring including SLCs, notification circuits, and related addressable and fault isolation modules for future expansion and modification.
  - 1. Terminal boxes and cabinets shall have a volume 50 percent greater than required by the NFPA 70. Minimum sized wire shall be considered as 14 AWG for calculation purposes.
- C. Boxes shall be installed plumb and firmly in position.
- D. Extension rings with blank covers shall be installed on junction boxes where required.
- E. Junction boxes served by concealed conduit shall be flush mounted.

- F. Upon initial installation, all wiring outlets, junction, pull and outlet boxes shall have dust covers installed. Dust covers shall not be removed until wiring installation when permanent dust covers or devices are installed.
- G. "Fire alarm system" decal or silk-screened label shall be applied to all junction box covers.
- H. Panel enclosures shall be installed to meet clearance requirements per NFPA 70 and local codes. Minimum requirements shall be 3 foot clearance in front of the enclosure

#### 3.4 CONDUCTORS

- A. Each conductor shall be identified as shown on the shop drawings at each with wire markers at terminal points. Attach permanent wire markers within 2 inches of the wire termination. Marker legends shall be visible.
- B. All wiring shall be supplied and installed in compliance with the requirements of the National Electric Code, NFPA 70, Article 760, and that of the manufacturer.
- Wiring for strobe and audible circuits shall be a minimum 14 AWG, signal line circuits; 18
   AWG twisted shielded, speaker circuits; 18 AWG twisted, telephone circuit; 18 AWG twisted shielded.
- D. All splices shall be made using solder-less connectors. All connectors shall be installed in conformance with the manufacturer recommendations.
- E. Crimp-on type spade lugs shall be used for terminations of stranded conductors to binder screw or stud type terminals. Spade lugs shall have upset legs and insulation sleeves sized for the conductors.
- F. The installation contractor shall submit for approval prior to installation of wire, a proposed color code for system conductors to allow rapid identification of circuit types.
- G. Wiring within sub panels shall be arranged and routed to allow accessibility to equipment for adjustment and maintenance.

#### 3.5 DEVICES

- A. Relays and other devices to be mounted in auxiliary panels are to be securely fastened to avoid false indications and failures due to shock or vibration.
- B. Wiring within panels shall be arranged and routed to allow accessibility to equipment for adjustment and maintenance.
- C. All devices and appliances shall be mounted to or in an approved electrical box.

#### 3.6 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."
- B. Permanently label or mark each conductor with alphanumeric wire markers at the main control panel, transponders, terminal cabinet and NAC booster panels.
- C. A consistent color code for fire alarm system conductors throughout the installation.

#### 3.7 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Testing General:
  - 1. All Alarm Initiating Devices shall be observed and logged for correct zone and sensitivity. These devices and their bases shall be tagged with adhesive tags located in an area not visible when installed, showing the initials of the installing technician and date.
  - 2. Wiring runs shall be tested for continuity, short circuits and grounds before system is energized. Resistance, current and voltage readings shall be made as work progresses.
  - 3. The acceptance inspector shall be notified before the start of the required tests. All items found at variance with the schematic design drawings or this specification during testing or inspection by the acceptance inspector shall be corrected.
  - 4. Test reports shall be delivered to the acceptance inspector as completed.

- 5. All test equipment, instruments, tools and labor required to conduct the system tests shall be made available by the installing contractor. The following equipment shall be a minimum for conducting the tests:
  - a. Ladders and scaffolds as required to access all installed equipment.
  - b. Multi-meter for reading voltage, current and resistance.
  - c. Two-way radios and flashlights.
  - d. A manufacturer recommended device for measuring air flow through air duct smoke detector sampling assemblies.
  - e. Decibel meter
  - f. Intelligibility meter
  - g. In addition to the testing specified to be performed by the installing contractor, the installation shall be subject to test by the authority having jurisdiction.

#### 3.8 ACCEPTANCE TESTING

- A. A written acceptance test procedure (ATP) for testing the fire alarm system components and installation will be prepared by the engineer in accordance with NFPA 72 and this specification. The contractor shall be responsible for the performance of the ATP, demonstrating the function of the system and verifying the correct operation of all system components, circuits, and programming.
  - 1. A program matrix shall be prepared by the installing contractor referencing each alarm input to every output function affected as a result of an alarm condition on that input.
  - 2. The installing contractor prior to the ATP shall prepare a complete listing of all device labels for alphanumeric annunciator displays.
- B. Preliminary Testing: Conduct preliminary tests to ensure that all devices and circuits are functioning properly. After preliminary testing is complete, provide a letter certifying that the installation is complete and fully operable. The letter shall state that each initiating and indicating device was tested in place and functioned properly. The letter shall also state that all panel functions were tested and operated properly. The Contractor and an authorized representative from each supplier of equipment shall be in attendance at the preliminary testing to make necessary adjustments.

- 1. Verify that the control unit is in the normal condition as detailed in the manufacturer's O&M manual.
- 2. Visually inspect wiring.
- 3. Test the battery charger and batteries.
- 4. Verify that software control and data files have been entered or programmed into the FACP.
- 5. Measure the current in circuits to ensure there is the calculated spare capacity for the circuits.
- 6. Measure voltage readings for circuits to ensure that voltage drop is not excessive.
- 7. Measure the voltage drop at the most remote appliance (based on wire length) on each notification appliance circuit.
- 8. Megger Tests: After wiring has been installed, and prior to making any connections to panels or devices, wiring shall be megger tested for insulation resistance, grounds, and/or shorts. Conductors with 300 volt rated insulation shall be tested at a minimum of 250 VDC. Conductors with 600 volt rated insulation shall be tested at a minimum of 500 VDC. Test results recorded for use at the final acceptance test.
- 9. Loop Resistance Tests: Measure and record the resistance of each circuit with each pair of conductors in the circuit short-circuited at the farthest point from the circuit origin. The tests shall be witnessed by the owner and test results recorded for use at the final acceptance test.
- Verify the absence of unwanted voltages between circuit conductors and ground. The tests shall be accomplished at the preliminary test with results available at the final system test.
- 11. Test each initiating device and notification appliance and circuit for proper operation and response at the control unit. Smoke sensors shall be tested in accordance with manufacturer's recommended calibrated test method. Use of magnets is prohibited. Testing of duct smoke detectors shall comply with the requirements of NFPA 72 except that, for item 12(e) (Supervision) in Table 14.4.2.2, disconnect at least 20 percent of devices. If there is a failure at these devices, then supervision shall be tested at each device.
- 12. All readings for Sound Pressure Level (SPL) and Intelligibility score shall be recorded on the installation drawings next to the speaker symbol. The readings shall then be added as propertied to each ADS on the "as-Built" drawings to be submitted at the conclusion of the Final Acceptance test.

- 13. Verify with all parties the required survivability of wiring, raceways, and junction boxes
- 14. Determine that the system is operable under trouble conditions as specified.
- C. Final Acceptance Test: Notify the owner in writing when the system is ready for final acceptance testing. Submit request for test at least 30 calendar days prior to the test date. A final acceptance test will not be scheduled until the Preliminary Testing has been completed.
  - 1. Provide documentation of Preliminary Testing results.
  - 2. Test the system in accordance with the procedures outlined in NFPA 72 acceptance testing.
  - 3. Demonstrate the performance of the required number and type of initiating devices and notification appliances per the AHJ's requirements.
  - 4. The speakers and sound levels shall be tested to ensure that the system meets the NFPA 72 intelligibility standards for Fire Alarm and Mass Notification Systems.
    - a. The sound from the speakers shall be a minimum of 15dB above the ambient noise levels throughout the facility. Testing shall be done with a Sound Level Meter. Contractor shall record the ambient and alarm sound levels as part of the "System Certification Test Report".
    - b. Verify intelligibility of the speakers throughout the facility to insure that the intelligibility meets the requirements. The test shall be performed with an Audio Intelligibility Analyzer such as a Goldline DSP-30B or the Quest Technologies Sound Pro SE/DL. The sound levels shall be tested at ear level throughout the facility and the results included in the "System Certification Test Report". The minimum Intelligibility score shall be a .8 CIS (Common Intelligibility Score) or .7 STI (Speech Transmission Index). The mean value of at least three readings shall be used to compute the intelligibility score at each test location. In high ambient noise areas or in areas where it is deemed impractical to meet the intelligibility levels, the AHJ has the authority to waive the testing in this area. Areas of the building where occupants are not expected to be normally present are permitted to have a CIS score less than 0.8 if personnel can determine that a voice signal is being broadcast and they must walk no more than 50 ft to a location with a CIS score of at least 0.8.

- 5. Verify that Shop Drawings reflecting as-built conditions are accurate. Upon final approval by all parties, provide two sets of As-built documents in a cabinet adjacent to the main FACP or designated area within the building. Per NFPA 72 7.7.2 Measure the current in Notification appliance circuits under full load to assure that there is the calculated spare capacity for every circuit.
- D. The acceptance inspector shall use the system record drawings in combination with the documents specified in this specification during the testing procedure to verify operation as programmed. In conducting the ATP, the acceptance inspector shall request demonstration of any or all input and output functions. The items tested shall include but not be limited to the following:
  - 1. System wiring shall be tested to demonstrate correct system response and correct subsequent system operation in the event of:
    - a. Open, shorted and grounded signal line circuits.
    - b. Open, shorted and grounded notification, releasing circuits.
    - c. Primary power or battery disconnected.
  - 2. System notification appliances shall be demonstrated as follows:
    - a. All alarm notification appliances actuate as programmed
    - b. Audibility and visibility at required levels.
    - c. VOICE Intelligibility measurements at the time of commissioning.
  - 3. System indications shall be demonstrated as follows:
    - a. Correct message display for each alarm input at the control display.
    - b. Correct annunciator light for each alarm input at each annunciator and graphic display as shown on the drawings.
    - c. Correct history logging for all system activity.
  - 4. System off-site reporting functions shall be demonstrated as follows:
    - a. Correct zone transmitted for each alarm input
    - b. Trouble signals received for disconnect
  - 5. Secondary power capabilities shall be demonstrated as follows:

- a. System primary power shall be disconnected for a period of time as specified herein. At the end of that period, an alarm condition shall be created and the system shall perform as specified for a period as specified.
- b. System primary power shall be restored for forty-eight hours and systemcharging current shall be normal trickle charge for a fully charged battery bank.
- c. System battery voltages and charging currents shall be checked at the fire alarm control panel.

#### 3.9 DOCUMENTATION

- A. System documentation shall be furnished to the owner and shall include but not be limited to the following:
  - 1. System record drawings and wiring details including one set of reproducible drawings, and a CD ROM or memory stick (thumb drive) with digital copies of the record drawings in PDF format.
  - 2. System operation, installation and maintenance manuals.
  - 3. System matrix showing interaction of all input signals with output commands.
  - 4. Documentation of system voltage, current and resistance readings taken during the installation, testing and ATP phases of the system installation.
  - 5. System program showing system functions, controls and labeling of equipment and devices.

#### 3.10 PROTECTION

A. Remove and replace devices and panel components that are wet, moisture damaged, or mold damaged.

#### 3.11 DEMONSTRATION

A. Include in the project the services of a factory-trained instructor, regarding the system operations, inspection requirements, and maintenance of the system provided. The instructor shall train the employees designated by the owner, in the care, adjustment, and operation of the fire alarm system.

#### FIRE ALARM SYSTEM REPLACEMENT, SOUTHWARK ELEMENTARY SCHOOL SDP CONTRACT NO. ELECTRICAL CONSTRUCTION NG10644 – 2640.001

- 1. Required Instruction Time: Provide 2 hours of instruction after final acceptance of the system. The instruction shall be given during working hours on such dates and times as are selected by the owner. The instruction may be divided into two periods and videotaped at the discretion of the owner.
- B. Provide a printed instruction card in a conspicuous location observable from the FACP. The card shall show those steps to be taken by an operator when a signal is received as well as the functional operation of the system under all conditions, normal, alarm, supervisory and trouble.

END OF SECTION 283111

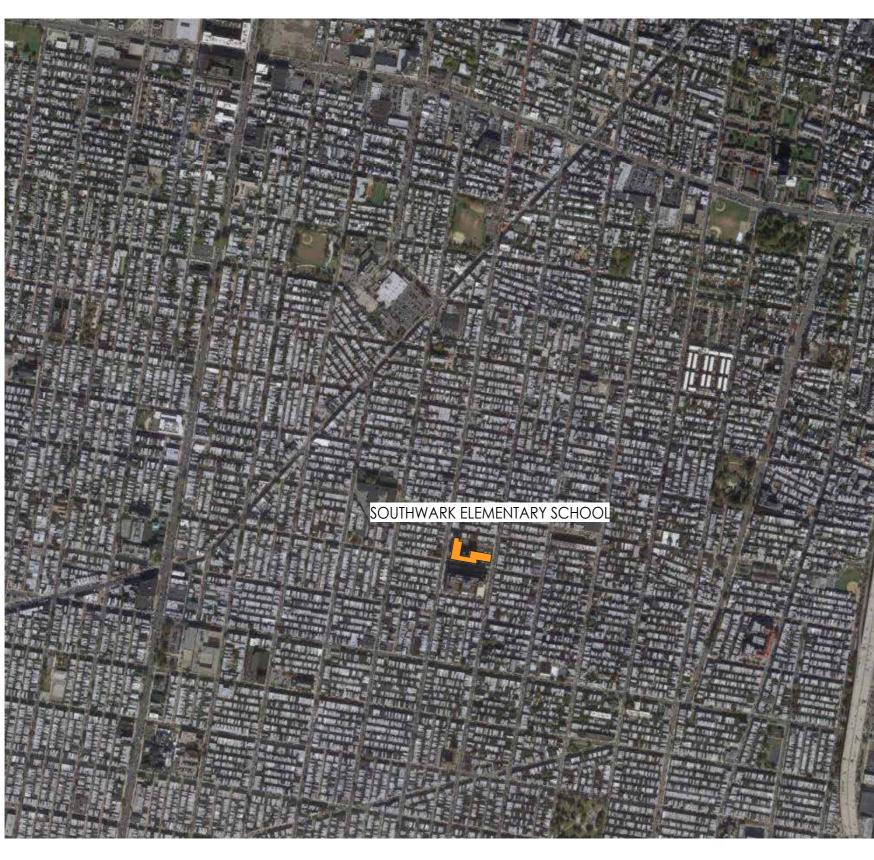
**CONTRACT DRAWINGS** 



## <u>OWNER</u>

SCHOOL DISTRICT OF PHILADELPHIA 440 North Broad Philadelphia, PA 19130-4015 Phone: 215-400-6423 Email: bnjohnson@philasd.org Attn: Brandon Johnson Design Project Mananger www.philasd.org

**BROAD STREET** 



LOCATION MAP 1

# THE SCHOOL DISTRICT OF PHILADELPHIA

SOUTHWARK ELEMENTARY SCHOOL 1835 S 9TH STREET, PHILADELPHIA, PA 19148

# SOUTHWARK ELEMENTARY SCHOOL FIRE ALARM RENOVATIONS

# BID DOCUMENTATION - APRIL 25TH, 2025

# ARCHITECTURE

STANTEC 1500 Spring Garden St Suite 1100 Philadelphia, PA, 19130 Phone: 215-751-2943 Email: Kristin.Shiffert@stantec.com Attn: Kristin Shiffert

# **ELECTRICAL**

STANTEC 1500 Spring Garden St Suite 1100 Philadelphia, PA, 19130 Phone: 215-665-7164 Email: Mark.Nardy@stantec.com Attn: Mark Nardy

**GENERAL NOTE:** 

1. ALL DIMENSIONS SEEN ON A SERIES DRAWINGS ARE TO FINISH FACE OF PARTITION AND CASEWORK. THIS INCLUDES FINISH FACE OF TILE.

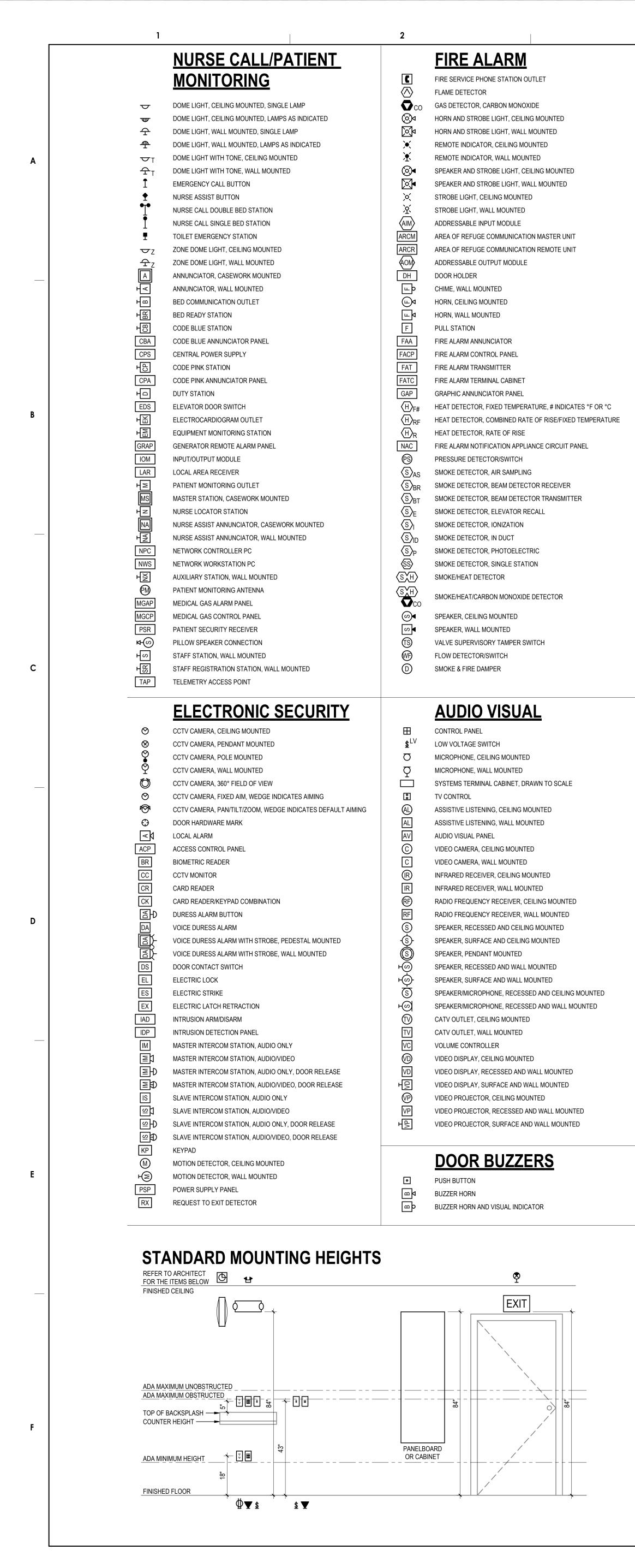
NOT TO SCALE

# **FIRE PROTECTION**

STANTEC 1500 Spring Garden St Suite 1100 Philadelphia, PA, 19130 Phone: 215-665-7035 Email: Brian.Lim2@stantec.com Attn: Brian Lim

LOCATION MAP 2

NOT TO SCALE



CIRCUIT:	-	LUMINAIRES	
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		SURFACE MOUNTED RECTANGULAR LUMINAIRE, DRAWN TO SCALE RECESSED BASKET LUMINAIRE, DRAWN TO SCALE	
		STRIP LUMINAIRE, LENGTH TO SCALE	
-	Ŧ	WALL MOUNTED RECTANGULAR LUMINAIRE, LENGTH TO SCALE (NUMBER OF MOUNTING POINTS WILL VARY WITH THE LUMINAIRE LENGTH AND ARE NOT INDICATED.)	
	0	RECESSED DOWNLIGHT LUMINAIRE	
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۲ ۲	N/A	WALL MOUNTED EXIT SIGN, FILLED SIDES INDICATE ILLUMINATED ANNOTATION, ARROWS INDICATE DIRECTIONAL GRAPHICS	
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	N/A	REMOTE EMERGENCY HEADS WITH REMOTE BATTERY PACK, NUMBER OF HEADS AS INDICATED	
<b>₽</b> 1	N/A	WALL MOUNTED REMOTE EMERGENCY HEADS WITH REMOTE BATTERY PACK, NUMBER OF LAMPS AS INDICATED	
	<u>▲</u> 3 3	RECESSED LINEAR WALL WASH LUMINAIRE, LENGTH TO SCALE	
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		MULTI-LAMP ACCENT LUMINAIRE, NUMBER OF LAMPS NOT INDICATED WALL MOUNTED MULTI-LAMP ACCENT LUMINAIRE, NUMBER OF LAMPS NOT INDICATED	
-		OVERCOUNTER TASK LUMINAIRE	
		FIBER OPTIC REMOTE SOURCE	
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		VALL MOUNTED ILLUMINATED SIGN NIGHT LIGHT ROUND LIGHT SITE/LANDSCAPE/GARAGE LUMINAIRES SITE/LANDSCAPE/GARAGE LUMINAIRES LIGHTING STANDARD: LUMINAIRE, POLE, AND BASE LAMP POST ILLUMINATED BOLLARD IN-GROUND LUMINAIRE ADJUSTABLE IN-GROUND LUMINAIRE SURFACE MOUNTED GARAGE LUMINAIRE SURFACE MOUNTED SHIELDED GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSITION OF SHIELD(S) WALL PACK SURFLEY SUBSCRIPT LOWER-CASE LETTER(S) OR NUMBER(S) USED ALONE OR IN CONJUCTION NEAR SWITCH DENOTE THE FOLLOWING: a = SWITH LEG 2 = DOUBLE POLE SWITCH 3 = TREE-WAY SWITCH 3 = TREE-WAY SWITCH 4 = FOUR-WAY SWITCH 4 = FOUR-WAY SWITCH MOMENTARY CONTACT LOW VOLTAGE SWITCH D = DIMMER SWITCH KF & SCENE KEYPAD IL V= MOMENTARY CONTACT LOW VOLTAGE SWITCH D = SWITCH WITH PILL LIGHT P = SWITCH PILL PILL PILL PILL PILL PILL PILL PIL	
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		WALL MOUNTED ILLUMINATED SIGN NIGHT LIGHT ROUND LIGHT RING LIGHT SITE/LAANDSCAPE/GARAGE LUMINAIRES SITE/LANDSCAPE/GARAGE LUMINAIRES LIGHTING STANDARD: LUMINAIRE, POLE, AND BASE LAMP POST ILLUMINATED BOLLARD IN-GROUND LUMINAIRE ADJUSTABLE IN-GROUND LUMINAIRE SURFACE MOUNTED GARAGE LUMINAIRE, LINES INDICATE SURFACE MOUNTED GARAGE LUMINAIRE, LINES INDICATE SURFACE MOUNTED GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSITION OF SHIELD(S) WALL PACK SINGLE POLE SWITCH SUPER/SUBSCRIPT LOWER-CASE LETTER(S) OR NUMBER(S) USED ALONE OR IN CONJUCTION NEAR SWITCH DENOTE THE FOLLOWING: A SWITH LEG 2 DOUBLE POLE SWITCH 3 THREE-WAY SWITCH 4 E FOUR-WAY SWITCH 4 E FOUR-WAY SWITCH 5 DUBLE POLE SWITCH 5 SENSER SUNTCH 5 SURFE SWITCH 5 S	
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		VALL MOUNTED ILLUMINATED SIGN NIGHT LIGHT ROUND LIGHT RING LIGHT SITE/LANDSCAPE/GARAGE LUMINAIRES SITE/LANDSCAPE/GARAGE LUMINAIRES LIGHTING STANDARD: LUMINAIRE, POLE, AND BASE LAMP POST ILLUMINATED BOLLARD IN-GROUND LUMINAIRE DJUSTABLE IN-GROUND LUMINAIRE SURFACE MOUNTED GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSITION OF SHIELD(S) WALL PACK SURFACE MOUNTED SHIELDED GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSITION OF SHIELD(S) WALL PACK SURFACE MOUNTED SHIELD(S) WALL PACK SURGLE POLE SWITCH SUPERSUBSCRIPT LOWER-CASE LETTER(S) OR NUMBER(S) USED ALONG OR IN COMUCTION NEAR SWITCH DENOTE THE FOLLOWING: a = SWITH LEG 2 = OUBLE POLE SWITCH 3 = TREE-WAY SWITCH 3 = TREE-WAY SWITCH 3 = TREE-WAY SWITCH 3 = TREE-WAY SWITCH C = OUR-WAY SWITCH M = SCENE KEYPAD UV = MOMENTARY CONTACT LOW VOLTAGE SWITCH O = OCCUPANCY SENSOR SWITCH C = OURDERTON SORDINMER SWITCH D = DIMENTARY CONTACT LOW VOLTAGE SWITCH O = OCCUPANCY SENSOR SWITCH C = OURDERTOR SORDINMER SWITCH D = SWITCH WITH PILOT LIGHT P = SWITCH WITH PILOT LIGHT P = SWITCH WITH PILOT LIGHT P = SWITCH SWITCH LIGHTING SYSTEM CONTROL STATION, #INDICATES STATION IDENTFICATION DIMMING SYSTEM CONTROL PANEL EMERGENCY LIGHTING CONTROL UNIT LIGHTING CONTROL PANEL COCUPANCY SENSOR, CELLING MOUNTED PHOTO SENSOR CONTROL, CELLING	
		<pre>value mounted illuminated sign might light round light <b>SITEF/LANDSCAPE/GARAGE LUMINAIRES</b> SIGHTING STANDARD: LUMINAIRE, POLE, AND BASE LAMP POST ILLUMINATED BOLLARD in-GROUND LUMINAIRE, POLE, AND BASE LAMP POST ILLUMINATED BOLLARD in-GROUND LUMINAIRE SURFACE MOUNTED GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSTION OF SHIELD(S) WALL PACK <b>SURFACE MOUNTED GARAGE LUMINAIRE</b> SURFACE MOUNTED GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSTION OF SHIELD(S) WALL PACK SURFACE MOUNTED SHIELDE GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSTION OF SHIELD(S) WALL PACK SURFERE MOUNTED SHIELDE GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSTION OF SHIELD(S) WALL PACK SURFERE MOUNTED SHIELDE GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSTION OF SHIELD(S) WALL PACK SURFERE VOUNTED SHIELDE GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSTION OF SHIELD(S) WALL PACK SURE POLE SWITCH 3 = THREF-WAY SWITCH 3 = THREF-WAY SWITCH 3 = THREF-WAY SWITCH MOUNTARY CONTROL LOW VOLTAGE SWITCH 0 = OCCUPANCY SENSOR CONTROL PANEL 0 = OCCUPANCY SENSOR CONTROL PANEL 0 = OCCUPANCY SENSOR CONTROL, CEILING MOUNTED NEIL 0 = OCCUPANCY SENSOR CONTROL, CEILING MOUNTED 0 = OCCUPANCY SENSOR CONTROL, CEILIN</pre>	
		WALL MOUNTED ILLUMINATED SIGN NIGHT LIGHT ROUND LIGHT RING LIGHT SITE/LANDSCAPE/GARAGE LUMINAIRES LIGHTING STANDARD: LUMINAIRE, POLE, AND BASE LAMP POST ILLUMINATED BOLLARD INGROUND LUMINAIRE ADJUSTABLE IN-GROUND LUMINAIRE SURFACE MOUNTED GARAGE LUMINAIRE SURFACE MOUNTED SHIELDED GARAGE LUMINAIRE, LINES INDICATE SURFACE MOUNTED SHIELDED DAMMER SWITCH SINGLE POLE SWITCH 3 = NOTHINE B 2 = OUTHLE G 2 = OUTHLE FOLE SWITCH 3 = FOURHARY SWITCH B = DUMMER SWITCH D = DUMMER SWITCH D = DUMMER SWITCH D = DUMENTARY CONTACT LOW VOLTAGE SWITCH D = OCCUPANCY SENSOR/DIMMER SWITCH D = OCCUPANCY SENSOR/SWITCH D = SWITCH INDICATES WIRELESS CONTROL LOW VOLTAGE CONTROL STATION, #INDICATES STATION DENTIFICATION DIMMING SYSTEM CONTROL DINIT LIGHTING CONTROL STATION, #INDICATES STATION DENTIFICATION DIMMING SYSTEM CONTROL PANEL EMERGENCY LIGHTING CONTROL UNIT LIGHTING CONTROL PANEL DICUPANCY SENSOR, CEILING MOUNTED PHOTO SENSOR CONTROL, CEILING MOUNTED PHOTO SENSOR CONTROL, CEILING MOUNTED PHOTO SENSOR CONTROL, CEILING MOUNTED PHOTO SENSOR CONTROL, CEILING MOUNTED	
		<pre>value mounted isluminated sign might light round light streat standard: unimated sign streat standard: unimated sign streat standard: unimated standards unimated boltard isluminated boltard</pre>	
		NIGHT LIGHT ROUND LIGHT RING LIGHT SITE/LANDSCAPE/GARAGE LIGHTING STANDARD: LUMINAIRE, POLE, AND BASE LAMP POST ILLUMINATED BOLLARD INGROUND LUMINAIRE ADJUSTABLE IN-GROUND LUMINAIRE SURFACE MOUNTED GARAGE LUMINAIRE, LINES INDICATE SURFACE MOUNTED SHIELDED GARAGE LUMINAIRE, LINES INDICATE SURGE POLE SWITCH SUPERSUBSCRIPT LOWER-CASE LETTER(S) OR NUMBER(S) USED ALONE OR IN CONJUCTION NEAR SWITCH DENOTE THE FOLLOWING: a = SURTH LEG 2 = DOUBLE POLE SWITCH X = KEY OPERATED SWITCH M = SCENE KEYPAD IV = MOMENTARY CONTACT LOW VOLTAGE SWITCH 0 = OCCUPANCY SENSOR SWITCH 1 = TIMER SWITCH 1 = OURACY SENSOR CONTROL UNIT 1 = OURACY SENSOR CONTROL SHING BOUNTED 1 = OURACY SENSOR CONTROL, CEILING MOUNTED 1 = OURACY SENSOR CONTROL, CEILING MOUNTED 1 = OUCACY SENSOR CONTROL, CEILING	
		<pre>WALL MOUNTED ILLUMINATED SIGN NIGHT LIGHT ROUND LIGHT RING LIGHT SITE/LANDSCAPE/GARAGE LUMINAIRES SITE/LANDSCAPE/GARAGE LUMINAIRES LIGHTING STANDARD: LUMINAIRE, POLE, AND BASE LAMP POST ILLUMINATED BOLLARD INGROUND LUMINAIRE ADJUSTABLE IN-GROUND LUMINAIRE SURFACE MOUNTED GARAGE LUMINAIRE, LINES INDICATE SURFACE MOUNTED GARAGE LUMINAIRE, SWITCH SURFACE MOUNTED SHIELDED GARAGE LUMINAIRE, LINES INDICATE SURFACE MOUNTED SHIELDED GARAGE LUMINAIRE, LINES INDICATE SURFACE MOUNTED SHIELDED GARAGE LUMINAIRE, LINES INDICATE SURFACE MOUNTED SHIELDED SWITCH SUPERSUBSCRIPT LOWER-CASE LETTER(S) OR NUMBER(S) USED ALOVE OR IN CONJUCTION NEAR SWITCH DENOTE THE FOLLOWING: = = SOUTH LEG = = SOUTH ED POLE SWITCH S = THREE-WAY SWITCH D = DIMER SWITCH P = SOUTANCY SENSORDIMMER SWITCH D = DIMER SWITCH P = SOUTANCY SENSORDIMMER SWITCH D = DIMERSINTCH P = SUTCH UIGHT D = DIMERSINTCH P = SWITCH INDICATES WIRELESS CONTROL LUMINING SYSTEM CONTROL STATION, # INDICATES STATION DENTIFICATION DIMINING SYSTEM CONTROL PANEL EMERGENCY LIGHTING CONTROL UNIT LIGHTING CONTROL PANEL EMERGENCY LIGHTING CONTROL UNITED PHOTO SENSOR CONTROL, CEILING MOUNTED PHOTO SENSOR CONTROL, CEILING MOUNTED PHOTO SENSOR CONTROL, CEILING MOUNTED CUUPANCY SENSOR CONTROL, CEILING MOUNTED PHOTO SENSOR CONTROL, CEILING MOUNTED PHOTO SENSOR CONTROL, CEILING MOUNTED COCUPANCY SENSOR CONTROL, CEILING MOUNTED CUUV VOLTAGE TRANSFORMER CLOCK, 12 HOUR DIAL CLOCK, 12 HOUR DIAL CLOCK, 24 HOUR DIAL CLOCK, 12 HOUR DIAL</pre>	

#### **WORK DEFINITION** CABLE IDENTIFICATION, TABLE ------ NEW WORK EXISTING \_\_\_\_\_ ---- REMOVE EXISTING //, ××× REMOVE EXISTING ELECTRICAL EQUIPMENT — — — FUTURE — - - — TEMPORARY, AS NOTED ?## KEY NOTE EQUIPMENT IDENTIFICATION <u>CIRCUITS</u> 4 #12+ 1 #12G, [SIZE]C RACEWAY CONCEALED IN CEILING OR WALL. EXPOSED RACEWAY IS ------ALLOWED ONLY WHERE NOTED. — — — RACEWAY BELOW SLAB OR UNDERGROUND CABLE IDENTIFICATION, TEXT \_\_\_\_0 RACEWAY UP RACEWAY DOWN ----• RACEWAY CONTINUATION $\rightarrow$ RACEWAY STUB-OUT WITH BUSHING \_\_\_\_ JUNCTION BOX, CEILING OR ABOVE CEILING MOUNTED JUNCTION BOX, WALL MOUNTED PULL BOX **RECEPTACLES** #×1/C #/C # SINGLE RECEPTACLE, 120V SINGLE RECEPTACLE, CEILING MOUNTED DUPLEX RECEPTACLE, 120V \_\_\_\_\_ DUPLEX RECEPTACLE, CEILING MOUNTED \_\_\_\_\_ <u>NAME</u> LOCATION DOUBLE DUPLEX RECEPTACLE, 120V DOUBLE DUPLEX RECEPTACLE, CEILING MOUNTED 225 A MCB 480 V SPLIT WIRED RECEPTACLE, 120V, TOP SWITCHED 3 Ø, 4 W RECEPTACLE, NEMA # 42 CCT RECEPTACLE, NEMA #, CEILING MOUNTED PANEL, COMBINATION RECEPTACLE, 120V AND NEMA # SINGLE TUB FURNITURE SYSTEMS RECEPTACLE, 120V AC/DC INVERTER INDICATES CONTROLLED INTEGRAL USB RECEPTACLE, 120V GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE, 120V w GROUND FAULT CIRCUIT INTERRUPTER DOUBLE DUPLEX RECEPTACLE, $\mathcal{X}$ PEDESTAL COUNTERTOP MOUNTED RECEPTACLE, 120V MULTI-SERVICE FLOOR BOX (REFER TO SCHEDULE FOR TYPES) MULTI-SERVICE POKE THRU (REFER TO SCHEDULE FOR TYPES) ŝ MULTI-SERVICE POWER POLE (REFER TO SCHEDULE FOR TYPES) MULTI-SERVICE ASSEMBLY (RECEPTACLES/OUTLETS AS INDICATED) «Ц» CLOCK RECEPTACLE, 120V CEILING CORD DROP, 120V WALL CORD DROP, 120V SUPER/SUBSCRIPT LETTER(S) OR NUMBER(S) SHOWN NEAR OULET DENOTE THE FOLLOWING: A = ARC FAULT INTERRUPTER T = TAMPER RESISTANT D = DEDICATED CIRCUIT **EM - EMERGENCY CIRCUIT** IG = ISOLATED GROUND S = SURGE PROTECTOR WP = GROUND FAULT CIRCUIT INTERRUPTER WITH WEATHER RESISTANT COVER + = ABOVE COUNTERTOP HEIGHT (42" A.F.F.) + # = NON STANDARD MOUNTING HEIGHT, # INDICATES MOUNTING HEIGHT ABOVE FINISHED FLOOR. NOTE: MULTIPLE LETTERS NEAR OUTLET MAY BE USED FOR **ELECTRICAL CONTROLS** HID. Ξ $\Box$ NON-FUSED SAFETY SWITCH •--• **D** FUSED SAFETY SWITCH, FUSE RATING INDICATED $\mathbf{u}\mathbf{u}$ COMBINATION MOTOR STARTER AND FUSED SAFETY SWITCH, FUSE •• •||· RATING INDICATED • H MOTOR STARTER $\ll$ MANUAL MOTOR STARTER AUTOMATIC DOOR PUSHPLATE $\nabla$ EMERGENCY SHUTDOWN ENCLOSED CIRCUIT BREAKER • 🕄 PUSH BUTTON CONTROL STATION EPO EMERGENCY POWER OFF TOGGLE SWITCH, MOTOR RATED VFD VARIABLE FREQUENCY DRIVE $\sim$ **ELECTRICAL EQUIPMENT** 208V OR 240V POWER PANELBOARD m 480V OR 600V POWER PANELBOARD **E** EQUIPMENT CABINET OR PANEL EQUIPMENT CONNECTION, FILL INDICATES EMERGENCY CIRCUIT GROUND BAR $\mathcal{O}$ MOTOR CONNECTION BUS DUCT ATS AUTOMATIC TRANSFER SWITCH B BUS DUCT PLUG (A)SPD SURGE PROTECTIVE DEVICE A TRANSFORMER DMS **TELECOM OUTLETS** LSIG OUTLET OUTLET, CEILING MOUNTED FURNITURE SYSTEMS OUTLET OUTLET, MOUNTED IN FLOOR BOX -- LSIG OUTLET, MOUNTED IN POKE THRU M OUTLET, MOUNTED IN POWER POLE METER SUPER/SUBSCRIPT LETTER(S) OR NUMBER(S) USED ALONE OR IN CONJUCTION NEAR OULET DENOTE THE FOLLOWING: # = INDICATES QUANTITY OF DATA JACKS, PULLSTRING ALWAYS SB PROVIDED. WHERE NO QUANTITY IS NOTED, 2 DATA JACKS AND PULLSTRING. SPACE + = ABOVE COUNTERTOP HEIGHT (42" A.F.F.) + # = NON STANDARD MOUNTING HEIGHT, # INDICATES MOUNTING HEIGHT ABOVE FINISHED FLOOR. B = BLANK FACEPLATE, ROUGH-IN ONLY D = DIRECT CONNECTION TO PANEL TS M = PATIENT MONITORING $(\mathbf{v})$ P = PAY TELEPHONE R = RACEWAY MOUNTED VS W = WALL MOUNTED TELEPHONE HANDSET OUTLET WAP = WIRELESS ACCESS POINT CONNECTION •-X

NOTE: MULTIPLE LETTERS NEAR OUTLET MAY BE USED FOR

COMBINATIONS

GROUND BAR, LENGTH TO SCALE

CABLE TRAY

**TELECOM MISC.** 

# **ELECTRICAL SCHEMATICS**

# CIRCUIT IDENTIFICATION, SEE FEEDER TABLE

A = ALUMINUM C = COPPER

### M = METAL CLAD

L QUANTITY OF GROUND CONDUCTORS, SIZE PER FEEDER TABLE 0 = NOT REQUIRED

1 = 1 GROUND CONDUCTOR 2 = 1 GROUND CONDUCTOR AND 1 ISOLATED GROUND CONDUCTOR - QUANTITY OF NEUTRAL CONDUCTORS, SIZE PER FEEDER TABLE

0 = NOT REQUIRED 1 = 1 NEUTRAL CONDUCTOR 2 = 2 NEUTRAL CONDUCTORS (NOT 200% NEUTRAL)

– QUANTITY OF PHASE CONDUCTORS, SIZE PER FEEDER TABLE CABLE IDENTIFICATION, TEXT

#### CONDUIT SIZE L QUANTITY AND SIZE OF GROUNDS

└ QUANTITY AND SIZE OF CONDUCTORS

4 SETS (3×1/C 600 kcmil +1 #3/0G, Cu, 15kV, 133%, TR-XLPE, [SIZE]C) L CABLE TYPE L INSULATION LEVEL

> L INSULATION VOLTS └ QUANTITY AND SIZE OF GROUNDS

– QUANTITY AND SIZE OF CONDUCTORS L QUANTITY OF SETS

> SINGLE CONDUCTOR CABLE, # INDICATES QUANTITY OF CABLES MULTI-CONDUCTOR CABLE, # INDICATES QUANTITY OF CONDUCTORS SHORT CIRCUIT CURRENT RATING, # INDICATES RATING BUS DUCT

> > NAME

480 V

42 CCT

#### BUS

FEEDER

NAME LOCATION LOCATION LOCATION 225 A MCB 225 A MCB 225 A MCB 3 Ø, 4 W 42 CCT

480 V 3 Ø, 4 W 3 Ø, 4 W 42 CCT PANEL, DOUBLE TUB, PANEL, DOUBLE TUB, FEED THRU LUGS MAIN LUGS

AUTOTRANSFORMER BATTERY BIMETALLIC THERMAL OVERLOAD CAPACITOR « 🎧 » CIRCUIT BREAKER, LOW VOLTAGE, DRAW OUT CIRCUIT BREAKER, LOW VOLTAGE, FIXED CIRCUIT BREAKER, LOW VOLTAGE, WITH LIMITER CIRCUIT BREAKER, MEDIUM VOLTAGE, DRAW OUT CIRCUIT BREAKER, MEDIUM VOLTAGE, FIXED CIRCUIT BREAKER, MEDIUM VOLTAGE, VACUUM INTERRUPTER CONNECTION, CONNECTED CONNECTION, DRAW OUT, DISCONNECTED CONNECTION, FEED FROM/TO CONNECTION, NOT CONNECTED CONNECTION, SPLICE CONTACT CURRENT TRANSFORMER DEAD BREAK ELBOW «□ 3E» DRAW OUT FUSE AND POTENTIAL TRANSFORMER FUSE

> FUSED CUTOUT GROUND GROUND STUD INDUCTOR LIGHTNING ARRESTOR, GAP TYPI LIGHTNING ARRESTOR, MOV TYPE LOAD BREAK ELBOW POTENTIAL TRANSFORMER POTHEAD STRESS CONE SWITCH, FUSED LOAD BREAK SWITCH, NON-FUSED LOAD BREAK SWITCH, NON-FUSED DOUBLE LOAD BREAK SWITCH, NON-FUSED LOAD BREAK WITH GROUNDING POSITION RESISTOR TRANSFER SWITCH

TRANSFORMER TRANSFORMER CONFIGURATION, DELTA TRANSFORMER CONFIGURATION, DELTA, OPEN TRANSFORMER CONFIGURATION, DELTA, CORNER GROUND TRANSFORMER CONFIGURATION, WYE TRANSFORMER CONFIGURATION, WYE, SOLID GROUND ZERO SEQUENCE CURRENT TRANSFORMER AMMETER AMPERAGE METER SWITCH DIGITAL METERING SYSTEM GENERATOF KIRK KEY RELAY, TRIP UNIT DRAW OUT BREAKER C/W INTEGRAL SOLID STATE TRIP UNIT DRAW OUT BREAKER C/W SERIES ELECTROMECHANICAL TRIP UNIT INLINE SOCKET METER METER E O/L ELECTRONIC THERMAL OVERLOAD SHORTING BLOCK SPACE, DRAW OUT BREAKER • • SPACE SPACE SPACE SURGE PROTECTION DEVIC SURGE PROTECTION DEVICE TEST SWITCH VOLTMETER VOLTAGE METER SWITCH

INDICATOR, VOLTAGE PRESENT

# DRAWING LIST

	ELECTRICAL DRAWING LIST
Sheet #	Sheet Name
E-001	ELECTRICAL COVERSHEET
E-002	ELECTRICAL NOTES
ED-110.1	BASEMENT ELECTRICAL DEMOLITION PLAN - SECTION 1
ED-110.2	BASEMENT ELECTRICAL DEMOLITION PLAN - SECTION 2
ED-111.1	FIRST FLOOR ELECTRICAL DEMOLITION PLAN - SECTION 1
ED-111.2	FIRST FLOOR ELECTRICAL DEMOLITION PLAN - SECTION 2
ED-112.1	SECOND FLOOR ELECTRICAL DEMOLITION PLAN - SECTION 1
ED-112.2	SECOND FLOOR ELECTRICAL DEMOLITION PLAN - SECTION 2
ED-113.1	THIRD FLOOR ELECTRICAL DEMOLITION PLAN - SECTION 1
ED-113.2	THIRD FLOOR ELECTRICAL DEMOLITION PLAN - SECTION 2
E-110.1	BASEMENT FLOOR FIRE ALARM PLAN - SECTION 1
E-110.2	BASEMENT FLOOR FIRE ALARM PLAN - SECTION 2
E-111.1	FIRST FLOOR FIRE ALARM PLAN - SECTION 1
E-111.2	FIRST FLOOR FIRE ALARM PLAN - SECTION 2
E-112.1	SECOND FLOOR FIRE ALARM PLAN - SECTION 1
E-112.2	SECOND FLOOR FIRE ALARM PLAN - SECTION 2
E-113.1	THIRD FLOOR FIRE ALARM PLAN - SECTION 1
E-113.2	THIRD FLOOR FIRE ALARM PLAN - SECTION 2
E-501	FIRE ALARM DETAILS
E-601	FIRE ALARM RISER DIAGRAM
E-602	ELECTRICAL SINGLE LINE DIAGRAM AND PANEL SCHEDULES

### **ABBREVIATIONS** (SOME ABBREVIATIONS MAY NOT BE USED ON THIS PROJECT)

FXH

FXP

FCU

FLR

FPC

FS

FSCS

FVNR

G, GND

F\/R

G/Y

GEN

LTG

MCB

MCC

MCCE

MCP

MDF

MDP

MFT

MIN

MISC

MLO

MSB

MTD

MTG

MTS

MVCB

MV

MW

NA(

NEC

NEMA

NIC

NL

NO

MM

MECH

GFI, GFCI

FLUOR

EXTER

EXIST, E, EX,

(SOME ABBREVIA	TIONS MAY NOT BE USED ON THIS PROJEC
#/C 1/C	MULTI-CONDUCTOR, # INDICTATES QUANTITY SINGLE CONDUCTOR
А	AMPS
A/C AC	AIR CONDITIONING UNIT ALTERNATING CURRENT
ACH	ABOVE COUNTER HEIGHT
ACT	ABOVE CEILING TILE
ADA	AMERICANS WITH DISABILITIES
ADJ	ADJUSTABLE
AF	
AFC AFCI	ABOVE FINISHED CEILING ARC FAULT CIRCUIT
	INTERRUPTER
AFF AFG	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING
AHU	JURISDICTION AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING
	CAPACITY
AL ALD	ALUMINUM ASSISTED LISTENING DEVICE
ALT	ALTERNATE
ARCH AS	ARCHITECTURAL AMP SWITCH
AS AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO AV	AUTOMATIC AUDIO VISUAL
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
BC BCU	BONDING CONDUCTOR BARE COPPER
BFC	BELOW FINISHED CEILING
BFG BKR	BELOW FINISHED GRADE BREAKER
BLDG	BUILDING
BOF	BOTTOM OF FIXTURE
BTM C	BOTTOM CONDUIT
C/W	COMPLETE WITH
CAP CATV	CAPACITY CABLE ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION CANADIAN ELECTRIC CODE
CEC CFOI	CONTRACTOR FURNISHED,
CIRC	OWNER INSTALLED CIRCULATING
CKT	CIRCUIT
CL	CENTERLINE
CLG CM	CEILING CEILING MOUNTED
CMU	CONCRETE MASONRY UNIT
CO COMM	CONDUIT ONLY COMMUNICATIONS
CONC	CONCRETE
CONN CONST	CONNECTION CONSTRUCTION
CONT	CONTINUOUS
CONTR CPT	CONTRACTOR CONTROL POWER
UFI	TRANSFORMER
CPU CR	CENTRAL PROCESSING UNIT
CT	CURRENT TRANSFORMERS
CTR	CENTER
CU CUH	COPPER CABINET UNIT HEATER
D, (D)	DEMOLISH, TO BE DEMOLISHED
DALI	DIGITAL ADDRESSABLE LIGHTING INTERFACE
DC	DIRECT CURRENT
DET DIAM	DETAIL DIAMETER
DIM	DIMENSION
DISC DIV	DISCONNECT DIVISION
DL	DAMP LOCATION
DMX DMX-RDM	DIGITAL MULTIPLEX DIGITAL MULTIPLEX REMOTE
	DEVICE MANAGEMENT
DN DP	DOWN DISTRIBUTION PANEL
DPDT	DOUBLE POLE, DOUBLE THROW
DPR	
DPST DWG	DOUBLE POLE, SINGLE THROW DRAWING
DWH	DOMESTIC WATER HEATER
EA EC	EACH ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEC ELEV	ELECTRICAL ELEVATOR
EM	EMERGENCY
EM GEN EMT	EMERGENCY GENERATOR ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	ELECTRIC-PNEUMATIC EMERGENCY POWER OFF
EPO EQ	EMERGENCY POWER OFF EQUIPMENT BRANCH
EQUIP	
ERL, (ERL) ETD	EXISTING TO BE RELOCATED EMERGENCY TRANSFER DEVICE
EWC	ELECTRIC WATER COOLER

EXHAUST	NTS	NOT TO SCA
EXISTING	OC	ON CENTER
	OD	OUTSIDE DIA
EXPLOSION PROOF	OFCI	OWNER FUR
EXTERIOR FURNISHED AND INSTALLED	OFE	CONTRACTC OWNER FUR
FIRE ALARM	OH	OVERHEAD
FIRE ALARM ANNUNCIATOR	OL	OVERLOAD
FIRE ALARM CONTROL PANEL	OS	OCCUPANCY
FLOOR BOX		STANDBY
FAN COIL UNIT	OSP	OUTSIDE PL
FLOOR	P	POLE
	PA PB	PUBLIC ADD
FIBER (FIBRE) OPTIC FIRE PROTECTION	PD	PUNCHDOW
FORWARD PHASE CONTROL	PF	POWER FAC
FUSIBLE SWITCH	PH	PHASE
FIRE FIGHTER SMOKE CONTROL	PNL	PANEL
STATION	POE	POINT OF EN
FUSE	POS	POINT OF SE
FULL VOLTAGE NON REVERSING FULL VOLTAGE REVERSING	PR PT	PAIR POTENTIAL 1
GROUND	PTS	PNEUMATIC
GREEN YELLOW	PTZ	PAN/TILT/ZO
GAUGE	PV	PHOTOVOLT
GALLONS	PVC	POLYVINYL (
GENERAL CONTRACTOR	PWR	POWER
	R, (R)	RELOCATED
GROUND FAULT (CIRCUIT) INTERRUPTER	RA REC	RETURN AIR RECESSED
HOT CONDUCTOR	RECP	RECEPTACL
HORIZONTAL CROSS CONNECT	REQD	REQUIRED
HAND DRYER	RM	ROOM
HAND FREE FIXTURE	RNC	RIGID NON-M
HEIGHT	RO	RACEWAY O
HANDHOLE HIGH INTENSITY DISCHARGE	RPC PCS	
HIGH INTENSITY DISCHARGE	RSC, RGS RX	RIGID STEEL REQUEST TO
HORIZONTALLY MOUNTED	SCCR	SHORT CIRC
HAND-OFF-AUTO		RATING
HORIZONTAL	SEC	SECURITY
HORSEPOWER	SECT	SECTION
HEATING	SIM	SIMILAR
HIGH VOLTAGE HIGH VOLTAGE CIRCUIT BREAKER	SM	SINGLE MOD STRAND
HOT WATER	SMR	SURFACE M
HERTZ	SPD	SURGE PRO
INTERMEDIATE CROSS CONNECT	SPDT	SINGLE POLI
INSIDE DIAMETER	SPECS	SPECIFICATI
INTERMEDIATE DISTRIBUTION	SPST	SINGLE POLI
FRAME ISOLATED GROUND	SS ST	STAINLESS S
INTERMEDIATE METAL CONDUIT	STD	STANDARD
INSTANTANEOUS	SW	SWITCH
INTERNET PROTOCOL	SWBD	SWITCHBOA
JUNCTION BOX	SWGR	SWITCHGEA
KIRK KEY INTERLOCK	SYS	SYSTEM
KILO-AMPS INTERRUPTING CAPACITY	TBB	TELECOMMU BACKBONE
KILOVOLT	TC	TEMPERATU
KILOVOLT-AMPERES	10	TERMINAL C
KILOWATT	TE	TELECOMMU
LIGHT EMITTING DIODE	TELE	ENCLOSURE TELEPHONE
LEGALLY REQUIRED	TELECOM	TELEPHONE
LIFE SAFETY BRANCH LONG TIME, SHORT TIME,	TEMP	TEMPERATU
INSTANTANEOUS, GROUND	TERM	TERMINAL
FAULT	TGB	TELECOMMU
LIGHTING	TMOD	BAR
LOW VOLTAGE MAKE UP AIR UNIT	TMGB	TELECOMMU GROUND BA
MAXIMUM	TOF	TOP OF FIXT
METAL CLAD CABLE	TP	TAMPER RES
MINIMUM CIRCUIT AMPS	TR	TELECOMMU
MAIN CIRCUIT BREAKER	TSP	TWISTED SH
MOTOR CONTROL CENTER	TSTAT TTB	THERMOSTA TELECOM TE
MOLDED CASE CIRCUIT BREAKER	TV	TELEVISION
MOTOR CIRCUIT PROTECTOR MAIN CROSS CONNECT	TYP	TYPICAL
MAIN DISTRIBUTION FRAME	UG	UNDERGROU
MAIN DISTRIBUTION PANEL	UH	UNIT HEATEI
MECHANICAL	UNO	UNLESS NOT
MAIN EARTHING TERMINAL	UPS	UNINTERRUF SUPPLY
	USB	UNIVERSAL
MANHOLE MINIMUM	UTP	UNSHIELDED
MISCELLANEOUS	UV	UNIT VENTIL
MAIN LUG ONLY	V	VOLTS
MULTIMODE FIBER (FIBRE) OPTIC	VA VAV	VOLT-AMPS VARIABLE AI
STRAND	VAV VC	
MAIN SWITCHBOARD	VC VDT	VISUAL DISP
MOUNTED MOUNTING	VERT	VERTICAL
MAIN TERMINAL SPACE	VFD	VARIABLE FF
MEDIUM VOLTAGE	VIF	VERIFY IN FI
MEDIUM VOLTAGE CIRCUIT	VOL	
	VT W	VAPOR TIGH WIRE, WATT
MICROWAVE OVEN NEUTRAL	W WAP	WIRE, WATT WIRELESS A
NEUTRAL NOTIFICATION APPLIANCE	WG	WIREGUARD
CIRCUIT	WL	WET LOCATI
NORMALLY CLOSED	WP	WEATHERPF
NATIONAL ELECTRIC CODE	WT	WATERTIGH
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	XFMR	
NOT IN CONTRACT	Ø	PHASE
NIGHT LIGHT		
NORMALLY OPEN		

CALE ER DIAMETER URNISHED, CTOR INSTALLED URNISHED EQUIPMENT	P: 215-665-7164 <u>FIRE PROTECTION</u> EMAIL: BRIAN.LIM2@STANTEC.COM ATTN: BRIAN LIM P: 215-665-7035
ND ND NCY SENSOR, OPTIONAL PLANT DDRESS C DWN ACTOR	GENERAL NOTES 1. ALL DRAWINGS MUST BE <u>MUST BE PRINTED IN COLOR</u> T ASCERTAIN ALL INFORMATION. BLACK AND WHITE PRINTS / REPRODUCTIONS MAY NOT CLEARLY SHOW ALL INFORMATION.
ENTRANCE SERVICE AL TRANSFORMERS TIC TUBE STATION ZOOM DLTAIC (L CHLORIDE CONDUIT TED EXISTING AIR ED CLE D N-METALLIC CONDUIT Y ONLY PHASE CUT EEL CONDUIT TO EXIT IRCUIT CURRENT	
IODE FIBER OPTIC MOUNTED RACEWAY ROTECTED DEVICE OLE DOUBLE THROW ATIONS OLE SINGLE THROW SS STEEL RIP	KEY PLAN NORTH BID DOCUMENTATION APRIL 25TH, 2025
OARD EAR IMUNICATIONS IE ITURE CONTROL OR L CABINET IMUNICATIONS IRE NE IMUNICATIONS	
ITURE IMUNICATIONS GROUND IMUNICATIONS MAIN BAR IXTURE RESISTANT IMUNICATIONS ROOM SHIELDED PAIR STAT	NO. DATE REVISION SCHOOL & LOCATION School District of Philadelphia 1835 S 9th Street, Philadelphia, PA 19148
I TERMINAL BOARD DN ROUND TER NOTED OTHERWISE RUPTIBLE POWER AL SERIAL BUS DED TWISTED PAIR TILATOR	PROJECT TITLE Southwark Elementary School Fire Alarm Renovations DRAWING TITLE ELECTRICAL COVERSHEET
PS E AIR VOLUME CONTROL ISPLAY TERMINAL E FREQUENCY DRIVE I FIELD GHT .TT S ACCESS POINT .RD ATION RPROOF GHT	LOCATION NO.FILE NO. 177903000DRAWN BY AuthorCHECKED BY CheckerSDP#: NG10644 - 2640.001DRAWING NO.
RMER	E-001

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THE SCHOOL DISTRICT OF **OFFICE OF CAPITAL PROGRAMS** 



# **GENERAL NOTES**

THESE DRAWINGS WERE PREPARED FROM INFORMATION TAKEN FROM THE AVAILABLE BUILDING DRAWINGS, ARCHITECTURAL BACKGROUNDS PROVIDED BY THE OWNER, AND FIELD SURVEY INFORMATION COMPILED BY THE ENGINEERING DESIGN TEAM FOR THE PURPOSE OF ENGINEERING DESIGN. EXISTING CONDITIONS ARE SHOWN AS ACCURATELY AS POSSIBLE. THERE IS THE POSSIBILITY THAT CONDITIONS SHOWN ARE NOT EXACTLY AS EXISTING. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, LOCATIONS, SIZES AND CONDITIONS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO BEGINNING INSTALLATION OR FABRICATION WORK

2. DO NOT SCALE DRAWINGS. BECAUSE OF THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS OR OTHER SIMILAR ITEMS WHICH MAY BE REQUIRED TO MAKE A COMPLETE OPERATING SYSTEM. CAREFULLY INVESTIGATE CONDITIONS AFFECTING WORK AND INSTALL WORK IN SUCH MANNER THAT INTERFERENCES BETWEEN PIPES, CONDUITS, DUCTS, EQUIPMENT, ARCHITECTURAL AND STRUCTURAL FEATURES SHALL BE AVOIDED.

3. CONTRACTOR IS TO CONSULT ALL PROJECT DOCUMENTATION AND OTHER TRADES FOR COORDINATION PRIOR TO START OF WORK AND BEFORE REQUESTING INFORMATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL DISCREPANCIES OF THE FIELD CONDITIONS AND THE INDICATED WORK ON THE CONTRACT DOCUMENTS. UNDER NO IRCUMSTANCES SHALL WORK PROCEED IN UNCERTAINTY. ALL REMEDIAL WORK REQUIRED FOR WORK PERFORMED PRIOR TO REQUESTED CLARIFICATION IS TO BE CORRECTED AT NO ADDITIONAL COST.

4. EQUIPMENT ARRANGEMENTS ARE DESIGNED TO SHOW PREFERRED CONFIGURATIONS TO SUIT KNOWN CONDITIONS. ACTUAL INSTALLATION BY CONTRACTOR MAY BE ALTERED AS REQUIRED TO SUIT FIELD CONDITIONS ENCOUNTERED DURING CONSTRUCTION WITHOUT COMPROMISING THE INTENT OF THE ORIGINAL DESIGN. ALL MODIFICATIONS ARE TO BE COORDINATED WITH THE ENGINEER, PRIOR TO STARTING WORK.

5. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS AT SITE PRIOR TO STARTING WORK. 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WORK SITE CONDUCT OF THEIR EMPLOYEES AND THEIR SUBCONTRACTORS. THE CONTRACTOR SHALL OBSERVE ALL THE WORKPLACE SAFETY AND CODE OF CONDUCT COMPLIANCE REGULATIONS ISSUED BY THE OWNER. THE CONTRACTOR SHALL PROVIDE SIGNAGE, BARRIERS AND OTHER MEANS TO PROVIDE WARNINGS AND PERSONNEL

OWNER AND BE MODIFIED OR REMOVED AS WORK PROGRESSES TO MAINTAIN A SAFE AND PRODUCTIVE WORK SITE A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING CONSTRUCTION SITE SAFETY AND WARNING EQUIPMENT FOR THEIR WORK. SAFETY AND WARNING EQUIPMENT SHALL BE APPROPRIATELY LOCATED ON AND AROUND THE JOB SITE. EQUIPMENT SHALL PROVIDE PROPER AND UNDERSTANDABLE WARNINGS, AND PHYSICAL PROTECTION WITH RESPECT TO THE ASSOCIATED HAZARDOUS CONDITIONS. EQUIPMENT SHALL INCLUDE, BUT IS NOT LIMITED TO, WARNING SIGNS, LIGHT SIGNAL DEVICES, GUARD LIGHTS, BARRICADES, GUARD RAILS, FENCES, AND OTHER DEVICES.

#### 7. THIS INSTALLATION WILL CONFORM TO ALL CODES AND THE REQUIREMENTS OF FEDERAL, STATE, AND LOCAL REGULATORY AGENCIES HAVING JURISDICTION. IN PARTICULAR, THE WORK WILL BE IN ACCORDANCE WITH THE FOLLOWING EDITIONS OF CONSTRUCTION CODES, INCLUDING ALL OF ITS APPLICABLE SUBCODES AND AMENDMENTS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING: A. BUILDING: INTERNATIONAL BUILDING CODE 2018 B. ELECTRICAL: NATIONAL ELECTRIC CODE NFPA 70-2017

8. WORK UNDER THIS CONTRACT SHALL CONSIST OF THE CONTRACTOR PROVIDING ALL LABOR. MATERIALS, AND SERVICES, INCLUDING WORK NOT SPECIFICALLY SHOWN BUT REASONABLY IMPLIED. THIS SHALL INCLUDE CUTTING, PATCHING, AND RESTORATION OF EXISTING SURFACES DAMAGED DURING THE CONSTRUCTION. CONTRACTOR SHALL ALSO PROVIDE ALL EQUIPMENT SHOWN OR SPECIFIED OR AN APPROVED EQUIVALENT. SUBSTITUTED EQUIPMENT OR MATERIALS SHALL NOT BE INSTALLED UNTIL GIVEN WRITTEN APPROVAL BY THE OWNER.

9. ALL WORK WILL BE LAWFULLY EXECUTED IN A NEAT AND WORKMANLIKE MANNER AND WILL BE COMPLETED IN ACCORDANCE WITH THE GOVERNING CODES INDUSTRY STANDARDS, AND IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS. A. ALL EQUIPMENT SHALL BE INSTALLED RECTILINEAR TO BUILDING STRUCTURE. B. HORIZONTAL OR CROSS RUNS IN PARTITIONS AND WALLS NOT PERMITTED.

10. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY POWER AND LIGHTING REQUIREMENTS THROUGHOUT CONSTRUCTION. THE ELECTRICAL CONTRACTOR SHALL REVIEW ALL ASSOCIATED PHASING PLANS AND SCHEDULES AND PROVIDE ANY AND ALL EQUIPMENT, EITHER TEMPORARY OR PERMANENT, REQUIRED TO MAINTAIN OR PROVIDE TEMPORARY POWER AND IGHTING TO ALL AREAS OF THIS FACILITY, THROUGHOUT THE CONSTRUCTION PROCESS A. IN ADDITION TO MINIMAL TEMPORARY LIGHTING AND POWER NEEDED FOR CONSTRUCTION OPERATIONS, AREAS THAT WILL BE OWNER-OCCUPIED THROUGHOUT CONSTRUCTION SHALL BE PROVIDED WITH TEMPORARY POWER AND LIGHTING SERVICES THAT MEET OR EXCEED THE EXISTING SERVICES THAT CURRENTLY SERVE THESE AREAS.

B. THE ELECTRICAL DOCUMENTS INDICATE THE FINAL ARRANGEMENT FOR THE POWER/LIGHTING/COMMUNICATION/SIGNAL/DATA SYSTEMS AND DO NOT REFLECT EQUIPMENT. DEVICES, ETC., NEEDED TO PROVIDE THE REQUIRED TEMPORARY POWER AND LIGHTING SFRVICES. C. AT THE COMPLETION OF THIS PROJECT, ALL TEMPORARY LIGHTING, TEMPORARY

RECEPTACLES, AND TEMPORARY WIRING SHALL BE REMOVED IN THEIR ENTIRETY. CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS INCURRED FOR NONCOMPLIANCE WITH THESE CONTRACT DOCUMENTS, CONTRACTOR WILL NOT BE ALLOWED CHANGE ORDERS FOR PROBLEMS ARISING FROM NEGLECT OF PROVISIONS INCLUDED IN THESE CONDITIONS.

COMPLETION PERFORM FINAL CLEANUP. REMOVE CONSTRUCTION RUBBISH, SCAFFOLDING, EQUIPMENT, TEMPORARY PROTECTION, TEMPORARY FIELD STRUCTURES, AND OTHER MATERIALS OR EQUIPMENT THAT WAS REQUIRED IN CONNECTION WITH THE CONSTRUCTION, BUT NOT A PERMANENT PART THEREOF.

#### 12. THE ELECTRICAL CONTRACTOR MUST EXAMINE AND DETERMINE SURFACES AND CONDITIONS IN PROJECT AREA ARE SATISFACTORY FOR INTENDED WORK. ANY CONDITIONS THAT ARE DETRIMENTAL TO COMPLETING WORK PROPERLY AND IN A TIMELY MANNER ARE TO BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND DOCUMENTED IN WRITING. WORK IS NOT TO PROCEED UNTIL CONDITIONS ARE SATISFACTORY. COMMENCEMENT OF WORK SHALL IMPLY THE CONDITIONS ARE SUITABLE AND ANY CORRECTIONS DUE TO UNDESIRABLE CONDITIONS ARE TO BE PERFORMED AT NO ADDITIONAL COSTS.

13. THE CONTRACTOR SHALL SECURE ALL PERMITS AND APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES AND CERTIFICATES OF INSPECTION REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. DELIVER ALL PERMITS, CERTIFICATES, AND APPROVALS TO THE OWNER AGENT PRIOR TO FINAL ACCEPTANCE OF THE WORK. THE CONTRACTOR MUST FILE NECESSARY DRAWINGS, PREPARE DOCUMENTS, AND MAKE APPLICATIONS FOR EACH REQUIRED PERMIT AND INSPECTION, PRIOR TO ANY COMMENCING WORK TO AVOID DELAYS DURING CONSTRUCTION.

14. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND MANUFACTURER'S DATA SHEETS ON ALL EQUIPMENT AND MATERIALS SPECIFIED ON DRAWINGS FOR APPROVAL BY OWNER OR AGENT FOR THE OWNER. THESE DRAWINGS OR SHEETS SHALL CONTAIN ALL NECESSARY DATA, I.E., MANUFACTURER, CATALOG NUMBER, SIZE, DIMENSIONS, CAPACITY, WIRING DETAILS, AND ALL OTHER ENGINEERING DATA AND DETAILS NECESSARY FOR COMPLETE CLARITY AND INSTALLATION.

15. THE CONTRACTOR SHALL KEEP ONE SET OF THE LATEST ISSUE OF DRAWINGS WHICH SHALL REFLECT THE ACTUAL INSTALLED CONDITIONS AND CONNECTIONS OF ALL EQUIPMENT AND DEVICES. THE CONTRACTOR SHALL PROVIDE COPIES OF ALL MAINTENANCE INFORMATION AND INSTRUCTIONS RECEIVED WITH EQUIPMENT AND SYSTEMS. ALL "AS-BUILT" DRAWINGS AND MISCELLANEOUS INFORMATION SHALL GUARANTEE ALL MATERIAL AND LABOR TO BE FREE FROM DEFECTS FOR A ONE-YEAR PERIOD FROM THE TIME OF OWNER ACCEPTANCE. ANY DEFECTS OCCURRING DURING THE PERIOD SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

16. CONTRACTOR IS TO PROVIDE ALL REQUIRED SCAFFOLDING, LADDERS, RIGGING, HOISTING AND ALL OTHER EQUIPMENT REQUIRED FOR THE INSTALLATION OF THEIR WORK.

17. ESTABLISH PASSAGE CLEARANCES REQUIRED TO DELIVER, INSTALL AND ERECT ALL REQUIRED EQUIPMENT. IF STRUCTURES, EQUIPMENT, AND SYSTEMS MUST BE ALTERED TO PROVIDE PASSAGE OF EQUIPMENT, THE CONTRACTOR SHALL RESTORE STRUCTURES, EQUIPMENT, AND SYSTEMS TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE; INCLUDING REMOVING AND REPLACEMENT OF ALL CEILINGS AS REQUIRED TO COMPLETE THE WORK.

 PROTECT PERMANENT BUILDING FINISHES FROM DAMAGE DURING CONSTRUCTION PERIOD. PROVIDE PLYWOOD OR SIMILAR MATERIAL UNDER EQUIPMENT OR MATERIALS STORED ON FLOORS, AND IN AREAS WHERE CONSTRUCTION MAY DAMAGE FINISHES. SURFACES OR FINISHES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE COST OF THE CONTRACTOR AT FAULT.

19. WHERE PROJECT PHASING IS INDICATED IN ANY PART OF THE WORKING DOCUMENT PACKAGE, ELECTRICAL CONTRACTOR IS TO PLAN WORK SO AS TO FACILITATE SUCH PHASING.

20. THE ELECTRICAL CONTRACTOR SHALL ENSURE THAT RECEPTACLES USED FOR HAND TOOLS AND OTHER MISCELLANEOUS EQUIPMENT SHALL BE INSTALLED WITH GROUND FAULT INTERRUPTER OR OTHER APPROVED AND RECOGNIZED INTERRUPTING SENSORS.

21. ALL OPENINGS SHALL BE SEALED UPON COMPLETION OF INSTALLATION TO PREVENT THE SPREAD OF SMOKE AND FIRE THROUGH OPENINGS. OPENINGS SHALL ALSO BE SEALED TO PREVENT WATER SEEPAGE WHERE APPLICABLE. ALL OPENINGS SHALL BE COORDINATED WITH OTHER CRAFTS TO PREVENT INTERFERENCE AND OBSTRUCTION. PENETRATIONS THROUGH FIRE WALLS MUST BE MADE BY AN APPROVED THROUGH PENETRATION FIRESTOP SYSTEM. 22. CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL WORK AND SHUTDOWNS OF EQUIPMENT

WITH FACILITY.

23. EXCAVATION FOR UNDERSLAB OR UNDERGROUND INSTALLATION OF CONDUITS SHALL BE APPROACHED WITH EXTREME CAUTION SO AS NOT TO DAMAGE EXISTING UNDERGROUND PIPING. WIRING, AND CONDUITS.

24. ELECTRICAL CONTRACTOR SHALL PROVIDE CONSTRUCTION MANAGER/GENERAL CONTRACTOR A SURFACE PENETRATING RADAR SURVEY FOR THE PURPOSE OF LOCATING ALL UNDERGROUND (OR IN-SLAB) CONDUITS. PIPING, UTILITIES, STRUCTURAL MEMBERS, ETC. IN ALL AREAS WHERE SLAB CUTTING MAY OCCUR (FOR THE PURPOSES OF ELECTRICAL WORK REQUIRED). SURVEY MUST BE COMPLETED TWO WEEKS PRIOR TO CUTTING OF ANY SLAB. THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY (AND ALL ASSOCIATED COSTS) OF REPAIRING AND/OR REPLACING ANY SYSTEMS DAMAGED BY THE SLAB CUTTING PROCEDURES. WHEN PREVENTATIVE MEASURES WERE NOT CONSIDERED OR UTILIZED. COST FOR SURVEY(S) SHALL BE SUBMITTED AS A SEPARATE LINE ITEM PRICE (WHEN APPLICABLE)

25. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO REVIEW THE ELECTRICAL PLANS AND SPECIFICATIONS, AS WELL AS ALL RELATED PROJECT PLANS AND SPECIFICATIONS FROM OTHER DISCIPLINES, TO BECOME FAMILIAR WITH THE FULL PROJECT SCOPE AND COORDINATED RESPONSIBILITIES. CONFLICT OF INTENDED RESPONSIBILITIES SHALL BE BROUGHT TO ENGINEERS ATTENTION, PRIOR TO SUBMISSION OF BID.

- 26. UNLESS NOTED OTHERWISE WITHIN THE PROJECT CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, ALL NEW ELECTRICAL DEVICES INDICATED ON THE ELECTRICAL PLANS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. A. I.E. DISCONNECT SWITCHES, CIRCUIT BREAKERS, WIRING, CONDUIT, ETC. B. ALL CONTRACTOR SUPPLIED MATERIALS SHALL BE NEW AND UL APPROVED (OR APPROVED BY ANOTHER NATIONALLY RECOGNIZED ORGANIZATION).
- 27. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER AND ALL OTHER DISCIPLINES INVOLVED IN THIS PROJECT. A. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH OTHER TRADES FOR ITEMS IN THEIR SCOPE OF WORK WHICH COULD REQUIRE ADDITIONAL ELECTRICAL WORK, (DISCONNECTION, RECONNECTION, ETC.) AND ARE NOT INDICATED ON THE
- ELECTRICAL DRAWINGS. B. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING VOLTAGE, PHASE, MCA, MOCP. REQUIRED FOR ALL EQUIPMENT PROVIDED BY OTHER CONTRACTORS PRIOR TO PURCHASING AND INSTALLING CONDUCTORS, BREAKERS, DISCONNECTS, CONDUIT, ETC. VERIFY RATINGS WITH FINAL, APPROVED CONTRACTOR EQUIPMENT SUBMITTALS. EQUIPMENT NAMEPLATES, AND COORDINATE FINAL MOUNTING LOCATIONS DIRECTLY WITH THE PROVIDING CONTRACTOR.
- VERIFY EXACT LOCATIONS AND MOUNTING OF ALL FIRE ALARM DEVICES, VOICE/DATA DEVICES AND OTHER EQUIPMENT WITH ACHITECTURAL DRAWINGS AND IN THE FIELD PRIOR TO ROUGH-IN. WHEN CENTERING OUTLETS AND LOCATING BOXES, ALLOW FOR OVERHEAD PIPES, DUCTS, AND MECHANICAL EQUIPMENT VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, SUSPENDED CEILINGS AND THE LIKE, AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
- 28. THE CONDUITS SHOWN ON THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE, THEY SHOW THE GENERAL ARRANGEMENT AND SIZE OF THE CONDUITS. THEY ARE NOT INTENDED TO SHOW EVERY OFFSET OR INTERFERENCE THAT MAY BE ENCOUNTERED. CONTRACTOR IS RESPONSIBLE FOR ROUTING ALL CONDUIT IN THE MOST EFFICIENT MANNER IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- 29. CONDUIT HOMERUNS SHOWN ON THE DRAWING WITH MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL NOT INSTALL MORE THAN **3 CURRENT CARRYING CONDUCTORS IN A RACEWAY.**
- 30. ALL CONDUIT SHALL BE SELECTED ACCORDING TO SPECIFICATIONS UNLESS NOTED OTHERWISE AND SHALL BE CONCEALED. THE CONTRACTOR SHALL FIELD ROUTE NEW CONDUIT PARALLEL AND ADJACENT WITH EXISTING CONDUIT PATHS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY HANGERS, INSERTS, SUPPORTS, CONDUIT SEALS, AND DRAINS. DO NOT RUN CONDUITS OR CABLES HORIZONTALLY WITHIN WALLS.
- 31. CUT STEEL CONDUIT ENDS SQUARE, REAM SMOOTH, PAINT MALE THREADS OF FIELD THREADED CONDUIT WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH CONDUIT COUPLINGS.
- 32. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
- 33. UNLESS OTHERWISE STATED, ALL ABOVE GROUND WIRING SHALL BE IN CONDUIT. 3/4 INCH MINIMUM SIZE FOR ELECTRIC SERVICES. ALL CONDUIT BENDS SHALL BE OF THE LONG RADIUS TYPE. ALL OUTDOOR WIRING SHALL BE IN CONDUIT, 3/4 INCH MINIMUM SIZE. ALL MOTORS AND TRANSFORMERS SHALL HAVE FLEXIBLE CONNECTIONS TO MINIMIZE VIBRATION. REFER TO ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- 34. ALL CONDUIT INSTALLATIONS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION/DEFLECTION TYPE FITTINGS AS REQUIRED. NOTE: FOR THE EXACT LOCATIONS OF EXPANSION JOINTS, SEE OWNER FOR EXISTING STRUCTURAL DRAWINGS.
- 35. CONTRACTOR SHALL USE TRAPEZE TO SUPPORT MULTIPLE CONDUITS FROM BUILDING STEEL 36. SECURE ALL SUPPORTS TO BUILDING STRUCTURE BY STEEL FOR VERTICAL SUPPORT AND BY MEANS OF TOGGLE BOLTS ON HOLLOW MASONRY UNITS, EXPANSION SHIELDS IN CONCRETE OR BRICK. MACHINE SCREWS ON METAL SURFACE, AND WOOD SCREWS ON WOOD CONSTRUCTION. NAILS, RAWL, OR WOOD PLUGS NOT PERMITTED. SUPPORT HORIZONTAL RUNS OF METALLIC CONDUITS NOT MORE THAN 10 FT. APART, SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL.
- RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. 37. ALL UNDERGROUND CONDUITS SHALL BE SEALED TO PREVENT THE ENTRY OF WATER OR
- 38. SIZE RACEWAY AS INDICATED, NOTED, OR SCHEDULES EXCEPT MINIMUM RACEWAY SIZE SHALL BE 3/4". PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. IN COMMON BOXES, PROVIDE BARRIERS BETWEEN EMERGENCY AND NORMAL WIRING. A. FURNISH PULL STRING IN EACH RACEWAY RUN OVER 10 FT IN WHICH WIRING IS NOT INSTALLED
- B. LEAVE WIRE SUFFICIENTLY LONG TO PERMIT MAKING FINAL CONNECTIONS. C. DO NOT PULL THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32°F.
- 39. RACEWAYS SHALL ONLY PASS OVER PIPING AT RIGHT ANGLES (WATER, STEAM, OR OTHER) AND WHEN PULLBOXES ARE NOT REQUIRED ABOVE PIPING. INSTALL RACEWAYS AT LEAST 3 INCHES FROM APPLIANCES. STEAM PIPES OR HOT WATER PIPES.
- 40. PROVIDE PULL BOXES AS INDICATED AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE AND COORDINATE LOCATIONS WITH OTHER TRADES.
- 41. FOR EMPTY RACEWAY RUNS, PROVIDE PULL BOXES EVERY 100FT AND AS INDICATED OR REQUIRED BY NEC. COORDINATE LOCATIONS WITH OTHER TRADES.
- 42. JUNCTION AND PULL BOXES: LOCATE GENERALLY NOT EXPOSED IN FINISHED SPACES. WHERE NECESSARY, REROUTE CONDUITS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. LOCATE JUNCTION AND PULL BOXES AS REQUIRED TO ALLOW ACCESS AFTER EQUIPMENT AND APPURTENANCES ARE INSTALLED. COORDINATE EXACT LOCATIONS WITH THE OTHER TRADES. COORDINATE LOCATIONS AND ELEVATIONS OF ELECTRICAL DEVICES WITH DRAWINGS AND OTHER TRADES PRIOR TO INSTALLATION.
- 43. SUPPORT JUNCTION AND PULL BOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON CONDUITS.
- 44. ALL WIRE SHALL BE 600V THWN/THHN, SIZED AS SHOWN, UNLESS OTHERWISE NOTED. MINIMUM CONDUCTOR SIZE SHALL BE #12AWG (POWER) AND #14AWG (CONTROL). A. ALL CIRCUITS 240V AND LESS, IN EXCESS OF 75 FEET SHALL HAVE A MINIMUM WIRE SIZE OF #10 WITH #10 GND.
- B. WIRING 10AWG AND SMALLER SHALL BE SOLID COPPER CONDUCTOR WITH INSULATION THHN-THWN. C. THE ELECTRICAL CONTRACTOR SHALL CALCULATE THE VOLTAGE DROP AND PROVIDE AN
- APPROPRIATE CONDUCTOR SIZE TO ACHIEVE NO MORE THAN 3% MAXIMUM ALLOWABLE VOLTAGE DROP. 45. ALL CIRCUITS 240V AND LESS, IN EXCESS OF 125 FEET SHALL HAVE A MINIMUM WIRE SIZE OF #8 WITH #8 GND.
- A. WIRING 8AWG AND LARGER SHALL BE STRANDED COPPER CONDUCTOR WITH INSULATION THHN-THWN. REFERENCE SPECIFICATIONS FOR MORE INFORMATION. B. THE ELECTRICAL CONTRACTOR SHALL CALCULATE THE VOLTAGE DROP AND PROVIDE AN APPROPRIATE CONDUCTOR SIZE TO ACHIEVE NO MORE THAN 3% MAXIMUM ALLOWABLE VOLTAGE DROP.
- 46. PROVIDE QUANTITY OF CONDUCTORS NECESSARY TO ACCOMPLISH INDICATED SWITCHING OR CONTROLS. 47. PROVIDE DEDICATED NEUTRAL CONDUCTOR WITH EACH CIRCUIT UNLESS OTHERWISE NOTED.
- DO NOT GANG NEUTRALS. SIZE NEUTRAL CONDUCTORS SAME SIZE AS POWER CONDUCTORS UNLESS LARGER SIZE IS INDICATED 48. ALL BRANCH CIRCUITS AND FEEDERS SHALL CONSIST OF SEPARATE INSULATED COPPER
- CONDUCTORS INSTALLED IN A METAL RACEWAY. 49. GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE REGARDING ELECTRODE, GROUNDING, AND BONDING REQUIREMENTS FOR SERVICE, EQUIPMENT AND ENCLOSURES, ALL EQUIPMENT AND CIRCUITS SHALL BE PROVIDED WITH A SEPARATE GROUNDING CONDUCTOR. DO NOT SHARE GROUND CONDUCTORS.
- 50. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT AND/OR ENGINEER PRIOR TO INSTALLATION. COORDINATE ALL REQUIRED CONTROL AND POWER RACEWAYS WITH DOOR HARDWARE AND FRAMES.
- 51. CONTRACTOR SHALL COORDINATE LOCATIONS OF FIXTURES AND ELECTRICAL DEVICES INSTALLED IN OR ON THE CEILING WITH ARCHITECTURAL REFLECTED CEILING PLAN. CEILING MOUNTED ELECTRICAL DEVICES SHALL BE MOUNTED IN THE CENTER OF THE CEILING TILES, UNLESS OTHERWISE NOTED.
- 52. WHERE DIRECTED TO USE OR RETAIN EXISTING CIRCUITS, AND THE CIRCUIT NUMBERS DIFFER FROM THE DRAWING, UPDATE DIRECTORIES AND RECORD DRAWINGS.
- 53. ALL SURFACE MOUNTED PANELS INSTALLED ON THE INSIDE FACE OF EXTERIOR WALLS, ABOVE GRADE. OR IN OTHER LOCATIONS CONSIDERED AS DAMP. SHALL BE MOUNTED SO AS TO MAINTAIN A 1/4" AIR SPACE BETWEEN THE ENCLOSURE AND THE FACE OF THE WALL.

- 54. ALL NEW ELECTRICAL PANELS SHALL BE LOCKABLE. PROVIDE OWNER WITH TWO (2) KEYS PER
- 55. ALL DEVICES SHALL BE ADEQUATELY IDENTIFIED WITH PERMANENT LABELS OR TAGS. WIRING SHALL BE IDENTIFIED AS TO PHASING AND CONDUCTOR IDENTIFICATION.
- 56. THE COMPLETE INSTALLATION SHALL BE TESTED AT COMPLETION OF WORK, TO BE FREE OF GROUND FAULTS AND SHORT CIRCUIT CONDITIONS. ALL INTERLOCK CIRCUITS SHALL BE TESTED TO VERIFY CORRECT OPERATION OF EACH DEVICE. ALL ROTATING EQUIPMENT SHALL BE JOGGED TO VERIFY CORRECT ROTATION BEFORE PERMANENTLY ENERGIZING.
- 57. DURING THE COURSE OF CONSTRUCTION, COORDINATION AND FINAL TURNOVER, IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO WORK CLOSELY WITH ALL CONTRACTORS AND TRADESMEN IN ORDER TO ENSURE A SMOOTH RUNNING AND CAREFULLY COORDINATED INSTALLATION. WIRE COLOR CODING SHALL BE INDICATED AS FOLLOWS, WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE
- 1. 120/208 PHASE A BLACK
- 2. 120/208 PHASE B RED 3. 120/208 PHASE C BLUE
- 4. 120/208 NEUTRAL WHITE 5. ----- GROUND GREEN

#### GENERAL FIRE ALARM NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL NATIONAL, STATE, AND LOCAL CODE REQUIREMENTS AND GOOD FIRE PROTECTION PRACTICES.

SELECTED, MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.

- 2. THE FIRE ALARM SYSTEM SHALL BE INSTALLED ACCORDING TO NFPA 70, NFPA 72, AND PHILADELPHIA BUILDING AND FIRE CODE REQUIREMENTS.
- 3. IN THE EVENT OF A CODE CONFLICT, THE MOST RESTRICTIVE COSE OR STANDARD SHALL BE OBSERVED.
- 4. FOLLOWING THE FIRE ALARM SYSTEM INSTALLATION. A 100% FIRE ALARM SYSTEM ACCEPTANCE TEST SHALL BE CONDUCTED BY THE FIRE ALARM CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE FIRE DEPARMTENT OR ITS AGENT WITHIN 48 HOURS OF THE TEST FOR SCHEDULING.
- 5. ALL FIRE ALARM DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70, NFPA 72 AND THE PHILADELPHIA BUILDING AND FIRE CODE REQUIREMENTS 1. MANUAL FIRE ALARM BOXES SHALL BE LOCATED AT 42-48INCHES (MEASURED FROM THE
- PULL HANDLE) ABOVE FINISHED FLOOR, AND SHALL NOT BE GREATER THAN 5-FEET FROM AN EGRESS DOOR.
- 2. AUDIO/VISUAL APPLIANCES SHALL BE LOCATED BETWEEN 80-INCHES AND 96-INCHES (MEASURED FROM LENS) ABOVE THE FINISHED FLOOR. 3. VISUAL ONLY APPLIANCES SHALL BE LOCATED BETWEEN 80-INCHES AND 96-INCHES
- (MEASURED FROM LENS) ABOVE THE FINISHED FLOOR. 6. THE FIRE ALARM SYSTEM SHALL BE MONITORED BY A NEW FIRE ALARM CONTROL PANEL
- LOCATED AS SHOWN ON THE DRAWING.
- 7. PAINT THE FACE PLATES OF THE NEW JUNCTION BOXES RED FOR NEW FIRE ALARM ONLY.
- 8. ALL FIRE ALARM NOTIFICATION APPLIANCES SIGNALS SHALL SOUND IN A TEMPORAL PATTERN UNLESS OTHERWISE SPECIFIED BY THE AHJ.
- 9. IN AREAS NOT CONTINUOUSLY OCCUPIED, A SMOKE DETECTOR SHALL BE PROVIDED ABOVE THE FIRE ALARM CONTROL PANEL, EACH REMOTE BOOSTER POWER SUPPLY, AND SUPERVISING STATION EQUIPMENT.
- 10. THE CONTRACTOR SHALL INSTALL SMOKE SENSING INITIATING DEVICES NOT LESS THAN 3 FEET FROM ANY HVAC DIFFUSER.
- 11. ALL VISUAL ONLY APPLIANCES SHALL BE SET ON A VISUAL OUTPUT OF (SEE DRAWINGS).
- 12. ALL VISUAL APPLIANCE CANDELA RATINGS SHALL BE SYNCHRONIZED AND INSTALLED IN ALL PUBLIC AND COMMON AREAS AS DEFINED BY ADA REQUIREMENTS.
- 13. THE FIRE ALARM SYSTEM SHALL BE PROGRAMMED TO DEACTIVATE BOTH AUDIBLE AND VISIBLE
- NOTIFICATION APPLIANCES SIMULTANEOUSLY PER NFPA 72 REQUIREMENTS. 14. ALL INSTALLED FIRE ALARM DEVICES ARE UL LISTED AND APPROVED FOR INSTALLATION WITH

THE FIRE ALARM CONTROL PANEL.

- 15. TWO INDEPENDENT AND RELIABLE POWER SUPPLIES SHALL BE PROVIDED. THE FIRST VIA A COMMERCIAL LIGHT AND POWER SOURCE. THE SECOND VIA A SET OF APPROVED DEDICATED BACKUP BATTERIES.
- 16. THE PRIMARY POWER TO TH FIRE ALARM CONTROL PANEL SHALL BE MECHANICALLY PROTECTED, PERMANENTLY INDENTIFIED, CLEARLY MARKED IN THE ELECTRICAL PANEL IN RED, AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT".
- 17. A ULLISTED OVERCURRENT PROTECTION DEVICE SUITABLE CURRENT CARRYING CAPACITY THAT IS CAPABLE OF INTERRUPTING THE MAXIMUM SHORT CIRCUIT CURRENT SHALL BE PROVIDED FOR THE FIRE ALARM SYSTEM IN ACCORDANCE WITH THE MANUFACTURER 'S REQUIREMENTS.
- 18. THE SECONDARY POWER SUPPLY BATTERY BACKUP FOR THE FCP SHALL CONSIST OF TWO 18 AMP/HOUR BATTERIES.
- 19. THE BATTERY BACKUP SHALL PROVIDE 60 HOURS OF QUIESCENT LOAD STANDBY POWER AND 5 MINUTES OF MAXIMUM CONNECTED LOAD ALARM CONDITION. THIS REQUIREMENT SHALL APPLY TO ALL CONTROL UNITS, REMOTE BOOSTER POWER SUPPLIES, AND OTHER EQUIPMENT ESSENTIAL TO THE FIRE ALARM SYSTEM OPERATION.
- 20. THE SECONDARY POWER SUPPLY SHALL AUTOMATICALLY PROVIDE POWER TO THE FIRE ALARM SYSTEM WITHIN 10 SECONDS OF POWER LOSS.
- 21. SECONDARY POWER SUPPLY BATTERIES SHALL BE PERMANENTLY MARKED WITH THE MONTH AND YEAR OF MANUFACTURE.
- 22. SECONDARY POWER SUPPLY BATTERIES SHALL BE LOCATED IN AN AREA NOT SUBJECT TO
- DAMAGE OR CORROSION. 23. THE FIRE ALARM CONTROL PANEL SHALL BE CAPABLE OF CHARGING THE SUPPLIED BATTERIES
- OR A BATTERY CHARGING UNIT SHALL BE SUPPLIED. 24. ALL FIRE ALARM DEVICES AND NOTIFICATION APPLIANCES SHALL BE ACCESSIBLE FOR PERIODIC
- INSPECTION, MAINTENANCE, AND TESTING PURPOSES.
- 25. ALL FIRE ALARM DEVICES APPLIANCES SUBJECT TO MECHANICAL DAMAGE SHALL BE PROTECTED BY A MANUFACTURER'S APPROVED PROTECTIVE COVER/GUARD.
- 26. THE CONTRACTOR SHALL NOT INSTALL DETECTORS UNTIL AFTER THE CONSTRUCTION CLEAN UP OF ALL TRADES IS COMPLETE AND FINAL.
- 27. THE CONTRACTOR SHALL PREPARE AS-BUILTS DRAWINGS DURING THE INSTALLATION OF THIS FIRE ALARM SYSTEM.
- 28. A FIRE ALARM SYSTEM RECORD OF COMPLETION SHALL BE PRESENTED TO THE OWNER AT THE CONCLUSION OF THIS FIRE ALARM SYSTEM INSTALLATION.
- 29. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH OPERATING, TESTING, MAINTENANCE INSTRUCTIONS, SITE SPECIFIC SOFTWARE, AND AS-BUILT DRAWINGS AT THE CONCLUSION OF THIS FIRE ALARM INSTALLATION. IT IS THE OWNER 'S RESPONSIBILITY TO MAINTAIN ALL RECORDS OF THIS FIRE ALARM INSTALLATION IN A LOCATION APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- 30. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A ZONE MAP IN ACCORDANCE WITH THE BUILDING AND FIRE CODES AND NFPA STANDARDS AT THE CONCLUSION OF THIS FIRE ALARM INSTALLATION. IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN ZONE MAPS IN CURRENT CONDITION THROUGHOUT THE LIFE THIS FIRE ALARM SYSTEM.
- 31. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A MAINTENANCE AND TESTING SCHEDULE IN ACCORDANCE WITH NFPA REQUIREMENTS. 32. THE PROPERTY OWNER SHALL BE RESPONSIBLE TO MAINTAIN THE FIRE AND LIFE SAFETY
- SYSTEM IN AN OPERABLE CONDITION AT ALL TIMES. A WRITTEN RECORD SHALL BE MADE AVAILABLE TO THE FIRE OFFICIAL.
- GENERAL FIRE ALARM CABLE NOTES: 1. ALL FIRE ALARM CABLE SHALL BE INSTALLED PER NFPA 70 REQUIREMENTS
- 2. ALL FIRE ALARM CABLE SHALL BE MONITORED FOR INTEGRITY IN ACCORDANCE WITH NFPA 70 AND 72 REQUIREMENTS.
- 3. ALL FIRE ALARM CIRCUITS SHALL BE DURABLY MARKED WHERE PLAINLY VISIBLE
- 4. ALL FIRE ALARM CABLE SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER. CABLES INSTALLED EXPOSED ON THE SURFACE OF CEILINGS AND SIDEWALLS SHALL BE SUPPORTED BY THE BUILDING STRUCTURE IN A MANNER THAT CABLE WILL NOT BE DAMAGED BY NORMAL BUILDING USE.
- 5. FIRE ALARM CABLE SHALL NOT BE STRAPPED, TAPED, OR ATTACHED BY ANY MEANS TO THE EXTERIOR OF ANY CONDUIT OR OTHER RACEWAY AS A MEANS OF SUPPORT.
- 6. ALL FIRE ALARM CABLE SHALL BE SUPPORTED BY STRAPS, STAPLES, CABLE TIES, HANGERS, OR SIMILAR FITTINGS DESIGNED AND INSTALLED SO AS NOT TO DAMAGE THE CABLE.
- 7. ALL FIRE ALARM CABLE SHALL BE ACCESSIBLE. IN LOCATIONS WHERE BUILDING FEATURES DO NOT PROVIDE ACCESSIBILITY, THE BUILDING SHALL BE MODIFIED IN AN APPROVED MANNER TO ALLOW ACCESS TO THE FIRE ALARM CABLE OR FIRE ALARM CABLE SHALL BE INSTALLED IN APPROVED METAL RACEWAY.
- 8. FIRE ALARM CABLE SHAL SHALL BE SECURED TO THE STRUCTURE AT INCREMENTS NOT EXCEEDING 10 FEET ON CENTER.
- 9. ALL WIRING SHALL BE SECURED TO THE STRUCTURE AS SPECIFIED IN NFPA 70.
- 10. ALL CONDUIT SHALL BE SECURED TO THE STRUCTURE AS SPECIFIED IN NFPA 70

- 11. THE FIRE ALARM SYSTEM SHALL TEST FREE OF GROUNDS.
- 12. THE FIRE ALARM/ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REMOVING THE ACCESSIBLE PORTIONS OF ABANDONED FIRE ALARM CABLE IN ACCORDANCE WITH NFPA 70 REQUIREMENTS.
- 13. ALL FIRE ALARM CABLE SHALL BE RUN IN ELECTRICAL METALLIC TUBING WHERE PASSING THROUGH A FLOOR OR WALL TO A HEIGHT OF 7FT ABOVE THE FLOOR UNLESS ADEQUATE PROTECTION CAN BE AFFORDED BY BUILDING CONTRUCTION.
- 14. ALL FIRE ALARM CABLE SHALL BE RUN IN ELECTRICAL METALLIC TUBING IN OPEN, ACCESSIBLE AREAS SUBJECT TO MECHANICAL DAMAGE TO THE BOTTOM OF THE ROOF DECK.
- 15. ALL OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RESISTANT RATED WALLS. PARTITIONS. FLOORS, OR CEILING SHALL BE FIRE STOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANCE RATING. NO EXCEPTIONS.
- 16. THE FIRE ALARM/ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ANY PLENUM-RATED CEILING OR AREA FOR THIS PROJECT.
- 17. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DETERMINING CABLE FILL/CONDUIT SIZING PER NFPA 70 REQUIREMENTS. (ALL FIRE ALARM CONDUIT SHALL BE A MINIMUM SIZE OF 3/4-INCH)
- 18. ALL CABLE SHALL BE IDENTIFIABLE AND JUNCTION BOX FACEPLATES SHALL BE RED IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS. NO EXCEPTIONS.
- 19. ALL FIRE ALARM WIRING AND CABLING MUST BE INSTALLED IN ELECTRICAL METALLIC TUBING. NO EXCEPTIONS.

# **GENERAL DEMOLITION NOTES**

- 1. THE EXISTING INFORMATION PROVIDED ON THESE PLANS IS BASED ON FIELD OBSERVATIONS AND/OR RECORD DRAWINGS AVAILABLE AT THE TIME OF DESIGN. THE LOCATIONS OF ALL PIPING. CONDUIT, ELECTRICAL DEVICES, LIGHT FIXTURES, RECEPTACLES, PANELBOARD, CONTROL PANEL, ETC ARE APPROXIMATE. THE CONTRACTOR SHALL NOTE THESE ARE SHOWN FOR INFORMATION ONLY AND THE INFORMATION SHOWN IS NOT NECESSARILY COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND ITEMS IN THE FIELD PRIOR TO BIDDING, THE ACCURACY OF THE DESIGN DOCUMENTS, AND IDENTIFY RESOLUTIONS TO ANY CONFLICTS PRIOR TO COMMENCING WORK. A. IDENTIFY ALL POWER, LIGHTING, COMMUNICATION, AND SIGNAL CIRCUITS PASSING
- THROUGH THE DEMOLITION AREA OR EXTENDING BEYOND THE DEMOLITION AREA. COORDINATE WITH DEMOLITION WORK OF OTHER TRADES. 2. THE CONTRACTOR SHALL COORDINATE DEMOLITION WORK WITH THE OWNER PRIOR TO
- STARTING WORK. ANY EXISTING SYSTEM OUTAGES SHALL BE OF MINIMUM DURATION AND AT A TIME ACCEPTABLE TO THE OWNER, ARRANGED A MINIMUM OF 10 WORKING DAYS IN ADVANCE. A. LONGER NOTICES AND/OR ADDITIONAL RESTRICTIONS PERTAINING TO OUTAGES MAY BE REQUIRED IN SOME INSTANCES. AS PER SPECIFICATIONS, VERIFY PROTOCOL WITH ALL PROJECT STAKEHOLDERS INCLUDING OWNER, TENANT, CONSTRUCTION MANAGER AND/OR USER GROUP(S) AS APPLICABLE.
- 3. THE EXISTING BUILDING MUST BE KEPT IN OPERATION AT ALL TIMES. MAINTAIN ELECTRICAL SERVICES AND SYSTEMS AT ALL TIMES TO AREAS BEYOND THE CONSTRUCTION AREA AND MAINTAIN CONTINUITY OF FIRE ALARM, LIFE SAFETY AND SECURITY SYSTEMS TO ALL OCCUPIED AREAS OF THE BUILDING THROUGHOUT THE CONSTRUCTION PERIOD. A. PROVIDE TEMPORARY WIRING AND BRANCH CIRCUITING AS NECESSARY TO MAINTAIN OPERATION OF EXISTING CIRCUITS AND SYSTEMS EXTENDING BEYOND REMODEL AREA.

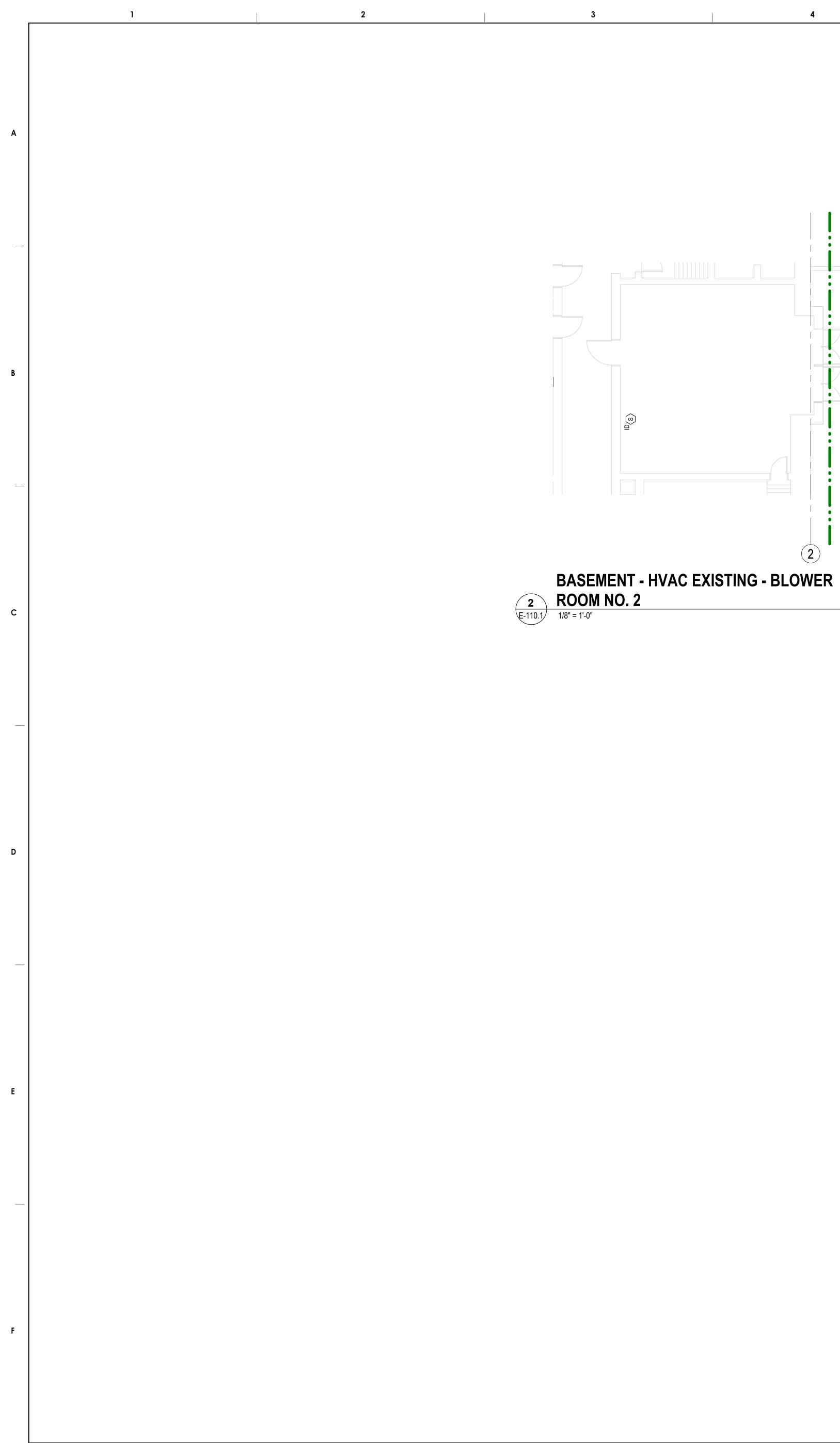
ASSUME FULL RESPONSIBILITY FOR ANY DISRUPTION TO EXISTING SERVICES.

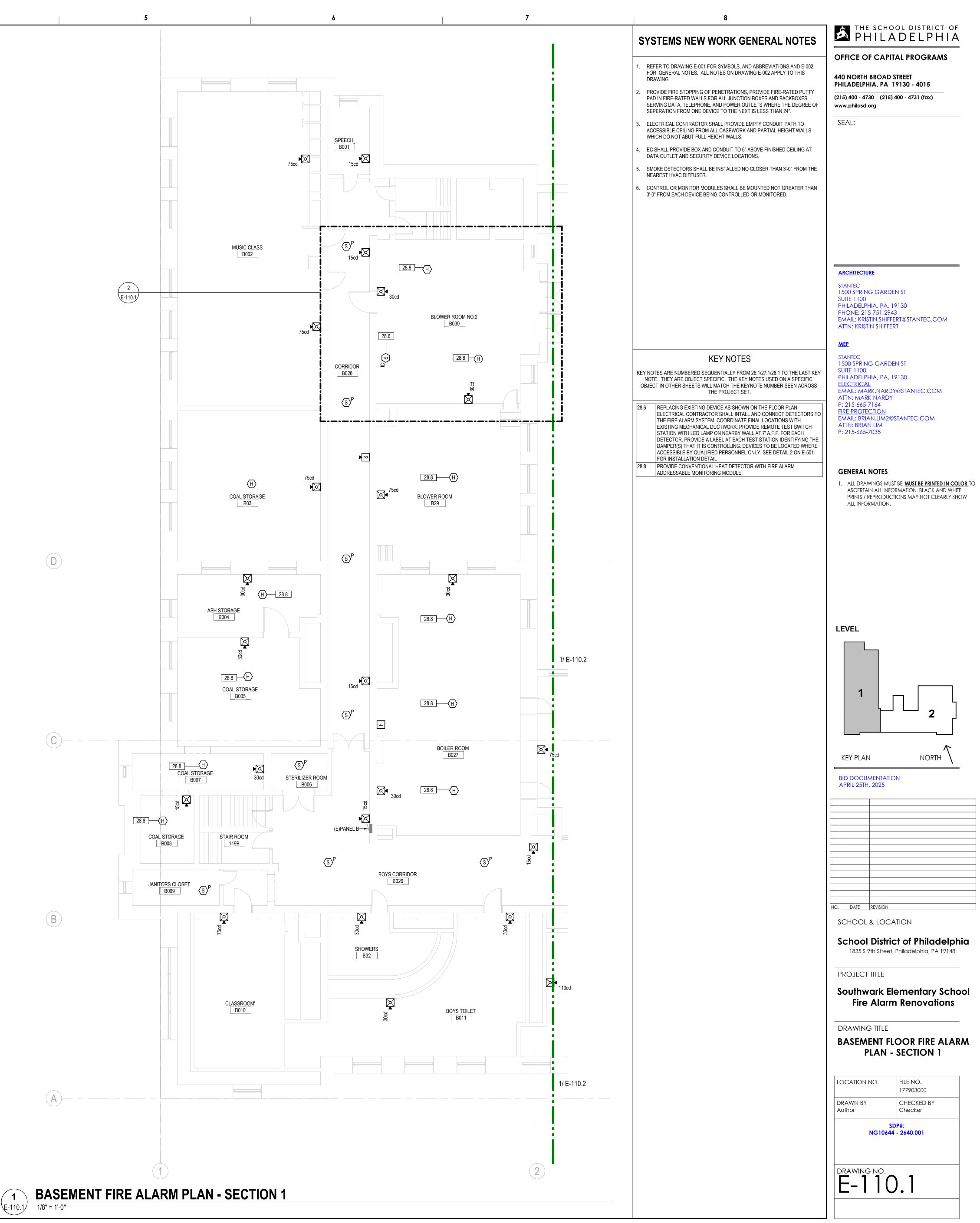
- B. IF ELECTRICAL PANELS SCHEDULED FOR REMOVAL FEED EQUIPMENT OUTSIDE OF THE PROJECT AREA, MAINTAIN SERVICE TO THE DEVICES VIA TEMPORARY METHODS.
- C. ALL EQUIPMENT REQUIRED TO ENSURE PROPER OPERATION OF THE EXISTING SYSTEMS SHALL REMAIN OR BE REVISED AND RECONNECTED TO MAINTAIN THE EXISTING SERVICE. ANY DEVICES DOWNSTREAM OF REMOVED EQUIPMENT SHALL BE REFED. EXTEND CONDUIT & WIRING AS NECESSARY.
- D. RECONNECT ANY SERVICES WHICH ARE TO REMAIN, AND WHICH HAVE BEEN DISCONNECTED DURING DEMOLITION OR CONSTRUCTION. ARRANGE WORK IN SUCH A MANNER THAT INTERRUPTIONS IN SERVICES OCCUR ONLY AT PRE-SCHEDULED TIMES. CARRY OUT THE WORK WITH A MINIMUM OF NOISE, DUST AND DISTURBANCE.
- E. IN THE EVENT THAT DEMOLITION WORK AFFECTS THE STRUCTURAL SUPPORT OF EXISTING ELECTRICAL EQUIPMENT THAT IS TO REMAIN IN SERVICE. IT SHALL BE RE-SUPPORTED IN ACCORDANCE WITH ALL APPLICABLE CODES. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.
- 4. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR, OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACES TO ITS ORIGINAL CONDITION. 5. ALL DEMOLISHED ITEMS SHALL BE REMOVED FROM THE SITE.
- 6. ELECTRICAL EQUIPMENT, FIXTURES, AND/OR DEVICES SCHEDULED TO REMAIN OR TO BE RELOCATED THAT ARE DAMAGED DURING DEMOLITION SHALL BE REPLACED WITH SIMILAR TYPE AS APPROVED BY THE OWNER, AT NO ADDITIONAL CHARGE TO THE OWNER.
- 7. ANY NEW INSTALLATION REQUIRED TO MAINTAIN CONTINUITY OF SERVICES MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC).
- 8. THE CONTRACTOR SHALL LABEL ALL WIRES IN THE JUNCTION BOX AND ALL CONDUITS ENTERING OR LEAVING THE JUNCTION BOX.
- 9. MAINTAIN SUPPLY TO ALL DEVICES THAT ARE TO REMAIN AND ARE AFFECTED BY DEMOLITION. EXTEND NEW CONDUIT AND WIRING AS NECESSARY.
- 10. ALL EXISTING RACEWAYS THAT WILL NO LONGER BE CONCEALED DUE TO CONSTRUCTION ALTERATIONS ARE TO BE MODIFIED TO REMAIN CONCEALED. REROUTE AND EXTEND RACEWAYS AS NECESSARY.

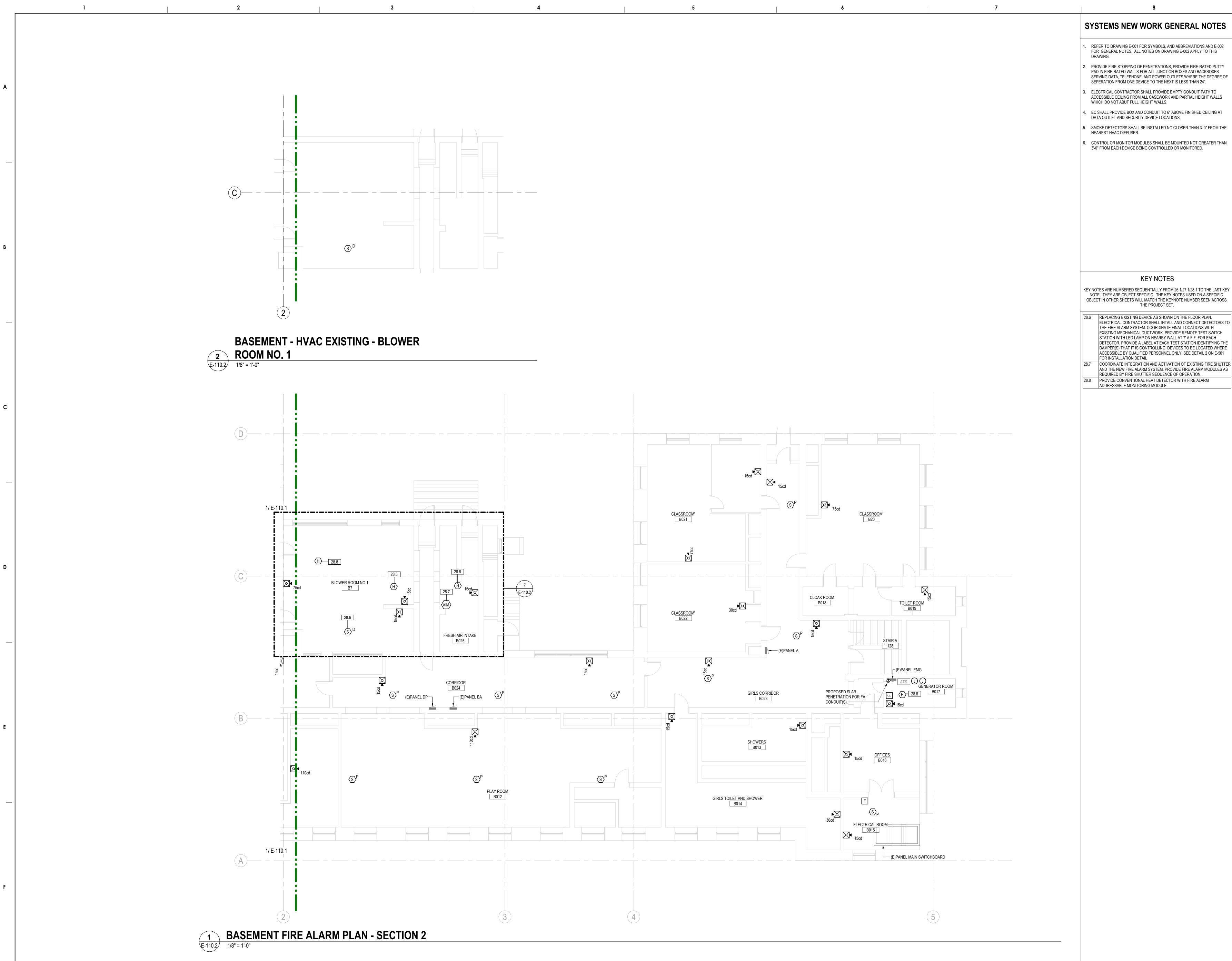
# **DEMOLITION NOTES - FIRE ALARM**

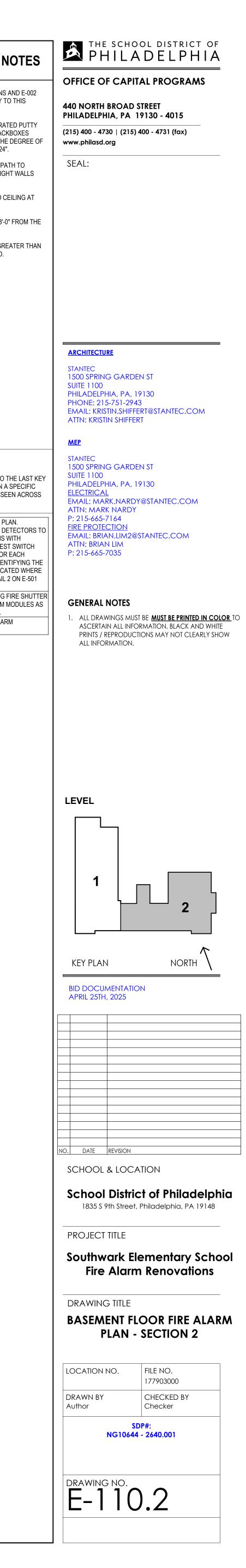
- 1. THE CONTRACTOR SHALL PROVIDE MAINTAIN AND PROVIDE TEMPORARY FIRE ALARM SERVICE IN THE AREA OF WORK THROUGHOUT CONSTRUCTION. INTENT IS TO FIRST INSTALL THE NEW FIRE ALARM SYSTEM THEN REMOVE THE EXISTING AFTERWARDS.
- 2. ALL FIRE ALARM EQUIPMENT WITHIN THE CONTRACT AREA THAT IS TO BE DEMOLISHED SHALL BE REMOVED IN ITS ENTIRETY. REMOVAL SHALL INCLUDE ALL RACEWAYS, WIRING AND ASSOCIATED EQUIPMENT BACK TO SOURCE.
- 3. ABANDON EXISTING CONDUITS BURIED INSIDE WALLS OR FLOORS, THEY SHALL BE CAPPED OFF SAFELY AT JOINTS/PENETRATION LOCATIONS.
- 4. FURNISH AND INSTALL COVER PLATES OVER THE EXISTING JUNCTION BOXES BURIED IN WALLS, PAINT TO MATCH ADJACENT WALL COLOR.
- NOT ALL EXISTING DEVICES MAY BE SHOWN IN THE CONTRACT DRAWINGS. BASE BID SHALL INCLUDE ALL DEVICES TO BE DEMOLISHED, VERIFIED BY THE CONTRACTOR.

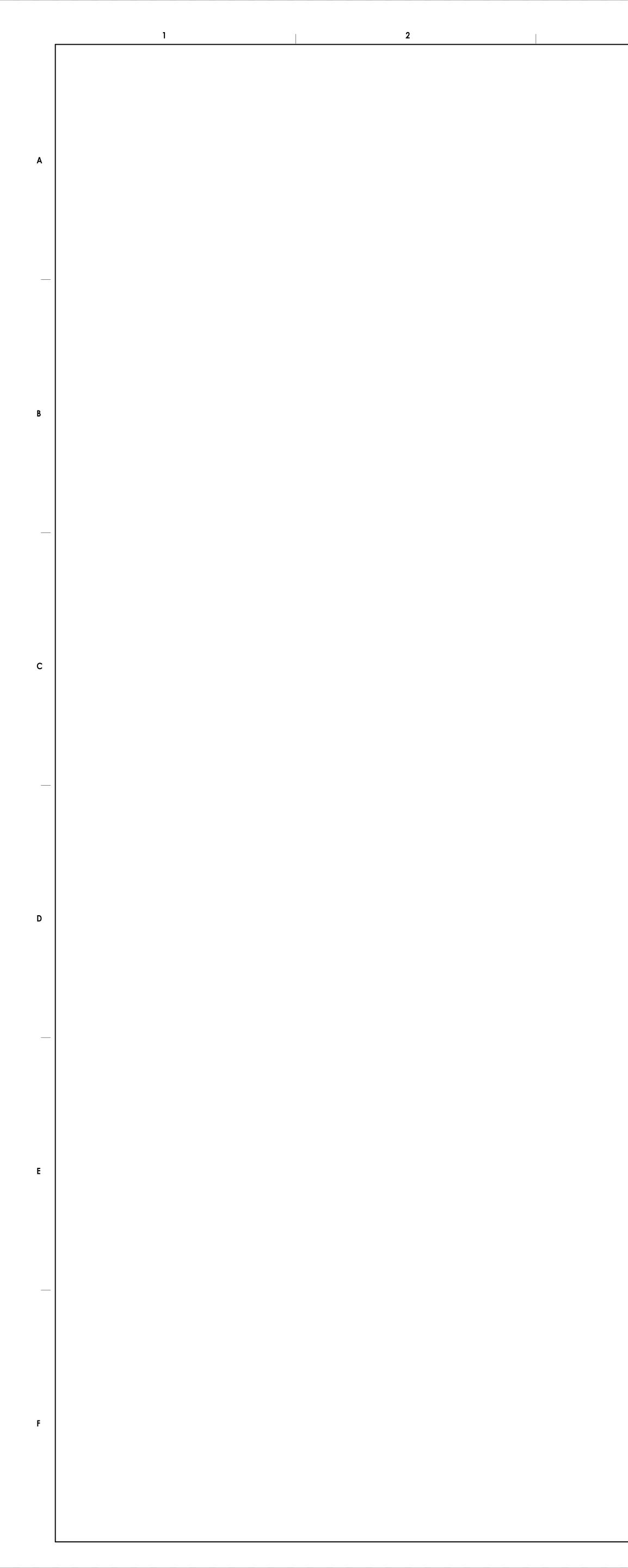
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	SUITE 1100 PHILADELPHIA, PA, 19130 <u>ELECTRICAL</u>
	EMAIL: MARK.NARDY@STANTEC.COM ATTN: MARK NARDY P: 215-665-7164
	FIRE PROTECTION EMAIL: BRIAN.LIM2@STANTEC.COM ATTN: BRIAN LIM
	P: 215-665-7035
	GENERAL NOTES
	1. ALL DRAWINGS MUST BE <b>MUST BE PRINTED IN</b> ASCERTAIN ALL INFORMATION. BLACK AND V PRINTS / REPRODUCTIONS MAY NOT CLEARL
	ALL INFORMATION.
	KEY PLAN NORTH
_	BID DOCUMENTATION
	BID DOCUMENTATION
	BID DOCUMENTATION APRIL 25TH, 2025
	BID DOCUMENTATION APRIL 25TH, 2025 BID DOCUMENTATION APRIL 25TH, 2025 DATE EVISION SCHOOL & LOCATION SCHOOL & LOCATION SCHOOL & LOCATION SCHOOL & LOCATION SCHOOL & LOCATION SCHOOL & LOCATION PROJECT TITLE Southwark Elementary Sc Fire Alarm Renovation DRAWING TITLE ELECTRICAL NOTES LOCATION NO. FILE NO. 177903000 DRAWN BY CHECKED BY
	BID DOCUMENTATION APRIL 25TH, 2025

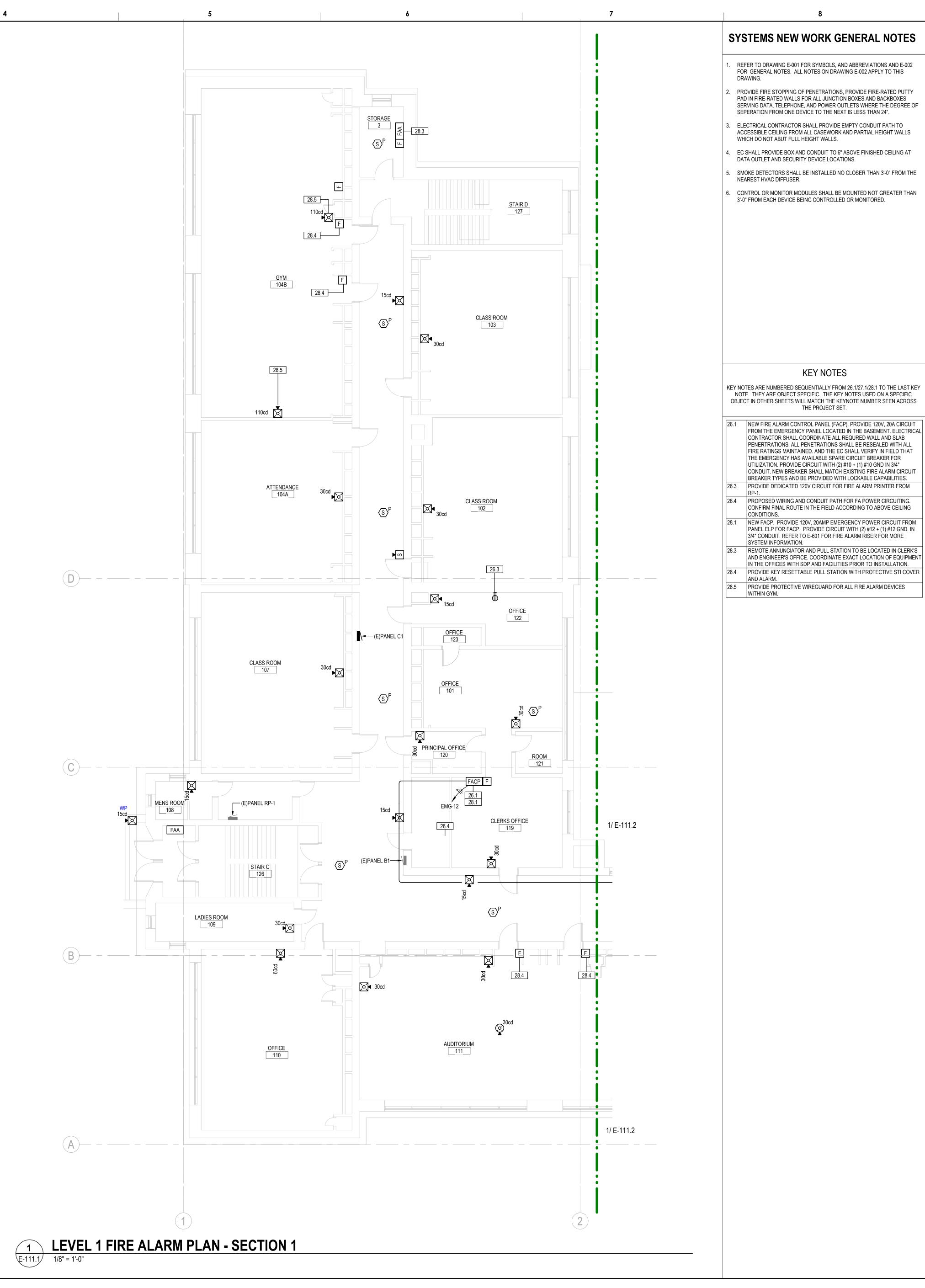


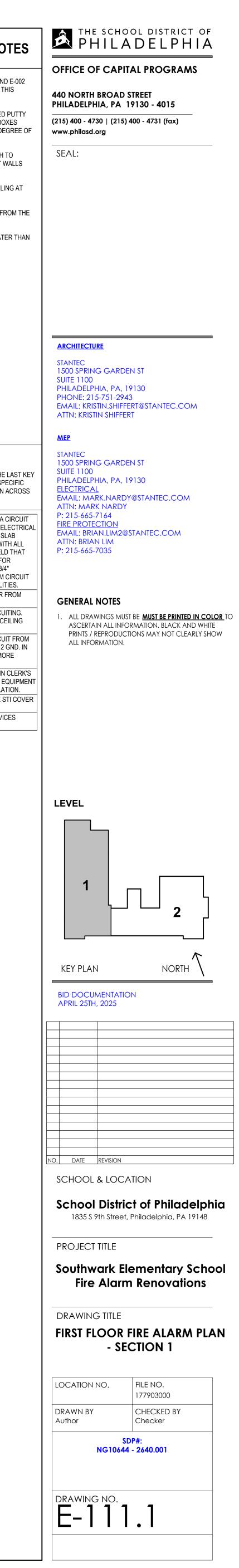


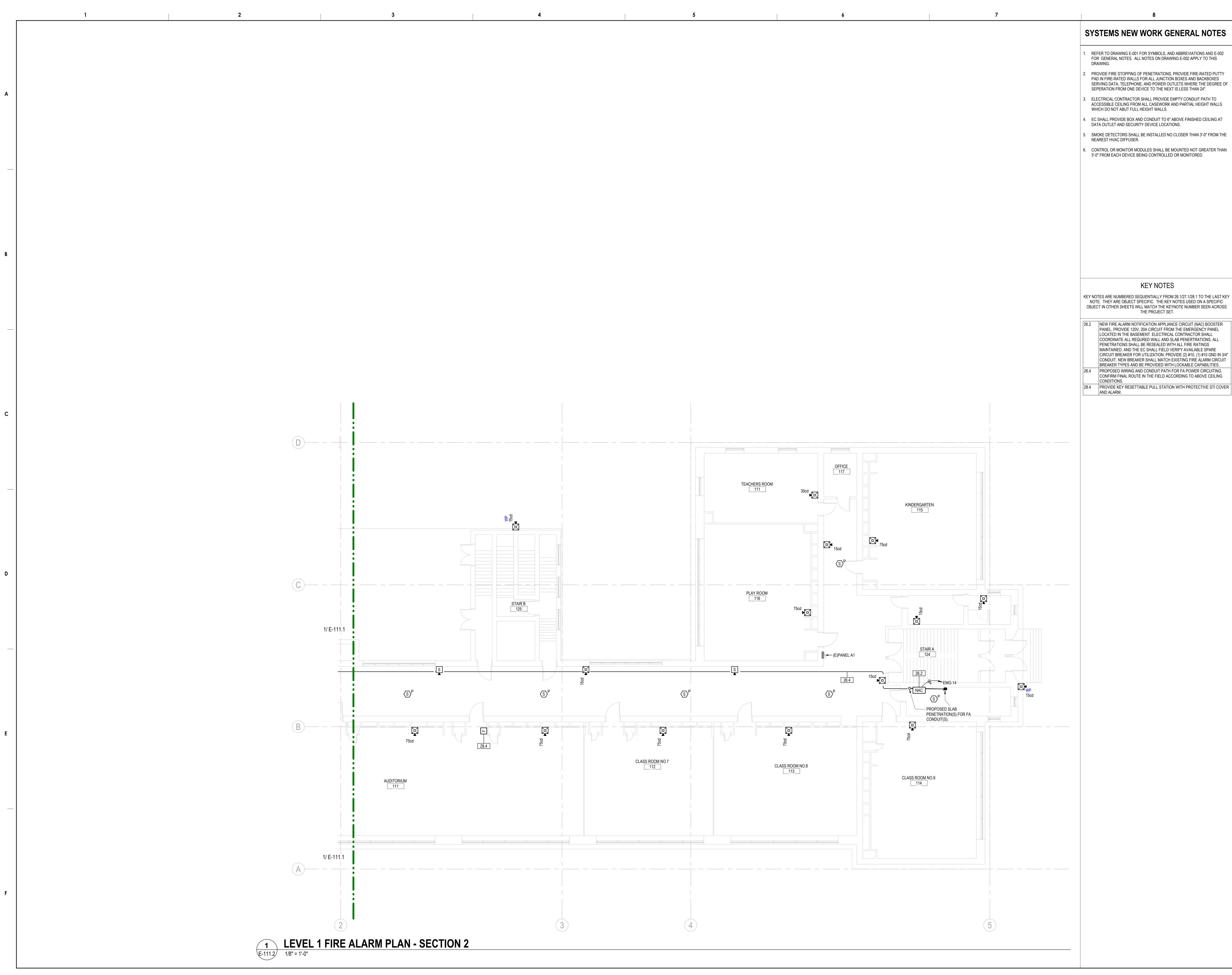


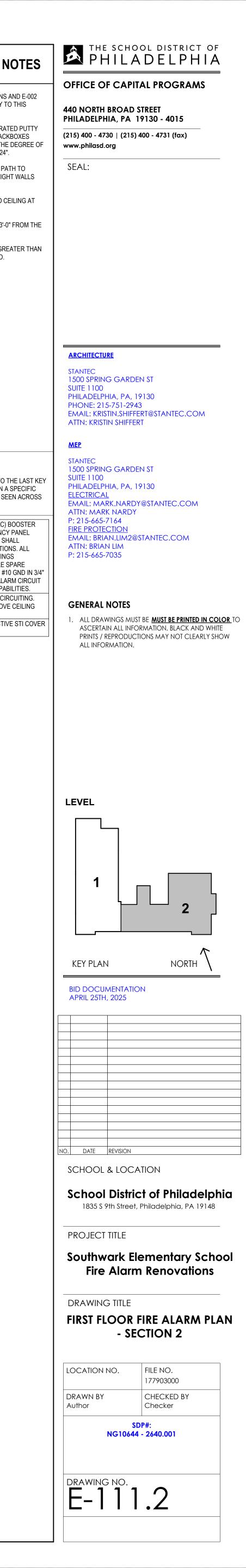


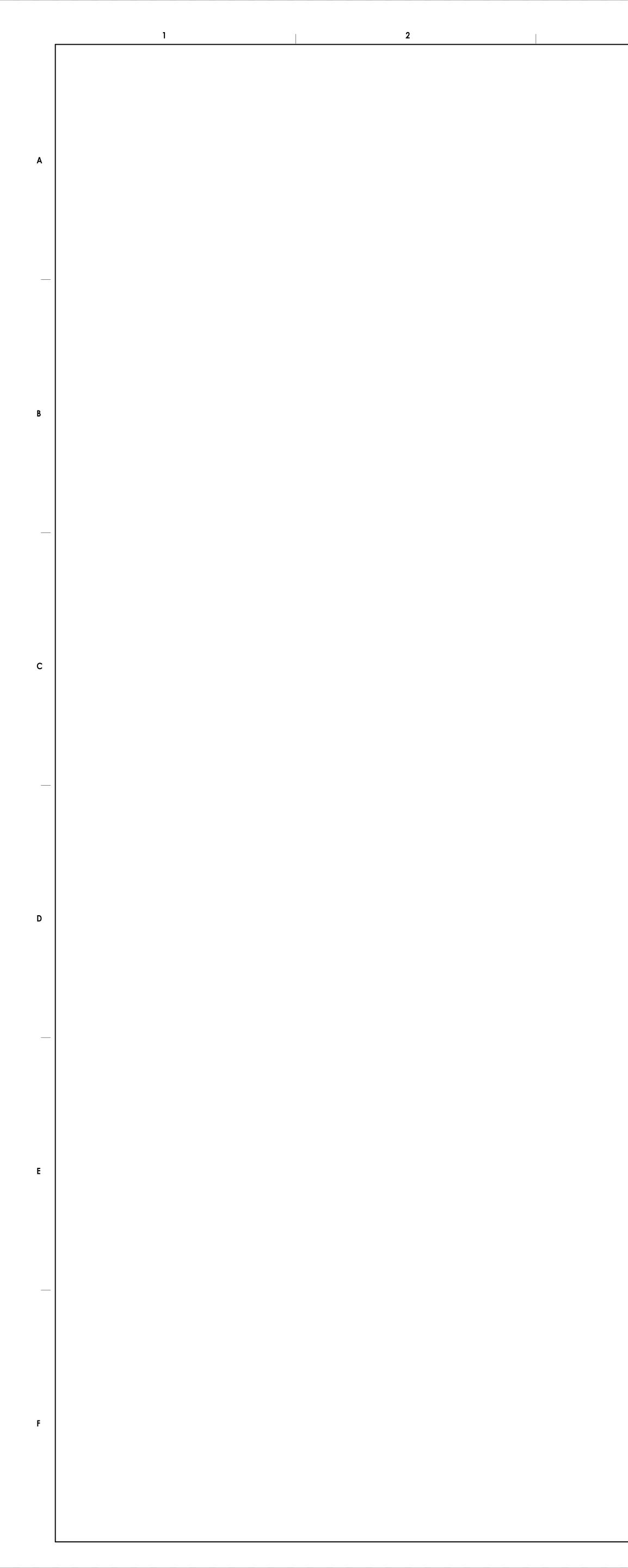


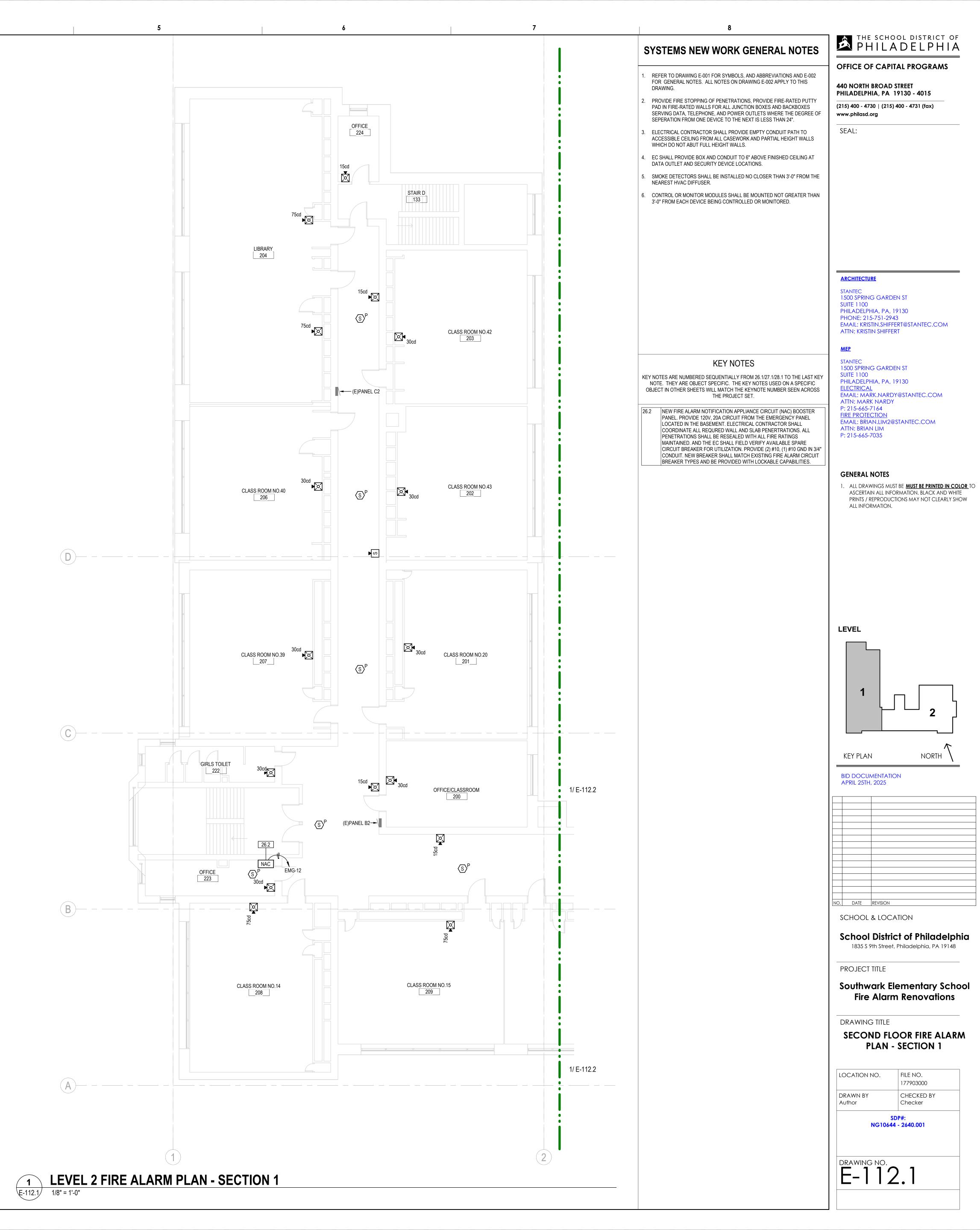


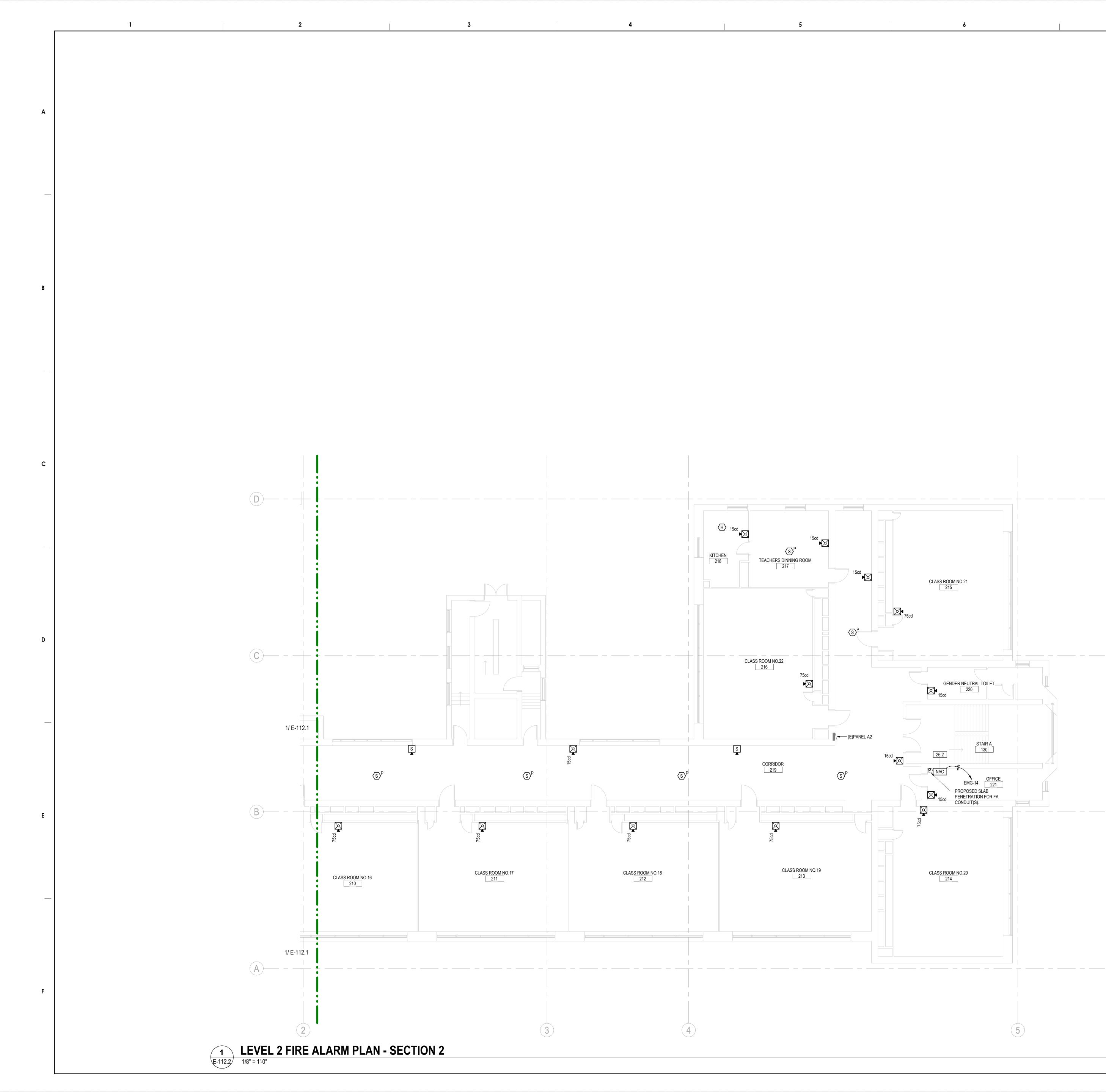




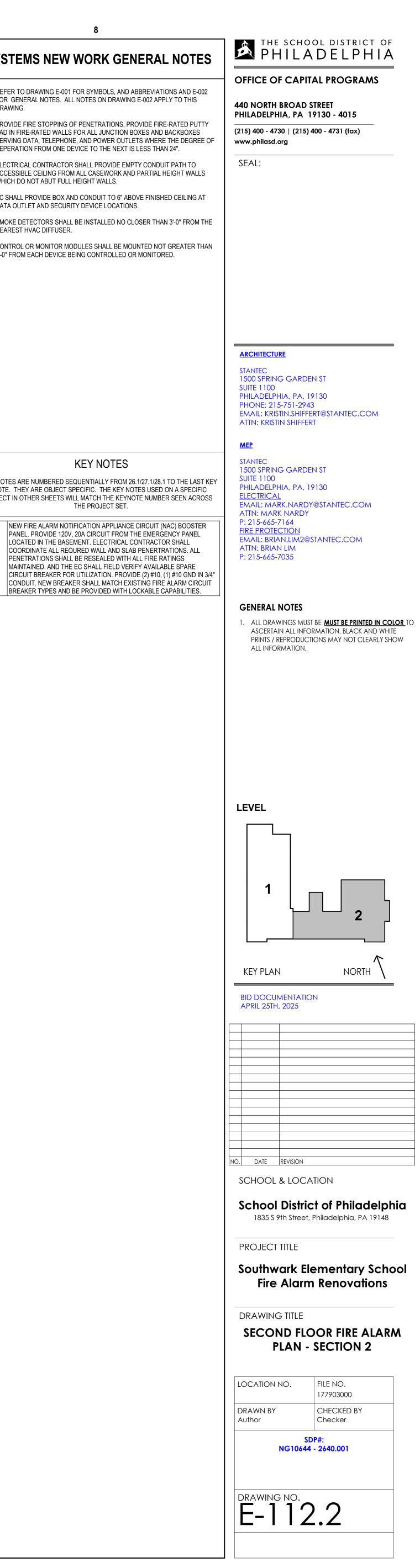


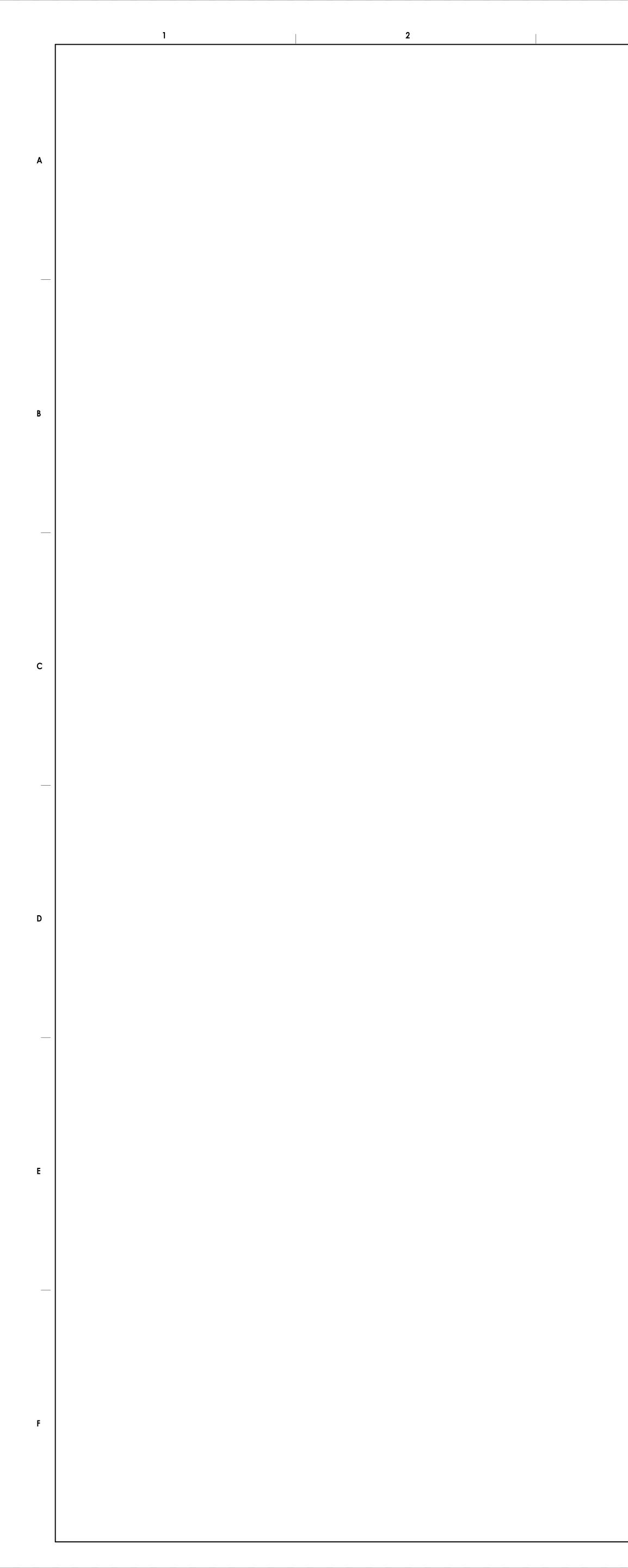




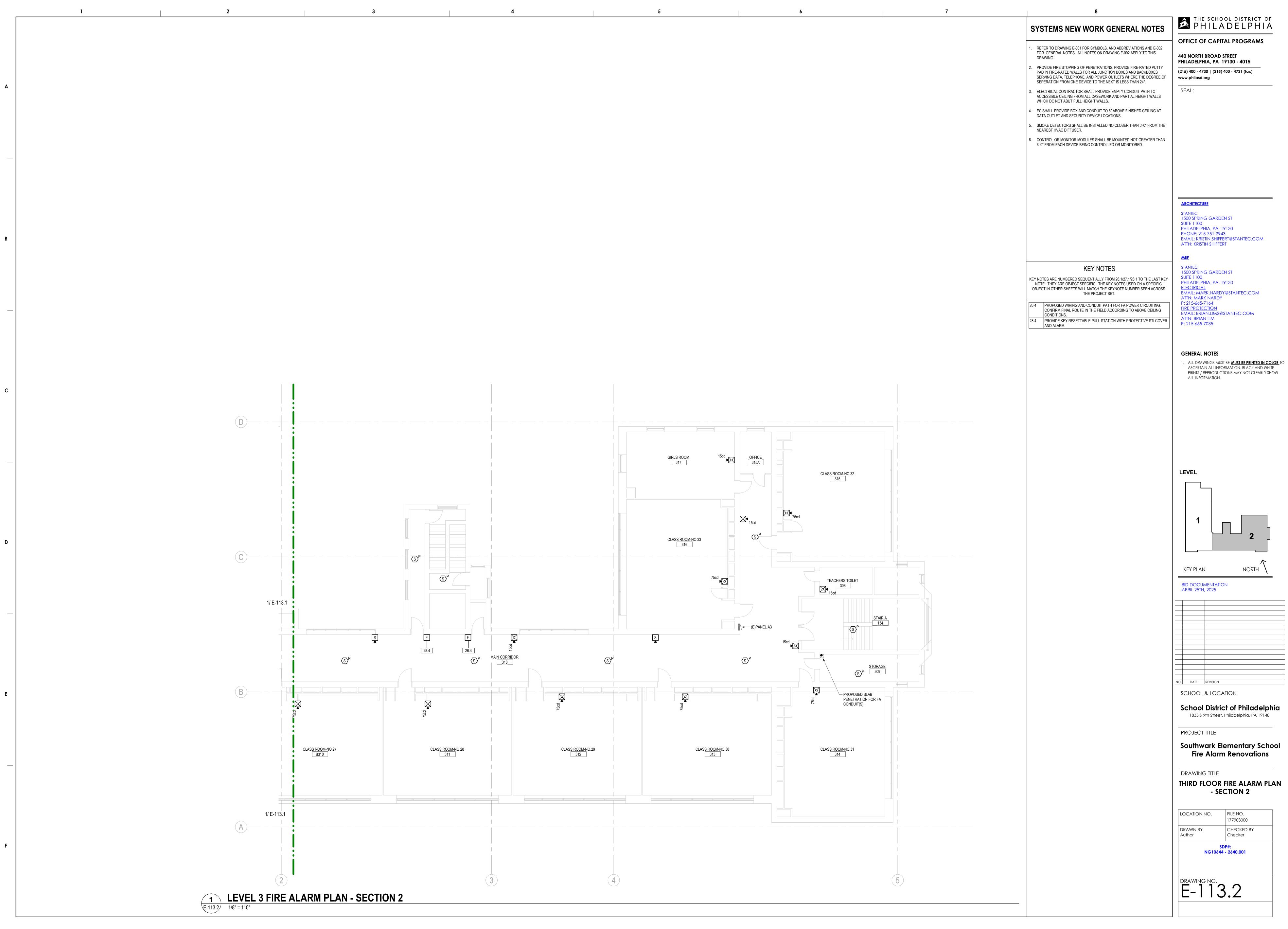


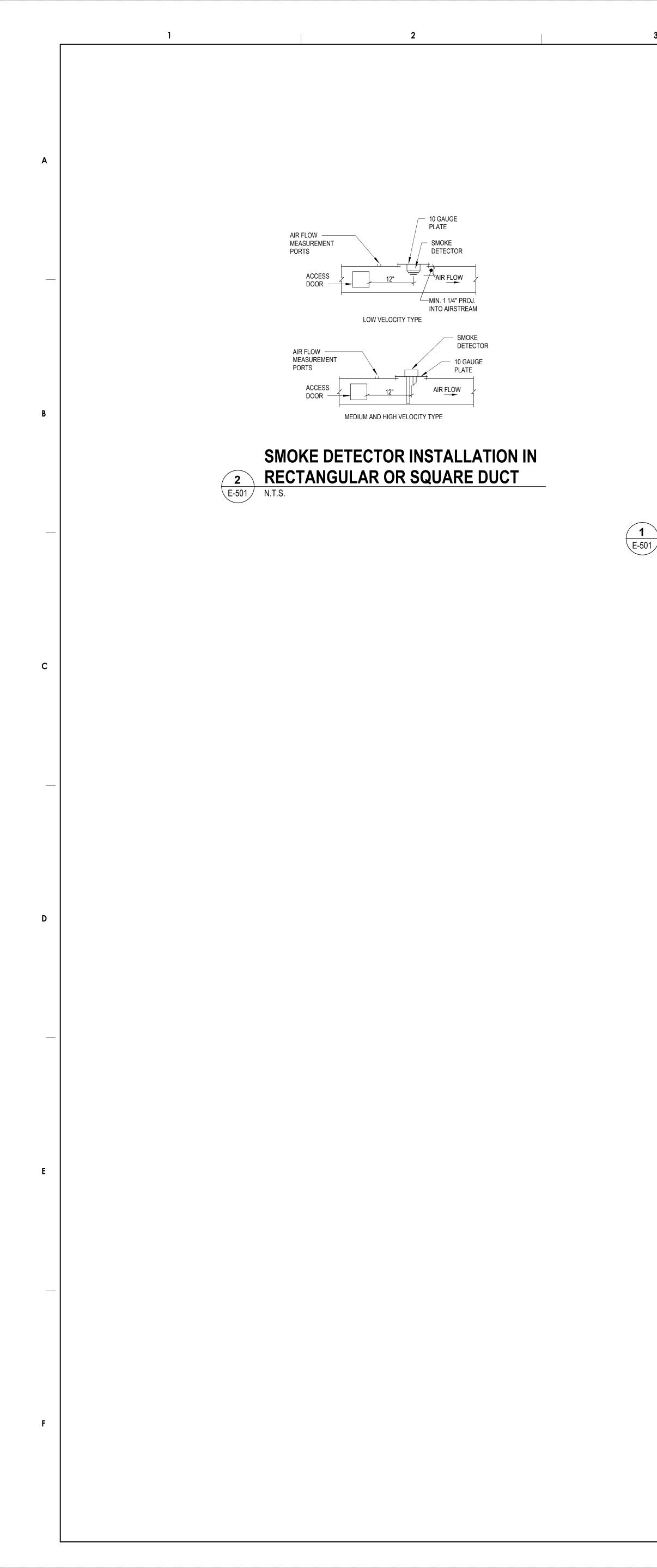
## SYSTEMS NEW WORK GENERAL NOTES 1. REFER TO DRAWING E-001 FOR SYMBOLS, AND ABBREVIATIONS AND E-002 FOR GENERAL NOTES. ALL NOTES ON DRAWING E-002 APPLY TO THIS DRAWING. 2. PROVIDE FIRE STOPPING OF PENETRATIONS, PROVIDE FIRE-RATED PUTTY PAD IN FIRE-RATED WALLS FOR ALL JUNCTION BOXES AND BACKBOXES SERVING DATA, TELEPHONE, AND POWER OUTLETS WHERE THE DEGREE OF SEPERATION FROM ONE DEVICE TO THE NEXT IS LESS THAN 24". 3. ELECTRICAL CONTRACTOR SHALL PROVIDE EMPTY CONDUIT PATH TO ACCESSIBLE CEILING FROM ALL CASEWORK AND PARTIAL HEIGHT WALLS WHICH DO NOT ABUT FULL HEIGHT WALLS. 4. EC SHALL PROVIDE BOX AND CONDUIT TO 6" ABOVE FINISHED CEILING AT DATA OUTLET AND SECURITY DEVICE LOCATIONS. 5. SMOKE DETECTORS SHALL BE INSTALLED NO CLOSER THAN 3'-0" FROM THE NEAREST HVAC DIFFUSER. 6. CONTROL OR MONITOR MODULES SHALL BE MOUNTED NOT GREATER THAN 3'-0" FROM EACH DEVICE BEING CONTROLLED OR MONITORED. **KEY NOTES** KEY NOTES ARE NUMBERED SEQUENTIALLY FROM 26.1/27.1/28.1 TO THE LAST KEY NOTE. THEY ARE OBJECT SPECIFIC. THE KEY NOTES USED ON A SPECIFIC OBJECT IN OTHER SHEETS WILL MATCH THE KEYNOTE NUMBER SEEN ACROSS THE PROJECT SET. NEW FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT (NAC) BOOSTER 26.2

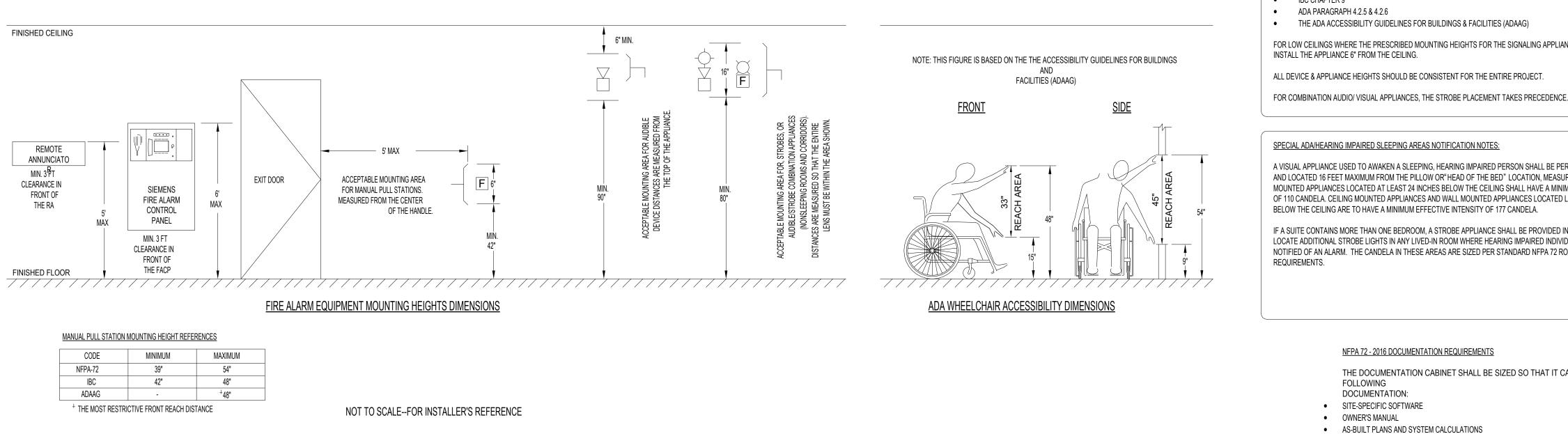






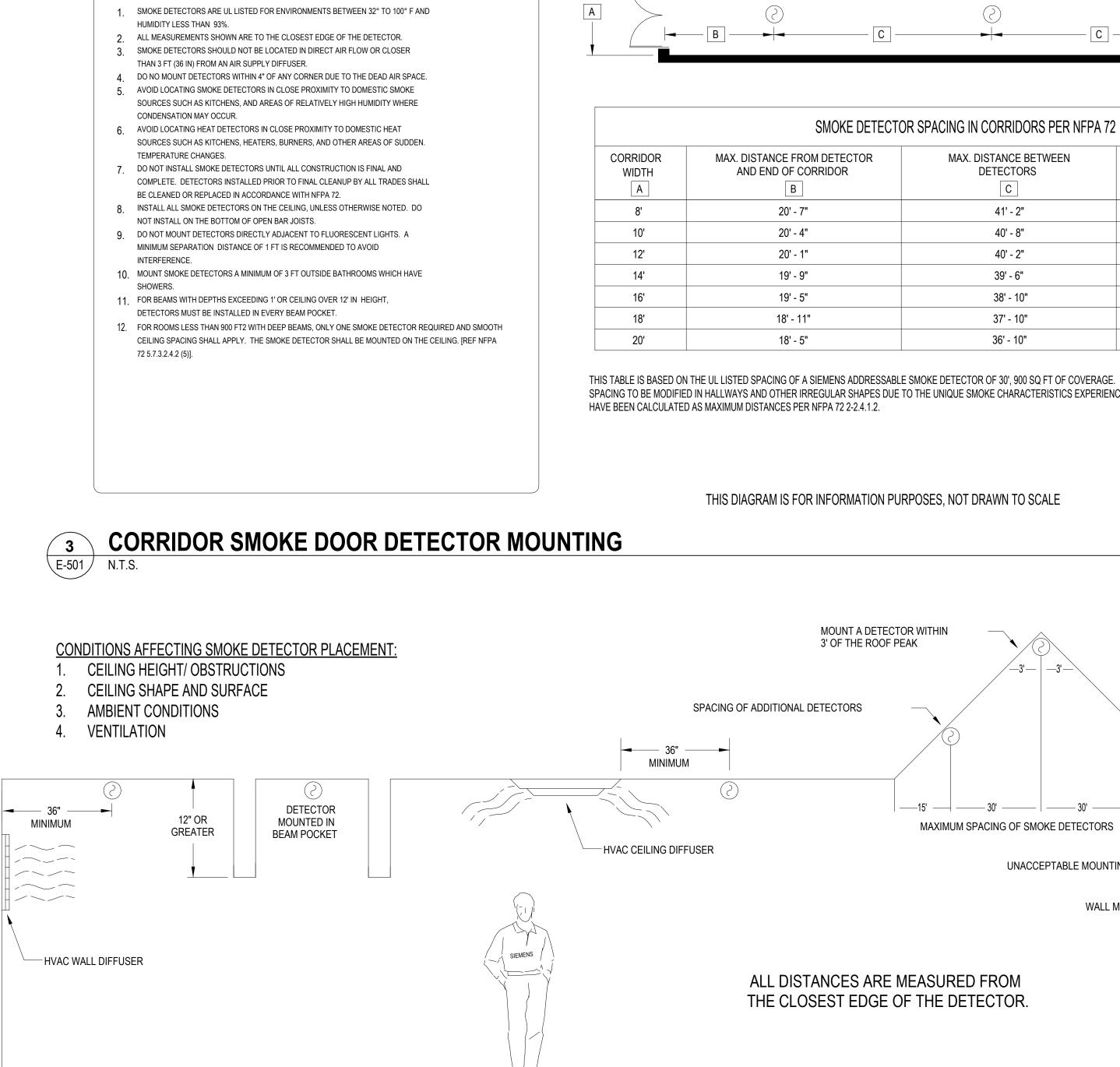






DETECTOR PLACEMENT NOTES:

## HARMONIZED FIRE ALARM EQUIPMENT MOUNTING DISTANCE REQUIREMENTS - IBC/ADA/NFPA/ANSI E-501 N.T.S.



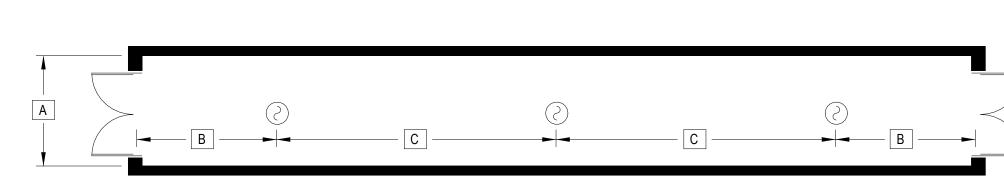


FINISHED FLOOR

## NOT TO SCALE, REFERENCE NFPA 72

# 

### SMOKE DETECTOR SPACING IN CORRIDORS PER NFPA 72 MAX. DISTANCE BETWEEN AREA COVERAGE DETECTORS PER DETECTOR С 41' - 2" 330 SQ. FT 40' - 8" 406 SQ. FT 40' - 2" 482 SQ. FT 39' - 6" 553 SQ. FT 38' - 10" 621 SQ. FT 37' - 10" 681 SQ. FT 36' - 10" 737 SQ FT THIS TABLE IS BASED ON THE UL LISTED SPACING OF A SIEMENS ADDRESSABLE SMOKE DETECTOR OF 30', 900 SQ FT OF COVERAGE. NFPA 72 PERMITS THE 30' CENTER-TO-CENTER SPACING TO BE MODIFIED IN HALLWAYS AND OTHER IRREGULAR SHAPES DUE TO THE UNIQUE SMOKE CHARACTERISTICS EXPERIENCED IN A CORRIDOR. THE SPACES LISTED ABOVE



THE DOCUMENTATION CABINET SHALL BE SIZED SO THAT IT CAN CONTAIN THE

THE BUILDING OWNER OR THE BUILDING OWNER'S REPRESENTATIVE SHALL, ON AN ANNUAL

MIN.

UNACCEPTABLE MOUNTING AREA

WALL MOUNTED SMOKE

----

MIN.

BASIS, REVIEW ANY ELECTRONIC DOCUMENTATION MEDIA FORMATS AND ASSOCIATED

INTERFACING HARDWARE FOR COMPATIBILITY AND UPDATE IF NECESSARY.

NFPA 72 - 2016 DOCUMENTATION REQUIREMENTS

FOLLOWING DOCUMENTATION:

BELOW THE CEILING ARE TO HAVE A MINIMUM EFFECTIVE INTENSITY OF 177 CANDELA. IF A SUITE CONTAINS MORE THAN ONE BEDROOM, A STROBE APPLIANCE SHALL BE PROVIDED IN EACH SLEEPING AREA. LOCATE ADDITIONAL STROBE LIGHTS IN ANY LIVED-IN ROOM WHERE HEARING IMPAIRED INDIVIDUALS WOULD NEED TO BE NOTIFIED OF AN ALARM. THE CANDELA IN THESE AREAS ARE SIZED PER STANDARD NFPA 72 ROOM SPACING

OF 110 CANDELA. CEILING MOUNTED APPLIANCES AND WALL MOUNTED APPLIANCES LOCATED LESS THAN 24 INCHES

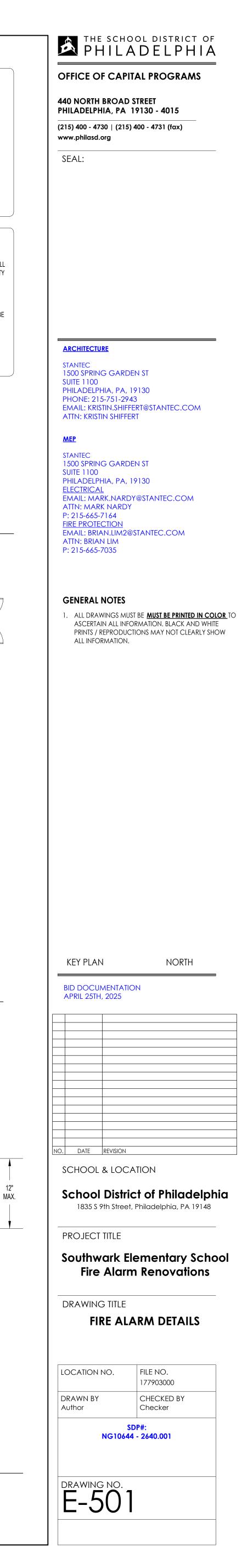
A VISUAL APPLIANCE USED TO AWAKEN A SLEEPING, HEARING IMPAIRED PERSON SHALL BE PERMANENTLY INSTALLED AND LOCATED 16 FEET MAXIMUM FROM THE PILLOW OR" HEAD OF THE BED" LOCATION, MEASURED HORIZONTALLY. WALL MOUNTED APPLIANCES LOCATED AT LEAST 24 INCHES BELOW THE CEILING SHALL HAVE A MINIMUM EFFECTIVE INTENSITY

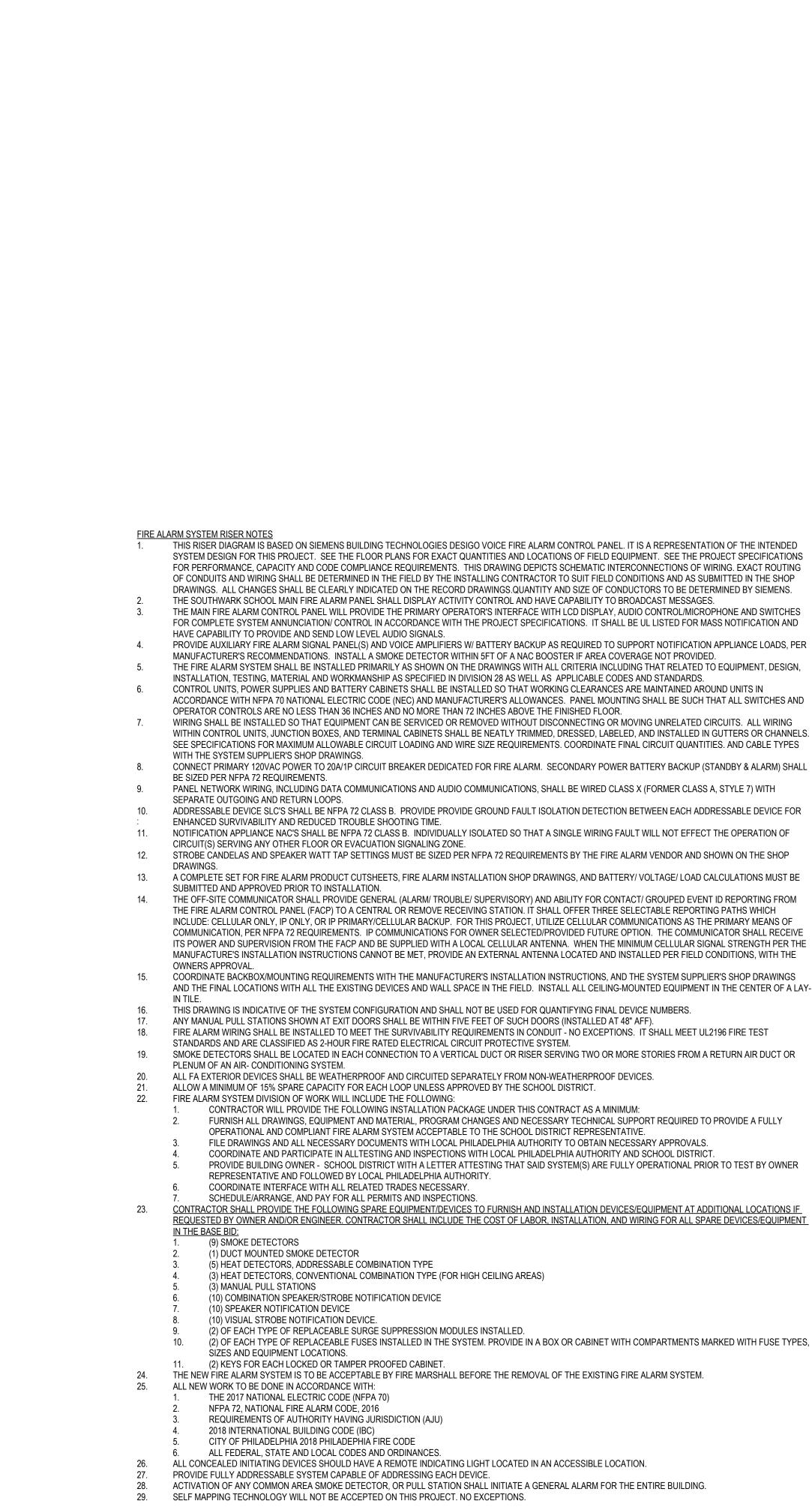
SPECIAL ADA/HEARING IMPAIRED SLEEPING AREAS NOTIFICATION NOTES:

FOR LOW CEILINGS WHERE THE PRESCRIBED MOUNTING HEIGHTS FOR THE SIGNALING APPLIANCES CAN NOT BE MET, INSTALL THE APPLIANCE 6" FROM THE CEILING. ALL DEVICE & APPLIANCE HEIGHTS SHOULD BE CONSISTENT FOR THE ENTIRE PROJECT.

• ADA PARAGRAPH 4.2.5 & 4.2.6 THE ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS & FACILITIES (ADAAG)

- CABO/ANSI A117.1 IBC CHAPTER 9
- THESE MOUNTING DIMENSIONS COMPLY WITH THE FOLLOWING: • NFPA 72 CHAPTER 5 & 7
- TYPICAL FIRE ALARM EQUIPMENT MOUNTING NOTES:





Α

### RISER DIAGRAM IS SCHEMATIC ONLY TO DEPICT OVERALL DESIGN INTENT AND DOES NOT AND DOES NOT SHOW THE ENTIRE SYSTEM. REFER TO FLOOR PLANS FOR LOCATIONS AND QUANTITIES OF ALL EQUIPMENT AND DEVICES.

# (TYPICAL).

PROVIDE COMPLIANCE WITH 2018, IFC 510 BY INCORPORATING THE COST FOR TESTING AND A NEW RADIO COVERAGE SYSTEM DURING

BIDDING PHASE, COMPLETE TESTING TO VERIFY GENERAL BUILDING

IS IN COMPLIANCE WITH MINIMUM SIGNAL STRENGTH STANDARDS

WITHOUT AN ADDITIONAL COVERAGE SYSTEM ADDED. WHEN

TESTING FINDS AN EMERGENCY RESPONDER RADIO COVERAGE

COVERAGE SYSTEM SHALL BE RETURNED TO THE OWNER AS A

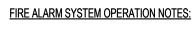
CREDIT. WHEN TESTING DETERMINES A NEW RADIO COVERAGE

SYSTEM IS REQUIRED, PROVIDE SYSTEM WITH BATTERY BACK UP.

SYSTEM IS NOT REQUIRED, THE COST FOR THE NEW RADIO

### PROVIDE PROTECTIVE COVERS FOR ALL APPLIANCES IN THE MULTI PURPOSE/ GYM ROOMS SPEAKER STROBE SPEAKER/STROBE APPLIANCE APPLIANCE APPLIANCE NOTIFICATION APPLIANCE CIRCUIT (NAC) SEPARATE FIRE AREA. DETERMINED BY SHOP DRAWING SYSTEM CALCULATIONS. ACTIVE ALARM CAPACITY SHALL NOT EXCEED 80%. 4. ALL STROBES SHALL HAVE ADA COMPLIANT SYNCHRONIZED FI ASHING 5. PROVIDE NFPA 72 520HZ LOW FREQUENCY PRE-ANNOUNCE TONE

# ADDRESSABLE FIRE ALARM WITH VOICE NOTIFICATION RISER DIAGRAM



MANUAL PULL STATION

SPRINKLER WATERFLOW

SLC/NAC OPEN-CIRCUIT

FIRE PUMP RUNNING

HVAC DUCT SMOKE DETECTOR

SPRINKLER TAMPER SWITCH

CARBON MONOXIDE DETECTOR

AREA SMOKE W/ LOCAL SOUNDER BASE

FACP, NAC BOOSTER OR DACT FAULT

SLC/NAC EQUIPMENT OR CIRCUIT FAULT

1. THIS NFPA 72 OPERATIONAL MATRIX IS BASED ON A SIEMENS FIRE ALARM SYSTEM. THE CONTRACTOR SHALL SUBMIT A COMPREHENSIVE SEQUENCE OF OPERATIONS INCLUDED WITH THE INSTALLATION SHOP DRAWINGS. 4. IN NORMAL STANDBY OPERATION, A GREEN POWER ON LED SHOULD BE ILLUMINATED ON THE FACP. THE LCD DISPLAY WILL SHOW THE SYSTEM NAME, "SYSTEM NORMAL" ANNOUNCEMENT AND THE CURRENT DATE, DAY, AND TIME. 5. ALL SYSTEM STATUS CONDITIONS SHALL BE MIRRORED AT REMOTE ANNUCIATOR(S), AS PROVIDED. LOW FREQUENCY 520HZ AUDIBLE NOTIFICATION TONES SHALL BE USED IN ALL SLEEPING ROOMS AND RESIDENTIAL UNITS.

CARBON MONOXIDE DETECTORS SHALL INITIATE A GENERAL ALARM IF REQUIRED BY THE AHJ. 8. ALL ADDRESSABLE DETECTORS, MANUAL PULLS, MONITORING MODULES AND REMOTE LAMPS SHALL PROVIDE VISIBLE INDICATION FOR STATUS:

NORMAL: GREEN, LED FLASHES ALARM: RED, LED FLASHES

TROUBLE: AMBER, LED FLASHES

# FIRE ALARM SEQUENCE OF OPERATIONS MATRIX

PROVIDE SEPARATE NAC HOMERUNS FOR EACH LEVEL AND EACH

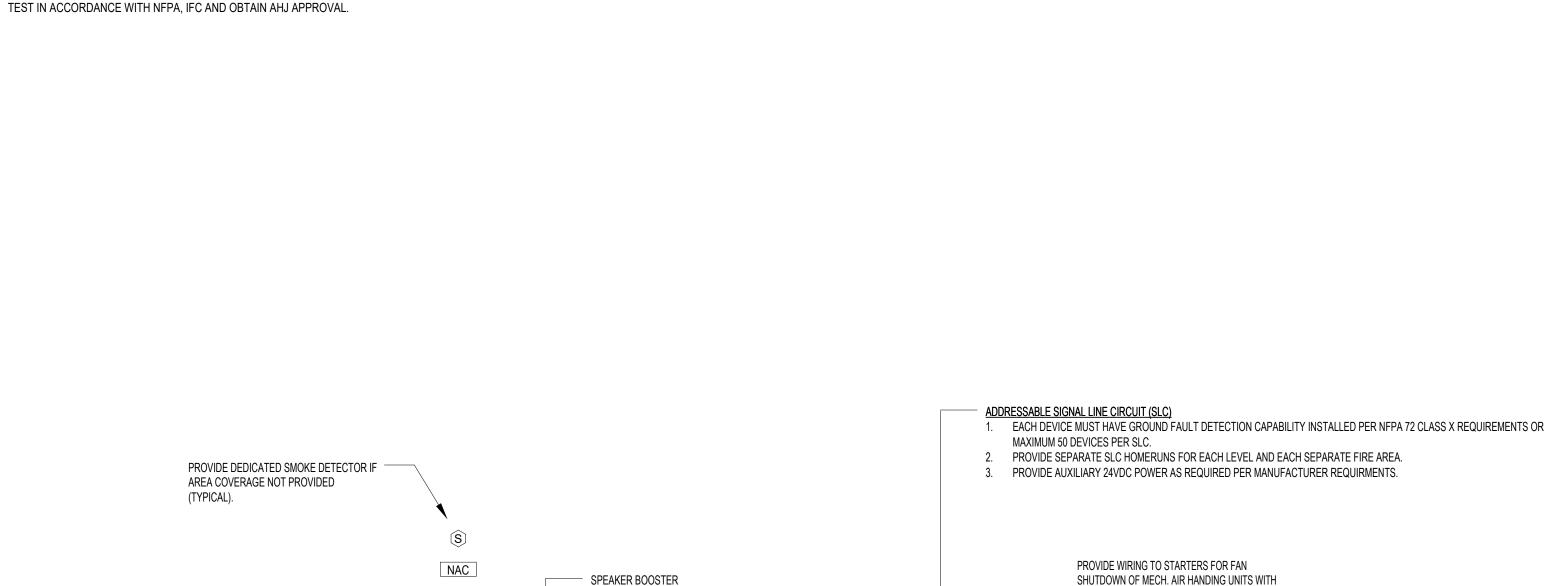
NAC CONDUCTOR GAUGE, QUANTITY AND BOOSTER PANELS TO BE

IN ALL SLEEPING AREAS.

0 AREA DETECTOR (SMOKE, HEAT, OR BEAM) 0 0 FIRE EXTINGUISHING SYSTEM AGENT RELEASE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

0 0 0 0 0

EMERGENCY



DUCT SMOKE DETECTORS. USE A SEPARATE

SHUTDOWN IF THE STARTER IS REMOTE FROM THE

ADDRESSABLE

HEAT DETECTOR

COORDINATE EXACT LOCATION WITH FIRE MARSHAL PRIOR TO

REMOTE ANNUNCIATOR #1 WITH

FRONT ENTRANCE

ROUGH-IN.

ADDRESSABLE SMOKE

COMBINATION SMOKE/CO FOR

GAS SUPPLIED AHU'S

AANN EARWEIDE' BOARTY TROUBE

REMOTE ANNUNCIATOR #2 WITH

DISPLAY & CONTROL FUNCTIONS DISPLAY & CONTROL FUNCTIONS

PRINTER 120VAC POWER CIRCUIT FOR PRINTER

PERFORMANCE REQUIREMENTS

MAIN OFFICE

SEE PLANS FOR PANEL INFORMATION

4 X 40 BACK LIT LCD

DUCT DETECTOR

ADDRESSABLE RELAY MODULE FOR FAN

MANUAL

PULL STATION

REMOTE

→ 120VAC POWER

MODULE

DEDICATED FOR

REMOTE PERIPHERAL

FIRE ALARM

.....

VOICE FIRE ALARM

CONTROL

PANEL

FACP

SOUTHWARK SCHOOL

DIALER

- ANNUNCIATOR

POWER & DATA

ADDRESSABLE

MULTI-CRITERIA

SMOKE DETECTOR

PANEL

DEDICATED FOR FIRE ALARM

→ 120VAC POWER

NOTIFICATION NOTE:

MANUFACTURER'S

DESIGN

120VAC POWER

ACTIVATION CIRCUIT

ALARM PANEL OR BY BOOSTER PANELS PER

- STROBE BOOSTER

ACTIVATION CIRCUIT

PANEL

DEDICATED FOR FIRE ALARM

LINE TO THE MAIN OFFICE LOCATED ON THE FIRST FLOOR.

PRIOR ANY INSTALLATION. ACTIVATE ON ANY ALARM.

PROVIDE TROUBLE. SUPERVISE. AND ALARM SIGNAL TO THE

SCHOOL POLICE DISPTACH LOCATED IN PHILADELPHIA - 440

NORTH BROAD STREET, PROVIDE ON DEDICATED PHONE

PROVIDE OUTSIDE WEATHERPROOF STROBE HORN/BELL NEAR MAIN ENTRANCE.

EXACT LOCATION MUST BE COORDINATED WITH PHILADELPHIA - FIRE MARSHAL

SPEAKER AND STROBES MAY BE SUPPORTED THE MAIN FIRE

AUXILIARY

SPEAKER

BOOSTER PANEL

W/ BATTERY

BACKUP

CONTROLLED &

MONITORED

BY FACP

NAC

AUXILIARY

STROBE

BOOSTER PANEL

W/ BATTERY

BACKUP

CONTROLLED &

MONITORED

BY FACP



- ALARM A SIGNAL WHICH INDICATES AN EMERGENCY SITUATION REQUIRING IMMEDIATE ACTION TROUBLE A SIGNAL WHICH INDICATES A FAULT WITH AN APPLIANCE, DEVICE, OR SYSTEM COMPONENT SUPERVISORY A SIGNAL WHICH INDICATES A NON-
- SITUATION REQUIRING IMMEDIATE ACTION

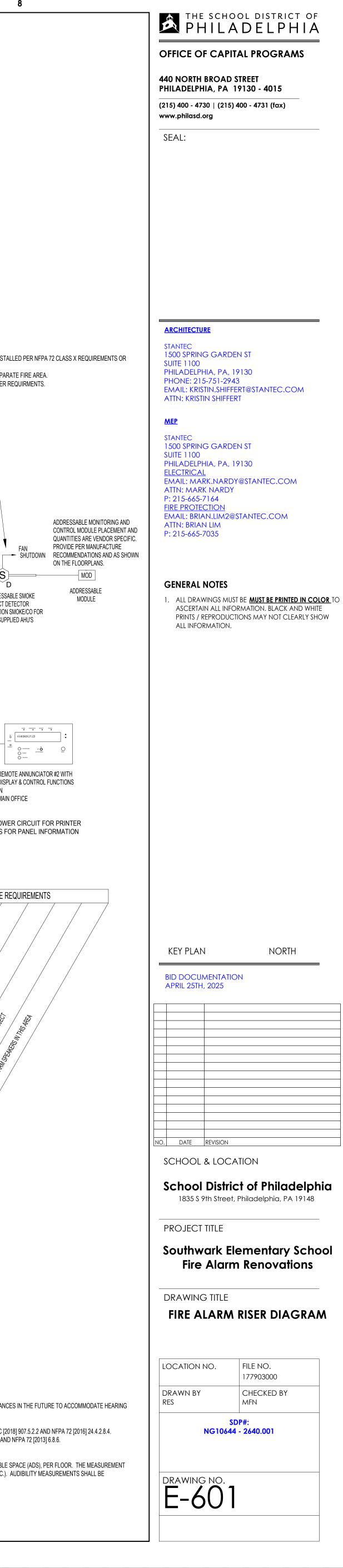
THIS SYSTEM SHALL PROVIDE EMERGENCY COMMUNICATION/VOICE ALARM FEATURES AND UTILIZE ABOVE MATRIX TO IDENTIFY ALL ACOUSTICALLY DISTINGUISHABLE SPACE(S) (ADS) AND WHETHER NOT EACH ADS REQUIRES INTELLIGIBILITY PER NFPA 72 [2016] 18.4.11.

NFPA 72

ACOUSTICALLY DISTINGUISHABLE SPACE

DESIGN INTENT SCHEDULE

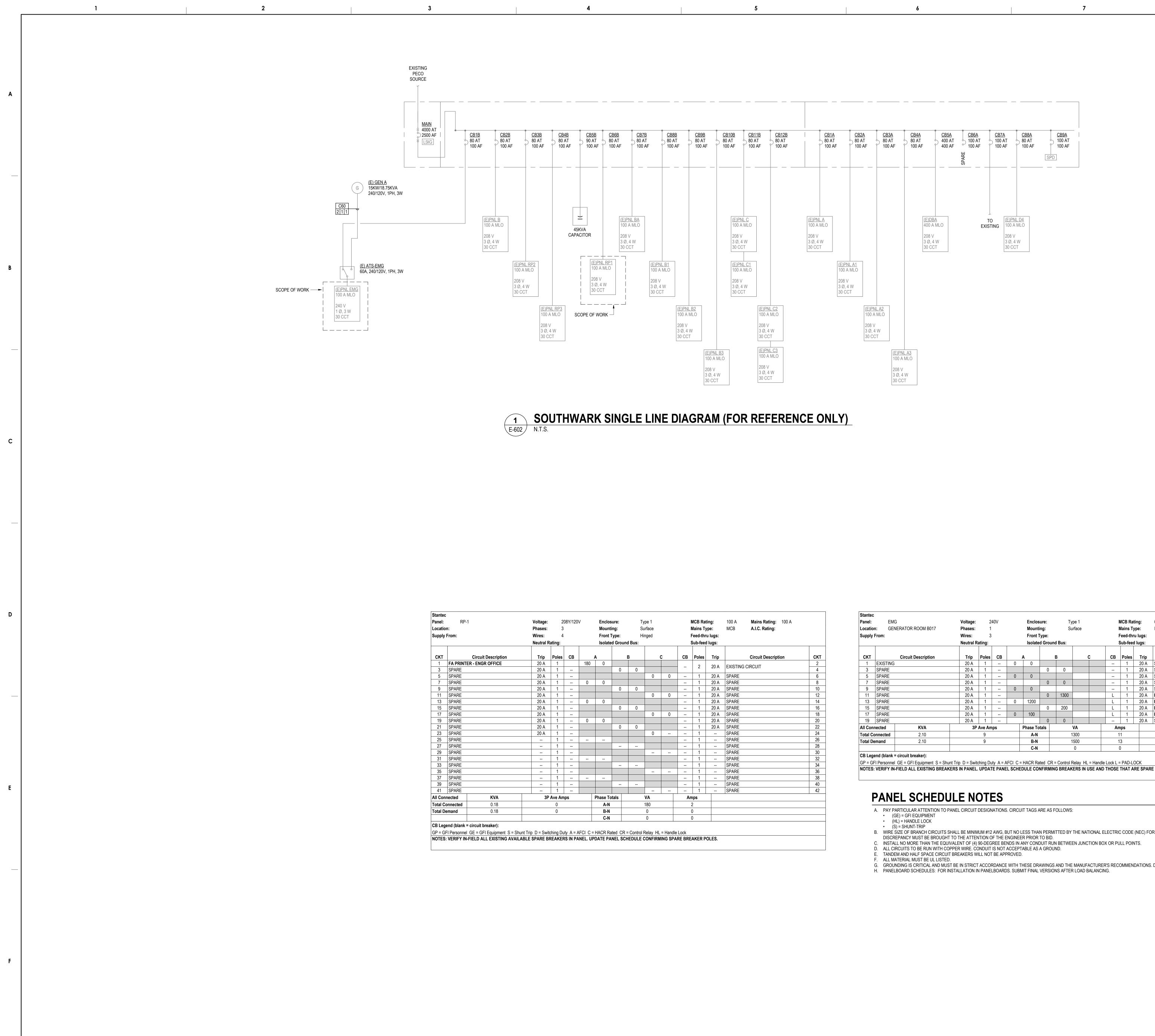
- PUBLIC LOBBIES AND RECEPTION AREAS CORRIDORS, AND COMMON CIRCULATION PATHS VESTIBULES PUBLIC BATHROOMS AND LOCKER ROOMS LOUNGE, LECTURE AREAS AND CONFERENCE ROOMS ELEVATOR LOBBIES FILING, PHOTOCOPY AND MAIL ROOMS STORAGE AND UTILITY ROOMS EMPLOYEE BREAK ROOMS/ KITCHENS INDIVIDUAL OFFICES AND ATTACHED PRIVATE BATHROOMS MULTI-PERSON OFFICES AND WORK AREAS  $\bullet$   $\bullet^2$ MECHANICAL, ELECTRICAL, IT AND TELECOM ROOMS CUSTODIAL, MECHANICAL, ELECTRICAL, IT AND TELECOM CLOSETS BACK-OF-HOUSE STORAGE/UTILITY ROOMS AND CORRIDORS ELEVATORS CABS EGRESS STAIRTOWERS AND EXIT PASSAGEWAYS • EXTERIOR AND ROOFTOP FIRE COMMAND CENTER/ MAIN FIRE ALARM CONTROL PANEL
- MATRIX FOOTNOTES FOR ADS SCHEDULE 1. PROVIDE AUDIBLE COVERAGE FOR THESE TYPES OF EMPLOYEE WORK AREAS, WITH SPARE CAPACITY TO ACCOUNT FOR THE POTENTIAL OF ADDING VISIBLE NOTIFICATION APPLIANCES IN THE FUTURE TO ACCOMMODATE HEARING
- IMPAIRED EMPLOYEE(S) PER IBC [2018] 907.5.2.3.2. STROBE SIGNALS PROVIDED IN THESE AREAS TO SUPPLEMENT NOTIFICATION SIGNALS, AMBIENT SOUND LEVELS MAY EXCEED 110 DBA. HIGH-RISE APPLICATIONS: EACH STAIRTOWER AND ELEVATOR GROUP MUST BE A SEPARATE PAGING ZONE, AUTOMATIC VOICE SIGNALS ARE PROHIBITED IN THESE AREAS PER IBC [2018] 907.5.2.2 AND NFPA 72 [2016] 24.4.2.8.4. 4. HIGH-RISE APPLICATIONS: VISIBLE ALARM NOTIFICATION APPLIANCES (STROBES) ARE NOT BE REQUIRED IN ELEVATOR CARS OR EGRESS STAIRS PER SECTION IBC [2018] 907.5.2.3 AND NFPA 72 [2013] 6.8.6.
- ACOUSTICALLY DISTINGUISHABLE SPACE TESTING NOTES WHERE INTELLIGIBILITY IS REQUIRED, THE CONTRACTOR SHALL MEASURE AND DOCUMENT THE TEST RESULTS IN AT LEAST ONE OF EACH CATEGORY OF ACOUSTICALLY DISTINGUISHABLE SPACE (ADS), PER FLOOR. THE MEASUREMENT SHOULD BE TAKEN APPROXIMATELY 5FT A.F.F. APPLICABLE FOR THE TYPICAL OCCUPANT POSITION IN THE SPACE, UNDER NORMAL CONDITIONS (E.G. STANDING, SITTING, SLEEPING, ETC.). AUDIBILITY MEASUREMENTS SHALL BE REPORTED IN DECIBELS. INTELLIGIBILITY MEASUREMENTS SHALL BE REPORTED IN COMMON INTELLIGIBILITY SCALE (CIS) SCORE.



- MOD

ADDRESSABLE

MODULE



Panel: RP-1		Voltage:	Voltage: 208Y/120V			Enclosure: 1			/pe 1		MCB Rating:			100 A	Mains Rating: 100 A		
Location:		Phases:	Phases: 3			Mounting:			urface		ľ	Mains Ty	/pe:	MCB	A.I.C. Rating:		
Supply From:		Wires:	Wires: 4			Front Type: Hin			inged	feed-thru			u lugs:				
	1		Neutral R	ating:	1		Isolate	d Ground	d Bus:	1			Sub-feed	lugs:	1		
СКТ	Ci	rcuit Description	Trip	Poles	СВ		A		в		0	СВ	Poles	Trip		Circuit Description	СК
1	FA PRINTER -		20 A	1		180	0		_					•		•	2
3	SPARE		20 A	1				0	0				2	20 A	EXISTING	CIRCUIT	4
5	SPARE		20 A	1						0	0		1	20 A	SPARE		6
7	SPARE		20 A	1		0	0						1	20 A	SPARE		8
9	SPARE		20 A	1				0	0				1	20 A	SPARE		10
11	SPARE		20 A	1						0	0		1	20 A	SPARE		12
13	SPARE		20 A	1		0	0						1	20 A	SPARE		14
15	SPARE		20 A	1				0	0				1	20 A	SPARE		16
17	SPARE		20 A	1						0	0		1	20 A	SPARE		18
19	SPARE		20 A	1		0	0						1	20 A	SPARE		20
21	SPARE		20 A	1				0	0				1	20 A	SPARE		22
23	SPARE		20 A	1						0			1		SPARE		24
25	SPARE			1									1		SPARE		26
27	SPARE			1									1		SPARE		28
29	SPARE			1									1		SPARE		30
31	SPARE			1									1		SPARE		32
33	SPARE			1									1		SPARE		34
35	SPARE			1									1		SPARE		36
37	SPARE			1									1		SPARE		38
39	SPARE			1									1		SPARE		40
41	SPARE			1									1		SPARE		42
All Con	nected	KVA	3P	Ave Am	nps		Phase To	otals		VA		An	nps				
Total Co	onnected	0.18		0				A-N				2					
Fotal De	emand	0.18		0			B-N		0			0					
							C-N			0		(	0				

## SINGLE LINE NEW WORK **GENERAL NOTES**

8

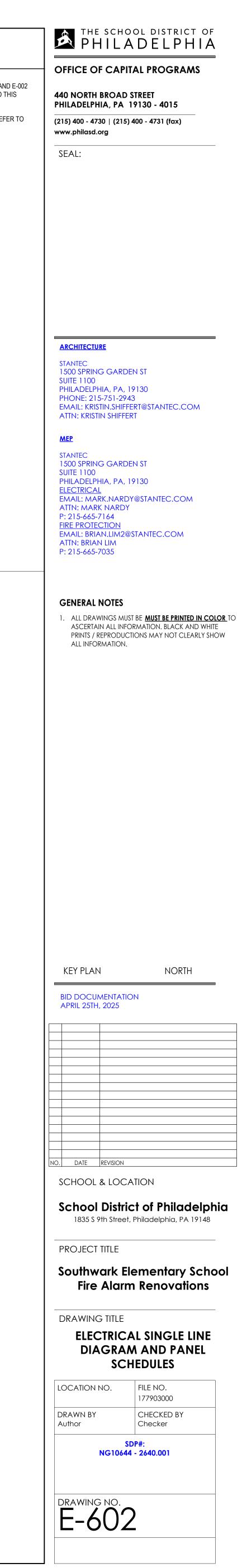
- REFER TO DRAWING E-001 FOR SYMBOLS, AND ABBREVIATIONS AND E-002 FOR GENERAL NOTES. ALL NOTES ON DRAWING E-002 APPLY TO THIS DRAWING.
- 2. ANY NEW BRANCH CIRCUITING SHALL BE 2#12, 1#12G, IN 3/4"C. REFER TO SPECIFICATIONS FOR CONDUIT TYPE REQUIREMENTS.

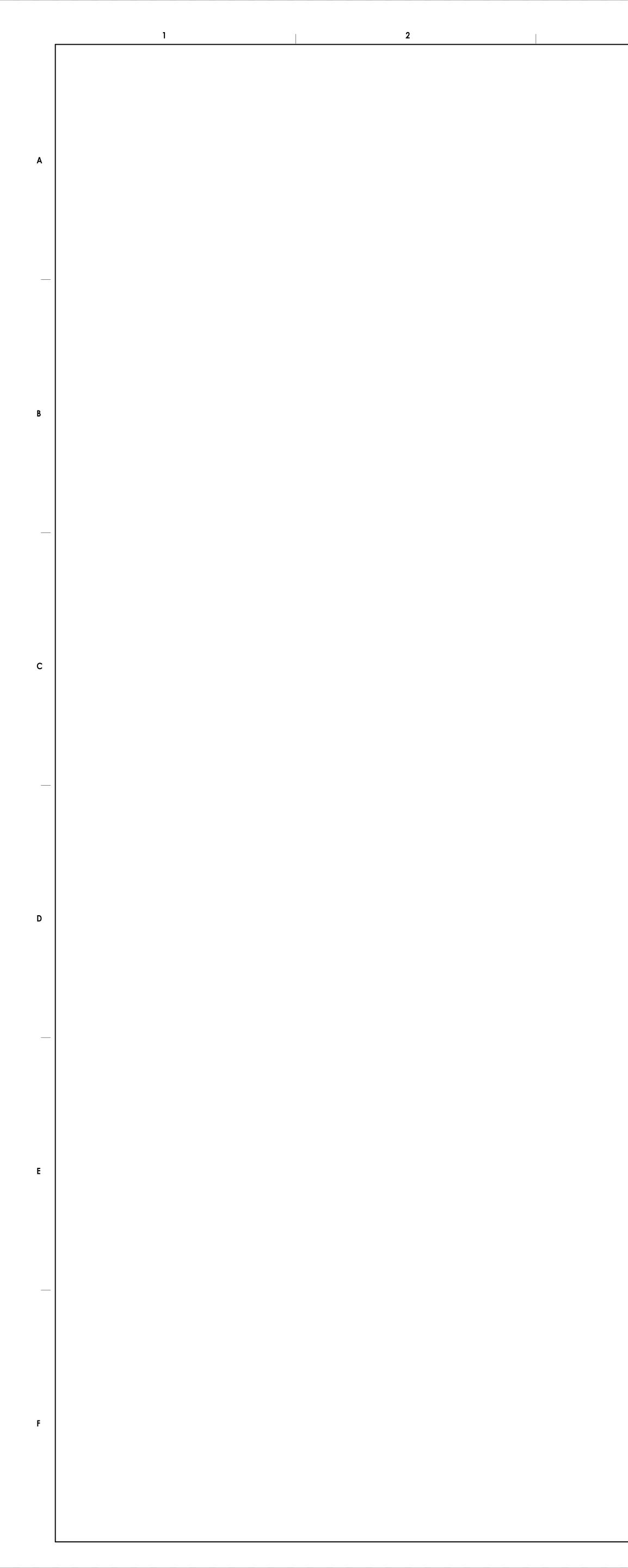
stantec																	
Panel:	EMO	3	Voltage:	24	40V		Enclos	ure:	Ту	pe 1		N	ICB Rat	ing:	60 A	Mains Rating: 100 A	
ocation	: GEN	VERATOR ROOM B017	Phases:	1			Mounti	ng:	Su	rface		Ν	lains Ty	vpe:	MCB	A.I.C. Rating:	
Supply F	rom:		Wires:	3			Front 1	ype:				F	eed-thr	u lugs:			
			Neutral Ra	ating:			Isolate	d Groun	d Bus:			S	ub-feed	l lugs:			
СКТ		<b>Circuit Description</b>	Trip	Poles	СВ		Α		В	(	C	СВ	Poles	Trip		Circuit Description	СКТ
1	EXISTING		20 A	1	-	0	0						1	20 A	SPARE		2
3	SPARE		20 A	1	-			0	0				1	20 A	SPARE		4
5	SPARE		20 A	1	-	0	0						1	20 A	SPARE		6
7	SPARE		20 A	1	-			0	0				1	20 A	SPARE		8
9	SPARE		20 A	1	-	0	0						1	20 A	SPARE		10
11	SPARE		20 A	1	-			0	1300			L	1	20 A	FIRE ALA	ARM CONTROL PANEL	12
13	SPARE		20 A	1	-	0	1200					L	1	20 A	FA NAC I	PNL - OFFICE 221	14
15	SPARE		20 A	1	-			0	200			L	1	20 A	EXISTING	G FA PANEL (TO BE DEMOLISHED)	16
17	SPARE		20 A	1	-	0	100					L	1	20 A	EXISTING	G FA PANEL (TO BE DEMOLISHED)	18
19	SPARE		20 A	1				0	0				1	20 A	SPARE		20
All Conn	ected	KVA	3P /	Ave Am	ips		Phase To	tals		VA		Am	ps				
fotal Co	nnected	2.10		9			A-N		1	300		1	1				
fotal De	mand	2.10		9			B-N		1	500		1	3				
							C-N			0		C	)				
B Lege	nd (blank =	= circuit breaker):				I		I			!						
GP = GF	l Personnel	GE = GFI Equipment S = Shi	unt Trip D = Switc	hing Du	ity A = A	FCIC=	HACR Ra	ted CR =	= Control F	Relay HL	= Handle	e Lock L =	PAD-L(	ОСК			
				-											-		

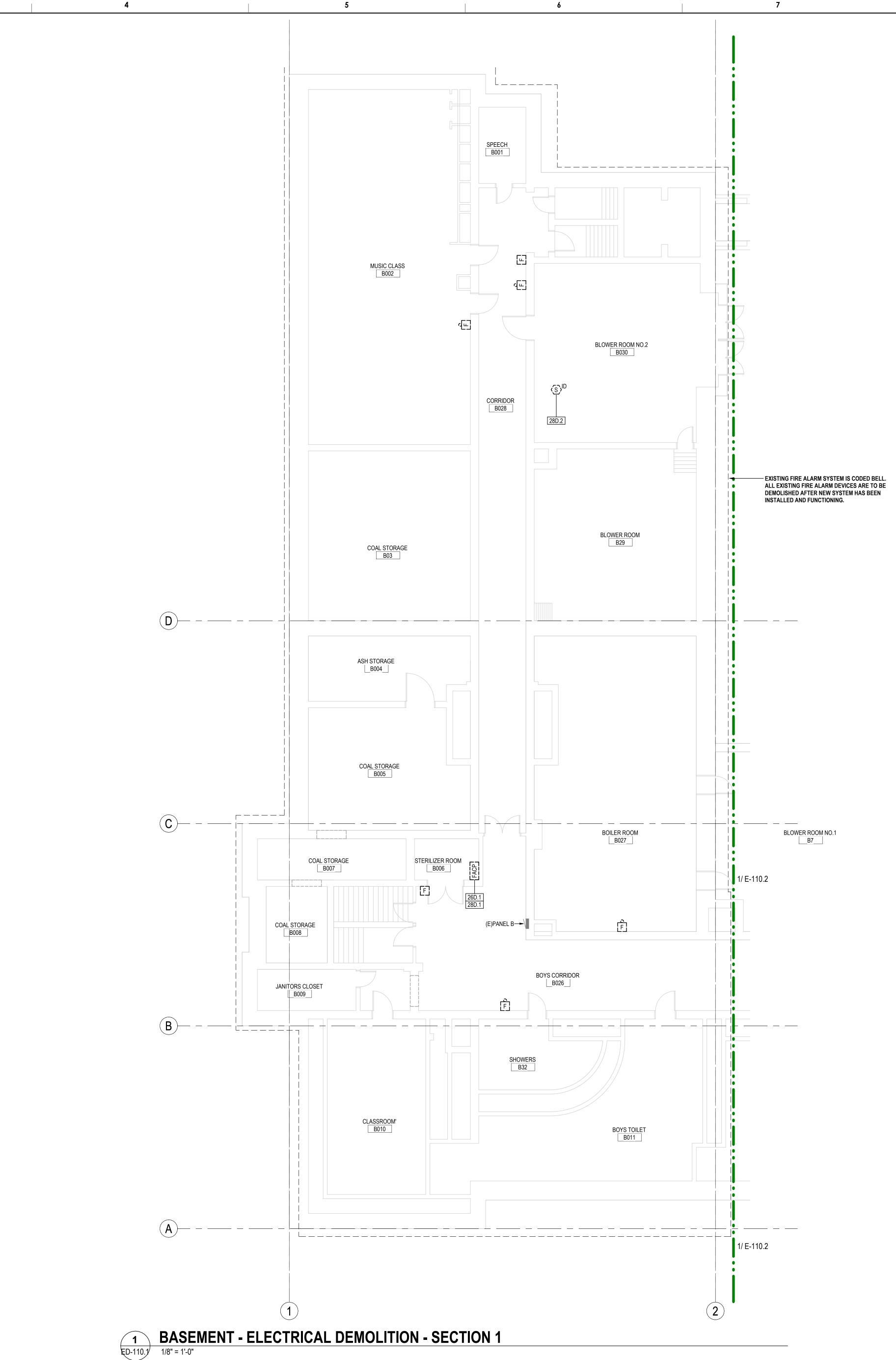
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- B. WIRE SIZE OF BRANCH CIRCUITS SHALL BE MINIMUM #12 AWG, BUT NO LESS THAN PERMITTED BY THE NATIONAL ELECTRIC CODE (NEC) FOR SPECIFIED OVERCURRENT PROTECTION. ANY
- INSTALL NO MORE THAN THE EQUIVALENT OF (4) 90-DEGREE BENDS IN ANY CONDUIT RUN BETWEEN JUNCTION BOX OR PULL POINTS.

- G. GROUNDING IS CRITICAL AND MUST BE IN STRICT ACCORDANCE WITH THESE DRAWINGS AND THE MANUFACTURER'S RECOMMENDATIONS. DO NOT DEVIATE WITHOUT WRITTEN AUTHORIZATION. H. PANELBOARD SCHEDULES: FOR INSTALLATION IN PANELBOARDS. SUBMIT FINAL VERSIONS AFTER LOAD BALANCING.







### REFER TO DRAWING E-001 FOR SYMBOLS, AND ABBREVIATIONS AND E-002 FOR GENERAL NOTES. ALL NOTES ON DRAWING E-002 APPLY TO THIS DRAWING. THE CONTRACTOR SHALL INCLUDE IN BID, ALL COST FOR REMOVAL AND RELOCATION, WHICH INCLUDE ALLOWANCE FOR NORMAL UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN SPECIFIC CASES CONSIDERED JUSTIFIABLE BY OWNER THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE TO FUNCTIONING ELECTRICAL SYSTEMS. POWER SHUTDOWNS OR INTERFERENCE WITH THE ACTIVE AREAS SHALL NOT BE PERMITTED WITHOUT PERMISSION FROM THE OWNER. NOTIFICATION OF OWNER'S ENGINEERING DEPARTMENT IN WRITING IS REQUIRED PRIOR TO APPROVAL OF ANY SHUTDOWNS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR, OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACES TO ITS ORIGINAL CONDITION. THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL FIRE ALARM DEVICES, COMPLETE WITH ASSOCIATED WIRING, CONDUITS, CONTROL PANELS, ETC. FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS MAKES DEAD ELECTRICAL WIRING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL JUCNTION BOXES AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS NECESSARY TO MAKE THE CIRCUITS AFFECTED CONTINUOUS AND READY FOR OPERATION. OTHERWISE, WIRING SHALL BE ENTIRELY REMOVED. EXISTING PANEL DIRECTORIES AFFECTED BY THE ALTERATION WORK SHALL BE MODIFIED TO THE REFLECT THE BRANCH CIRCUIT WIRING CHANGES. ANY FIRE ALARM SYSTEM WIRING CUT OR REROUTED DURING DEMOLITION WORK SHALL BE RECONNECTED TO MAINTAIN SYSTEM OPERATION. ANY SYSTEM SHUTDOWNS MUST BE COORDINATED WITH OWNER'S ENGINEERING DEPARTMENT. FIRE WATCHES TO BE PROVIDED AS REQUIRED AT NO ADDITIONAL COST. THE CONTRACTOR SHALL NOTIFY THE FACILITY ENGINEER OF THE PROJECT DEMOLITION AND PHASING SCHEDULES SO THAT REMOVAL OR RELOCATION OF AFFECTED SERVICES MAY BE OUT IN COORDINATION WITH THE OWNER'S REQUIREMENTS. ALL PRESENT MATERIALS AND EQUIPMENT WHICH ARE TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME PROPERTY OF THE OWNER AND/OR SHALL BE REMOVED BY THE ELECTRICAL CONTRACTOR, AS DIRECTED BY THE OWNER. COORDINATE WITH THE BUILDING MANAGER PRIOR TO DISPOSAL OF THESE EQUIPMENT. 0. ALL EXISTING AND NEW FIRE ALARM DEVICES INSTALLED IN SOUTHWARK MUST BE COMMISSIONED, DECOMMISSIONED, AND PROGRAMMED BY THE ELECTRICAL CONTRACTOR PER NFPA 72. . CONTRACTOR MUST VERIFY WITH SDP THAT ROOM NAMES AND NUMBERS SPECIFIED ON DRAWINGS WILL MATCH THE EXISTING ROOM DESIGNATIONS

**DEMOLITION GENERAL NOTES** 

## **KEY NOTES**

KEY NOTES ARE NUMBERED SEQUENTIALLY FROM 26D.1/27D.1/28D.1 TO THE LAST KEY NOTE. THEY ARE OBJECT SPECIFIC. THE KEY NOTES USED ON A SPECIFIC OBJECT IN OTHER SHEETS WILL MATCH THE KEYNOTE NUMBER SEEN ACROSS THE PROJECT SET.

PRIOR TO ANY DEVICING PROGRAMMING AND LABELING.

26D.1	THE EXISTING FIRE ALARM PANELS SHALL BE PHASED TO BE REMOV
	FROM THE EXISTING CIRCUIT AT THE END OF CONSTRUCTION FOR N
	FIRE ALARM SYSTEM COMISSIONING. WORK TO BE DONE PRIOR TO
	FINAL DECOMISSIONING OF EXISTING FIRE ALARM SYSTEM.
28D.1	EXISTING FIRE ALARM SYSTEM IS CODED BELL. ALL EXISTING FIRE
	ALARM DEVICES ARE TO BE DEMOLISHED AFTER NEW SYSTEM HAS
	BEEN INSTALLED AND FUNCTIONING.
28D.2	EXISTING DUCT DETECTOR DEVICES TO BE REMOVED AND REPLACE
	EXISTING LOCATION IN DUCTWORK.



PHILADELPHIA, PA 19130 - 4015

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SEAL:

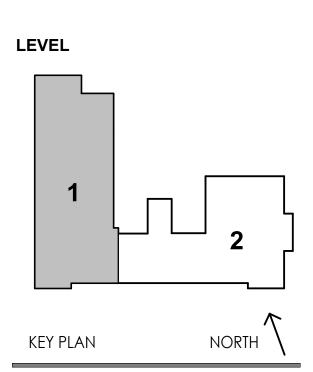
D BE REMOVED CTION FOR NEW PRIOR TO FING FIRE

STEM HAS D REPLACED AT

**ARCHITECTURE** STANTEC 1500 SPRING GARDEN ST SUITE 1100 PHILADELPHIA, PA, 19130 PHONE: 215-751-2943 EMAIL: KRISTIN.SHIFFERT@STANTEC.COM ATTN: KRISTIN SHIFFERT <u>MEP</u>

STANTEC 1500 SPRING GARDEN ST SUITE 1100 PHILADELPHIA, PA, 19130 **ELECTRICAL** EMAIL: MARK.NARDY@STANTEC.COM ATTN: MARK NARDY P: 215-665-7164 FIRE PROTECTION EMAIL: BRIAN.LIM2@STANTEC.COM ATTN: BRIAN LIM P: 215-665-7035

**GENERAL NOTES** 1. ALL DRAWINGS MUST BE MUST BE PRINTED IN COLOR TO ASCERTAIN ALL INFORMATION. BLACK AND WHITE PRINTS / REPRODUCTIONS MAY NOT CLEARLY SHOW ALL INFORMATION.



BID DOCUMENTATION

DATE	REVISION

School District of Philadelphia 1835 S 9th Street, Philadelphia, PA 19148

PROJECT TITLE

Southwark Elementary School

Fire Alarm Renovations DRAWING TITLE

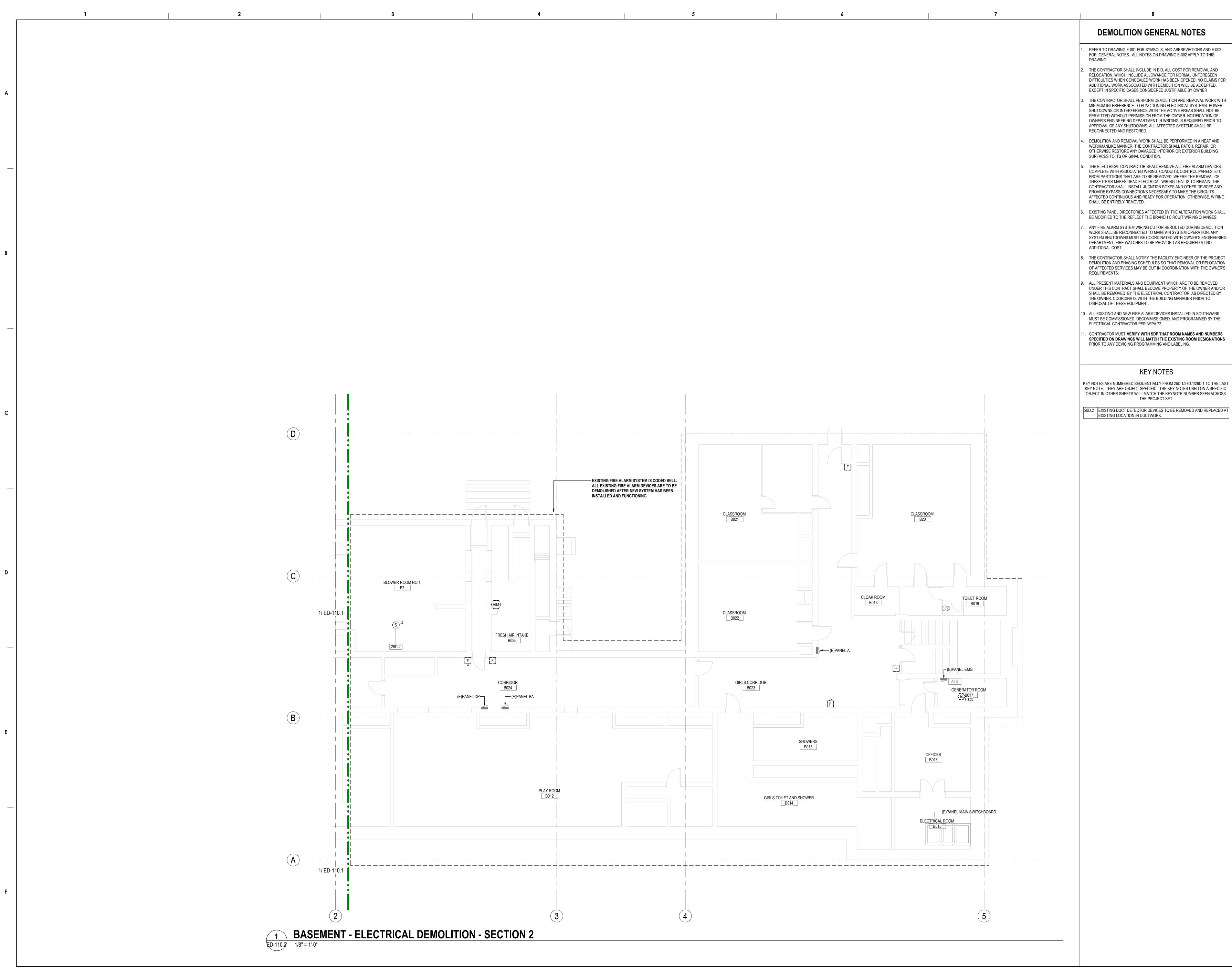
**BASEMENT ELECTRICAL DEMOLITION PLAN - SECTION 1** 

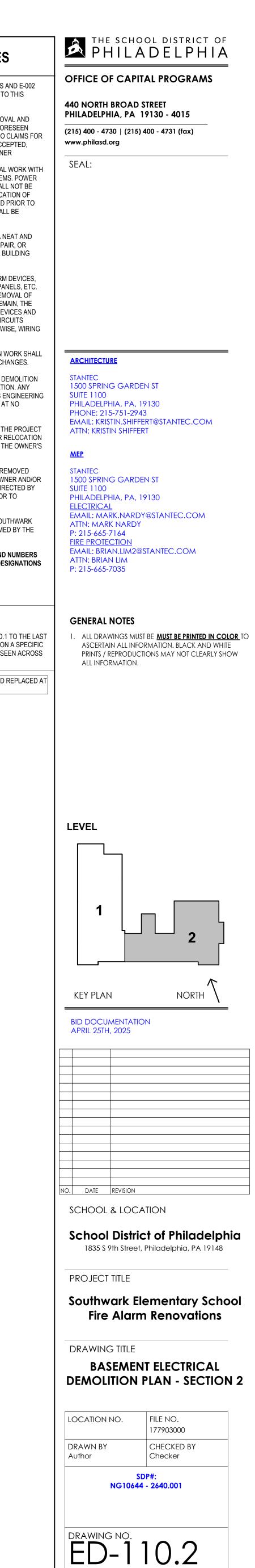
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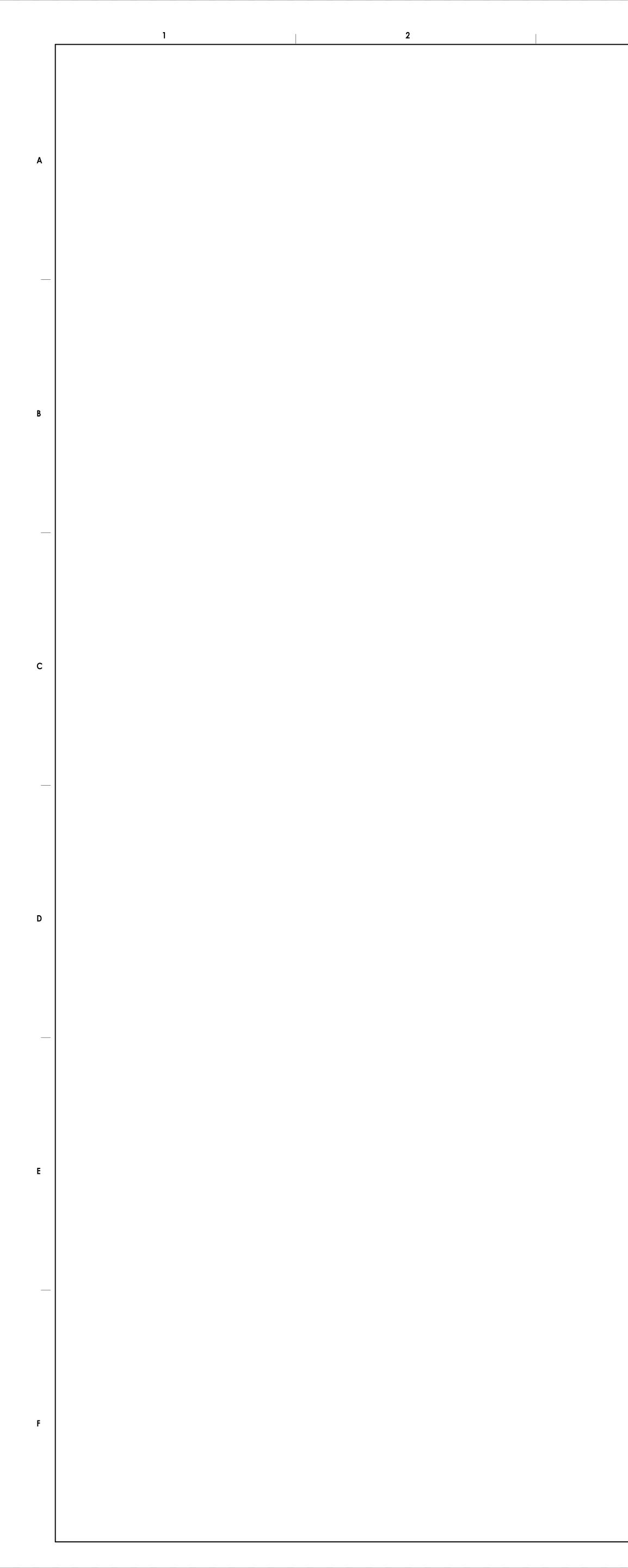
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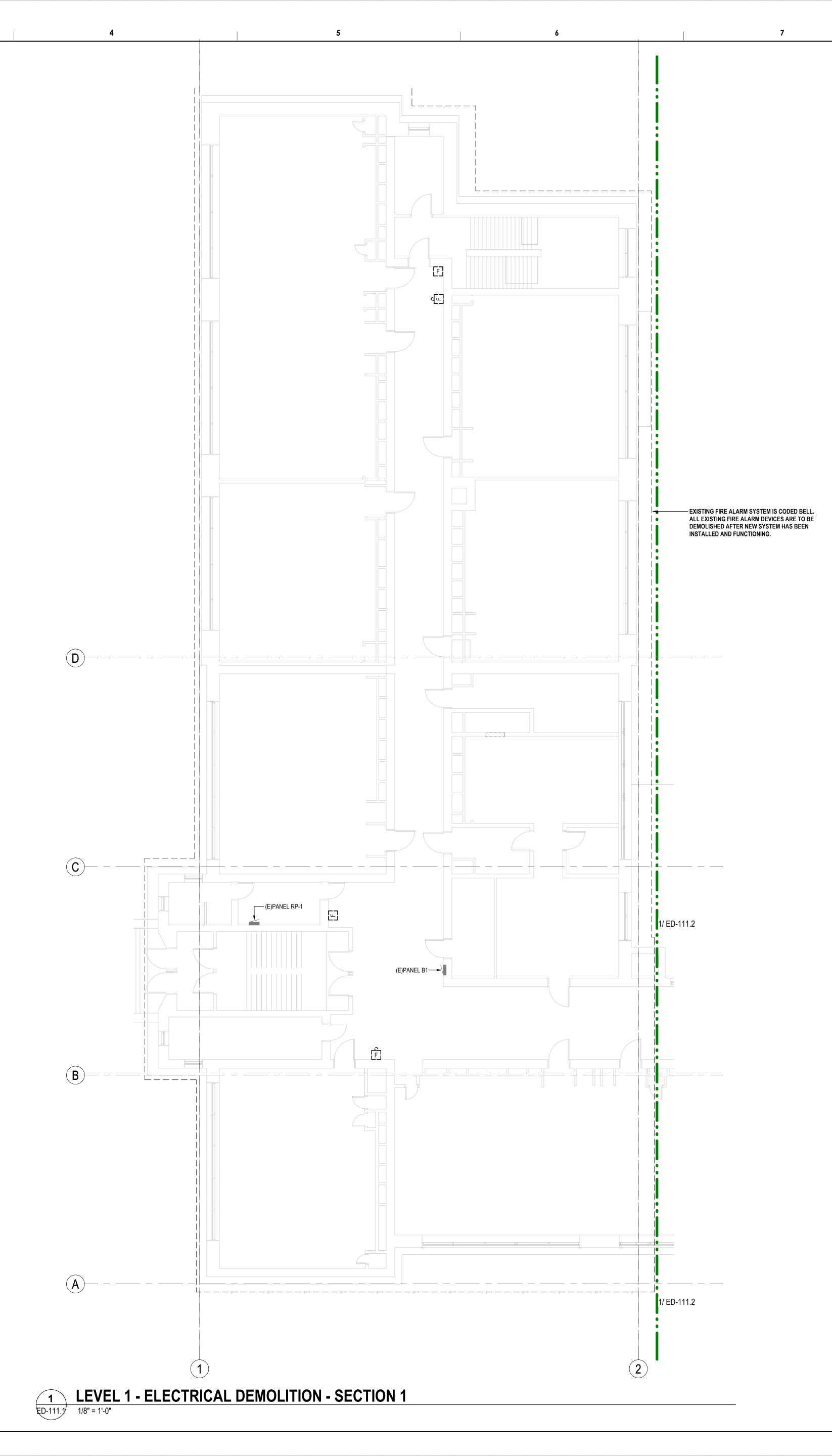
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DRAWING NO. ED-110.1









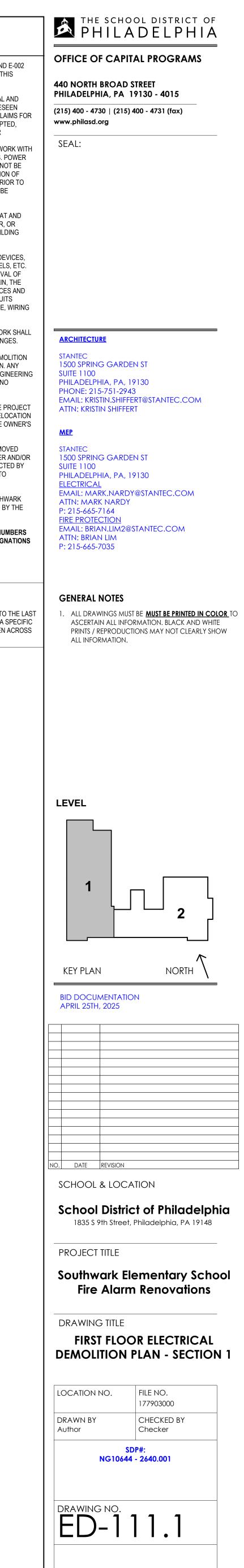
# DEMOLITION GENERAL NOTES

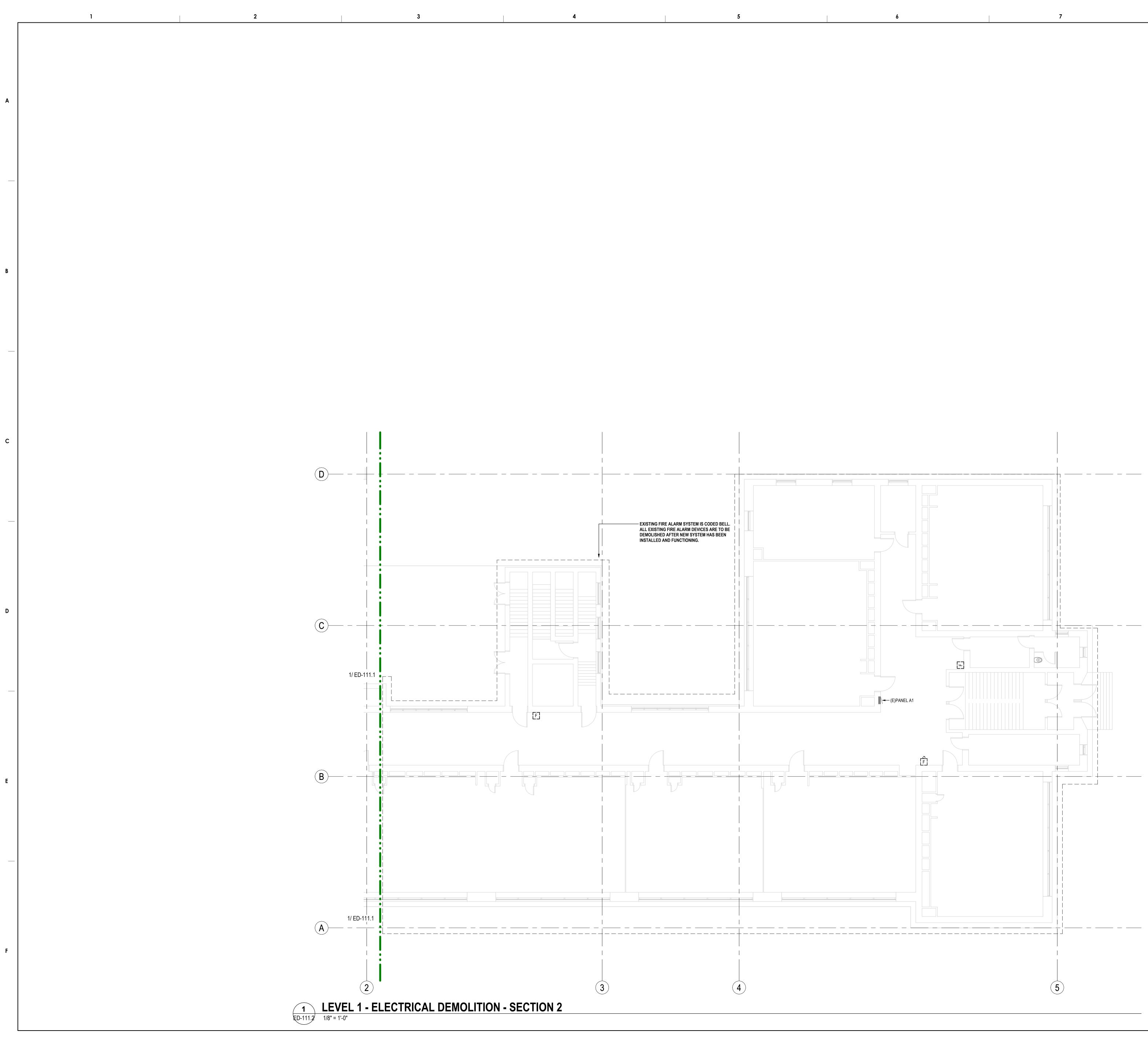
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- 10. ALL EXISTING AND NEW FIRE ALARM DEVICES INSTALLED IN SOUTHWARK MUST BE COMMISSIONED, DECOMMISSIONED, AND PROGRAMMED BY THE ELECTRICAL CONTRACTOR PER NFPA 72.
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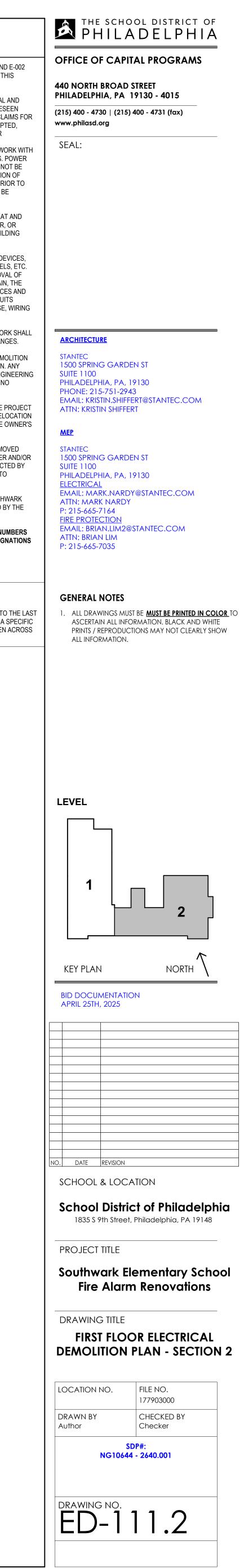
## KEY NOTES

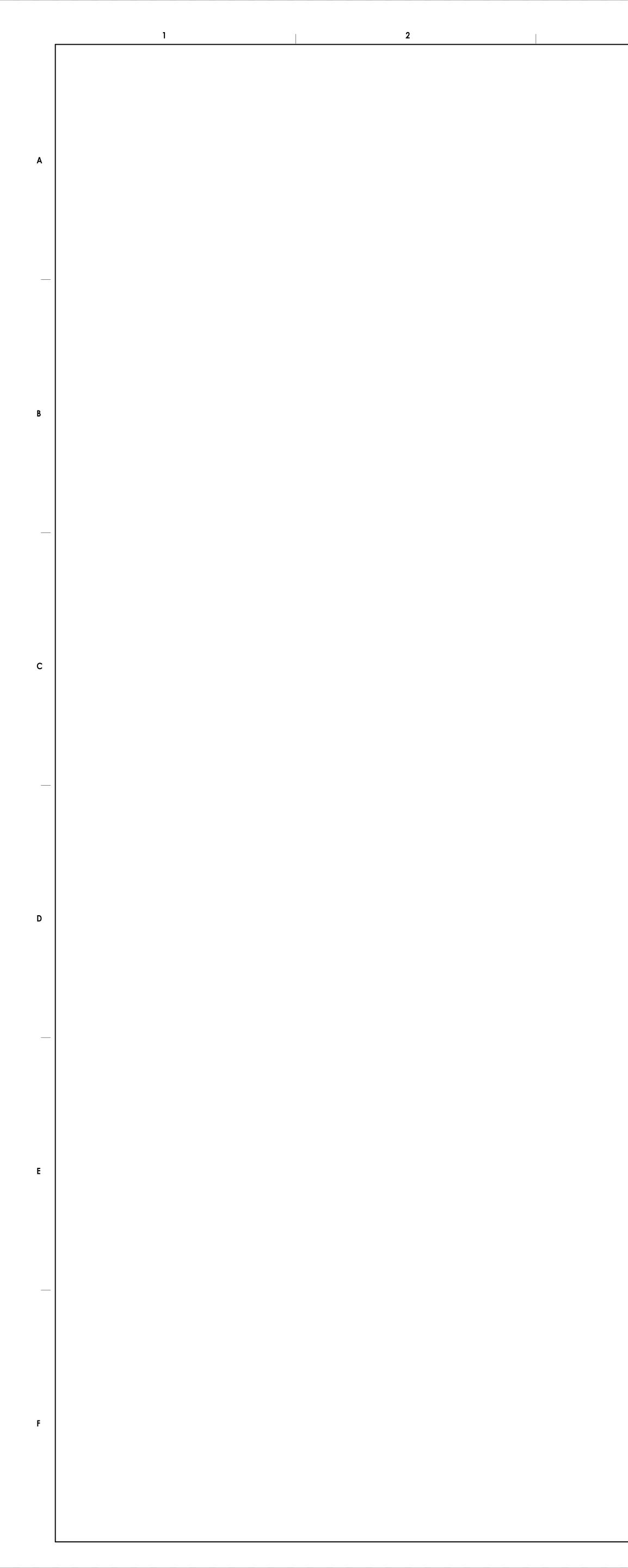
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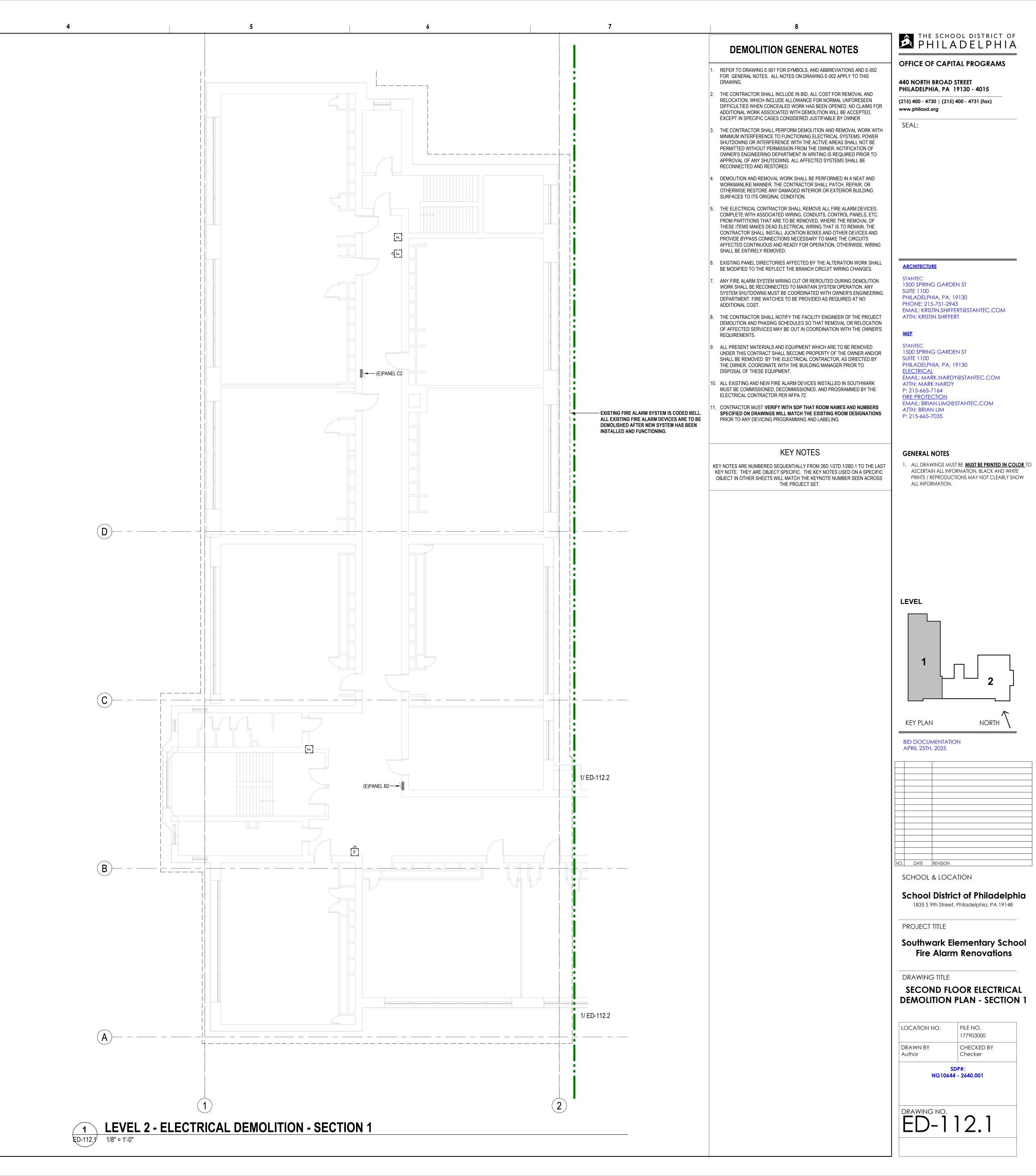


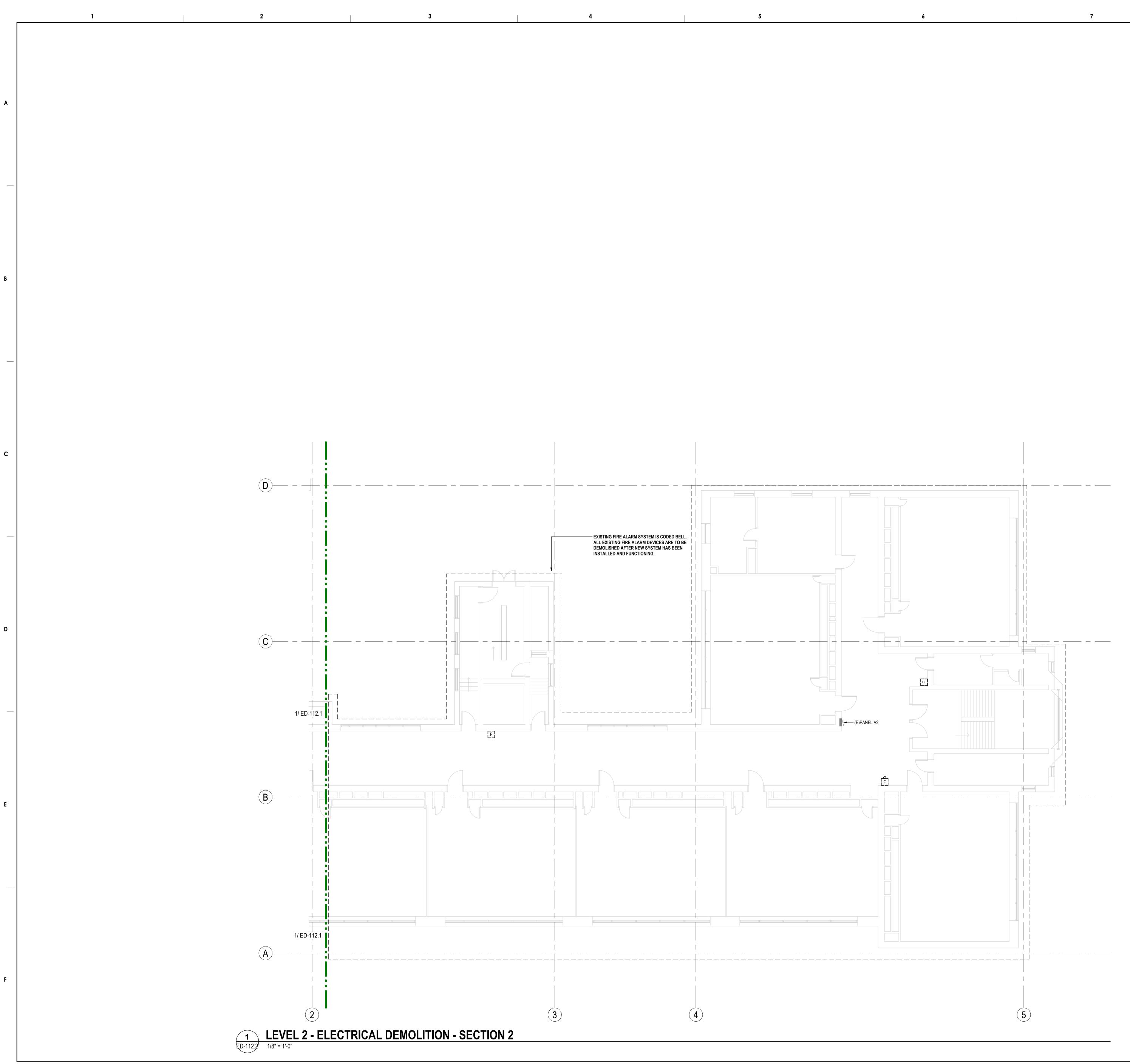


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## **DEMOLITION GENERAL NOTES**

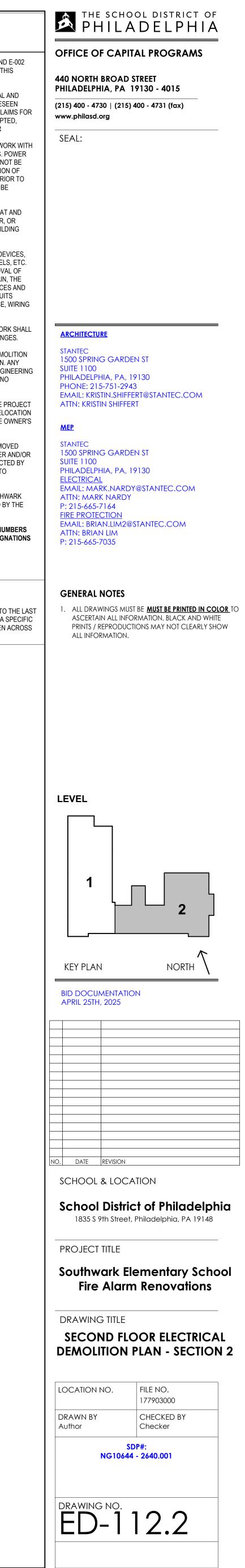
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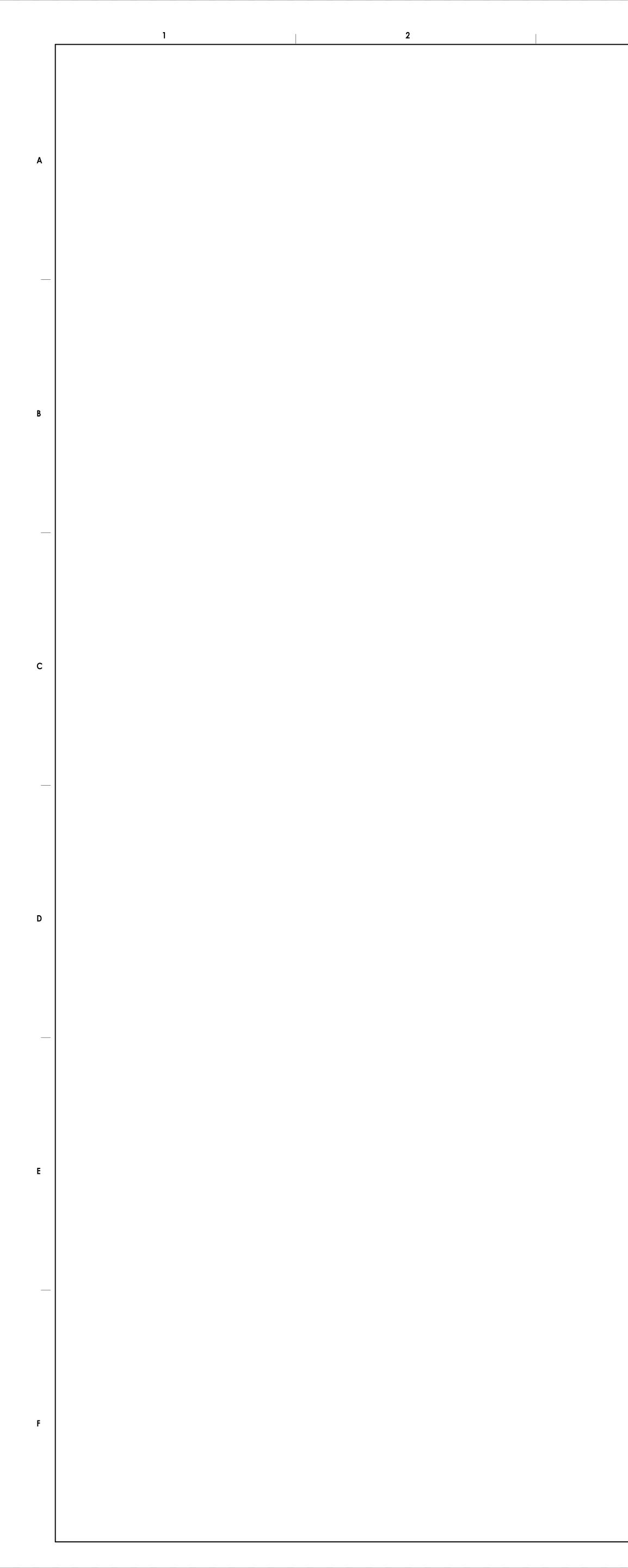
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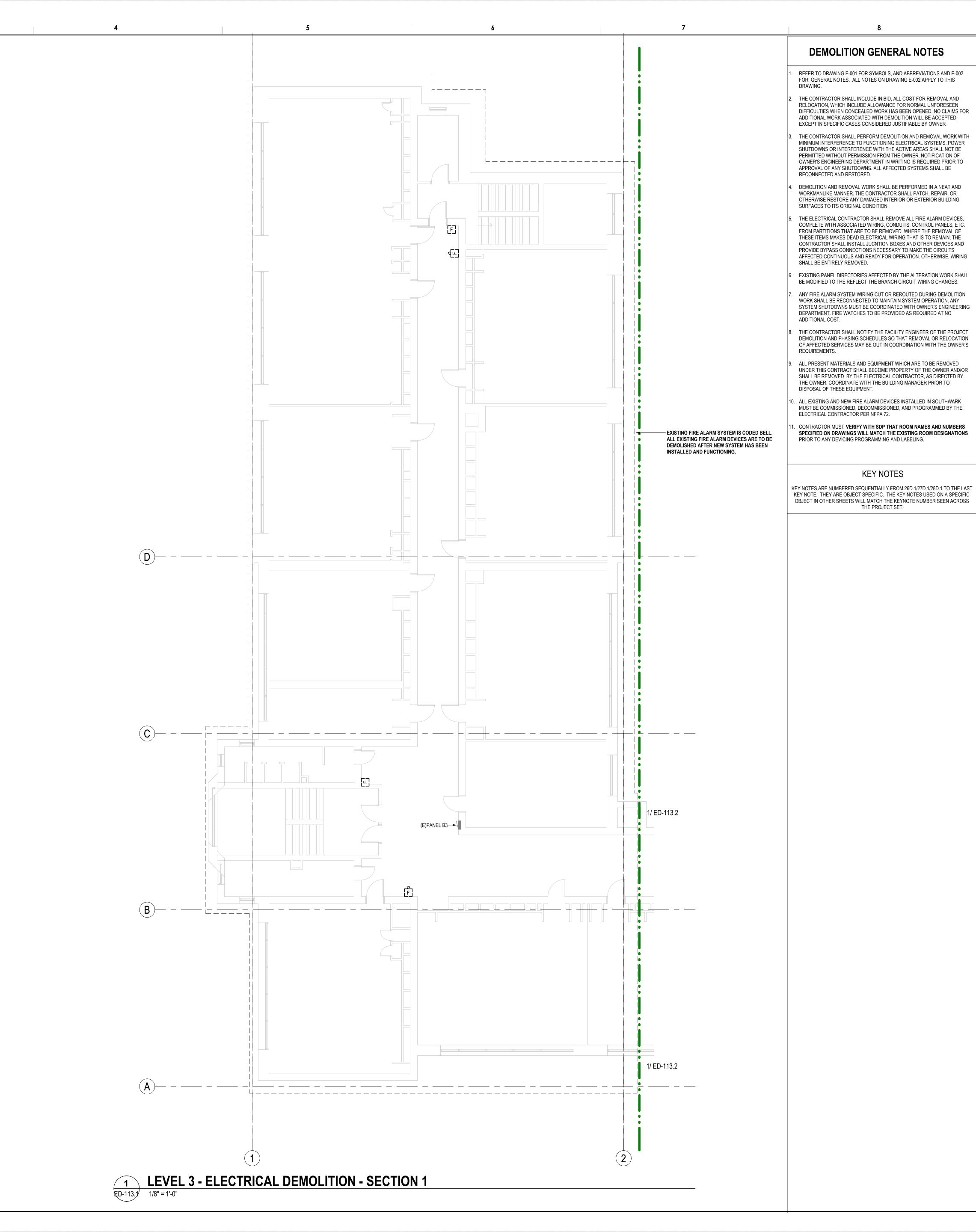
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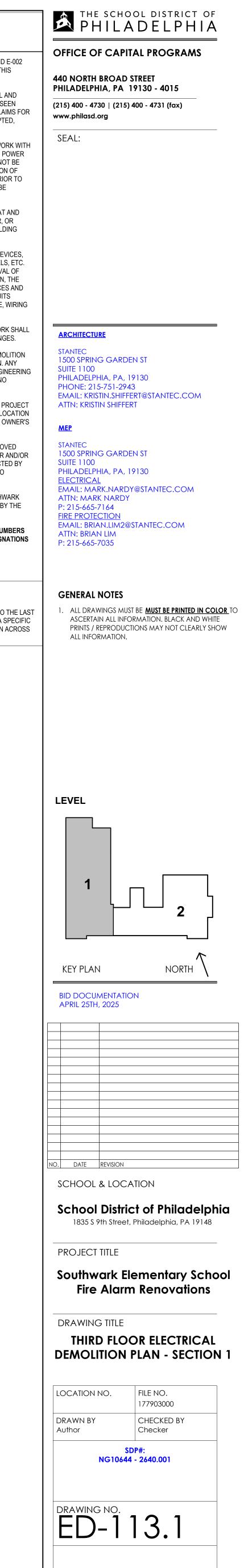
THE PROJECT SET.

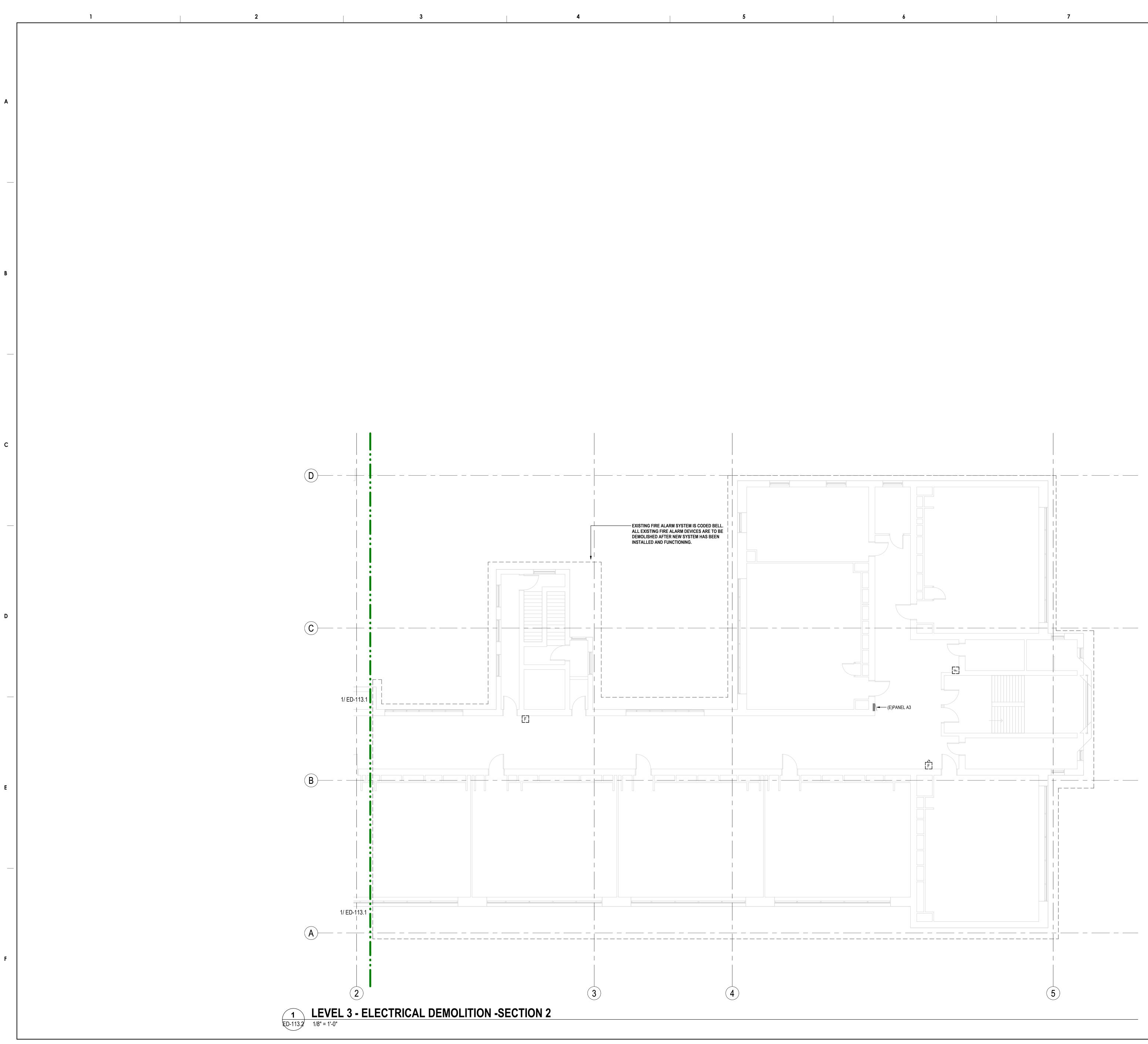
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