



THE SCHOOL DISTRICT OF  
PHILADELPHIA

BOARD OF EDUCATION  
Office of Capital Programs  
440 North Broad Street, 3<sup>rd</sup> Floor – Suite 371  
Philadelphia, PA 19130

TELEPHONE: (215) 400-4730

**Addendum No. 6**

**Subject: SDP Contracts No. B-11 C, B-112 C, B-113 C and B-114 C of 2017/18  
Major Renovation and Addition**

**Location: Richmond Elementary School**

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**This Addendum, dated December 12, 2019, shall modify and become part of the Contract Documents. Any items not mentioned herein, or affected by, shall remain strictly in accordance with the original document.**

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**NOTICE TO ALL BIDDERS:**

**BID OPENING POSTPONED UNTIL THURSDAY, DECEMBER 19, 2019 AT 2:00 PM**

**NOTICE TO GENERAL CONSTRUCTION CONTRACT BIDDERS:**

**THE ATTACHED BID PROPOSAL FORM (REVISION 2) MUST BE USED TO SUBMIT YOUR BID.**

**1. MODIFICATIONS TO GENERAL AND SUPPLEMENTARY CONDITIONS (DIVISION 00)**

**A. DELETE GENERAL CONDITIONS GC-4.23: CLEANING UP.**

(Superseded by 01 1725 INDOOR AIR QUALITY PROCEDURES and 01 1750 PROJECT CLEANLINESS)

**2. MODIFICATIONS TO DIVISION 01 GENERAL REQUIREMENTS (DIVISION 01)**

**A.ADD THE FOLLOWING TO SECTION 01 1000 SUMMARY OF WORK, 1.6-**

1. **Scope of Work** for this project includes Painting and Plaster Repairs in the EXISTING BUILDING of:
  - (a) ALL ROOMS, including corridors and stairways, on the First, Second and Third Floors;
  - (b) The Gymnasium, including the Gymnasium Office, Locker Rooms and Storage

**Addendum No. 6 (cont'd)**

Rooms;

(c) Classrooms and Boys' and Girls' Toilet Rooms on the intermediate/basement level,

(d) all In accordance with attached Paint and Plaster Specifications.

NOTE: This work is included in the Lump Sum Amount on the Bid Proposal Form

**2. Paint and Plaster Specifications will supersede current related specifications where there is a conflict or duplication, except for paint colors**

3. Paint and Plaster Repairs, per Unit Price No 3 in Basement Rooms 003, 004, 005 and 006 (Approx. 15,000 SF Total) will be performed on unit price basis, per Unit Price No 3 on the Bid Proposal Form

4. Plaster repairs for rooms not included in the above Scope of Work will be done on a unit price basis, per Unit Prices 4 and 5 on the Bid Proposal Form.

**5. Paint and Plaster Repairs must be performed by trained and certified firms and personnel in Compliance with the US EPA Renovation, Repair and Painting Regulations dated April 22, 2018 and the School District of Philadelphia Paint and Plaster Stabilization Project Plan and Procedures (copy attached).**

**6. BIDDERS MUST BE AWARE THAT SCHOOL DISTRICT REQUIREMENTS FOR PAINT AND PLASTER STABILIZATION EXCEED THOSE OF THE EPA.**

**7. BIDDERS ARE ENCOURAGED TO UTILIZE A PRE-APPROVED PAINT AND PLASTER REPAIR CONTRACTOR. See website at Capital Programs/Paint and Plaster Bids for list.**

8. When damage is identified on a wall or ceiling, the damage is to be repaired and the entire surface of that wall or ceiling is to be repaired and painted.

9. Any classrooms that have paint/repair work are to include painting all four (4) walls.

10. Damage repair in all classrooms with windows or window walls are to utilize INSL-X and/or ECOBOND as primer only. Finish coat to be semi-gloss as directed. See attached technical specifications for these products.

11. All rooms receiving popcorn ceiling repair shall have ceilings painted.

12. Contractors are to clean all surfaces in the room and follow the requirements of the US EPA RRP.

13. Swing Space Available: Although there is swing space, one day of School District post cleaning must be allotted. This includes reset-up of classroom.

**SWING SPACE LIMITED TO THREE CLASSROOMS AT A TIME.**

14. On site environmental consultant will document all of the work completed and document the EPA Post-Renovation Cleaning Verification for all work spaces. EPA Post-Renovation Cleaning is to be completed by the Contractor.

15. The Contractor shall provide all the necessary tools and equipment of the trade to complete the required work of this contract including but not limited to: HEPA vacuum(s), airless sprayers, ground fault circuit interrupters (GFCI) panels, ladder(s), 1 tier scaffold, and all associated painting and plaster equipment at no additional cost to the District.

16. The Contractor shall provide all the necessary materials of the trade to complete the required work of this contract including but not limited to: 6 mil poly, duct tape, painters tape, signage, personnel protective equipment and all associated filters, at no

**Addendum No. 6 (cont'd)**

additional charge to the School District.

17. No additional charges will be paid by the School District to the Contractor for the repair or replacement of any tools or equipment, which are broken, vandalized, stolen, or wear out, as a result of work done under this contract

**NOTE: Contractors are responsible for the repair and painting of all visibly damaged areas on the entire wall or ceiling.**

**B. REVISE SECTION 01 1200 SPECIAL INSURANCE REQUIREMENTS AS FOLLOWS:**

The General Construction Contractor (GC) AND the Mechanical Construction Contractor (MC) shall provide Environmental Liability/Contractors Pollution Insurance in the amounts and coverages specified in **GG Article 11-INSURANCE, Section 11.1.1.9**

The Plumbing Construction Contractor (PC) and the Electrical Construction Contractor (EC) shall provide Pollution Liability Insurance in the amounts and coverages specified in **GC Article 11-INSURANCE, Section 11.1.1.7**

**3. CHANGES TO TECHNICAL SPECIFICATIONS (DIVISIONS 02-36):**

**ADD THE FOLLOWING SECTIONS:**

01 1725 INDOOR AIR QUALITY PROCEDURES  
01 1750 PROJECT CLEANLINESS)  
09 0290 PLASTER PATCHING AND REPAIR  
09 9123 PAINTING  
ATTACHMENTS TO THE TECHNICAL SPECIFICATIONS  
PAINT AND PLASTER STABILIZATION PROJECT PLAN AND PROCEDURE  
PROCEDURE FOR MOVING CEILING TILE IN PRE-1978 BUILDINGS

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**4. CLARIFICATIONS:**

1 Drawing A-700 – Provide PT-2 Wall Finish in Rooms 002 and 007.

**5. QUESTIONS AND ANSWERS**

**Question 1:** Wall Section A/A-401 references “Window Schedule”. Please provide. Section 08 1113 refers to Sound-Rated Interior Windows. Where are these windows located?

**Answer:** Provide sound-rated interior glazing at the two borrowed lights between the Collaboration Area B213 and Classroom B207. These borrowed lights are tagged on A-102 as “N1”.

**Question 2:** This project is calling for a 24 strand Hybrid fiber. This fiber is very expensive and has a high minimum footage per order from our suppliers. Is it acceptable to bid two separate strands of fiber in its place? One 24 strand SM & one 24 strand MM.

## Addendum No. 6 (cont'd)

**Answer:** Provide 24-strand multi-mode fiber terminated on LC connectors from the existing MDF to the new IDF in the new addition. Remove single-mode fiber.

**Question 3:** Please confirm Plenum wire is acceptable for Fire Alarm above ceilings.

**Answer:** Plenum rated cabling is permitted in areas with finished ceilings. Please refer to detail 5 on FA-700 and section 3.2 of specification 283100 for more details.

**Question 4:** Confirm EMT conduit acceptable for panel feeders.

**Answer:** EMT with compression steel fittings are acceptable.

**Question 5:** Is EMT conduit acceptable for mechanical room?

**Answer:** Provide conduits with threaded fittings.

**Question 6:** No additional electronic controls seem to be included in the existing classrooms.

However, M-100/101/102/103 all show new thermostats serving these spaces. Are these thermostats for monitoring space conditions on the BAS, or are they part of some stand-alone control for the radiators?

**Answer:** The thermostats are part of the stand-alone control for the radiators. The thermostats should not be tied into the BAS.

**Question 7:** Drawings M200-M-203 indicate what appears to be wall grilles/registers being attached at the classroom air supply/return. There is no schedule for the grilles/registers in the existing building. If registers/grilles are to be installed, please provide a schedule. The Diffuser Register and Grille Schedule shown on M600 appears to be for the new construction only.

**Answer:** Provide wire mesh protective screen over supply air outlet within each existing classroom. Coordinate final look with architect. No return air covering required in existing classrooms.

**Question 8a:** Re: Specification Section: 116143-Stage Curtains (issued in Addendum 2)

Paragraph 2.03. B.1 call for Doral Opaque for the Main Traveler and Valance. Drawings A101 and A201 show a Main and a Rear Traveler. Do you want Doral for both locations?

**Answer:** Yes. Provide Doral Opaque for both locations.

**Question 8b:** Paragraph 2.04. D calls for Manual Walk-Along Operation. Paragraph 2.04. E describes a Rope Drawn model. Please clarify.

**Answer:** Provide a walk-along Rear Traveler and a Rope Drawn model for the Main Traveler.

**Question 8c:** 3.05, A calls for the tracks to be batten mounted. This is overkill for a heavy duty track only 28' wide. Please confirm that you want the batten.

**Answer:** Provide batten mounted track assembly.

**Question 9:** Which contractor does the "F. Clarifications." paragraph on p.13 of Add #2 apply to?

**Answer:** The PC and Fire Protection sub-contractor shall be responsible for all piping work to 5'-0" outside the building. The GC shall provide all related piping, including the spool piece for the domestic water line, from 5'-0" outside the building to the street main connection. The GC shall also provide the meter pits. The Philadelphia Water Department will provide the water meter. See attached Drawings: C-002, C-101, C-102 and C-201

**Addendum No. 6 (cont'd)**

**ATTACHMENTS 1 (REVISED DRAWINGS AND SKETCHES):**

SKE – 001 – Unit Heater  
SKM – 004 – Unit Heater  
C-002- Demolition Plan  
C-101- Site Plan  
C-102 – Grading and Utility Plan  
C-201- Erosion and Sediment Control Plan

**ATTACHMENTS 2 (ADDED SPECIFICATIONS):**

01 1725 INDOOR AIR QUALITY PROCEDURES  
01 1750 PROJECT CLEANLINESS)  
09 0290 PLASTER PATCHING AND REPAIR  
09 9123 PAINTING  
ATTACHMENTS TO THE TECHNICAL SPECIFICATIONS  
PAINT AND PLASTER STABILIZATION PROJECT PLAN AND PROCEDURE  
  
PROCEDURE FOR MOVING CEILING TILE IN PRE-1978 BUILDINGS

**ATTACHMENTS 3 (GC-BID PROPOSAL FORM-REVISION 2):**

**End of Addendum No. 6**

SEAL:

ARCHITECT

USA ARCHITECTS  
100 W Oxford Street  
Philadelphia, PA 19122  
Phone: (215) 924-4597  
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MEP

BRINJAC ENGINEERING  
100 South Independence Mall West  
Suite 500  
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CIVIL

KS ENGINEERS, P.C.  
35 South 3rd Street  
Philadelphia, PA 19104  
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STRUCTURAL

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Phone: (215) 372-3400  
Fax:  
Email: jgleaton@davidmason.com  
Attn: James Gleaton

FOOD SERVICE

CINI - LITTLE INTERNATIONAL INC  
261 Madison Avenue, 6th Floor  
New York, NY 10016  
Phone: (240) 454-7798  
Fax:  
Email: jusso@cinitlle.com  
Attn: Jason Russo

ACOUSTICS

METROPOLITAN ACOUSTICS  
1628 JFK Boulevard  
Philadelphia, PA 19103  
Phone: (215) 248-4352  
Fax:  
Email: f.dogget@metro-acoustics.com  
Attn: Felicia Dogget

ESTIMATING

PROMATECH, INC  
714 Main Street, Unit 2C  
Moorestown, NJ 08057  
Phone: (856) 314-8468  
Fax: (856) 314-8217  
Email: csteehle@promatechinc.com  
Attn: Corrie Steahle

ISSUED FOR BID  
SEPTEMBER 26, 2019

10		
9		
8		
7		
6		
5		
4		
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2		
1	12/11/2017	
NO.	DATE	REVISION
		ADDENDUM #6

SCHOOL & LOCATION

RICHMOND ELEMENTARY SCHOOL  
2944 BELGRADE STREET  
PHILADELPHIA, PA 19134

PROJECT TITLE

MAJOR RENOVATION AND ADDITION

DRAWING TITLE

DEMOLITION PLAN

DRAWING SCALE	
LOCATION NO.	FILE NO.
XXXX	
DRAWN BY	CHECKED BY
RDC	SGM
GC B-111 C	OF 2017 / 18
MC B-112 C	OF 2017 / 18
PC B-113 C	OF 2017 / 18
EC B-114 C	OF 2017 / 18

DRAWING NO.

C-002

SHEET X OF XXX

LEGEND

---	PROPERTY LINES
---	GAS LINE
---	POTABLE WATER
---	STORM SEWER
---	SANITARY SEWER
---	ELECTRIC CONDUIT
---	ELECTRIC OVERHEAD LINE
---	FENCE
---	CURB
○	UNKNOWN MANHOLE
○	TELEPHONE MANHOLE
○	SEWER MANHOLE
○	WATER MANHOLE
○	WATER VALVE
○	GAS VALVE
○	UNKNOWN VALVE
○	FIRE HYDRANT
○	UTILITY POLE/STREET LIGHT
○	INLET
○	TREE
○	TREE PROTECTION - PLANKING
○	TREE PROTECTION - FENCING

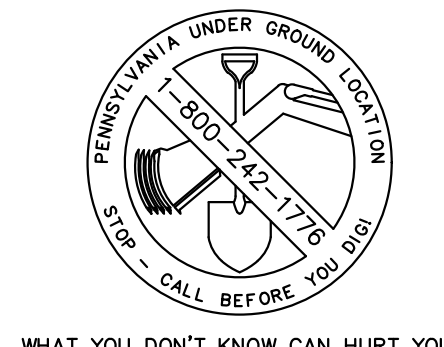
ACT 187

IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PENNSYLVANIA ACT 187 AND TO CONTACT THE "ONE CALL SYSTEM" THREE (3) WORKING DAYS (UNLESS OTHERWISE NOTED) PRIOR TO START OF CONSTRUCTION.

PENNSYLVANIA ONE CALL: 1-800-242-1776

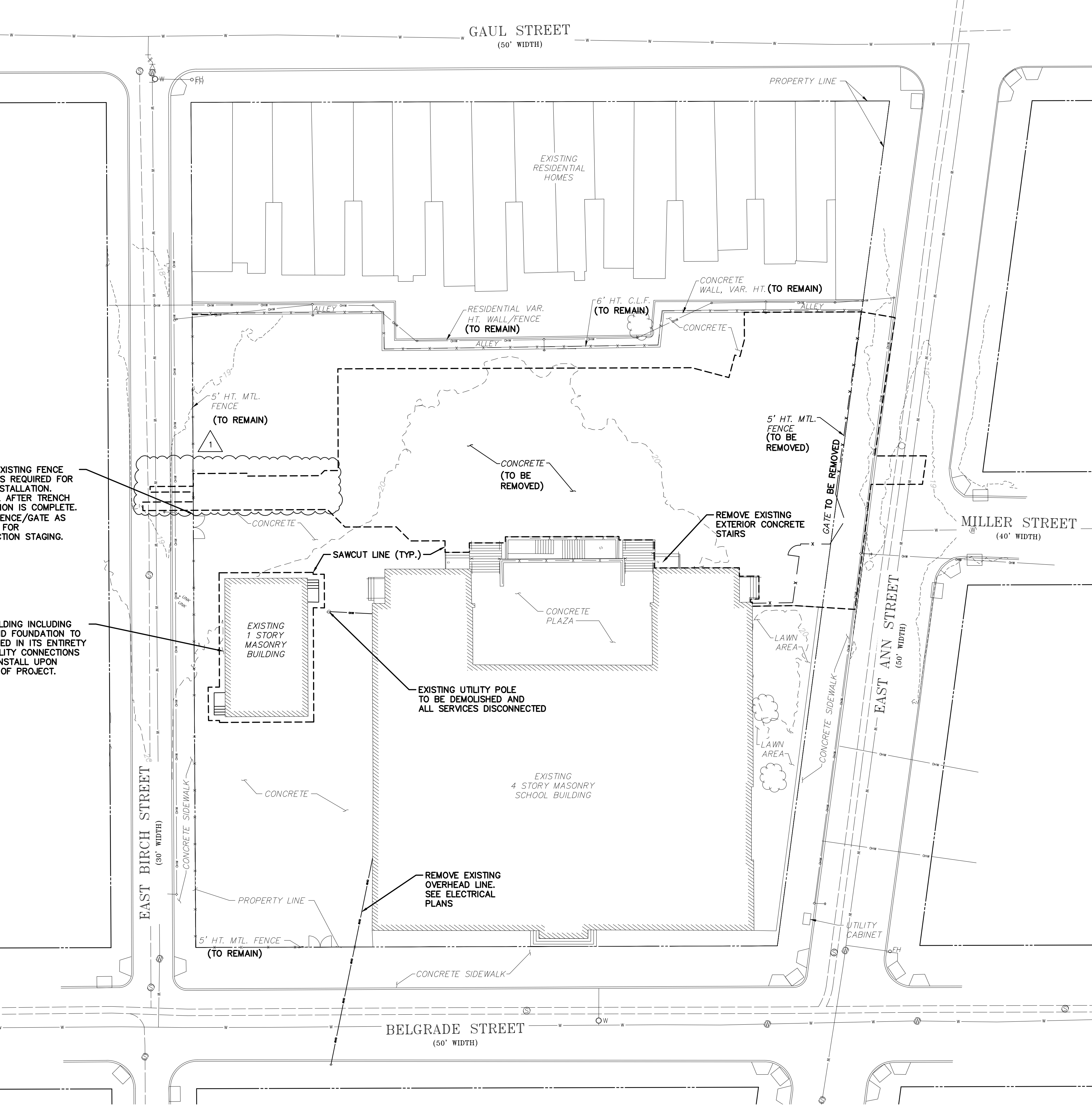
PHILADELPHIA WATER DEPARTMENT 1101 MARKET STREET, 2nd FLOOR PHILADELPHIA, PENNSYLVANIA (215) 685-6270	VERIZON 900 RACE STREET PHILADELPHIA, PENNSYLVANIA 19107 (215) 351-8947
PHILADELPHIA GAS WORKS 800 W. MONTGOMERY AVENUE, 3RD FLOOR PHILADELPHIA, PENNSYLVANIA 19122 (215) 684-6706	COMCAST 1351 S. COLUMBUS BOULEVARD PHILADELPHIA, PENNSYLVANIA 19147 (215) 952-4935
PECO-CONSTRUCTION DEPARTMENT 2301 MARKET STREET PHILADELPHIA, PENNSYLVANIA 19103 (215) 731-3264	

PROTECT YOURSELF



WHAT YOU DON'T KNOW CAN HURT YOU.

CALL BEFORE YOU DIG!  
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE & 10 WORKING DAYS IN DESIGN STAGE  
Pennsylvania One Call System, Inc.  
1-800-242-1776



1 SITE PLAN - DEMOLITION  
SCALE: 1" = 20'  
0 10' 20' 30'

NOTES:

- PROPERTY ADDRESS: 2944 BELGRADE STREET PHILADELPHIA, PA 19134 OPA/BRT #: 786032600
- OWNER/APPLICANT: SCHOOL DISTRICT OF PHILADELPHIA 440 NORTH BROAD STREET PHILADELPHIA, PA 19130
- DATUM: HORIZONTAL = PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83, ESTABLISHED BY GLOBAL POSITIONING SYSTEM METHODOLOGY. VERTICAL = NAVD 88 ESTABLISHED BY GLOBAL SYSTEM POSITIONING METHODOLOGY.
- ALL UNDERGROUND UTILITIES ARE BASED ON INFORMATION OBTAINED FROM PA ONE CALL, UTILITY RECORDS AND FIELD LOCATED STRUCTURES THAT WERE VISIBLE. THE ACCURACY REGARDING LOCATION AND OR DEPTH CANNOT BE GUARANTEED. PRIOR TO ANY DIGGING, DRILLING, TRENCHING OR OTHER EARTHMOVING ACTIVITIES, THE CONTRACTOR SHALL VERIFY DIMENSIONS AND EXISTING CONDITIONS AT THE SITE. FOR INFORMATION REGARDING UTILITIES, CONSULT PENNSYLVANIA ONE CALL 1-800-242-1776. ALL UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE.
- RIGHT-OF-WAY LINES SHOWN HERON ESTABLISHED PER PROVIDED CITY PLAN INFORMATION. EXISTING SITE CONDITIONS INCLUDING BUILDING AND LOT PROPERTY LINES WERE OBTAINED FROM GIS DATA. EXISTING ELEVATION DATA IS REFERENCED PER CITY DATUM.
- EXISTING FEATURES OF THE SITE WERE FIELD LOCATED BY KS ENGINEERS AND SHOWN ON A PROPERTY SURVEY PREPARED BY KS ENGINEERS DATED AUGUST 2018.
- SUBJECT TO ALL RESTRICTIONS, EASEMENTS AND/OR COVENANTS OF RECORD EITHER WRITTEN OR IMPLIED THAT MAY NOT APPEAR ON THIS SURVEY.
- THE SITE LIES OUTSIDE THE MAPPED LIMITS OF ANY FLOOD ZONE AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAPS No. 4207570191G, 4207570192G, 4207570193G, AND 4207570194G DATED JANUARY 17, 2007 FOR THE CITY OF PHILADELPHIA.
- ALL DIMENSIONS SHOWN ARE IN U.S. SURVEY FEET.
- THERE ARE NO WATER COURSES OR BODIES OF WATER LOCATED WITHIN ONE HUNDRED FEET OF THE PROPERTY.
- PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD ZONE AND THERE ARE NO WETLANDS ON SITE.

ZONING DATA TABLE

RSA-5, RESIDENTIAL SINGLE FAMILY ATTACHED - 5

ZONING CRITERIA	REQUIRED	EXISTING	PROPOSED
MIN. LOT WIDTH (FT.)	16	247	247
MIN. LOT AREA (SQ. FT.)	1,440	67,780	67780
MIN. OPEN AREA (%)	Intermediate: 25%; Corner: 20%	76%	64%
MIN. FRONT SETBACK (FT.)	-	-	-
MIN. SIDE YARD WIDTH NON-RESIDENTIAL DETACHED, INTERMEDIATE LOT (FT.)	2/8 Each	N/A	N/A
MIN. SIDE YARD WIDTH NON-RESIDENTIAL DETACHED, CORNER LOT (FT.)	8	N/A	N/A
MIN. SIDE YARD DEPTH (FT.)	9	66	7.5
MAX. BUILDING HEIGHT (FT.)	38		
PARKING SPACES		0	0
BICYCLE PARKING		0	0

ISSUED FOR BID 09-26-2019

SEAL:

ARCHITECT

USA ARCHITECTS  
100 W Oxford Street  
Philadelphia, PA 19122  
Phone: (215) 924-4597  
Fax: (610) 559-2174  
Email: mayer@usaarchitects.com  
Attn: Robert Hayes, Project Manager

MEP

BRINJAC ENGINEERING  
100 South Independence Mall West  
Suite 500  
Philadelphia, PA 19104  
Phone: (215) 592-9611  
Fax:  
Email: jmcusker@brinjac.com  
Attn: Jim McCusker

CIVIL

KS ENGINEERS, P.C.  
35 South 3rd Street  
Philadelphia, PA 19104  
Phone: (215) 925-0425  
Fax:  
Email: smarzoff@kseng.com  
Attn: Sean Marzoff

STRUCTURAL

DAVID MASON ASSOCIATES  
705 General Washington Ave.  
Suite 401  
Northtown, PA 19403  
Phone: (215) 372-3400  
Fax:  
Email: jgleaton@davidmason.com  
Attn: James Gleaton

FOOD SERVICE

CINI - LITTLE INTERNATIONAL INC  
261 Madison Avenue, 6th Floor  
New York, NY 10016  
Phone: (249) 454-7798  
Fax:  
Email: jusso@cini11ie.com  
Attn: Jason Russo

ACOUSTICS

METROPOLITAN ACOUSTICS  
1628 JFK Boulevard  
Philadelphia, PA 19103  
Phone: (215) 248-4352  
Fax:  
Email: f.dogget@metro-acoustics.com  
Attn: Felicia Dogget

ESTIMATING

PROMATECH, INC  
714 Main Street, Unit 2C  
Moorestown, NJ 08057  
Phone: (856) 314-8468  
Fax: (856) 314-8217  
Email: cstreeble@promatechinc.com  
Attn: Corrie Streeble

ISSUED FOR BID  
SEPTEMBER 26, 2019

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1	12/11/2017
NO.	DATE
NO.	REVISION

SCHOOL & LOCATION

**RICHMOND ELEMENTARY SCHOOL**  
2944 BELGRADE STREET  
PHILADELPHIA, PA 19134

PROJECT TITLE

**MAJOR RENOVATION AND ADDITION**

DRAWING TITLE

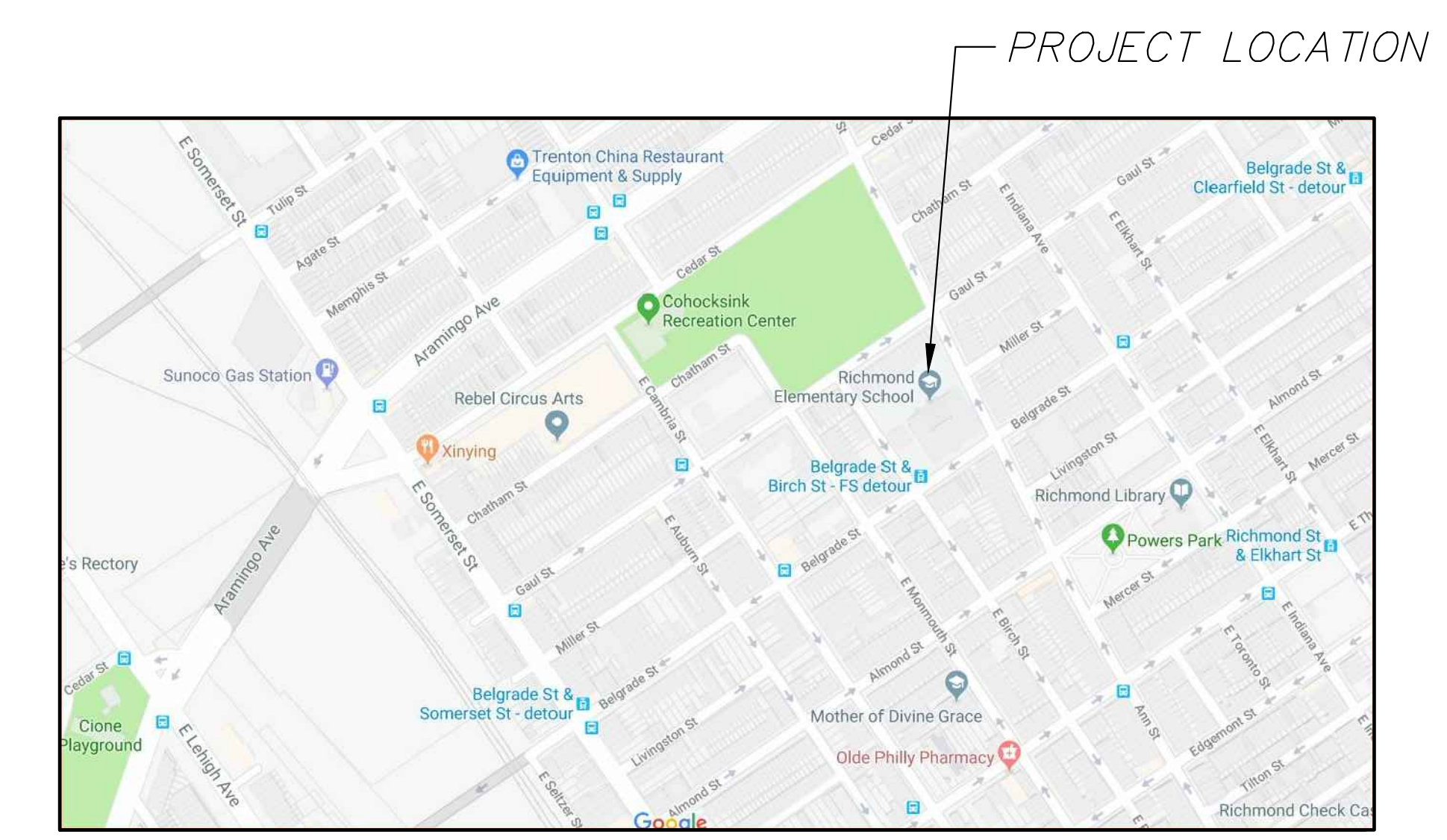
**SITE PLAN**

DRAWING SCALE	
LOCATION NO.	FILE NO.
XXXX	
DRAWN BY	CHECKED BY
SG	SGM
GC 8-111 C	OF 2017 / 18
MC 8-112 C	OF 2017 / 18
PC 8-113 C	OF 2017 / 18
EC 8-114 C	OF 2017 / 18

DRAWING NO.

**C-101**

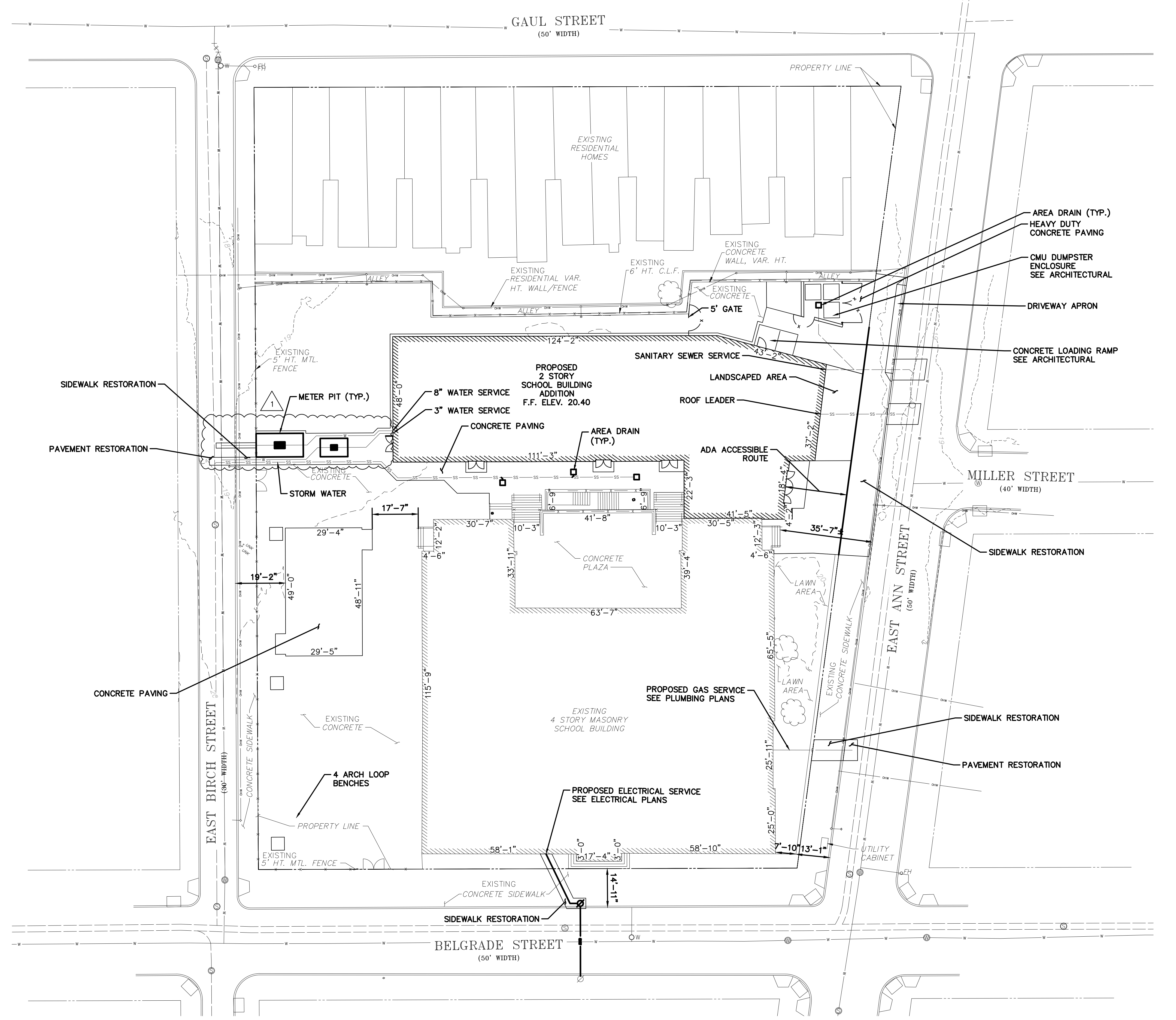
SHEET X OF XXX



VICINITY MAP  
NOT TO SCALE

LEGEND

---	PROPERTY LINES
---	GAS LINE
---	POTABLE WATER
---	STORM SEWER
---	SANITARY SEWER
---	ELECTRIC CONDUIT
---	ELECTRIC OVERHEAD LINE
---	FENCE
---	CURB
⊕	UNKNOWN MANHOLE
⊗	TELEPHONE MANHOLE
⊙	SEWER MANHOLE
⊖	WATER MANHOLE
⊘	WATER VALVE
⊙	GAS VALVE
⊙	UNKNOWN VALVE
⊙	FIRE HYDRANT
⊙	UTILITY POLE/STREET LIGHT
⊙	INLET
⊙	TREE
⊙	TREE PROTECTION - PLANKING
⊙	TREE PROTECTION - FENCING
---	LIMIT OF DISTURBANCE



1 SITE PLAN  
SCALE: 1" = 20'

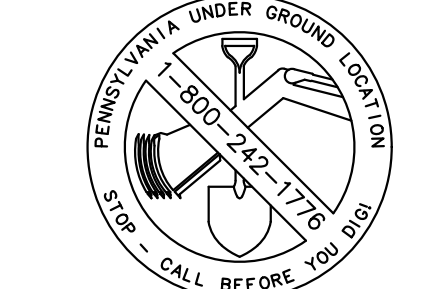
NOTES:

- PROPERTY ADDRESS  
2944 BELGRADE STREET  
PHILADELPHIA, PA 19134  
OPA/BRT #: 786032600
- OWNER/APPLICANT:  
SCHOOL DISTRICT OF PHILADELPHIA  
440 NORTH BROAD STREET  
PHILADELPHIA, PA 19130
- DATUM:  
HORIZONTAL = PENNSYLVANIA STATE PLANE COORDINATE SYSTEM,  
SOUTH ZONE, NAD 83, ESTABLISHED BY GLOBAL POSITIONING SYSTEM  
METHODODOLOGY. VERTICAL = NAVD 88 ESTABLISHED BY GLOBAL SYSTEM  
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CONTRACTOR SHALL VERIFY DIMENSIONS AND EXISTING CONDITIONS AT  
THE SITE. FOR INFORMATION REGARDING UTILITIES, CONSULT  
PENNSYLVANIA ONE CALL 1-800-242-1776. ALL UNDERGROUND  
UTILITIES AS SHOWN ARE APPROXIMATE.
- RIGHT-OF-WAY LINES SHOWN HERON ESTABLISHED PER PROVIDED  
CITY PLAN INFORMATION. EXISTING SITE CONDITIONS INCLUDING  
BUILDING AND LOT PROPERTY LINES WERE OBTAINED FROM GIS DATA.  
EXISTING ELEVATION DATA IS REFERENCED PER CITY DATUM.
- EXISTING FEATURES OF THE SITE WERE FIELD LOCATED BY KS  
ENGINEERS AND SHOWN ON A PROPERTY SURVEY PREPARED BY KS  
ENGINEERS DATED AUGUST 2016.
- SUBJECT TO ALL RESTRICTIONS, EASEMENTS AND/OR COVENANTS OF  
RECORD EITHER WRITTEN OR IMPLIED THAT MAY NOT APPEAR ON THIS  
SURVEY.
- THE SITE LIES OUTSIDE THE MAPPED LIMITS OF ANY FLOOD ZONE AS  
SHOWN ON THE FEMA FLOOD INSURANCE RATE MAPS No.  
4207570191C, 4207570192G, 4207570193G, AND 4207570194G DATED  
JANUARY 17, 2007 FOR THE CITY OF PHILADELPHIA.
- ALL DIMENSIONS SHOWN ARE IN U.S. SURVEY FEET.
- THERE ARE NO WATER COURSES OR BODIES OF WATER LOCATED  
WITHIN ONE HUNDRED FEET OF THE PROPERTY.
- PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD ZONE  
AND THERE ARE NO WETLANDS ON SITE.

ACT 187  
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WITH THE PENNSYLVANIA ACT 187 AND TO CONTACT THE  
"ONE CALL SYSTEM" THREE (3) WORKING DAYS (UNLESS OTHERWISE NOTED) PRIOR  
TO START OF CONSTRUCTION.  
PENNSYLVANIA ONE CALL: 1-800-242-1776

PHILADELPHIA WATER DEPARTMENT 1101 MARKET STREET, 2nd FLOOR PHILADELPHIA, PENNSYLVANIA (215) 685-6270	VERIZON 900 RACE STREET PHILADELPHIA, PENNSYLVANIA 19107 (215) 351-8947
PHILADELPHIA GAS WORKS 800 W. MONTGOMERY AVENUE, 3RD FLOOR PHILADELPHIA, PENNSYLVANIA 19122 (215) 684-6796	COMCAST 1351 S. COLUMBUS BOULEVARD PHILADELPHIA, PENNSYLVANIA 19147 (215) 952-4935
PECO-CONSTRUCTION DEPARTMENT 2301 MARKET STREET PHILADELPHIA, PENNSYLVANIA 19103 (215) 731-3264	

PROTECT YOURSELF



WHAT YOU DON'T KNOW CAN HURT YOU.

CALL BEFORE YOU DIG  
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR  
CONSTRUCTION PHASE & 10 WORKING DAYS IN DESIGN STAGE

Pennsylvania One Call System, Inc.  
1-800-242-1776

ISSUED FOR BID 09-26-2019

SEAL:

ARCHITECT

USA ARCHITECTS  
100 W Oxford Street  
Philadelphia, PA 19122  
Phone: (215) 924-4597  
Fax: (610) 559-2174  
Email: mayer@usaarchitects.com  
Attn: Robert Hayes, Project Manager

MEP

BRINJAC ENGINEERING  
100 South Independence Mall West  
Suite 500  
Philadelphia, PA 19104  
Phone: (215) 592-9611  
Fax:  
Email: jmcusker@brinjac.com  
Attn: Jim McCusker

CIVIL

KS ENGINEERS, P.C.  
35 South 3rd Street  
Philadelphia, PA 19104  
Phone: (215) 925-0425  
Fax:  
Email: smarozoff@kseng.com  
Attn: Sean Marzoff

STRUCTURAL

DAVID MASON ASSOCIATES  
705 General Washington Ave.  
Suite 401  
Northtown, PA 19403  
Phone: (215) 372-3400  
Fax:  
Email: jgleaton@davidmason.com  
Attn: James Gleaton

FOOD SERVICE

CINI - LITTLE INTERNATIONAL INC  
261 Madison Avenue, 6th Floor  
New York, NY 10016  
Phone: (249) 454-7798  
Fax:  
Email: jusso@cini11ie.com  
Attn: Jason Russo

ACOUSTICS

METROPOLITAN ACOUSTICS  
1628 JFK Boulevard  
Philadelphia, PA 19103  
Phone: (215) 248-4352  
Fax:  
Email: f.dogget@metro-acoustics.com  
Attn: Felicia Dogget

ESTIMATING

PROMATECH, INC  
714 Main Street, Unit 2C  
Moorestown, NJ 08057  
Phone: (856) 314-8468  
Fax: (856) 314-8217  
Email: cstreeble@promatechinc.com  
Attn: Corrie Streeble

ISSUED FOR BID  
SEPTEMBER 26, 2019

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1	12/11/2019
NO.	DATE
NO.	REVISION

SCHOOL & LOCATION

RICHMOND ELEMENTARY SCHOOL  
2944 BELGRADE STREET  
PHILADELPHIA, PA 19134

PROJECT TITLE

MAJOR RENOVATION AND ADDITION

DRAWING TITLE

GRADING AND UTILITY PLAN

DRAWING SCALE	
LOCATION NO.	FILE NO.
XXXX	
DRAWN BY	CHECKED BY
SG	SGM
GC 8-111 C	OF 2017 / 18
MC 8-112 C	OF 2017 / 18
PC 8-113 C	OF 2017 / 18
EC 8-114 C	OF 2017 / 18

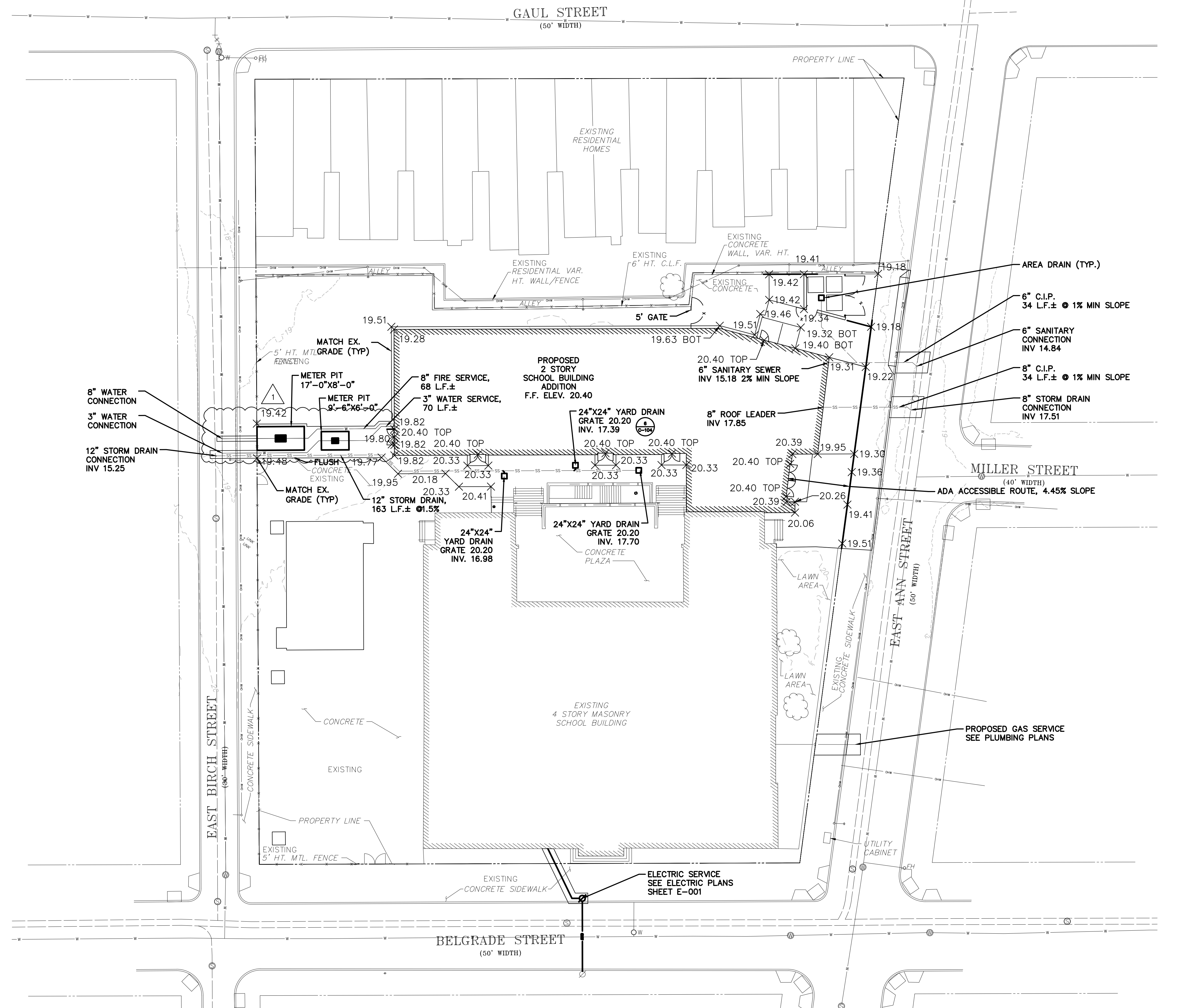
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C-102

SHEET X OF XXX

LEGEND

---	PROPERTY LINES
---	GAS LINE
---	POTABLE WATER
---	STORM SEWER
---	SANITARY SEWER
---	ELECTRIC CONDUIT
---	ELECTRIC OVERHEAD LINE
---	FENCE
---	CURB
⊙	UNKNOWN MANHOLE
⊙	TELEPHONE MANHOLE
⊙	SEWER MANHOLE
⊙	WATER MANHOLE
⊙	WATER VALVE
⊙	GAS VALVE
⊙	UNKNOWN VALVE
⊙	FIRE HYDRANT
⊙	UTILITY POLE/STREET LIGHT
⊙	INLET
⊙	TREE
⊙	TREE PROTECTION - PLANKING
⊙	TREE PROTECTION - FENCING



1 SITE PLAN - GRADING AND UTILITY  
SCALE: 1" = 20'

NOTES:

- PROPERTY ADDRESS  
2944 BELGRADE STREET  
PHILADELPHIA, PA 19134  
OPA/BRT #: 786032600
- OWNER/APPLICANT:  
SCHOOL DISTRICT OF PHILADELPHIA  
440 NORTH BROAD STREET  
PHILADELPHIA, PA 19130
- DATUM:  
HORIZONTAL = PENNSYLVANIA STATE PLANE COORDINATE SYSTEM,  
SOUTH ZONE, NAD 83, ESTABLISHED BY GLOBAL POSITIONING SYSTEM  
METHODOLOGY. VERTICAL = NAVD 88 ESTABLISHED BY GLOBAL SYSTEM  
POSITIONING METHODOLOGY.
- ALL UNDERGROUND UTILITIES ARE BASED ON INFORMATION OBTAINED  
FROM PA ONE CALL, UTILITY RECORDS AND FIELD LOCATED  
STRUCTURES THAT WERE VISIBLE. THE ACCURACY REGARDING  
LOCATION AND OR DEPTH CANNOT BE GUARANTEED. PRIOR TO ANY  
DIGGING, DRILLING, TRENCHING OR OTHER EARTHMOVING ACTIVITIES, THE  
CONTRACTOR SHALL VERIFY DIMENSIONS AND EXISTING CONDITIONS AT  
THE SITE. FOR INFORMATION REGARDING UTILITIES, CONSULT  
PENNSYLVANIA ONE CALL 1-800-242-1776. ALL UNDERGROUND  
UTILITIES AS SHOWN ARE APPROXIMATE.
- RIGHT-OF-WAY LINES SHOWN HERON ESTABLISHED PER PROVIDED  
CITY PLAN INFORMATION. EXISTING SITE CONDITIONS INCLUDING  
BUILDING AND LOT PROPERTY LINES WERE OBTAINED FROM GIS DATA.  
EXISTING ELEVATION DATA IS REFERENCED PER CITY DATUM.
- EXISTING FEATURES OF THE SITE WERE FIELD LOCATED BY KS  
ENGINEERS AND SHOWN ON A PROPERTY SURVEY PREPARED BY KS  
ENGINEERS DATED AUGUST 2018.
- SUBJECT TO ALL RESTRICTIONS, EASEMENTS AND/OR COVENANTS OF  
RECORD EITHER WRITTEN OR IMPLIED THAT MAY NOT APPEAR ON THIS  
SURVEY.
- THE SITE LIES OUTSIDE THE MAPPED LIMITS OF ANY FLOOD ZONE AS  
SHOWN ON THE FEMA FLOOD INSURANCE RATE MAPS No.  
4207570191G, 4207570192G, 4207570193G, AND 42075701P94G DATED  
JANUARY 17, 2007 FOR THE CITY OF PHILADELPHIA.
- ALL DIMENSIONS SHOWN ARE IN U.S. SURVEY FEET.
- THERE ARE NO WATER COURSES OR BODIES OF WATER LOCATED  
WITHIN ONE HUNDRED FEET OF THE PROPERTY.
- PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD ZONE  
AND THERE ARE NO WETLANDS ON SITE.
- ALL PROPOSED GRADES AT SAWCUT EDGE OF EXISTING PAVEMENT  
SHALL BE FLUSH, UNLESS OTHERWISE NOTED
- CONTRACTOR SHALL COORDINATE ALL UTILITY SERVICE CONNECTIONS  
WITH THE RESPECTIVE UTILITY OWNER.

ACT 187	
IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PENNSYLVANIA ACT 187 AND TO CONTACT THE "ONE CALL SYSTEM" THREE (3) WORKING DAYS (UNLESS OTHERWISE NOTED) PRIOR TO START OF CONSTRUCTION.	
PENNSYLVANIA ONE CALL: 1-800-242-1776	
PHILADELPHIA WATER DEPARTMENT 1101 MARKET STREET, 2nd FLOOR PHILADELPHIA, PENNSYLVANIA 19107 (215) 685-6270	VERIZON 900 RACE STREET PHILADELPHIA, PENNSYLVANIA 19107 (215) 351-8947
PHILADELPHIA GAS WORKS 800 W. MONTGOMERY AVENUE, 3RD FLOOR PHILADELPHIA, PENNSYLVANIA 19122 (215) 684-6796	COMCAST 1351 S. COLUMBUS BOULEVARD PHILADELPHIA, PENNSYLVANIA 19147 (215) 952-4935
PECO-CONSTRUCTION DEPARTMENT 2301 MARKET STREET PHILADELPHIA, PENNSYLVANIA 19103 (215) 731-3264	

PROTECT YOURSELF



WHAT YOU DON'T KNOW CAN HURT YOU.

CALL BEFORE YOU DIG  
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR  
CONSTRUCTION PHASE & 10 WORKING DAYS IN DESIGN STAGE

Philadelphia One Call System, Inc.  
1-800-242-1776

ISSUED FOR BID 09-26-2019



SEAL:

ARCHITECT

USA ARCHITECTS  
100 W Oxford Street  
Philadelphia, PA 19122  
Phone: (215) 924-4597  
Fax: (610) 559-2174  
Email: mayes@usaarchitects.com  
Attn: Robert Hayes, Project Manager

MEP

BRINJAC ENGINEERING  
100 South Independence Mall West  
Suite 500  
Philadelphia, PA 19104  
Phone: (215) 592-9611  
Fax:  
Email: jmcusker@brinjac.com  
Attn: Jim McCusker

CIVIL

KS ENGINEERS, P.C.  
35 South 3rd Street  
Philadelphia, PA 19104  
Phone: (215) 925-0425  
Fax:  
Email: smzaroff@kseng.com  
Attn: Sean Marzoff

STRUCTURAL

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705 General Washington Ave.  
Suite 401  
Northtown, PA 19403  
Phone: (215) 372-3400  
Fax:  
Email: jgleaton@davidmason.com  
Attn: James Gleaton

FOOD SERVICE

CINI - LITTLE INTERNATIONAL INC  
261 Madison Avenue, 6th Floor  
New York, NY 10016  
Phone: (249) 454-7798  
Fax:  
Email: jusso@cini11e.com  
Attn: Jason Russo

ACOUSTICS

METROPOLITAN ACOUSTICS  
1628 JFK Boulevard  
Philadelphia, PA 19103  
Phone: (215) 248-4352  
Fax:  
Email: f.dogget@metro-acoustics.com  
Attn: Felicia Dogget

ESTIMATING

PROMATECH, INC  
714 Main Street, Unit 2C  
Moorestown, NJ 08057  
Phone: (856) 314-8448  
Fax: (856) 314-8217  
Email: cstreeh@promatechinc.com  
Attn: Corrie Strehle

ISSUED FOR BID  
SEPTEMBER 26, 2019

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1	12/11/2019 ADDENDUM #6
NO.	DATE REVISION

SCHOOL & LOCATION

**RICHMOND ELEMENTARY SCHOOL**  
2944 BELGRADE STREET  
PHILADELPHIA, PA 19134

PROJECT TITLE

**MAJOR RENOVATION AND ADDITION**

DRAWING TITLE

**EROSION AND SEDIMENT CONTROL PLAN**

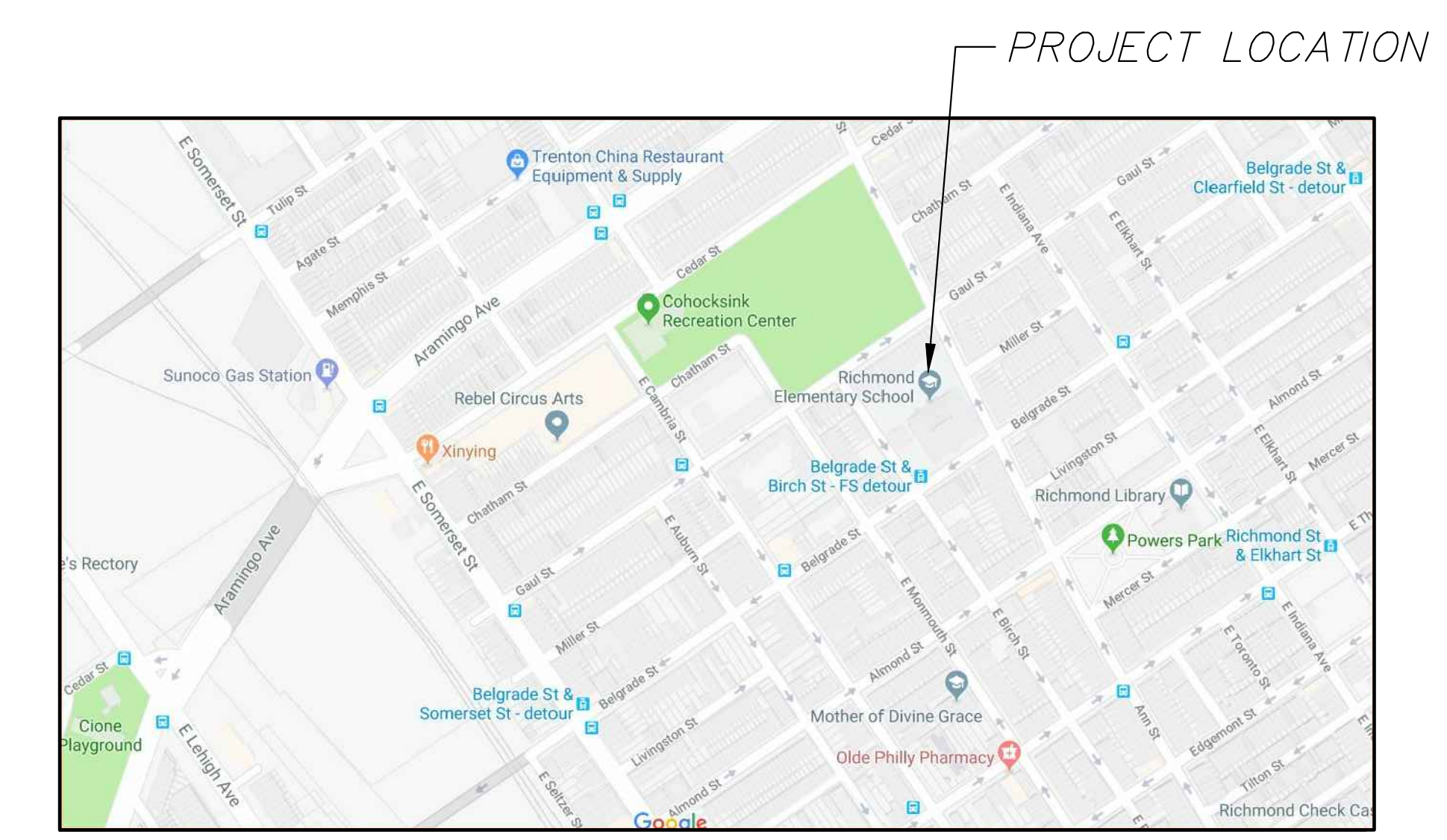
DRAWING SCALE

LOCATION NO.	FILE NO.
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SG	SGM
GC 8-111 C	OF 2017 / 18
MC 8-112 C	OF 2017 / 18
PC 8-113 C	OF 2017 / 18
EC 8-114 C	OF 2017 / 18

DRAWING NO.

**C-201**

SHEET X OF XXX



VICINITY MAP

NOT TO SCALE

LEGEND

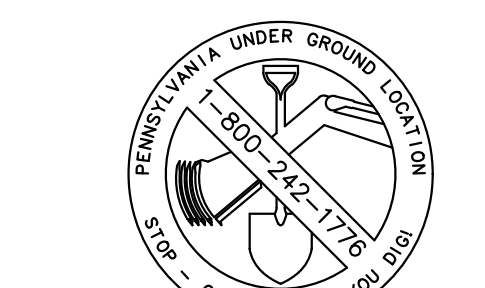
- PROPERTY LINES
- GAS LINE
- POTABLE WATER
- STORM SEWER
- SANITARY SEWER
- ELECTRIC CONDUIT
- ELECTRIC OVERHEAD LINE
- FENCE
- CURB
- UNKNOWN MANHOLE
- TELEPHONE MANHOLE
- SEWER MANHOLE
- WATER MANHOLE
- W WATER VALVE
- G GAS VALVE
- UNKNOWN VALVE
- FH FIRE HYDRANT
- P / ○ UTILITY POLE/STREET LIGHT
- INLET
- TREE
- TREE PROTECTION - PLANKING
- TREE PROTECTION - FENCING
- LIMIT OF DISTURBANCE
- 12" COMPOST FILTER SOCK

CONSTRUCTION LIMIT OF DISTURBANCE (LOD) SUMMARY:

ONSITE DISTURBED AREA: 14,977 S.F.  
ROW DISTURBED AREA: 1,711 S.F.

ACT 187	
IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PENNSYLVANIA ACT 187 AND TO CONTACT THE "ONE CALL SYSTEM" THREE (3) WORKING DAYS (UNLESS OTHERWISE NOTED) PRIOR TO START OF CONSTRUCTION.	
PENNSYLVANIA ONE CALL: 1-800-242-1776	
PHILADELPHIA WATER DEPARTMENT 1101 MARKET STREET, 2nd FLOOR PHILADELPHIA, PENNSYLVANIA 19107 (215) 685-6270	VERIZON 900 RACE STREET PHILADELPHIA, PENNSYLVANIA 19107 (215) 351-8947
PHILADELPHIA GAS WORKS 800 W. MONTGOMERY AVENUE, 3RD FLOOR PHILADELPHIA, PENNSYLVANIA 19122 (215) 684-6796	COMCAST 1351 S. COLUMBUS BOULEVARD PHILADELPHIA, PENNSYLVANIA 19147 (215) 952-4935
PECO-CONSTRUCTION DEPARTMENT 2301 MARKET STREET PHILADELPHIA, PENNSYLVANIA 19103 (215) 731-3264	

PROTECT YOURSELF



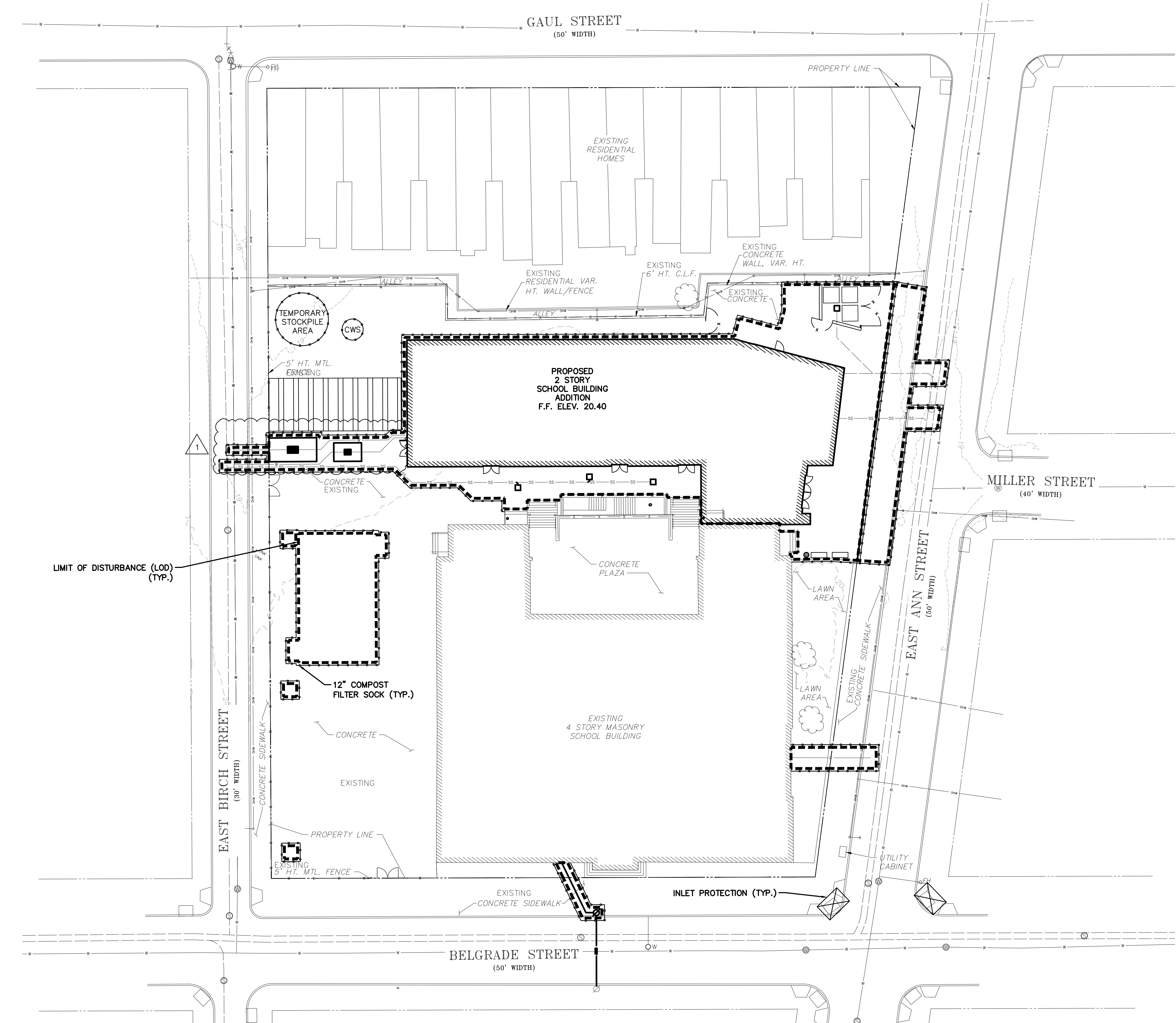
WHAT YOU DON'T KNOW CAN HURT YOU.

CALL BEFORE YOU DIG!

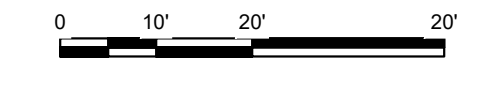
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE & 10 WORKING DAYS IN DESIGN STAGE

Pennsylvania One Call System, Inc.

1-800-242-1776



1 EROSION AND SEDIMENT CONTROL PLAN  
SCALE: 1" = 20'



NOTES:

- PROPERTY ADDRESS: 2944 BELGRADE STREET, PHILADELPHIA, PA 19134, OPA/BRT #: 786032600
- OWNER/APPLICANT: SCHOOL DISTRICT OF PHILADELPHIA, 440 NORTH BROAD STREET, PHILADELPHIA, PA 19130
- DATUM: HORIZONTAL = PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83, ESTABLISHED BY GLOBAL POSITIONING SYSTEM. METHODOLOGY, VERTICAL = NAVD 88 ESTABLISHED BY GLOBAL SYSTEM POSITIONING METHODOLOGY.
- ALL UNDERGROUND UTILITIES ARE BASED ON INFORMATION OBTAINED FROM PA ONE CALL, UTILITY RECORDS AND FIELD LOCATED STRUCTURES THAT WERE VISIBLE. THE ACCURACY REGARDING LOCATION AND OR DEPTH CANNOT BE GUARANTEED. PRIOR TO ANY DIGGING, DRILLING, TRENCHING OR OTHER EARTHMOVING ACTIVITIES, THE CONTRACTOR SHALL VERIFY DIMENSIONS AND EXISTING CONDITIONS AT THE SITE. FOR INFORMATION REGARDING UTILITIES, CONSULT PENNSYLVANIA ONE CALL 1-800-242-1776. ALL UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE.
- RIGHT-OF-WAY LINES SHOWN HEREON ESTABLISHED PER PROVIDED CITY PLAN INFORMATION. EXISTING SITE CONDITIONS INCLUDING BUILDING AND LOT PROPERTY LINES WERE OBTAINED FROM GIS DATA. EXISTING ELEVATION DATA IS REFERENCED PER CITY DATUM.
- EXISTING FEATURES OF THE SITE WERE FIELD LOCATED BY KS ENGINEERS AND SHOWN ON A PROPERTY SURVEY PREPARED BY KS ENGINEERS DATED AUGUST 2018.
- SUBJECT TO ALL RESTRICTIONS, EASEMENTS AND/OR COVENANTS OF RECORD EITHER WRITTEN OR IMPLIED THAT MAY NOT APPEAR ON THIS SURVEY.
- THE SITE LIES OUTSIDE THE MAPPED LIMITS OF ANY FLOOD ZONE AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAPS No. 4207570191G, 4207570192G, 4207570193G, AND 4207570194G DATED JANUARY 17, 2007 FOR THE CITY OF PHILADELPHIA.
- ALL DIMENSIONS SHOWN ARE IN U.S. SURVEY FEET.
- THERE ARE NO WATER COURSES OR BODIES OF WATER LOCATED WITHIN ONE HUNDRED FEET OF THE PROPERTY.
- PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD ZONE AND THERE ARE NO WETLANDS ON SITE.

ISSUED FOR BID 09-26-2019

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<b>PANEL DESIGNATION</b> M2		<b>BUS AMP</b> 225 A		<b>MIN. A.I.C.</b> 22,000		<b>MAIN BREAKER</b> 225	
<b>LOCATION</b> GIRLS TOILET B208		<b>PHASE</b> 3		<b>WIRE</b> 4		<b>VOLTAGE</b> 120/208 Wye	
<b>MOUNTING</b> RECESSED		<b>NOTES:</b>					
<b>TOTAL POLES</b> 42							

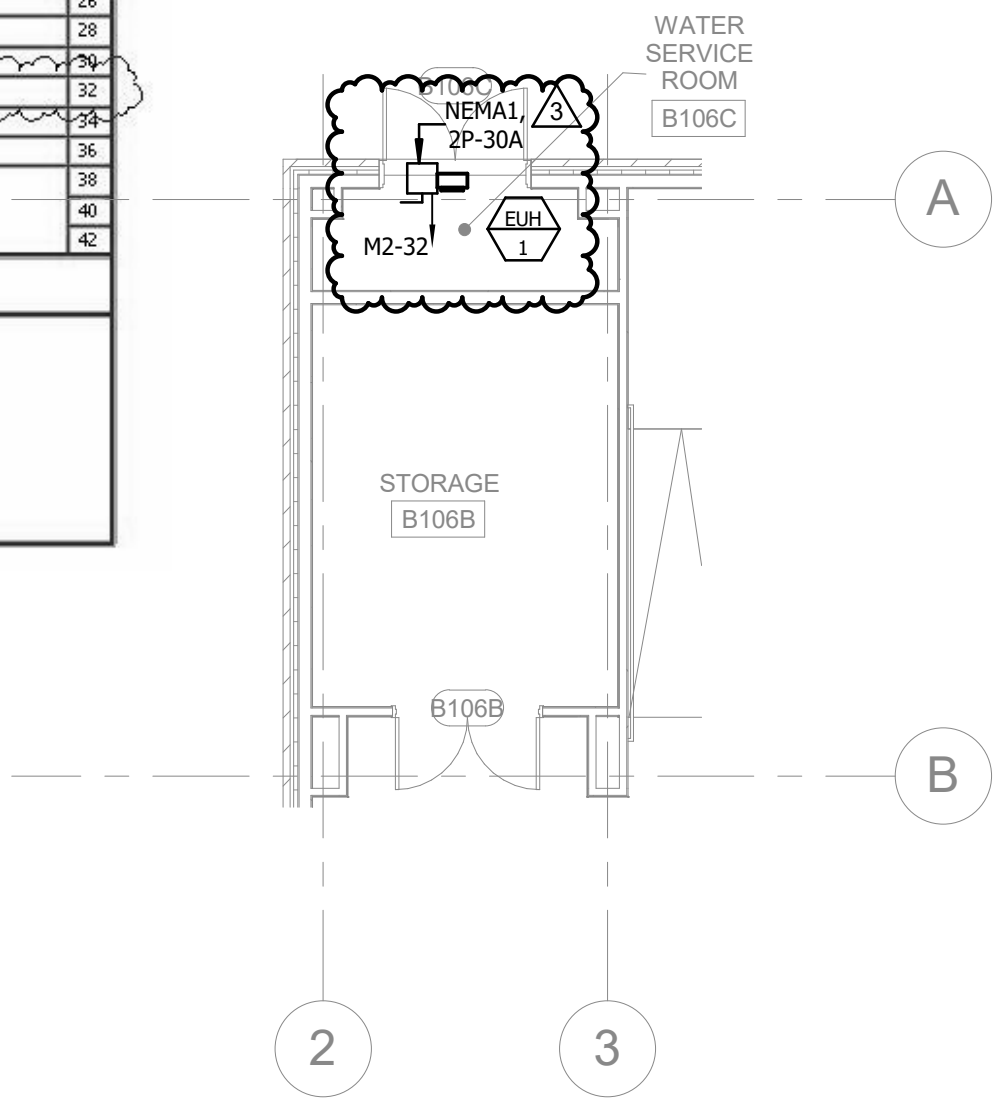
CKT	CIRCUIT DESCRIPTION	ANPS	POLES	WIRE NO.	WIRE SIZE	GND. SIZE	COND. SIZE	A	B	C	A	B	C	COND. SIZE	GND. SIZE	WIRE SIZE	WIRE NO.	POLES	ANPS	CIRCUIT DESCRIPTION	CKT
1								3.0			3.0										2
3	RTU-2 (SUPPLY-1)	35	3	3	8	10	1"		3.0			3.0		1"	10	10	3	3	30	RTU-1 (SUPPLY)	4
5										3.0			3.0								6
7								2.3			2.3										8
9	RTU-2 (SUPPLY-2)	20	3	3	12	12	3/4"		2.3			2.3		3/4"	10	10	3	3	30	RTU-1 (RETURN)	10
11										2.3			2.3								12
13								2.3			0.2										14
15	RTU-2 (ENR RECOVER)	15	3	3	12	12	3/4"		2.3			0.2		3/4"	10	10	3	3	30	RTU-1 (ENR RECOVER)	16
17										2.3			0.2								18
19	VAV 1.1, 1.2	15	1	2	12	12	3/4"	0.2			0.2										20
21	VAV 2.1, 2.2, 2.3, 2.6, 2.7, 2.9	15	1	2	12	12	3/4"		0.4			0.2		3/4"	12	12	3	3	15	RTU-1 (ENR RECOVER)	22
23	VAV 2.4, 2.5, 2.8, 2.10	15	1	2	12	12	3/4"			0.4			0.2								24
25	UH-1 (3)	20	1	2	12	12	3/4"	0.2			1.0			3/4"	12	12	2	1	20	P-FR4	26
27	P-FR2	20	2	3	12	12	3/4"		1.5			1.4		3/4"	12	12	2	1	20	CUH-1 (2)	28
29										1.5			1.4								30
31	P-FR3, P-FR6, P-FR7	20	1	2	12	12	3/4"	1.0			1.5			3/4"	12	12	2	1	20	EUIH-1	32
33								1.8				0.8									34
35	KVU (SUPPLY)	20	3	3	12	12	3/4"			1.8			0.0	--	--	--	--	1	20	SPARE	36
37								1.8			0.8										38
39	EF-1, EF-2	20	1	2	12	12	3/4"		1.5			0.8		3/4"	12	12	3	3	20	KX-1	40
41	KX-2	20	1	2	12	12	3/4"			0.7			0.8								42

**Total Load (kVA): A: 19.8 B: 20.7 C: 19.5**

<b>NEC LOAD SUMMARY PANEL M2</b>						
LTS.	RECP.	HVAC	MISC.	KITCH.	NON-COIN	TOTAL
8.7		45.9	0.0			60.1 kVA (CONNECTED)
125%		100%	100%			104% DEMAND FACTOR
10.9		45.9	0.0			62.2 kVA (DEMAND)
						173 AMPS (DEMAND)

**NOTES:**  
 RECP. - 100% FIRST 10 kVA, 50% REMAINING (NEC 220.44)  
 KITCH. - BETWEEN 100% @ 65% (NEC 220.56)  
 NON-COINCIDENTAL - 0% (NEC 220.60)



1 FIRST FLOOR PLAN - MECHANICAL POWER  
 SKE-001 1/8" = 1'-0"



100 W. Oxford Street  
 Suite E-1500  
 Philadelphia, PA 19122  
 t 215.710.3835  
 f 908.722.7201  
 usaarchitects.com

BRINJAC ENGINEERING  
 100 S Independence Mall West  
 Suite 500  
 Philadelphia, PA 19106  
 Phone: (215) 592-9611  
 Email: jmccusker@brinjac.com  
 Attn: Jim McCusker

PROJECT TYPE  
 AT/FOR  
**MAJOR RENOVATION AND ADDITION**  
 FOR/THE  
**RICHMOND ELEMENTARY SCHOOL**  
 2944 BELGRADE STREET  
 PHILADELPHIA, PA 19134

Addendum 6

Drawing Title: <b>UNIT HEATER</b>	
Drawing No.: <b>SKE-001</b>	
Reference RFI:	Reference Drawing: <b>E-301</b>
USA Project No.: <b>2018-081</b>	
Drawn By: <b>SCM</b>	Checked By: <b>MKS</b>
Date: <b>12/11/19</b>	Page: of

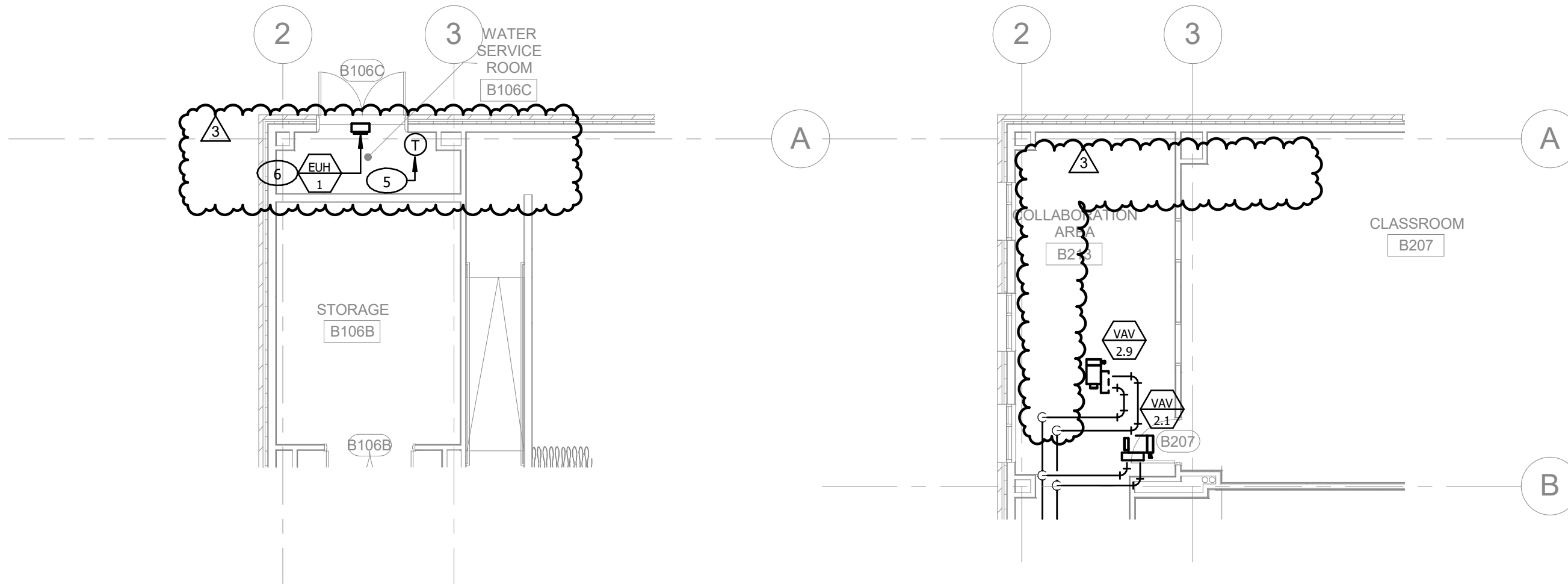
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**KEYED NOTES:**

5 THERMOSTAT SHALL TIE INTO BMS AND MONITOR WATER SERVICE ROOM. WHEN TEMPERATURE OF ROOM FALLS BELOW 45° F (ADJ), SENSOR SHALL SEND AN ALARM BACK TO THE BMS.

6 MOUNT UNIT HEATER ABOVE DOORWAY. 3



1 **FIRST FLOOR PLAN - MECHANICAL PIPING**  
SKM-004 1/8" = 1'-0"

2 **SECOND FLOOR PLAN - MECHANICAL PIPING**  
SKM-004 1/8" = 1'-0"

<b>(EUH) ELECTRIC UNIT HEATER SCHEDULE</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">3</span>								
TAG	LOCATION	TYPE	MAX CFM	VOLT./PH.	AMPS	kW	BASIS OF DESIGN	NOTES
EUH-1	B106C - WATER SERVICE	WALL MOUNTED	65	120 / 1	4.2	0.5	QMARK CWH1101DSAF	1,2,3,4

NOTES: 1. DISCONNECT SWITCH PROVIDED BY EC.  
 2. SUPPORT AND ATTACHMENTS TO UNIT HEATERS SHALL BE PER MANUFACTURER'S REQUIREMENTS.  
 3. PLANS SHOW APPROXIMATE LOCATIONS ONLY. EXACT LOCATION SHALL BE COORDINATED IN FIELD.  
 4. PROVIDE WITH WALL MOUNTED THERMOSTAT.



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 100 S Independence Mall West  
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 Email: jmccusker@brinjac.com  
 Attn: Jim McCusker

PROJECT TYPE  
 AT/FOR  
**MAJOR RENOVATION AND ADDITION**  
 FOR/THE  
**RICHMOND ELEMENTARY SCHOOL**  
 2944 BELGRADE STREET  
 PHILADELPHIA, PA 19134

Addendum 6

Drawing Title:  
**UNIT HEATER**

Drawing No.:  
**SKM-004**

Reference RFI:  
 Reference Drawing:  
**M-101/M-102**

USA Project No.:  
**2018-081**

Drawn By:  
**SCM**  
 Checked By:  
**NW**

Date:  
**12/11/19**  
 Page:  
 of

## SECTION 01 1725

### INDOOR AIR QUALITY PROCEDURES

#### 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
  - 2. Section 01 1750 - Project Cleanliness
  - 3.

##### 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. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit description and performance data for filters including MERV ratings.
- C. Construction IAQ Management Plan: Submit plan describing methods and procedures for implementing and monitoring compliance as specified in this Section.
- D. 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.
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](http://www.nadca.com).
  - d. Coordinate duct testing and cleaning procedures with the commissioning requirements set forth in Division 01, Section 019115 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 011000 - 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

1. 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
2. Negative pressure air scrubber
  - a. B-Air RA-650 HEPA Air scrubber
  - b. MOUNTO AF500 1/3hp 500cfm Industrial HEPA Air scrubber Air Filtration System Dust Air Cleaner Negative Air Machine
  - c. Abatement Technologies H2KM Negative Air Machine
  - d. XPOWER X-2580 Commercial 4 Stage Filtration HEPA+ Activated Carbon Filter Purifier System, Negative Air Machine
  - e. BlueDri BD-AS-550-BL Negative Machine
  - f. Or equal

### 2.4 HVAC AIR FILTERS FOR PERMANENT HVAC SYSTEMS DURING CONSTRUCTION

- A. Return Filters: Filtration media rated for minimum efficiency reporting value (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:
  1. Specific dust generating activities and associated controls shall be addressed in the Site Specific Health and Safety Plan.
  2. Workforce, including sub-contractors, must be made aware of the site dust control requirements.
  3. Check the various work zones within the building and adjacent areas to confirm the area are clean.
  4. Access to all active work areas shall be restricted to authorized contractors.
  5. For occupied buildings, dust generating activities shall be performed after normal hours of operations, unless prior permission is 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. Some 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

- B. Furnish plan for owner approval and revise as necessary as per Section 1 and below.
- C. 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. Section 013300 - Submittal Procedures: Requirements for construction photographs.
- B. Photograph construction operations to show compliance with SMACNA IAQ and Construction IAQ Management Plan.
- C. Section 013300 - Submittal Procedures: Requirements for construction photographs.

2. Take photographs of trainer and housekeeping training sessions.
3. Take minimum of six photographs on minimum of three different occasions during construction to show consistent adherence with specified requirements.
4. Identify photographs as required in Section 013300 - Submittal Procedures and identify SMACNA IAQ approach illustrated in each photograph.
5. 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.

G. 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.
3. 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.

3.7 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. 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(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.

### 3.8 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.

### 3.9 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.

### 3.10 HOUSEKEEPING

- A. Section 017000 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Progress Cleaning: clean in accordance with Section 017411.
  - 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

### 3.11 CLOSEOUT

- A. 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. 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**



## SECTION 01 74 11

### 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 09 0290 – PLASTER PATCHING AND REPAIR

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Metal lath and gypsum plastering for patching and repair of existing plaster finishes, including skim coat over existing plaster surfaces.

B. Scope and extent of plaster patching and repair as indicated on the Drawings, and may include the following:

1. Plaster surfaces within the area of new construction that are cracked, spalled, bubbled or otherwise deteriorated.
2. Plaster surfaces that are damaged during demolition or construction operations.
3. Conditions that are exposed by demolition or construction and will be exposed in the completed Work.

#### 1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

#### 1.3 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain gypsum lath and gypsum plaster from a single manufacturer.

B. Field Constructed Mockup: Before starting plaster work, prepare a sample application for each type of finish and application required to demonstrate aesthetic effects of application and qualities of materials and execution.

1. Locate mockups on site in location directed by Architect.
2. Erect 4 foot by 4 foot by full thickness mockup in presence of Architect using materials, including lath, indicated for final work.
3. Demonstrate the proposed range of aesthetic effects including texture and workmanship to be expected in completed work.
4. Demonstrate that adhesion to existing surface will be achieved where skim coat over plaster is indicated.
5. Obtain Architect's acceptance of mockups before start of plaster work.

6. Retain and maintain mockups during construction in undisturbed condition as a standard for judging completed plaster work.

#### 1.4 PRODUCT HANDLING

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer.

B. Store materials inside, under cover, and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes. Neatly stack gypsum lath flat to prevent deformation.

C. Protect metal lath, corner beads and trim from being bent or damaged.

#### 1.5 PROJECT CONDITIONS

A. Environmental Requirements, General: Comply with requirements of referenced plaster application standards and recommendations of plaster manufacturer for environmental conditions before, during, and after application of plaster.

B. Ventilation: GC to provide temporary mechanical equipment that will assure proper temperature, humidity and ventilation is optimal for plaster curing. Adherence to project schedule and phasing plan will required.

a. Ventilate building spaces as required to remove water in excess of that required for hydration of plaster. Begin ventilation immediately after plaster is applied and continue until it sets and cures.

C. Protect adjacent work from soiling, spattering, moisture deterioration and other harmful effects.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

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

1. Gypsum Plaster Materials:

- a. United States Gypsum Co.
- b. Gold Bond Building Products Div. National Gypsum Co.

2. Expanded Metal Lath:

- a. Alabama Metal Industries Corp. (AMICO)
- b. Gold Bond Building Products Div., National Gypsum Co
- c. United States Gypsum Co.
- d. Western Metal Lath Co.

3. Accessories:

- a. Fry Reglet Corp.
- b. Gold Bond Building Products Div., National Gypsum Co.
- c. Keene Corp.
- d. MM Systems Corp.
- e. United States Gypsum Co.

4. POPCRON Ceiling Repairs

- a. Homax Products, I

2.2 EXPANDED-METAL LATH

A. Expanded-Metal Lath: Fabricate from zinc coated (galvanized) steel sheet, ASTM C 847.

1. Configuration: Flat

2. Weight: 3.4 lbs. Per sq. yd

B. Lath Attachment Devices: Devices of material and type required by referenced standards and recommended by lath manufacturer for secure attachment of lath to substrate and of lath to lath.

2.3 ACCESSORIES

A. General: Comply with material provisions of ASTM C 841; coordinate depth of accessories with thicknesses and number of plaster coats required.

B. Metal Corner Beads: Fabricated from zinc coated (galvanized) steel.

1. Type: Small nose with expanded flanges, unless otherwise indicated.

C. Strip Reinforcement: Smooth edge strips of expanded metal lath fabricated from zinc coated (galvanized) steel sheet.

1. Cornerite: Strips prebent lengthwise in center for internal plaster angles not otherwise reinforced by metal lath lapped or carried around.

2. Stripite: Flat strips for reinforcing joints in gypsum lath, nonmetallic bases, and between dissimilar plaster bases.

D. Control Joints: Prefabricated, of material and type indicated below:

1. Material: Zinc-coated (galvanized) steel. Small nose cornerbead with perforated flanges; use on curved corners.

2. One-Piece Type: Folded pair of nonperforated screeds in M-shaped configuration, with expanded or perforated flanges.

3. Provide removable protective tape on plaster face of control joints.

#### 2.4 PLASTER MATERIALS

A. Base Coat Plasters: Gypsum neat plaster, ASTM C 28.

B. Finish Coat Plasters: Gypsum Keene's cement, ASTM C 61.

C. Finishing Hydrated Limes: ASTM C 206, Type S, normal double hydrated lime for finishing purposes.

D. Aggregates for Base Coat Plasters: ASTM C 35, sand aggregate.

E. Aggregates for Finish Coat Plaster with Floated Finish: ASTM C 35; graded per ASTM C 842, sand aggregate.

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

1. Gypsum Neat Plasters:

a. Red Top Gypsum Plaster; United States Gypsum Co.

b. Red Top Two Purpose Plaster; United States Gypsum Co.

c. Two Way Hardwall Plaster; Gold Bond Building Products Div., National Gypsum Co.

2. Gypsum Keene's Cement:

a. Red Top Keene's Cement; United States Gypsum Co.

3. Finishing Hydrated Limes, Type S:

a. Ivory Finish Lime; United States Gypsum Co.

2.5

#### MISCELLANEOUS MATERIALS

A. Water for Mixing and Finishing Plaster: Drinkable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Bonding Agent for Gypsum Plaster: ASTM C 631

2.6

#### GYPSUM PLASTER MIXES AND COMPOSITIONS

A. Plaster Base Coat Compositions: Comply with ASTM C 842 and manufacturer's directions for gypsum plaster base coat proportions that correspond to application methods and plaster bases indicated below:

1. Three Coat Work Over Metal Lath: Base coats as follows:

a. Scratch Coat: Gypsum neat plaster with job mixed sand.

b. Brown Coat: Gypsum neat plaster with job mixed sand.

B. Finish Coats: Proportion materials in parts by dry weight for finish coats to comply with the following requirements:

1. Troweled Finish to Match Existing Smooth Finish: Finish coat of Gypsum Keene's Cement; proportion 2 parts plaster to 1 part lime.

2.7 MIXING

A. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

2.8 POPCORN CEILING REPAIR

A. Repair as needed and directed with



Homax Aerosol Ceiling Texture Professional Match Popcorn, 16 oz., OR EQYAL, carefully following manufacturer's directions for use of this product.

B. Areas of repair must be cleaned and primed before application; and painting must wait 24 hours after application

### PART 3 - EXECUTION

#### 3.1 INSTALLATION, GENERAL

A. Interior Lathing Installation Standard: Install lathing materials indicated for gypsum plaster to comply with ASTM C 841.

B. Isolation: Where lathing abuts building structure horizontally and where partition/wall work abuts overhead structure, isolate the work from structural movement sufficiently to prevent transfer of loading into the work from the building structure. Install slip or cushion type joints to absorb deflections but maintain lateral support.

C. Install expanded metal lath where plaster base coats are required. Provide appropriate type, configuration, and weight of metal lath selected from materials indicated that comply with referenced lathing installation standards.

#### 3.2 INSTALLING ACCESSORIES

A. General: Comply with referenced lathing and furring installation standards for provision and location of plaster accessories of type indicated. Miter or cope accessories at corners; install with tight joints and in alignment. Attach accessories securely to plaster bases to hold accessories in place and alignment during plastering.

B. Cornerbeads: Install at external corners.

C. Control Joints: Install at locations indicated or, if not indicated, at spacings and locations required by referenced standard, recommended by plaster manufacturer, and approved by Architect..

#### 3.3 PLASTER AND POPCORN APPLICATION

A. General: Prepare monolithic surfaces for bonded base coats and use bonding compound or agent to comply with requirements of referenced plaster application standards for conditioning of monolithic surfaces.

B. Tolerances: Do not deviate more than 1/8 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10 foot straightedge placed at any location on surface.

C. Sequence plaster application with the installation and protection of other work so that neither will be damaged by the installation of the other.

D. Apply thicknesses and number of coats of plaster as indicated or as required by referenced standards.

E. Power wash or clean as required for full to adhesion existing plaster surfaces scheduled to receive skim coat plaster.

F. Interior Gypsum Plaster Application Standard: Apply gypsum plaster materials, composition, mixes, and finishes indicated to comply with ASTM C 842.

G. Number of Coats: Apply gypsum plaster, of composition indicated, to comply with the following requirements.

1. Use two coat work where existing plaster base is intact.

2. Use three coat work over metal lath for areas where no intact plaster base remains.

H. Bonding: Apply bonding agent to existing plaster surfaces prior to application of base or finish coats.

I. Finish Coats:

1. Troweled finishes for gypsum finish coat plasters, to match existing plaster finish textures.

J. Popcorn Ceiling Repair

1. Carefully follow manufacturer's directions for the use of this product.

2. Clean and prime repair area before application

3. Wait 24 hours after application before painting

#### 3.4 CUTTING AND PATCHING

A. Cut, patch, point up, and repair plaster as necessary to accommodate other work and to restore cracks, dents, and imperfections. Repair or replace work to eliminate blisters, buckles, excessive crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to the substrate has failed.

B. Sand smooth troweled finishes lightly to remove trowel marks and arrises

#### 3.5 CLEANING AND PROTECTION

A. Remove temporary protection and enclosure of other work. Promptly remove plaster from door frames, windows, and other surfaces that are not to be plastered. Repair floors, walls, and other surfaces that have been stained, marred, or otherwise damaged during the plastering work. When plastering work is completed, remove unused materials, containers, and equipment and clean floors of plaster debris.

B. Provide final protection and maintain conditions, in a manner suitable to Installer that ensure plaster work's being without damage or deterioration at time of Substantial Completion.

END OF SECTION 09 0290

### SECTION 099123 – PAINTING

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

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

##### 1.2 SUMMARY

A. This Section includes surface preparation and field painting of interior items and surfaces. 1. 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 these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically

mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Architect will supply a color selection.

1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

1. Prefinished items include the following factory-finished components:

- a. Acoustical wall panels.
- b. Metal toilet enclosures.
- c. Metal lockers.

2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:

- a. Foundation spaces.
- b. Furred areas.
- c. Ceiling plenums.
- d. Utility tunnels.
- e. Pipe spaces.
- f. Duct shafts.
- g. Elevator shafts.

3. Finished metal surfaces include the following:

- a. Anodized aluminum.
- b. Stainless steel.
- c. Chromium plate.
- d. Copper and copper alloys.
- e. Bronze and brass.

4. Operating parts include moving parts of operating equipment and the following:

- a. Valve and damper operators.
- b. Linkages.

c. Sensing devices.

d. Motor and fan shafts.

5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

D. Related Sections include the following:

1. Division 9 Section "Gypsum Board" for surface preparation of gypsum board.

### 1.3 DEFINITIONS

A. General: Standard coating terms defined in ASTM D 16 apply to this Section.

1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.

2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.

3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.

4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

### 1.4 SUBMITTALS

A. Product Data: For each paint system indicated. Include block fillers and primers.

1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification. Submit in same format as specification.

2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.

3. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOC's).

B. Colors: Match Architect's color selections.

C. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.

1. Submit 4 sets of samples of each final color and finish.

D. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to be demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Certifications:

1. Furnish a letter from the paint manufacturer or their factory representative certifying that the paint system proposed for this project are equal to or better than the specified systems in appearance and performance levels. Submit proof of equivalency for approval including generic type, descriptive information, VOC content, performance data, solids by volume, and recommended film thickness. Submittals not accompanied by this certification will be returned, "REJECTED."

F. Coating Maintenance Manual: Upon conclusion of the project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

#### 1.5 QUALITY ASSURANCE

A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

C. Benchmark Samples (Mockups): Provide a full-coat benchmark finish sample for each type of

coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.

1. Architect will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.

a. Provide mock up of first and second coats of block filler or primer for approval of application.

b. Wall Surfaces: Provide samples on at least 100 sq. ft.

c. Small Areas and Items: Architect will designate items or areas required.

D. Apply benchmark samples, according to requirements for the completed Work, after permanent lighting and other environmental services have been activated. Provide required sheen, color, and texture on each surface. Where materials are being applied over previously painted surfaces, apply mock up samples and perform field testing to check for compatibility, adhesion, and film integrity of the new materials to existing painted surfaces. Report in writing any condition that may affect application, appearance, or performance of the specified coating system.

1. After finishes are accepted, Architect will use the room or surface to evaluate coating systems of a similar nature.

2. Final approval of colors will be from benchmark samples.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:

1. Product name or title of material.

2. Product description (generic classification or binder type).

3. Manufacturer's stock number and date of manufacture.

4. Contents by volume, for pigment and vehicle constituents.

5. Thinning instructions.

6. Application instructions.

7. Color name and number.

8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.

1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

C. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

#### 1.7 PROJECT CONDITIONS

A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.

B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.

C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

#### 1.8 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver left-over paint materials to Owner.

1. Quantity: Furnish Owner with extra paint materials in quantities indicated below:

a. Interior: 1 case of each color applied.

#### PART 2 - PRODUCTS

##### 2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, provide products from one of the following manufacturers. Sherwin-Williams is the basis of design and establishes the



standard of quality required.

B. Manufacturers' Names:

1. Sherwin Williams (SW).
2. Duron.
3. MAB.
4. Glidden.

## 2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience. Each system should be from the same manufacturer.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

C. Colors: Match Architect's samples.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application. Comply with procedures specified in PDCA P4.

1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions

within a particular area.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.

C. Where materials are being applied over previously painted surfaces, apply mock up samples and perform field testing to check for compatibility, adhesion, and film integrity of the new materials to existing painted surfaces. Report in writing any condition that may affect application, appearance, or performance of the specified coating system.

### 3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning. All surfaces must be clean, dry, and free of all oil, grease, surface contaminants, and substances that could impair adhesion.

1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

2. All previously coated surfaces shall clean, dry, dull, and in sound condition prior to coating. All loose paints (either visible or not) shall be removed to expose a sound surface for repainting. All smooth, glossy surfaces shall be abraded to impart a surface profile that will promote adhesion of the subsequent coating system. A test-patch shall be applied prior to a full installation to assure adequate adhesion will be achieved.

C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's

written instructions for each particular substrate condition and as specified.

1. Provide barrier coats over incompatible primers or remove and reprime.
2. Cementitious Materials: Prepare brick, concrete, concrete unit masonry, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
  - a. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
  - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces if moisture content exceeds that permitted in manufacturer's written instructions.
3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

#### PAINT AND PLASTER REPAIRS-JAMES R. LOWELL SCHOOL

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5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
  7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
  8. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
  9. Sand lightly between each succeeding enamel or varnish coat.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before

subsequent surface deterioration.

1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.

2. Omit primer over metal surfaces that have been shop primed and touchup painted.

3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.

2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.

3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.

F. Mechanical items to be painted include, but are not limited to, the following:

1. Exposed uninsulated metal piping.

2. Exposed uninsulated plastic piping.
  3. Exposed pipe hangers and supports.
  4. Tanks that do not have factory-applied final finishes.
  5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
  6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.
  7. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
- G. Electrical items to be painted include, but are not limited to, the following:
1. Switchgear.
  2. Panel boards.
  3. Electrical equipment that is indicated to have a factory-primed finish for field painting.
- H. All interior exposed gypsum wallboard, including any bulkheads and soffits to be painted.
- I. All interior ferrous metal to be painted including any lintels, railings, grilles, and louvers (does not include factory or pre-finished items).
- J. All hollow metal doors and frames to be painted.
- K. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- L. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- M. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

N. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats.

O. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

P. Marking and Identification: Fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions or any other wall required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling. Such identification shall:

1. Be located in accessible concealed floor, floor-ceiling or attic spaces;

2. Be repeated at intervals not exceeding 30 feet measured horizontally along the wall or partition; and

3. Include lettering not less than 0.5 inch in height, incorporating the suggested wording: "FIRE AND/OR SMOKE BARRIER-PROTECT ALL OPENINGS," or other wording.

a. Exception: Walls in Group R-2 occupancies that do not have a removable decorative ceiling allowing access to the concealed space.

### 3.4 FIELD QUALITY CONTROL

A. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during the period when paint is being applied:

1. Owner will engage a qualified independent testing agency to sample paint material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in the presence of Contractor.

2. Testing agency will perform appropriate tests for the following characteristics as required by Owner:

a. Quantitative material analysis.

b. Abrasion resistance.

c. Apparent reflectivity.

d. Flexibility.

e. Washability.

f. Absorption.

g. Accelerated weathering.

h. Dry opacity.

i. Accelerated yellowness.

j. Recoating.

k. Skinning.

l. Color retention.

m. Alkali and mildew resistance.

3. Owner may direct Contractor to stop painting if test results show material being used does not comply with specified requirements. Contractor shall remove noncomplying paint from Project site, pay for testing, and repaint surfaces previously coated with the noncomplying paint. If necessary, Contractor may be required to remove noncomplying paint from previously painted surfaces if, on repainting with specified paint, the two coatings are incompatible.

B. Pre-installation Meetings:

1. Schedule a conference and inspection to be held on-site before field application of coating systems begins.

2. Conference shall be attended by Contractor, Owner's representative, Engineer, Construction Manager, coating applicators, and a representative of coating material manufacturer.

3. Topics to be discussed at meeting shall include:

a. A review of Contract Documents and accepted shop drawings shall be made and deviations or differences shall be resolved.

b. Review items such as environmental conditions, surface conditions, surface preparation, application procedures, and protection following application.

c. Establish which areas on-site will be available for use as storage areas and working area

4. Pre-construction conference and inspection shall serve to clarify Contract Documents, application requirements and what work should be completed before coating application can begin.

5. Prepare and submit, to parties in attendance, a written report of pre-installation conference report shall be submitted with 3 days following conference.

6. Field Samples:

a. Provide a full coating system to the required sheen, color, texture, and recommended coverage rates. Simulate finished lighting conditions for reviewing in-place work.

7. The Architect, Construction Manager or Owners Representative will select one room, area, or combination of areas and surfaces and conditions for each type of coating and substrate to be coated. Apply coatings in this room, area, combination of areas and surfaces according to the schedule, or as specified. After finishes are accepted, this room, area or combination of areas and surfaces will serve as the standard of quality and for evaluation of coating systems of similar nature.

8. A manufacturer's representative shall be available upon request by the General Contractor or Painting subcontractor, to advise applicator on proper application technique and procedures.

### 3.5 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

### 3.6 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.



B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.

1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

### 3.7 INTERIOR PAINT SCHEDULE

A. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:

1. Flat Acrylic Finish (Ceiling Application): Two finish coats over a primer.

a. Primer: SW, ProMar 200 Zero VOC Latex Primer, B28W600.

b. Finish Coat: SW, ProMar 200 Zero VOC Latex Flat, B30W2650 series.

\*Zero VOC, Anti-Microbial, \*Product remains Zero VOC when tinted.

2. Low Luster Acrylic-Enamel Finish (Wall Application @ Administration): Two finish coats over a primer.

a. Primer: SW, ProMar 200 Zero VOC Latex Primer, B28W600.

b. Finish Coats: SW, ProMar 200 Zero VOC Latex Eg-Shel, B20W2650 series.

\*Zero VOC, Anti-Microbial, \*Product remains Zero VOC when tinted.

3. Semi-Gloss Acrylic-Enamel Finish (Wall Application): Two finish coats over a primer.

a. Primer: SW, ProMar 200 Zero VOC Latex Primer, B28W600.

b. Finish Coats: SW, ProMar 200 Zero VOC Latex Semi-Gloss, B31W2650 series.

\*Zero VOC, Anti-Microbial, \*Product remains Zero VOC when tinted.

B. Previously Painted Gypsum Board: Provide the following finish systems over previously painted interior gypsum board surfaces. \*Note: Mock-Up with adhesion test per ASTM-D3359 is required prior to installation of this system.

1. Flat Acrylic Finish (Ceiling Application): Two finish coats over an adhesion promoting primer.

a. Primer: SW, Extreme Bond Interior/Exterior Bonding Primer, B51-150.

b. Finish Coat: SW, ProMar 200 Zero VOC Latex Flat, B30W2650 series.

\*Zero VOC, Anti-Microbial, \*Product remains Zero VOC when tinted.

2. Low Luster Acrylic-Enamel Finish (Wall Application @ Administration): Two finish coats

over an adhesion promoting primer.

a. Primer: SW, Multi-Purpose Interior/Exterior Latex Primer/Sealer, B51-450 series  
Extreme Bond Interior/Exterior Bonding Primer, B51-150.

b. Finish Coats: SW, ProMar 200 Zero VOC Latex Eg-Shel, B20W2650 series.

\*Zero VOC, Anti-Microbial, \*Product remains Zero VOC when tinted.

3. Semi-Gloss Acrylic-Enamel Finish (Wall Application): Two finish coats over an adhesion promoting primer.

a. Primer: SW, Extreme Bond Interior/Exterior Bonding Primer, B51-150.

b. Finish Coats: SW, ProMar 200 Zero VOC Latex Semi-Gloss, B31W2650 series.

\*Zero VOC, Anti-Microbial, \*Product remains Zero VOC when tinted.

C. Previously Painted Gypsum Board Epoxy Finish: Provide the following epoxy finish systems over previously painted interior gypsum board surfaces. \*Note: Mock-Up with adhesion test per ASTM-D3359 is required prior to installation of this system.

1. Eg-Shel Waterbased Epoxy Finish: two finish coats over an adhesion promoting primer.

a. Primer: Multi-Purpose Interior/Exterior Latex Primer/Sealer, B51-450 series

b. 1st Coat: Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 series

c. 2nd Coat: Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 series

D. Ferrous Metal: Provide the following finish systems over ferrous metal:

1. Semi-Gloss Finish: Two finish coats over a primer.

a. Primer: SW, Pro-Industrial Pro-Cryl Universal Metal Primer, B66-310 series

b. Finish Coats: SW, Pro-Industrial Waterbased Catalyzed Epoxy Gloss.

E. Previously Painted Ferrous Metal: Provide the following finish systems over previously painted ferrous metal. \*Note: Mock-Up with adhesion test per ASTM-D3359 is required prior to installation of this system.

1. Semi-Gloss Finish: Two finish coats over an adhesion promoting primer.

a. Spot Primer (for bare or rusty areas): SW, Pro-Industrial Pro-Cryl Universal

Metal Primer, B66-310 series

b. Primer: SW, Multi-Purpose Interior/Exterior Latex Primer/Sealer, B51W450.

c. Finish Coats: SW, Pro-Industrial Waterbased Catalyzed Epoxy Gloss.

F. Galvanized Metal: Provide the following finish systems over galvanized metal:

1. Semi-Gloss Finish: Two finish coats over a primer.

a. Primer: SW, Pro-Industrial Pro-Cryl Universal Metal Primer, B66-310 series

b. Finish Coats: SW, Pro-Industrial Waterbased Catalyzed Epoxy Gloss.

G. Previously Painted Galvanized Metal: Provide the following finish systems over previously painted galvanized metal. \*Note: Mock-Up with adhesion test per ASTM-D3359 is required prior to installation of this system.

1. Semi-Gloss Finish: Two finish coats over an adhesion promoting primer.

a. Spot Primer (for bare or rusty areas): SW, Pro-Industrial Pro-Cryl Universal Metal Primer, B66-310 series

b. Primer: SW, Extreme Bond Interior/Exterior Bonding Primer, B51-150.

c. Finish Coats: SW, Pro-Industrial Waterbased Catalyzed Epoxy Gloss.

H. Dry Fog Paint: Provide where indicated for painted exposed structure.

1. Provide dry fog paint system according to approved manufacture's recommendations.

a. Primer: SW, Pro-Industrial Pro-Cryl Universal Metal Primer, B66-310 series

\*Omit primer on clean galvanized surfaces

b. Finish Coats, SW, Pro-Industrial Waterborne Acrylic Dryfall Flat, B42W81 series

I. Concrete Masonry Units: Provide the following finish systems over primer for wall applications.

1. Semi-Gloss Finish: Two finish coats over a primer.

a. Filler: SW, PrepRite Block Filler, B25W25.

b. Finish Coats: SW, ProMar 200 Zero VOC Latex Semi-Gloss, B31W2650 series

\*Zero VOC, Anti-Microbial, \*Product remains Zero VOC when tinted.

J. Previously Painted Concrete Masonry Units: Provide the following finish systems over an adhesion promoting primer for wall applications. \*Note: Mock-Up with adhesion test per ASTM-D3359 is required prior to installation of this system.

1. Semi-Gloss Finish: Two finish coats over a primer.

a. Primer: SW, Extreme Bond Interior/Exterior Bonding Primer, B51-150.

b. Finish Coats: SW, ProMar 200 Zero VOC Latex Semi-Gloss, B31W2650 series.

\*Zero VOC, Anti-Microbial, \*Product remains Zero VOC when tinted.

K. Plaster – Latex System: Provide the following finish systems over interior plaster surfaces:

1. Flat Acrylic Finish for ceiling applications only: - Two finish coats over a primer.

a. Primer: Loxon Concrete & Masonry primer, A24W8300

b. 1st Coat: ProMar 200 Zero VOC Latex Flat, B30W2650 series

c. 2nd Coat: ProMar 200 Zero VOC Latex Flat, B30W2650 series \*

2. Semi-Gloss Acrylic-Enamel Finish: two finish coats over a primer.

a. Primer: Loxon Concrete & Masonry primer, A24W8300

b. 1st Coat: ProMar 200 Zero VOC Latex Semi-Gloss, B31W2650 series

c. 2nd Coat: ProMar 200 Zero VOC Latex Semi-Gloss, B31W2650 series

L. Plaster - Epoxy Finish: Provide the following epoxy finish systems over plaster surfaces:

1. Eg-Shel Waterbased Epoxy Finish: two finish coats over a primer.

a. Primer: Loxon Concrete & Masonry primer, A24W8300

b. 1st Coat: Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 series

c. 2nd Coat: Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 series

M. Previously Painted Brick and Concrete Masonry Units Eg-Shel Epoxy Finish: Provide the following epoxy finish systems over previously painted wall applications. \*Note: Mock-Up with adhesion test per ASTM-D3359 is required prior to installation of this system.

1. Eg-Shel Waterbased Epoxy Finish: two finish coats over an adhesion promoting primer.

a. Primer: Multi-Purpose Interior/Exterior Latex Primer/Sealer, B51W450

b. 1st Coat: Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 series

2nd Coat: Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 series

N. Previously Painted Wood: Provide the following finish systems over previously painted trim

applications. \*Note: Mock-Up with adhesion test per ASTM-D3359 is required prior to installation of this system.

1. Semi-Gloss Finish: Two finish coats over a primer.

a. Primer: PrepRite ProBlock Latex Interior/Exterior Primer/Sealer, B51-600 series

b. 1st Coat: ProMar 200 Zero VOC Latex Semi-Gloss, B31W2650

c. 2nd Coat: ProMar 200 Zero VOC Latex Semi-Gloss, B31W2650

### 3.8 INTERIOR STAIN AND NATURAL-FINISH WOODWORK SCHEDULE

A. Natural-Finish Woodwork: Provide the following natural finishes over new interior woodwork:

1. Waterborne Satin-Varnish Finish: Two finish coats of waterborne clear satin varnish over a sanding sealer.

a. Filler Coat: Optional Open-grain wood filler (if needed).

b. 1st Coat: Wood Classics Waterborne Polyurethane Satin Finish, A68F90.

c. 2nd Coat: Wood Classics Waterborne Polyurethane Satin Finish, A68F90

B. Stain-Finish Woodwork with Sealer: Provide the following stain finish with sealer over new interior woodwork:

1. Waterborne Satin-Varnish Finish: Two finish coats of waterborne clear satin varnish over a sanding sealer. Wipe wood filler before applying stain.

a. Filler Coat: Optional Open-grain wood filler (if needed).

b. Stain Coat: Wood Classics 250 VOC Interior Oil Stain, A49-800 series.

c. 1st Coat: Wood Classics Waterborne Polyurethane Satin Finish, A68F90.

d. 2nd Coat: Wood Classics Waterborne Polyurethane Satin Finish, A68F90

END OF SECTION 09 9123

**ATTACHMENTS TO TECHNICAL SPECIFICATIONS**

**1. INSL-X PRODUCT DATA SHEET**

**2. SYNAVAX PRODUCT DATA SHEET**

**3. ECOBOND LBP DEFENDER-PRO SPEC**



# LEAD BLOCK<sup>®</sup>

## LEAD ENCAPSULANT COATING

### EGGSHELL EC-3210

#### Features

- Interior/Exterior
- High Build
- Seals Lead-Based Paint
- Can be top-coated using most water based architectural coatings
- Contains Bitrex - Anti-Ingestant
- Low VOC
- Soap and Water Clean-Up

#### Recommended For

**Interior** – This product may be applied to walls, trim and ceilings, or properly prepared drywall, plaster, wood, masonry or metal surfaces. Lead Block should not be used on friction surfaces or moveable closures, as the thickness of the applied coating may alter clearances and affect proper operation. **Exterior** – Product may be applied to vertical surfaces, including properly prepared masonry, stucco, wood, or metal substrates. No application of exterior coatings is approved by the State of Massachusetts for Lead encapsulation.

#### General Description

This is a thin film, water based, elastomeric coating formulated to encapsulate lead-based paints and forms a dense, high-solids barrier that blocks and seals to prevent the migration of lead contaminants from reaching the surface. It contains Bitrex, a bitter tasting, anti-ingestant, which deters children from oral contact. Lead Block<sup>®</sup> conforms to the requirements of the Commonwealth of Massachusetts Public Health (13931) and meets the requirements of the U.S. Department of Housing and Urban Development (H.U.D.), which spells out a 20-year manufacturer's warranty.

#### Limitations

- Do not apply to below grade or back-filled walls.
- Do not apply if surface or air temperatures are below 50 °F (10 °C), above 95 °F (35 °C) or within 5° of Dew Point
- Not recommended for coating horizontal surfaces or freestanding walls.

#### Product Information

##### Colors — Standard:

EC-3210 – White

Can tint using up to 2 oz. of Universal Colorant per gallon.

##### — Tint Bases:

N/A

##### — Special Colors:

Contact your dealer.

##### Certification & Qualifications :

The products supported by this data sheet contain a maximum of 100 grams per liter VOC/VOS (0.83 lbs./gal.) excluding water & exempt solvents.

This product meets qualifications for LEED (Leadership in Energy and Environmental Design) projects as a Non-Flat Coating.

Meets ASTM-E 1795

VOC REGION	COMPLIANT
FEDERAL	YES
OTC	YES
OTCII	YES
CARB	YES
CARB07	YES
UTAH	YES
AZMC	YES
SCAQMD	NO

##### Technical Assistance:

Available through your local authorized independent Insl-x dealer. For the location of the dealer nearest you, call 1-866-708-9180, or visit [www.insl-x.com](http://www.insl-x.com)

##### Technical Data◇

##### White

Vehicle Type	Acrylic
Pigment Type	Titanium Dioxide
Volume Solids	44 ± 1.0%
Coverage per Gallon at Recommended Film Thickness	85 – 100 Sq. Ft.
Recommended Film Thickness	– Wet 16 - 19 mils – Dry 7 - 8.5 mils
Depending on surface texture and porosity. Be sure to estimate the right amount of paint for the job. This will ensure color uniformity and minimize the disposal of excess paint.	
Dry Time @ 77 °F (25 °C) @ 50% RH	– Tack Free 2 – 4 Hours – To Recoat 4 – 12 Hours – To Cure 4 to 7 Days
High humidity and cool temperatures will result in longer dry, recoat and service times.	
Dries By	Evaporation
Viscosity	125 – 130 KU
Flash Point	N/A
Gloss / Sheen	Eggshell 8-12 @ 60° / 25-30 @ 85°
Surface Temperature at Application	– Min. 50 °F – Max. 95 °F
Thin With	Clean Water
Clean Up Thinner	Warm, Soapy Water
Weight Per Gallon	11.0 lbs.
Storage Temperature	– Min. 45 °F – Max. 95 °F

##### Volatile Organic Compounds (VOC)

93 Grams/Liter 0.78 Lbs./Gallon  
Sag rating of 20+ Mils

◇ Reported values are for White. Contact dealer for values of other bases or colors.

## Lead Block® Lead Encapsulant Coating Eggshell EC-3210

### Surface Preparation

The surface to be coated must be clean, sound, dry and free of dirt, grease, oil, wax, rust, mildew, flaking paint or any other contamination that could affect proper adhesion and film performance. Remove surface dirt, grease and oil by washing the surface with an oil and grease emulsifier, per label instructions. Any wax contamination should be removed by cleaning the surface with a commercial wax remover. Active mildew spores must be removed by washing the surface with a solution of one part household bleach\* mixed with six parts water. Rinse thoroughly with clean water following all label instructions.

\*Follow bleach manufacturer's instructions for safe handling and use of bleach solution.

Rust should be tightly adhering. Remove loose or flaking paint by hand scraping. Preliminary to scraping, cover the entire horizontal work area with plastic drop cloths to collect all paint chips removed.

**Adequate respiratory protection is strongly recommended as lead dust could be generated during the scraping procedure.**

Once all loose paint has been removed, repair the surface irregularities using joint compound for interior wall or ceiling surfaces. To smooth joint compound on interior surfaces, use a damp sponge to evenly blend the compound into the surrounding surfaces. Avoid dry sanding lead bearing surfaces whenever possible. Fold plastic drop cloths from the outside edges to the middle making sure all paint chips and assorted residue are contained within the plastic. Treat this residue as hazardous waste and dispose of in accordance with all local, state and federal regulations. HEPA Vacuum (High Efficiency Particulate Accumulator) all surfaces to remove hazardous lead dust and particles. Existing high gloss to enamel surfaces require special preparation. Three options are available when dealing with glossy or enameled finishes. The first option is probably the fastest and easiest. Make sure the surface is clean from contamination, as previously mentioned and apply a coat of primer. Apply at no more than 2 mils wet film thickness and allow overnight cure before finishing with Lead Block. The second option is to wet scour the glossy surface using a TSP (or equivalent) and water solution with coarse bronze wool until the gloss is eliminated. After the surface dries out, HEPA Vacuum the surface and the surrounding area and follow up with wet mopping. The third option is to use a chemical deglossing material as an alternate method to wet scouring. Follow all label directions completely.

Any bare surfaces resulting from surface preparation procedures should be spot primed with an appropriate primer for the surface: as listed:

**Drywall/Plaster** – Insl-x® AQ-0400 Aqua Lock™ Plus

**Masonry** – Coronado® 48-11 Acrylic Masonry Primer-Sealer

**Ferrous Steel** – Corotech® V110 Acrylic Metal Primer

**Galvanized** – Corotech® V110 Acrylic Metal Primer

**Interior Wood** – Insl-x® AQ-0400 Aqua Lock™ Plus

**Exterior Wood** – Insl-x® TB-1100 Blockout® Primer

**WARNING!** If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Informational Hotline at 1-800-424-LEAD or log on to [www.epa.gov/lead](http://www.epa.gov/lead).

### Application

Stir this product thoroughly before use. Once stirred, Lead Block is ready to use. Do not thin or incorporate any additives into this product. Apply Lead Block in a one-coat process, applied at 14-16 wet mils using the airless spray method. This is the preferred method of application and will produce a uniform and smooth finish. Because of the high viscosity of this material, the airless spray pump must be powerful enough to pump the material, without lag or fingering at the gun, when using a 0.019 to 0.025 tip orifice. Apply 14-16 mils WFT by spray, one coat only. If applied by brush or roller, use only top quality application tools so the smoothest possible finish can be obtained. Multiple coats will be necessary to achieve the desired film thickness. Expect 7-8 mils WFT per coat by brush and 8-12 mils WFT by roller. Pay particular attention to wet film thickness rates, when applying by brush or roller, to make sure adequate film build is achieved. Do not apply if surface or air temperatures are below 50 or above 95 degrees Fahrenheit.

### Clean Up

To Clean Up tools use mild soap and water.

### Environmental Health & Safety Information

#### Warning

**May cause an allergic skin reaction**

**Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves.

**Response:** IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**Disposal:** Dispose of contents/container to an approved waste disposal plant.



**WARNING** Cancer and Reproductive Harm—  
[www.P65warnings.ca.gov](http://www.P65warnings.ca.gov)

This document represents hazards of the product referenced above. Refer to the individual Safety Data Sheet for hazards of the specific product you will be using.

**KEEP OUT OF REACH OF CHILDREN  
PROTECT FROM FREEZING**

**Refer to Safety Data Sheet for  
additional health and safety information.**





## PRODUCT DATA SHEET

### LeadX™ Clear Lead Encapsulation Coating

#### USES:

- ✓ Commercial buildings
- ✓ Homes
- ✓ Historical Buildings
- ✓ Government Buildings
- ✓ Hospitals/Schools
- ✓ Pipes
- ✓ Wood
- ✓ Nuclear facilities

#### BENEFITS:

- ✓ Easy encapsulation of lead
- ✓ Mold resistant, without use of harsh chemicals
- ✓ Moisture resistant
- ✓ Non-toxic, water-based, low VOC
- ✓ Clear, allowing surface to remain visible
- ✓ Outstanding durability and weathering
- ✓ Easily applied by brush, roller or paint sprayer
- ✓ Space saving – each coat is applied at 4 wet mils; a 2-coat application is standard
- ✓ Can be painted over
- ✓ Breathable, won't act as a vapor barrier
- ✓ Easy cleanup
- ✓ 20-year warranty for interior use; 5 year warranty for exterior use

## Award Winning Energy Saving and Asset Protection Coatings



#### OVERVIEW:

Clear lead encapsulation coating. Sustainable coating which is used to encapsulate and remediate lead based paint and lead contaminated surfaces. Use over brick, painted walls, wood, concrete, stucco, and many other surfaces. Can be painted over. Once cured, can perform at temperatures between -40F (-40C) up to 256F (125C).

Clear, nanotechnology-based coating for safe encapsulation of lead and mold resistance used for lead abatement of building surfaces, such as walls, ceilings, pipes, and more. Color: Translucent (ClearCoat) with a smooth, matte finish.

#### ADVANTAGES:

**LEAD ABATEMENT:** Safe and effective encapsulation of lead based paint and lead contaminated surfaces such as wood, brick, concrete, and more.

**MOLD RESISTANCE:** Resistant to growth of mold and mildew. Coating has been tested to ASTM D5590 and ASTM G21 for mold resistance. Reduces chance of food contamination.

**EXCELLENT ADHESION:** Forms a strong bond with the surface to protect from lead. ASTM D4541 tested for superior pull-off strength at 2400-2450 psi.

**ENVIRONMENTALLY FRIENDLY:** Non-toxic, non-flammable, water-based coating is low VOC, low odor, and environmentally friendly. Synavax™ coatings are a sustainable, green technology.

**SURFACE PROTECTION:** Highly moisture resistant as well as UV resistant, protecting underlying building surfaces from weathering and damage due to the elements.

**COLOR OPTIONS:** Clear, White, or Custom Tint (25 gallon minimum for custom tint)

#### CONTACT/ORDERING:

Phone: 800-858-3176

Order Online: [www.synavax.com](http://www.synavax.com)



## PRODUCT DATA SHEET

## Award Winning Energy Saving and Asset Protection Coatings

### PRODUCT DATA:

Theoretical coverage rate for One Gallon (3.79 Liters)	Yields approximately 4 mils/100 microns wet film thickness (1 coat) over 450 square feet (42 square meters) of surface area, depending on surface.
Coverage rate for typical application for One Gallon (3.79 litres)	Yields approximately 8 mils/200 microns wet film thickness (2 coats) over 225 square feet (21 square meters) of surface area, depending on surface.
Typical applied coat thickness	4 wet mils (100 microns) per coat
Typical dry film thickness (DFT) of 1 coat	.75 mil (19 microns) DFT
Typical touch dry time for 1 coat	20 minutes to 1 hour
Typical full cure time	30 days, dependent upon environmental variables
Shelf life	2 years, from date of manufacture
VOC content	100 g/L (calculated)
Viscosity	3000 to 3500 (cps)
Cross Hatch Adhesion - ASTM D-3359	0% 5B, edges remain smooth, no flaking
Pull Apart Strength - ASTM D-4541	2400-2450 psi
Flame Spread- ASTM E84	Class A
U/V Cabinet Aging Cabinet	Passed 10 year equivalent with no discoloration or loss of adhesion
Mold Resistance - ASTM D5590 & G21	Zero or minimal growth
Microbiology Testing - Gleocapsa Magma	Zero growth
Lead Testing	0% detectable lead when coated over solid lead blocks
Emissivity as tested on concrete roof tile	0.91
Permeability	5 perms/inch @ 23 deg C.

### OTHER TESTING:

LeadX™ has been thoroughly tested on solid lead blocks during in house controlled laboratory testing, and was shown to successfully encapsulate lead and prevent lead from leaching through to the surface.

LeadX™ has also been tested individually by many environmental remediators who have identified it as their lead encapsulant of choice.

### LIMITATIONS:

Do not use as a final floor covering.

Do not use over flaking paint.

Do not install where long-term submersion in liquid or continuous exposure to moisture is a possibility.

Do not install over poor surfaces, such as those with flaking paint, grease or other contaminates.

Do not allow application to be subject to rain or condensation for at least 72 hours.

Do not allow application to be subject to freezing temperatures during first 30 days.

Do not rely on visual measurement for coating thickness. Always use a wet film thickness (WFT) and/or dry film thickness (DFT) gauge in several areas to ensure proper application thickness. See Crystal Application Handbook for further details.

### APPLICATION HANDBOOK:

The Synavax™ Application Handbook for buildings, which includes application of the LeadX™, is available for download at: [www.synavax.com](http://www.synavax.com).

All statements, technical information and recommendations contained in this document are based upon tests or experience that Synavax™ believes are reliable. However, many factors beyond Synavax's control can affect the use and performance of a Synavax™ product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the Synavax™ product to determine whether it is fit for a particular purpose and suitable for the user's method of application. No warranty, expressed or implied is given regarding the accuracy of this information. Except where prohibited by law, Synavax™ will not be liable for any loss or damage arising from the Synavax™ product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability. For questions, contact Synavax™ at 800-858-3176 or [contact@synavax.com](mailto:contact@synavax.com). Products are Made in the USA.



# ECOBOND™ LBP: Lead Defender™ PRO

Lead Based Paint Sealant and Treatment,  
Latex Primer and Paint



FPPROPERTIES	
Fill/Max Tint (oz)	124/4 per gal.
VOC	<15 g/L
Flashpoint	N/A
Composition	
Vehicle	Acrylic Polymer
Weight Solids	17.5% (+/- 2%)
Volume Solids	21.8% (+/- 2%)
Wt: 1 Gal	13 lbs
Wt: 5 Gal	57 lbs
Viscosity	90 kμ
PRODUCT TESTING	
<ul style="list-style-type: none"> <li>EPA Method 1311: Reduces lead hazards by up to 95%</li> <li>ASTM E1613-12: Reduces airborne lead dust by up to 99%</li> <li>EPA 9200.1-86: Reduces relative lead bioavailability by up to 75%</li> <li>EPA Method 1312: Resists acid rain</li> </ul>	

## RECOMMEND FILM THICKNESS

- Single coat 4-6 mil wet for typical application
- Incrementally layer up to 12 mil wet for higher concentrations of lead

## COVERAGE

250-300 sf/gal depending on surface texture, porosity and application method

## APPLICATION TEMPERATURE

50° – 100° F

## APPLICATION TOOLS

- **Airless Sprayer:** Recommended tip size .017-.031, filters removed
- **Roller:** High quality ½ - ¾ " nap
- **Brush:** Nylon/polyester blend

## DRY TIME AT 77° F, 50% RH

- To touch: 2-4 hours
- To recoat/topcoat: 4 hours

Application at lower temperatures, high humidity, or poor ventilation will affect dry time.

**PRODUCT DESCRIPTION:** Specially formulated for professional use with patented lead treatment reagents, paint penetrators, paint softeners, and the best professional-grade quality latex paint to penetrate, bond, seal and treat existing lead paint applications and control the spread of airborne lead. Advanced human bioavailability reduction, resistance to acid rain, low odor, low VOC, quick dry penetrating resin, firm anchorage and paint application compatibility. For use on interior and exterior surfaces.

**WHERE TO USE:** Use to seal and treat lead paint/dust as a self-priming interior paint or as an exterior primer prior to application of standard exterior topcoat. Ideal for offices, retail/commercial/industrial facilities, DOT structures, schools, and residential. Superior adhesion on most properly prepared substrates, the unique **Paint-it-on Leave-it-on™** formula can be used on a variety of surfaces including, but not limited to:

- Wood
- Drywall/Plaster
- Steel
- Masonry
- Brick
- Metal
- Concrete
- Asphalt

## SURFACE PREPARATION

- Surface must be clean, dry, and free of dust, rust, grease, oil, and peeling paint that could interfere with adhesion
- Patch and repair any damaged areas such as holes and cracks
- High Gloss Surfaces may be prepared by application of a liquid deglosser and or TSP, rinse well and allow to dry; High gloss topcoat applications, may require scuffing
- Prepare Masonry Surfaces by applying a masonry sealer prior to Lead Defender™ PRO application. Remove all dust with a damp cloth, allow surface to dry

## APPLICATION

- Eye protection is recommended
- Apply when air and surface temperatures are between 50-100° F
- Apply as supplied using a sprayer, roller, or brush
- Thoroughly mix prior to use for 1-3 minutes

## APPLICATION (cont.)

- Initial testing is recommended by painting a small area prior to full application to confirm compatibility
- Protect surface from rain or moisture until dry

## CLEANUP AND DISPOSAL:

- Clean spills immediately with soap and warm water
- Wash hands, tools, and equipment with warm soapy water after use
- Dispose of all waste according to current local, state, and federal regulations





## ECOBOND™ LBP: Lead Defender™ PRO

Lead Based Paint Sealant and Treatment,  
Latex Primer and Paint



### SAFETY PRECAUTIONS:

- Follow lead work safe practices (<http://www2.epa.gov/lead/renovation-repair-and-painting-program>) and all appropriate guidelines (e.g. OSHA, NIOSH, EPA and all other applicable Federal and State Laws and Regulations).
- To control lead exposure, the use of a respirator, eye protection, and protective clothing is recommended.
- Use only with adequate ventilation, if you experience difficulty breathing; leave the area to obtain fresh air. If continued difficulty is experienced, seek medical assistance immediately.
- Avoid contact with eyes and skin; in case of eye contact, flush immediately with plenty of water for at least 15 minutes and seek medical assistance. For skin, wash thoroughly with soap and water.

**LEAD WARNING:** If you scrape, sand, or remove old paint, you may release lead dust. Lead is toxic. Exposure to lead dust can cause serious illness, such as brain damage, especially in children. Pregnant women should also avoid exposure. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log onto [www.epa.gov/lead](http://www.epa.gov/lead).

**DANGER – Harmful if swallowed; Keep out of reach of Children**

This information is provided “as is” and no representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or of any other nature are made with respect to this information or to any product referred to in this information. For SDS or to consult with a technical service representative, call 888-520-7132

**WARRANTY:** Manufacturer warrants that the Products are free from defects in material and workmanship under normal use and proper storage. Manufacturer’s obligation under this warranty shall be limited to replacement of any product that may be defective within 30 days from the date of purchase, and which upon Manufacturer’s examination discloses to Manufacturer’s satisfaction to be defective, or at the Manufacturer’s option, to refund an amount equal to the purchase price paid. This warranty is expressly in lieu of all other warranties expressed or implied, including the warranties of merchantability and fitness for use, and of all other obligations or liabilities on manufacturer’s part, and manufacturer neither assumes, nor authorizes any other person to assume for manufacturer any other liability in connection with the sale of this product. This warranty shall not apply to product or any part thereof, which has been subject to freezing, excessive heat, dilution, improper mixing, improper surface preparation, improper storage, or improper application.

**DISCLAIMER:** Although the information contained herein is offered in good faith, such information is expressly given without any warranty (expressed or implied) or any guarantee of its accuracy or sufficiency and is taken at the user's sole risk. User is solely responsible for determining the suitability of use in each particular situation. ECOBOND™ LBP, LLC specifically disclaims any liability whatsoever for the use of such information including without limitation, any recommendations which user may construe and attempt to apply which may infringe or violate patents, licenses, and/or copyrights.

Lead Defender™ and Lead Defender™ PRO are ECOBOND™ LBP brand products  
For more information about the complete line of Lead Defender™ products visit [www.ecobondlbp.com](http://www.ecobondlbp.com)



ECOBOND LBP, LLC  
888-520-7132 info@ecobondlbp.com

## Paint and Plaster Stabilization Project Plan and Procedures

The School District of Philadelphia (District) has developed a Paint and Plaster Stabilization Project Plan and Procedures. The plan and procedures were jointly developed with the District's Office of Environmental Management and Services and the Philadelphia Federation of Teachers' Health and Welfare Fund and Union's Director of Environmental Science & Occupational Safety & Health.

Paint and Plaster Stabilization is a term that describes the process of a qualified group of trained professionals performing the removal of loose, peeling, flaking and damaged paint and plaster under controlled conditions. The work is performed in accordance with the US Environmental Protection Agency (EPA) Lead Renovation, Repair and Painting rule. The purpose of the work is to minimize the risk of children's exposure to lead-based paint while at school.

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### Contents:

- I. Communication & Collaboration
  - II. Preliminary Steps
  - III. Stabilization Procedures
  - IV. Oversight
  - V. Testing
  - VI. Project Closeout
- 

### I. Communication & Collaboration

Communication by the Operations Division with parents, principals, teachers and staff will take place at a minimum of 10-days prior to work commencement at a school. The Operations Division will coordinate and collaborate with the Philadelphia Federation of Teachers' Health and Welfare Fund and Union's Director of Environmental Science & Occupational Safety & Health on all communication activities and all work scopes, FAQs, notifications and other materials will be shared. The following communication will take place at every school in the program.

#### 1. *Email to Principal*

An email to principals will be sent by the Operations Division at least two weeks in advance of work starting to announce that the project will commence at their school. The email will share coordination information including:

- Determining relevant school calendar issues such as testing and holidays.
- Providing the initial work schedule.
- Explaining the need for logistical support and help with storage, relocations and replacement of belongings in classrooms and closets.
- Requesting a point of contact for School Advisory Council and/or Home and School Association.

#### 2. *Letter to Families and FAQ Sheet*

## Paint and Plaster Stabilization Project Plan and Procedures

A backpack letter will be sent home with students to announce that the project will commence within 10 days. A Frequently Asked Question sheet will be provided to parents. The EPA Lead RRP pamphlet will be sent home with students in grades Pre-K to 1 via backpack. The pamphlet will also be made available in the Main Office.

### 3. *Kick Off Meeting*

A kick off meeting will be conducted by the Operations Division. The meeting will be scheduled through the school's principal. The purpose of the meeting is to share information with teachers, staff and families about the project's work plan and procedures. A presentation will be provided by the Operations Division. The meeting will provide the opportunity for questions and answers.

### 4. *Teacher Notification*

Teachers will be notified directly by the Operations Division through an email and a postcard will be placed in each teacher's mailbox 10-days in advance of the project start.

### 5. *Detailed Work Scope Determination*

A school-specific scope determination report (i.e., the location and quantity of paint and plaster to be stabilized) will be made available in the school's main office and will also be emailed to a designated representative of the School Advisory Council and/or Home and School. An email from the school providing the name of the designated point of contact should be emailed to: [capitalprograms@philasd.org](mailto:capitalprograms@philasd.org).

### 6. *Weekly Email to Principal and SAC/HSA*

A weekly email will be sent to the Principal and a designated point of contact for the school's SAC/HSA to share the stabilization schedule. The Paint and Plaster Stabilization Plan and Procedures will also be emailed to the Principal and HSA/SAC.

## II. Preliminary Steps

### 1. *Decluttering*

Classrooms, closets and other storage areas will need to be decluttered prior to commencing stabilization work. Coordination will be required for decluttering activities between teachers and facilities staff to ensure that outdated and unneeded academic materials can be discarded, and that resources are provided to assist in the decluttering task such as heavy lifting support staff for moving large furniture and such as additional recycling dumpsters.

### 2. *Wall Hangings*

Posters, bulletin boards, framed art and other wall hangings will have to be removed in order for the paint stabilization project to commence. This will be coordinated with teachers by the Operations Division at the kick off meeting and during the phasing of the project through the principal.

### 3. *Pre-Cleaning*

## Paint and Plaster Stabilization Project Plan and Procedures

On an as-needed basis for areas such as cluttered storage closets that require extensive movement of materials and HEPA vacuuming and wet wiping prior to paint and plaster stabilization, the Maintenance Environmental staff will perform a pre-cleaning in advance of stabilization work. The intent of this task is to provide a clean work area prior to stabilization. Pre-cleaning will take place in work areas where painters are able to complete stabilization in one work shift. Otherwise, post-cleaning will take place (described below).

### 4. *Post-Cleaning*

Post-cleaning will be conducted by facilities staff after paint and plaster stabilization is completed. This will include the HEPA vacuuming and wet-wiping of all horizontal surfaces and polishing floors. Testing will be conducted after the post-cleaning is completed in accordance with the plan's testing section.

### 5. *Swing Space*

The identification of swing space will be required to ensure that classrooms are available during the school year. A plan will be created on a school by school basis to relocate students and teachers from classrooms during the course of this work. All work areas will be scheduled for a cleaning by facilities staff after the paint stabilization work is completed by Maintenance. This will require an additional day to complete, therefore, swing space is essential.

### 6. *Cleaning Staff Training*

Cleaning staff will be provided with information about this project and expectation for post-cleaning.

## III. Stabilization Procedures

Paint and plaster stabilization work will comply with the EPA's Lead RRP rule. All staff conducting this work will be certified as Lead RRP workers.

The following procedures should be followed:

### 1. *Work Practices*

- Isolate work areas to restrict dust from impacting adjacent areas.
- Post signs/notifications as per EPA Lead RRP.
- Place "walk-off" pads at all access points into/out of work area.
- Seal all openings [windows, doors and HVAC system registers/grilles] inside work areas as per direction from on-site environmental monitors and consistent with the EPA Lead RRP rules & guidelines.
- **Workers should wear disposable clothing and foot coverings while inside work areas – do not leave work areas wearing disposable clothing.**
- Move/cover all remaining objects in work area to protect them.

## Paint and Plaster Stabilization Project Plan and Procedures

- Employ/Erect “portable” dust containment barrier systems to limit the size of work areas requiring post-cleaning and limit testing and exposure.
- Place plastic floor coverings to extend at least 6 feet out from vertical surfaces being stabilized unless utilizing vertical barriers/containment systems.
- Perform all paint stabilization work in compliance with the EPA Lead RRP rules & guidelines and as per the directions of on-site environmental monitors to minimize dust contamination.
- Take all steps necessary to ensure that no dust or debris leaves the work area while the work is being performed.
- Use precautions to ensure that all employees, tools, and other items, including the exteriors of waste containers, are free of dust and debris before leaving the work area.
- Collect all paint chips & debris, fold up plastic floor coverings and any other plastic sheeting used on horizontal surfaces, without dispersing dust or debris and dispose of the material in heavy duty plastic waste bags.
- Do not use power tools.
- Do not use dry sweeping with brooms.
- Do use water/misting during stabilization to minimize dust.
- Do use HEPA vacuums and wet wiping/cleaning techniques.

### 2. *Clean-Up & Completion of Stabilization Work*

- There should be no signs of loose, peeling, flaking, bubbling or crumbling paint or plaster visible on walls or ceilings or on any other painted surfaces.
- There should be no visible signs of paint chips, debris or dust of any kind on surfaces within “contained” and isolated work areas NOR outside of the contained and isolated work areas.
- Window sills, floors, baseboards, shelving units, tops of cabinets, desks, chairs, tables and all other horizontal surfaces must be free of any visible signs of paint and plaster dust and/or debris.
- There must be absolutely no visible signs of paint chips, and/or paint/plaster dust or debris on academic/educational materials, including books, bins, toys, desks, chairs, carpets, papers, etc., after each work shift and to allow for re-occupancy the next day,
- Any remaining paint and plaster must be tightly adhered to wall and ceiling surfaces such that it can not be further damaged, pried off or disturbed by “simple fingernail pressure” otherwise work will not be considered to be successfully completed.
- Newly painted surfaces should match the aesthetics of the area in total and should cover the entirety of the wall or ceiling area that was addressed through this work. No visible “patches” of paint should be observed.

## IV. **Oversight**

The environmental technician will oversee paint and plaster stabilization work to ensure compliance with lead safe work practices. An oversight report will be completed at the end of every shift to record the work areas that were stabilized. The following tasks will be verified and recorded:

- Pre-cleaning



## Paint and Plaster Stabilization Project Plan and Procedures

- Contents moved
- Work area prepped
- Surfaces stabilized
- Contents back in place
- Final inspection approval and photos

### V. Testing

The District and the PFT worked closely to develop an agreed upon approach to verify that stabilization work was performed in accordance with lead safe work practices, and that classrooms will be safe for re-occupancy by children and staff. This approach exceeds the EPA Lead RRP rule requirements in terms of the types of and amounts of testing performed.

Testing will take place only on surfaces in a specified Lead RRP work area. All other areas in a space, e.g., classroom, will be visually inspected but not tested. For example, in a room where only one wall out of four is receiving paint and plaster stabilization, the testing procedures outlined in the plan will only apply to the designated work area for that wall. All other areas will be visually inspected for signs of paint chips, dust and debris.

Qualitative testing methods, i.e., visual inspection and EPA RRP Verification Testing, will be systematically compared with quantitative testing methods i.e., XRF Analyzer Dust Wipe Test, for 10-business days of the project at a given school. If the comparison testing is consistently correlated in terms of pass/fail, only qualitative testing will continue for the duration of the project.

#### 1. *Initial Visual Inspection*

Following lead-based paint stabilization work and cleanup performed by RRP certified painters, a visual inspection will be performed by a “certified renovator” supervisor and the on-site, third party environmental technician, to verify that the area is free of paint chips, paint debris, and visible dust.

Following the completion of EPA RRP lead stabilization in a work area, sampling personnel will wait one (1)-hour prior to *initiating* the testing.

#### 2. *EPA RRP Verification Testing*

The EPA RRP cleaning verification testing will be performed in accordance with Title 40 §745.85, within the work area.

Detailed as follows:

## Paint and Plaster Stabilization Project Plan and Procedures

- When work areas have passed the visual inspection, the cleaning verification procedure is performed by wiping all dust collection surfaces in the work area with a wet, disposable cleaning cloth and comparing that cloth visually to a cleaning verification card. Dust collection surfaces include, but are not limited to, window sills, countertops, desks, chairs, bookshelves, cabinets, and floors, found within the work area.
- Each window sill, in the work area, will be wiped by using a single, wet, disposable cleaning cloth. Once the entire window sill surface is wiped, the cleaning cloth is compared to the cleaning verification card.
- Each horizontal surface, within the work area, will be wiped using a wet disposable cleaning cloth.
- For smaller countertops, unit ventilator covers, floors, etc., with a total surface area less than 40 square feet—wipe the entire surface with a single wet disposable cleaning cloth and compare to the cleaning verification card.
- Large area surfaces, such as large countertops and floors, have surface areas larger than 40 square feet—each of these large countertops and floors must be divided into roughly equal sections that are 40 square feet or less.
- Wipe each section separately using a new wet disposable cleaning cloth for each separate section.
- When conducting cleaning verification on floors, the wet disposable cleaning cloth will be attached to the handle of a wet mopping system.
- The use of the wet mopping system handle allows the sampler to apply uniform pressure on the cleaning cloth.
- Each cleaning cloth is then compared to the cleaning verification card.

### 3. *Colorimetric Instant Wipe Test*

Following clearance by the EPA RRP cleaning verification testing, the environmental technician will use an SKC, Inc. “Full Disclosure® Instant Wipe” to validate the veracity of the results obtained by the qualitative dust verification testing outlined by the EPA RRP Rule. If the validation lead dust wipe sampling analytical results are found to be consistent with the results of the dust verification testing, the lead dust wipe sampling validation sampling will end after 10-business days.

The NIOSH-developed SKC, Inc. Full Disclosure® Instant Wipes will be used to collect an additional qualitative result for the presence of lead-containing dust on the surfaces of concern. Environmental technicians will follow the manufacturer’s recommendations for sample collection and colorimetric determination of results.

The “Instant Wipes” will be collected at agreed upon locations on at least 20% of the of the surfaces where the EPA RRP cleaning verification testing was performed ensuring that at least one wipe per impacted horizontal surface is used.

After a period of 10 business days or 2 weeks, and daily sample collection in at least the first two (2) schools, representative from the SDP-OEMS and PFTH&WF/U’s Director of Environmental

## Paint and Plaster Stabilization Project Plan and Procedures

Science & Occupational Safety & Health, will evaluate all results and findings and come up with recommendations for how, and if, this approach should be continued and on what frequency.

### 4. XRF Analyzer Dust Wipe Test

Lead-wipe samples, analyzed by an X-Ray Fluorescence (XRF) analyzer with dust wipe capabilities, will be performed to determine a quantitative result for the presence of lead-containing dust on the surfaces of concern. Environmental technicians will follow the manufacturer’s recommendations for sample collection and analysis by XRF.

The XRF-analyzed wipes will be collected, at agreed-upon locations on at least 20% of the surfaces where the EPA RRP cleaning verification testing was performed and sufficient to ensure that a minimum of one sample per each individual type of horizontal surface (e.g stone flooring, hardwood flooring, desktops, etc.) will be collected.

For any location where either the “Instant Wipe” or XRF-analyzed wipe are found to have concentrations of lead above the lead clearance levels established, the location will be re-cleaned and re-tested until a concentration below the lead clearance level is achieved.

Three testing methods will be conducted as follows:

Type of Clearance Tests	Building Component	Number of Sample Locations within Work Area	Type of Testing	Testing Specifications/Limitations
EPA RRP Cleaning Verification Wipe	Floors, Countertops, Desks, Tables, Window Sills	One (1) wipe every 40 square feet (ft <sup>2</sup> ) or entire surface of component if surface area is less than 40ft <sup>2</sup>  One (1) wipe for every window sill	Qualitative	<ul style="list-style-type: none"> <li>• Qualitative testing based on cleanliness (white glove test)</li> <li>• According to RRP, the areas pass after the 3<sup>rd</sup> cleaning, regardless of verification</li> </ul>
SKC, Inc. Full Disclosure® Instant Wipes	Floors, Countertops, Desks, Tables, Etc  Window Sills	20% of surfaces wiped using EPA RRP Cleaning Verification Wipes	Qualitative	<ul style="list-style-type: none"> <li>• Qualitative testing based on colorimetric visual comparison</li> <li>• Lower Limit of Visual Detection is 18µg of lead</li> <li>• False positive and false negative interferences from silver, cadmium, barium, mercury, and titanium (percentages unknown).<sup>2</sup></li> <li>• Involves field preparation of sampling media using reagents</li> </ul>

## Paint and Plaster Stabilization Project Plan and Procedures

XRF-Analyzed Wipes	Floors, Countertops, Desks, Tables, Etc  Window Sills	20% of surfaces wiped using EPA RRP Cleaning Verification Wipes	Quantitative	<ul style="list-style-type: none"> <li>• Limit of Detection is 10µg of lead per wipe</li> <li>• XRF analysis is statistically comparable to analysis by Atomic Absorption Spectroscopy<sup>3</sup></li> <li>• Involves field preparation of samples (drying of samples in toaster oven) that takes up to 25 minutes per sample.</li> </ul>
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### 5. *Optional Stakeholder Involvement with Testing and Verification*

The opportunity for parent and teacher involvement in verifying that areas are safe for re-occupancy after stabilization work is completed will be provided in the form of a small stakeholder team on an as requested basis. This will be offered at kick off meetings and scheduled through the Environmental Office.

The process will include:

In the morning between 7:00 and 7:30 a.m., a small stakeholder team including parent, teacher and other designated representatives will meet at the school. Information about areas in which stabilization work was completed the night before will be provided.

Following a visual inspection by the stakeholder team, both supplemental testing methodologies will be demonstrated.

## VI. **Close Out**

1. Letter to parents
2. Post card placed in teachers' classrooms after area is completed
3. Final report in Main Office

## Procedures for Moving Ceiling Tiles in Pre-1978 Buildings

Buildings built prior to 1978 are assumed to contain lead paint and caution should be exercised when moving ceiling tiles to prevent chips and plaster debris from falling into occupied areas. The following procedures should be followed when moving ceiling tiles:

### Materials/Equipment Required:

- Ladder
- Flashlight
- Plastic Sheeting
- HEPA vacuum
- Paper Towels
- Approved Cleaner in Spray Bottle

### Procedures:

- 1) Ceiling tiles should not be moved when the room is occupied by students and teachers;
- 2) Ceiling tiles should be re-installed or replaced before the room is occupied by students and teachers;
- 3) Classroom contents and educational materials located below the ceiling tiles to be moved should be relocated;
- 4) Non-movable objects located under the ceiling tiles to be moved should be covered with plastic sheeting;
- 5) The floor located under the ceiling tiles to be moved should be covered with plastic sheeting extending at least 2 feet past the furthest edge in all directions of the ceiling tiles to be moved;
- 6) Carefully push the ceiling tile above the suspended grid and slide the tile to the side;
- 7) Inspect the top side of the ceiling tile for paint chips and plaster debris;
- 8) HEPA vacuum the top side of the ceiling tile and remove from the grid if necessary;
- 9) Inspect the plastic sheeting and surrounding areas for debris that may have fallen from above the suspended ceiling;
- 10) The plastic sheeting and surrounding areas should be HEPA vacuumed if there was fallout from above the ceiling grid;
- 11) Any materials or areas beyond the plastic sheeting that required HEPA vacuuming from the previous step will also need to be wet wiped;
- 12) Replace or re-install the ceiling tile;
- 13) Inspect all tools and equipment, HEPA vacuum and wet wipe as needed before moving from the plastic sheeting;
- 14) Carefully gather and fold the corners of the plastic sheeting place into a trash bag a seal for disposal;
- 15) Remove all materials, equipment, and waste from the area and store in a designated located.

**BID PROPOSAL FORM (REVISION 2)  
MAJOR RENOVATION AND ADDITION  
RICHMOND ELEMENTARY SCHOOL**

**Contract No. B-111C of 2017/18 General 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**

**FROM:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**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: **Contract No. B-111C of 2017/18-General Construction**

for the lump sum consideration of: \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$\_\_\_\_\_), said amount being hereinafter referred to as the Base Proposal Amount. Base proposal Amount includes Unit Price Items listed below, if applicable.

**BID ALTERNATES (Not applicable to this Contract – No Alternates)**

**UNIT PRICES: (Included Base Bid Amount)**

**UNIT PRICE NO. 1: EXCAVATION AND DISPOSAL OF UNSUITABLE SOILS ONLY.**

1. Excavation and Disposal of **unsuitable** material beyond the design lines, grades and elevations or other limits indicated in the Contract Documents, as directed by the Owner's designated representative in accordance with Section 31 000-EARTHWORK , as applicable. (This unit price does not apply to excavation and offsite disposal of **suitable** material rendered **excess** by the construction of the New Addition))

2. Unit of Measurement: Cubic yard (CY) of excavated material as measured by the volume of the excavated area.

3. Payment: Payment to be made for the actual quantities in accordance with Section 01 1600-UNIT PRICES.

4. Base Bid Quantity: 1,200 CY

5. Unit Price Calculation (to be included in Base Bid Amount):

1,200 CY @ \$ \_\_\_\_\_ per CY=  
\$ \_\_\_\_\_ Total\*

**\*This amount included in Base Bid Amount**

**UNIT PRICE NO. 2: IMPORTED STRUCTURAL FILL MATERIAL**

1. Import, Place and Compact Fill Material, determined by testing as suitable for structural fill to Replace Unsuitable Soils excavated under Unit Price No.1 with the requirements of Section 31 0000-EARTHWORK.

2. Unit of Measurement: Cubic Yard (CY) of material in place, as measured by the volume of the excavated area to be filled.

3. Payment: Payment to be made for the actual quantities in accordance with Section 01 1600-UNIT PRICES.

4. Base Bid Quantity: 1,200 CY

5. Unit Price Calculation (Total to be included in Base Bid Amount):

1,200 CY @ \$ \_\_\_\_\_ per CY =

\$ \_\_\_\_\_ Total\*

**\*This amount included in Base Bid Amount**

**UNIT PRICE No. 3: PAINT AND PLASTER REPAIRS IN BASEMENT ROOMS 003, 004, 005 AND 006** and required documentation in accordance with the requirements of Section 09 0290 PLASTER PATCHING AND REPAIR **AND** Section 09 9123 PAINTING, as directed by the owner's representative.

1. Unit of Measurement: Per Square Foot (SF)

2. Payment: Payment will be made for the actual quantities furnished in accordance with Section 01 16 00 - UNIT PRICES.

3. Base Bid Quantity: 15,000 SF

4. Unit Price Calculation: 15,000 SF @ \$ \_\_\_\_\_ per SF =

\$ \_\_\_\_\_ **TOTAL\***



**\*This amount included in Lump Sum Price above**

**UNIT PRICE No. 4: PATCHING WALLS (Spackling)** in areas **not included** in the base scope of work and required documentation in accordance with the requirements of Section 09 0290 PLASTER PATCHING AND REPAIR as directed by the owner's representative as directed by the owner's representative.

1. Unit of Measurement: Per Square Foot (SF)
2. Payment: Payment will be made for the actual quantities furnished in accordance with Section 01 16 00 - UNIT PRICES.
3. Base Bid Quantity: 5,000 SF
4. Unit Price Calculation: 5,000 SF @ \$\_\_\_\_\_ per SF =  
\$\_\_\_\_\_ **TOTAL\***

**\*This amount included in Lump Sum Price above**

**UNIT PRICE No. 5: PATCHING WALLS (Plaster Work)** in areas **not included** in the base scope of work and required documentation in accordance with the requirements of Section 09 0290 PLASTER PATCHING AND REPAIR as directed by the owner's representative as directed by the owner's representative.

1. Unit of Measurement: Per Square Foot (SF)
2. Payment: Payment will be made for the actual quantities furnished in accordance with Section 01 16 00 - UNIT PRICES.
3. Base Bid Quantity: 5,000 SF
4. Unit Price Calculation: 5,000 SF @ \$\_\_\_\_\_ per SF =  
\$\_\_\_\_\_ **TOTAL\***

**\*This amount included in Lump Sum Price above**

**ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA:**

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

<u>Addendum No.</u>	<u>Date</u>	<u>Addendum No.</u>	<u>Date</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 \_\_\_\_\_, 201\_.

***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: \_\_\_\_\_ (SEAL)  
(Secretary or Treasurer) (President or Vice President)

(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 Bi