



THE SCHOOL DISTRICT OF
PHILADELPHIA

**BOARD OF EDUCATION
Office of Capital Programs
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Addendum No. 002

**Subject: Rhawnhurst Elementary School- Additions and Renovations
SDP Contracts No. B-070, B-071, B-072 and B-073 of 2019/20**

**Location: Rhawnhurst Elementary School
7809 Castor Avenue
Philadelphia, Pennsylvania 19152**

This Addendum, dated March 23, 2021 shall modify and become part of the Contract Documents for the work of this project. Any items not mentioned herein, or affected by, shall be performed strictly in accordance with the original documents.

ATTENTION ALL BIDDERS – IMPORTANT NOTICE

- 1. The Bid DUE DATE has been extended to: Tuesday, April 6, 2021.**
- 2. The following clarifications and additions are being issued for the specifications and plans:**
- 3. Questions and Answers follow clarifications and additions.**

ARCHITECTURAL SPECIFICATIONS

SECTION 033000 – BUILDING CAST-IN-PLACE CONCRETE

1. ADD 2.5.G.1.a as follows:

1. MVRA 900 moisture reduction admixture by ISE Loqik Industries, Inc. shall be an accepted equal to the basis of design.

SECTION 071416 – COLD FLUID-APPLIED WATERPROOFING

2. REVISE 2.2.A.1.c as follows:

2. Meadows, W.R., Inc.; HYDRALASTIC 836 & HYDRALASTIC SL

SECTION 099123 PAINTING

1. REVISE 2.1.B.4

4. Glidden to PPG.

SECTION 101112 -SPECIALTY BUILDING PRODUCTS

1. ADD 2.1.A.1.c. as follows

- c. Kiln shall be 208v, 1 phase to coordinate with power shown on electrical drawings.

MECHANICAL SPECIFICATIONS

SECTION 230900 ATC Systems

1. REPLACE with the attached section.

SECTION 230835 HVAC Equip

2. ADD paragraph 2.11 as follows:

2.1 BIPOLAR IONIZATION AIR PURIFICATION

- A. The air purification system(s) shall be of the size, type, arrangement and capacity indicated and required by the unit furnished and shall be manufactured by Plasma Air International (www.plasma-air.com).

2.2 BI-POLAR IONIZATION DESIGN & PERFORMANCE CRITERIA

- A. Each piece of air handling equipment, so designated on the plans, details, equipment schedules and/or specifications shall contain a plasma ion generator with bipolar ionization output as described here within.
- B. The Bi-polar Ionization system shall be capable of:
 1. Effectively killing microorganisms downstream of the bipolar ionization equipment (mold, bacteria, virus, etc.).
 2. Controlling gas phase contaminants generated from human occupants, building structure, furnishings and outside air contaminants.
 3. Reducing space static charges.
 4. Reducing space particle counts.
 5. When mounted to the air entering side of a cooling coil, keep the cooling coil free

from pathogen and mold growth.

6. All manufacturers shall provide documentation by an independent NELEC accredited laboratory that proves the product has minimum kill rates for the following pathogens given the allotted time and in a space condition:

1. MS2 Bacteriophage (COVID):	99.0% in 10 minutes or less
2. MRSA:	99.5% in 60 minutes or less
3. E. Coli:	99.4% in 30 minutes or less
4. H1N1:	86.6% in 60 minutes or less
5. H1N5:	99.0% in 60 minutes or less
6. Staphylococcus Aureus	91.5% in 60 minutes or less
7. Aspergillus Niger:	97.1% in 60 minutes or less
8. Candida Albicans:	36.0% in 30 minutes or less
9. Pseudomonas Aeruginosa	99.9% in 60 minutes or less
10. Cladosporium	97.7% in 60 minutes or less
11. Dichobotrys Abundans	90.0% in 60 minutes or less
12. Penicillium	95.0% in 60 minutes or less
13. Bacillus Subtilis var Niger	89.3% in 60 minutes or

less Manufacturers not providing the equivalent space kill rates shall not be acceptable.

- C. The bipolar ionization system shall operate in such a manner that equal amounts of positive and negative ions are produced. Single pole ion devices shall not be acceptable.
1. Airflow rates may vary through the full operating range of a VAV system. The quantity of air exchange shall not be increased due to the air purification system requirements.
 2. Velocity Profile: The air purification device shall not have a maximum velocity profile.
- D. Humidity: Plasma Generators shall not require preheat protection when the relative humidity of the entering air exceeds 85%. Relative humidity from 0 - 100%, condensing, shall not cause damage, deterioration or dangerous conditions to the air purification system.
- E. Ionization Equipment Requirements:
1. Electrode Specifications (Bi-polar Ionization):
 - a. Each plasma generator with bipolar ionization output shall include the required number of electrodes and power generators sized to the air handling equipment capacity.
 - b. Electrodes shall be energized when the main unit disconnect is turned on and the fan is operating.
 - c. Ionization output when tested in the occupied space shall be between 800 to 1200 ions/cm³.
 - d. Manufacturer shall demonstrate that no voltage potential exists due to exposed electrical components in the duct system or plenum. Exposed needles protruding into the air stream will not be accepted.
 2. Air Handler mounted units
 - a. Ion generators for air handling units 25 tons and larger shall be Plasma Air's BAR product furnished in a linear or bar mounted configuration so as to minimize the space required for installation. Ionization BAR shall be 3.5" deep

in the direction of airflow.

- b. The mechanical contractor shall mount the plasma ionization BAR and connect it to the remote mount power supply panel using only low voltage wiring. Low voltage wiring shall be defined as 12V. The use of high voltage cabling (600V or higher) shall not be acceptable due to safety concerns.
- c. The remote mount power supply panel shall be capable of directly accepting voltage of 12V DC or 24V AC. The panel shall have an on/off switch, ionizer indicator LED, and a set of dry contacts which will feedback ionizer functionality. Dry contacts that indicate power available only shall not be acceptable.
- d. For systems that do not include a feedback electronic signal indicating ion production, provide a duct mounted ion sensor powered from 12V DC or 24V AC. Ion sensor to be user adjustable from 500 to 20,000 ions per cm³ and contain a dry contact BMS interface. To be clear, for systems that only indicate power available to the ionizer, vendor must provide duct mounted ion sensor described herein.
- e. Needles on air handler mounted units shall be recessed for safety and to avoid fouling of any exposed needles.

3. Certifications

- a. Bipolar ionization units shall be tested and listed by either UL or ETL according to UL Standard 867 – Electrostatic Air Cleaners and/or UL 2998 - Environmental Claim Validation Procedure (ECVP) for Zero Ozone Emissions from Air Cleaners.
- b. The operation of the electrodes or bipolar ionization units shall conform to UL 867/2998 with respect to ozone generation.

F. Electrical Requirements:

- 1. Ion generators shall contain a built-in power supply and operate on 24V AC and shall connect to the fan and common terminals of the air handling unit served. Ion generators requiring a loose 24V, 120V or 230V transformer or power supply shall not be accepted.
- 2. Wiring, conduit and junction boxes shall be furnished and installed by the electrical contractor within housing plenums and shall be UL and NEC NFPA 70 approved.

G. Control Requirements:

- 1. All plasma ion generators shall include internal short circuit protection, overload protection, and automatic fault reset. Manual fuse replacement shall not be accepted.
- 2. All BAR, 7000 and 660 series plasma ion generators shall include an external BMS interface to indicate ion generator status and alarm.

SECTION 230890 Ductwork systems
ADD paragraph 2.11 as follows:

1.1 DUCT SILENCER

A. Manufacturer:

- 1. POTTORFF, OR APPROVED EQUAL BY PRICE OR KINETICS

B. Duct Silencers:

- 1. GENERAL: FURNISH AND INSTALL FACTORY PRE-FABRICATED DUCT SILENCERS OF THE TYPES AND SIZES SHOWN ON THE PLANS AND/OR LISTED IN THE

SCHEDULE. ANY CHANGE OR EXCEPTION TO THIS SPECIFICATION MUST BE SUBMITTED AND APPROVED IN WRITING BY THE ENGINEER AT LEAST 10 DAYS BEFORE THE BID DATE.

2. FIRE PERFORMANCE: COMBUSTION RATING FOR THE ACOUSTIC FILL SHALL NOT BE GREATER THAN THE FOLLOWING WHEN TESTED IN ACCORDANCE WITH ASTM E84, NFPA STANDARD 255, OR UL NO. 723: FLAME SPREAD CLASSIFICATION – 24, SMOKE DEVELOPMENT RATING - 50
- C. Tubular Silencers including Models CFP: Outer casings shall be fabricated from type ASTM A653/653M, G60 galvanized lock former quality perforated steel.
- D. Interior partitions for tubular silencers shall be fabricated from not less than ASTM A653/653M, 22-gauge, die-formed, type G60 galvanized lock former quality perforated steel.
- E. Fill Material:
1. DISSIPATIVE AND FILM LINED SILENCERS: FILL MATERIAL SHALL BE OF INORGANIC GLASS FIBER OF A PROPER DENSITY TO OBTAIN THE SPECIFIED ACOUSTIC PERFORMANCE AND BE PACKED UNDER NOT LESS THAN 5% COMPRESSION TO ELIMINATE VOIDS DUE TO VIBRATION AND SETTLING. MATERIALS SHALL BE INERT, VERMIN AND MOISTURE PROOF.
 2. MEDIA PROTECTION: FILL MATERIAL SHALL BE ENCASED AND SEALED WITH A THIN LAYER OF POLYMERIC FILM MEMBRANE.
- F. Construction:
1. UNITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ASHRAE GUIDE RECOMMENDATIONS FOR HIGH PRESSURE DUCTWORK. SEAMS SHALL BE LOCK FORMED AND MASTIC FILLED. RECTANGULAR CASING SEAMS SHALL BE IN THE CORNERS OF THE SILENCER SHELL TO PROVIDE MAXIMUM UNIT STRENGTH AND RIGIDITY. INTERIOR PARTITIONS SHALL BE FABRICATED FROM SINGLE PIECE, PERFORATED SHEETS AND SHALL HAVE DIE-FORMED ENTRANCE AND EXIT SHAPES SO AS TO PROVIDE THE MAXIMUM AERODYNAMIC EFFICIENCY AND MINIMUM SELF-NOISE CHARACTERISTICS IN THE DUCT SILENCER. BLUNT NOSES OR SQUARED OFF PARTITIONS WILL NOT BE ACCEPTED.
 2. ATTACHMENT OF INTERIOR PARTITIONS TO THE CASING SHALL BE BY MEANS OF AN INTERLOCKING TRACK ASSEMBLY. TRACKS SHALL BE SOLID GALVANIZED STEEL AND SHALL BE PERMANENTLY ATTACHED TO THE ASSEMBLY. TRACKS SHALL BE SOLID GALVANIZED STEEL AND SHALL BE PERMANENTLY ATTACHED TO THE OUTER CASING. ATTACHMENT OF THE INTERIOR PARTITIONS TO THE TRACKS SHALL BE SUCH THAT A MINIMUM OF 4 THICKNESSES OF METAL EXISTS AT THIS LOCATION. THE TRACK ASSEMBLY SHALL STIFFEN THE EXTERIOR CASING, PROVIDE A REINFORCED ATTACHMENT DETAIL FOR THE INTERIOR PARTITIONS, AND SHALL MAINTAIN A UNIFORM AIRSPACE WIDTH ALONG THE LENGTH OF THE SILENCER FOR CONSISTENT AERODYNAMIC AND ACOUSTIC PERFORMANCE.
 3. INTERIOR PARTITIONS SHALL BE ADDITIONALLY SECURED TO THE OUTER CASING WITH PERMANENTLY ATTACHED NOSE CLIPS AT BOTH WENDS OF THE DUCT SILENCER.
 4. THE SILENCE SIDE SHEETS CASINGS SHALL BE UNDERSIZED IN COMPARISON TO THE HEIGHT OF THE INTERIOR PERFORATED ACOUSTIC SPLITTERS TO MAINTAIN A TIGHT SEAM BETWEEN THE SPLITTERS AND THE SILENCER CASING.
 5. ATTACHMENT OF INTERIOR PARTITIONS FOR TUBULAR SILENCERS SHALL BE SECURED WITH GALVANIZED STEEL RADIAL MOUNTING BRACKETS WELDED TO THE PARTITION AND THE OUTER CASING. THE RADIAL BRACKETS SHALL BE INSTALLED AT 90° ANGLES TO EACH OTHER TO ASSURE UNIFORM SPACING FOR CONSISTENT AERODYNAMIC AND ACOUSTIC PERFORMANCE.
 6. ALL INTERIOR PARTITIONS SHALL BE LOCATED TO PROVIDE A MINIMUM 1" PERIMETER CLEARANCE AT BOTH ENDS OF THE SILENCER SHELL SO AS TO

ALLOW FOR THE FIELD INSTALLATION OF "DUCT-MATE" OR SIMILAR FLANGING WHEN REQUIRED.

7. SOUND ATTENUATING UNITS SHALL NOT FAIL STRUCTURALLY WHEN SUBJECTED TO A DIFFERENTIAL AIR PRESSURE OF 8" WATER GAUGE FROM INSIDE TO OUTSIDE THE CASING.
8. AIRTIGHT CONSTRUCTION WHEN REQUIRED SHALL BE PROVIDED BY USE OF A DUCT SEALING COMPOUND ON THE JOBSITE, MATERIAL AND LABOR FURNISHED BY THE CONTRACTOR.
9. DUCT TRANSITIONS: WHEN TRANSITIONS ARE REQUIRED TO ADAPT SILENCER DIMENSIONS TO CONNECTING DUCTWORK, THEY SHALL BE FURNISHED BY THE INSTALLING CONTRACTOR.

G. Source Quality Control:

1. ACOUSTIC PERFORMANCE:

- a. All silencer ratings shall be determined in a duct-to-reverberant room test facility, which provides for airflow in both directions through the test silencer in accordance with ASTM Specification E477.
- b. The test set-up and procedure shall be such that all effects due to end reflection, directivity, flaring transmission, standing waves and test chamber sound absorption are eliminated.
- c. Acoustic ratings shall include Dynamic Insertion Loss (DIL) and Generated Noise (GN) Power Levels both for FORWARD FLOW (air and noise in same direction) and REVERSE FLOW (air and noise in opposite directions) with airflow of at least 1000 fpm entering face velocity.
- d. Delta for acoustic performance shall include Dynamic Insertion Loss (DIL) and Generated Noise (GN) Power levels for octave band center frequencies from 31.5 Hz to 8,000 Hz.

Aerodynamic Performance: Static pressure loss of silencers shall not exceed those listed in the silencer schedule at the airflow indicated. Airflow measurements shall be made in accordance with ASTM Specification E477 and in a NVLAP accredited laboratory. Tests shall be reported on the identical units for which acoustic data is presented. Static pressure loss measurements shall be taken in the same set-up and at the same time as DIL and GN.

SECTION 230533 Heat Trace for HVAC Piping
ADD the attached section.

ELECTRICAL SPECIFICATIONS

SECTION 262420 Panelboard Schedules

1. Panel F: **REVISE** branch circuit #28 description to "RTU-2,3,8 Bipolar Ionization" and add note 13.
2. Panel LCK: **REVISE** branch circuit #69 description to "RTU-4,6 Bipolar Ionization".
3. Panel LC1B: **REVISE** branch circuit #16 description to "RTU-1,5,7 Bipolar Ionization".

CIVIL DRAWINGS

DRAWING C-500 Utility Plan

1. **ADD** Cleanouts for all basin inflow points.
2. **ADD** Approx. Size and Location of Grease Interceptor.
3. **ADD** Jellyfish Filter Outlet Control Structure.
4. **ADD** Callout for 13.5'Lx6'W PWD Standard Meter Pit w/ Access Manhole.
5. **ADD** Callout for Curb Cut w/ Velocity Dissipater (Typ. Of 2)
6. **ADD** Callout for Utility Pole Relocation (By Others)

DRAWING C-600 Erosion and Sediment Control Plan

1. **ADD** Silt Sock surrounding surface basin and in front of curb cuts.
2. **REVISED** Erosion and Sediment Control Notes.

DRAWING C-601 Erosion and Sediment Control Notes and Detail

1. **REVISED** Construction Sequence.

DRAWING C-701 Utility Details 2

1. **REVISED** Water Meter Pit detail to include an additional 9 ½" flanged Coupling adapter.
2. **ADD** 4'x4' Inlet Box with Frame and Cover Detail.

DRAWING C-702 Utility Details 3

1. **REVISED** Catch Basin/Outlet Control Structure Abutment Detail.

DRAWING C-705 SMP-2 Sections

1. **REVISED** Elevation View C2-C2 to include Jellyfish Outlet Control Structure.

ARCHITECTURAL DRAWINGS

DRAWING A-1 – COLOR SCHEME PACKAGE

1. **ADD** this drawing in its entirety.

DRAWING A6.1 – ROOM FINISH SCHEDULE

1. **ADD** remark R59 to B206 Media Center.
2. **DELETE** 'PNT' at C107 gymnasium wainscot finish.
3. **REVISE** B107 base to RB.
4. **ADD** general note 11 as follows: 11.GC SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED DUCTWORK, STRUCTURE & PIPING WHERE ROOMS ARE SCHEDULED TO RECEIVE PSTR.
5. **ADD** remark R53 @ C128 Lobby & C129 Vestibule.

DRAWING I7.10 – OVERALL SECOND FLOOR – FINISH PLAN

1. **ADD** finish line to stain the existing wood bench at B206 Media Center.

MECHANICAL DRAWINGS

DRAWING M0.1 – MECHANICAL SITE PLAN

1. **ADD** heat trace to all above ground chilled water piping.

DRAWING M3.0 – MECHANICAL SCHEDULES

2. **ADD** Bipolar ionization air purification to ALL Roof top air handling units. RTU-1 through 8.

FIRE PROTECTION DRAWINGS

DRAWING FP2.0 – BASEMENT UNIT A & B FIRE PROTECTION

1. **REPLACE.** Replace Drawing FP2.0 as part of Addendum #2.

ELECTRICAL DRAWINGS

DRAWING E3.6 – ROOF POWER

1. **REPLACE.** Replace Drawing E3.6 as part of Addendum #2.

BIDDER QUESTIONS SUBMITTED TO DATE & RESPONSES ARE AS FOLLOWS:

1. **Specification section 011000 Paragraph 4.a.8 calls for the provision of “New pathways for new low voltage cabling” please clarify what other pathway systems, not already listed in this sections, is the EC responsible for? Are the BAS pathway included in the MC or EC SOW?**

Answer: The EC is responsible for pathways for all systems specified in Divisions 26, 27, 28 and as required in Section 260180. The MC is responsible for pathways for BAS system cabling as specified in Section 230100.

2. **Please confirm that all Prime Contractors are responsible for any cutting and patching related to their work.**

Answer: All contractors are responsible for cutting and patching related to their work. Bidders are responsible to review cutting and patching as detailed in the contract documents.

3. **At the site visit, it was mentioned that all testing and inspections, including building envelope testing is to be provided by the SDP/CM. Please confirm.**

Answer: This is incorrect, The School District of Philadelphia is responsible for LEED Enhanced Commissioning of HVAC, plumbing and electrical system as described in the specifications, contractors are responsible to coordinate with SDP's Commissioning Agent (CxA) as described in commissioning specifications issued in Addendum #1, including but not limited to owner testing.

Please be aware that the general contractor does have responsibilities for the building envelope commissioning as described in Specification 070800 – COMMISSIONING OF BUILDING ENCLOSURE issued in Addendum #1.

As described in the Specification 230990 -TESTING, ADJUSTING & BALANCING issued in Addendum #1, HVAC Contractor is to provide balancing. Reference specification for complete responsibilities.

All other testing and inspections required for the progress of the work and to obtain Certificates of Occupancy are the responsibility of the contractors.

Owner shall commission a third party special inspection agency to perform the required special inspections under a separate contract. The lead design consultant of the project (AOR) shall perform the role of "Design Professional in Responsible Charge of Special Inspections" (DPRC-SI). Each role of Owner, DPRC-SI, and Contractor shall be performed according to the roles defined by the City of Philadelphia Department of Licenses and Inspections.

4. Will the SDP/CM provide all commissioning, including LEED commissioning?

Answer: See Answer to Number 3 above.

5. Is the entire project (including renovations to the existing building) seeking LEED Gold certification or just the new addition?

Answer: The entire building is seeking LEED Gold Certification.

6. Please provide the voltage and phase needed for the Kiln. The specified manufacturer will need this information in order to provide pricing and it is not provided in the specifications.

Answer: Voltage as per the electrical drawings is 208v, 1 phase. A clarification is being added to Specification 101112 Specialty Building Products as part of Add#2.

7. Specification section 102238 is provided for Operable Panel Partitions. Where on the project are these partitions located?

Answer: See SGI C209 & SGI C211 on the second floor shown on A1.8. The operable partition divides the two rooms. Please also see 2.2.B.1.a that confirms location SGI C209/C211.

8. The architectural drawings have wall tags shown throughout (M1, S2, etc.), however a wall schedule/legend and associated details for each tag used are not provided.

Answer: Please see Sheet CS.2 General Information, it is the first page after the cover sheet for Volume 1 drawings. Wall Types are provided in the bottom left corner of the page for both masonry and stud wall types.

ATTACHMENTS

This Addendum includes the following attachments:

Mechanical Specifications

SECTION 230533 – Heat Tracing for HVAC Piping

B-070, B-071, B-072 & B-073 of 2019/2020

SECTION 230900 – ATC System

Civil Drawings

Drawing C-500	Utility Plan (Revised for Addendum #2)
Drawing C-600	E&SC Plan (Revised for Addendum #2)
Drawing C-601	E&SC Notes and Details (Revised for Addendum #2)
Drawing C-701	Utility Details 2 (Revised for Addendum #2)
Drawing C-702	Utility Details 3 (Revised for Addendum #2)
Drawing C-701	SMP-2 Sections (Revised for Addendum #2)

Rhawnhurst ADA Ramp Construction Plans for the intersection of Large Street and Chandler Street

Architectural Drawings:

DRAWING A6.1	ROOM FINISH SCHEDULE
DRAWING A-1	COLOR SCHEME SCHEDULE
DRAWING I7.10	OVERALL SECOND FLOOR – FINISH PLAN

Fire Protection Drawings

DRAWING FP2.0	BASEMENT UNIT A & B FIRE PROTECTION
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Electrical Drawings

DRAWING E3.6	ROOF POWER
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END OF ADDENDUM #002