ADDENDUM NO. 2 March 31, 2020
Appoquinimink School District
Everett Meredith Middle School
Additions and Renovations – Bid Package 'A'
Page 1

The bid due date remains unchanged.
The time for receipt of bids is 2:00 p.m. on Tuesday, April 21, 2020. The location for receipt of bids is Room 138 of the Appoquinimink School District, Marion Proffitt Training Center, 118 South Sixth Street, Odessa, Delaware 19730

NOTICE: Attach this addendum to the project manual for this project. It modifies and becomes a part of the contract documents. Work or materials not specifically mentioned herein are to be described in the main body of the specifications and as shown on the drawings. Bidders shall acknowledge receipt of this addendum on the space provided on the Bid Form. Failure to do so may subject the bidder to disqualification.

Whenever this Addendum modifies a portion of the Project Manual added information is shown as **Bold** and deleted information is shown as ~~strikethrough~~.

The contract documents for the above referenced project, dated February 21, 2020 are amended as follows:

GENERAL CLARIFICATIONS:

1. The bid documents for the Asbestos Abatement contract are attached for reference purposes. Bidders need to review this document as there is work specified in this bid packs scopes of work that affect the work of the abatement contractor.

2. The 2nd site visit was conducted 26 Mar 20 at 9:00 AM. The list of attendees is attached hereto.

QUESTIONS AND ANSWERS:

1. See attached responses to RFI's - None

MODIFICATIONS TO SPECIFICATIONS:

1. SECTION 081113 – HOLLOW METAL DOORS AND FRAMES
   Page 081113-4, Article 2.04, Paragraph F:
   Add subparagraph 4:

4. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.

Page 081113-5, Article 2.04, add Paragraph H:

H. Exterior Doors: Thermally insulated.
   1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
      a. Level 3 - Extra Heavy-duty.
      b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
      c. Model 2 - Seamless.
      d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
      e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
   2. Core Material: Polyurethane, 1.8 lbs/cu ft minimum density.
   3. Door Thickness: 1-3/4 inch, nominal.
   4. Top and Bottom Closures: Flush with top of faces and edges.
   5. Provide weep-hole openings in bottom of exterior doors to permit moisture to escape.

2. SECTION 092116 - GYPSUM BOARD ASSEMBLIES
   a. Insert Section 092116, Revision 0, dated 2/21/2020, attached to this Addendum, into the Project Manual.

3. SECTION 000110 – TABLE OF CONTENTS
   a. Add the following to the end of the Table of Contents on page TOC-6,
      AHERA Asbestos Project Design/Technical Specifications for Pre-Demolition Asbestos Abatement at Everett Meredith Middle School, dated November 19, 2019. The document is 304 pages in total.

4. SECTION 011100 – SUMMARY OF WORK; make the following pen and ink changes:
   a. CONTRACT A-01 – DEMOLITION
      1. DELETE scope item no. 1 and REPLACE with the following:

         "1. Provide all labor, material, trucking, equipment, hoisting, scaffolding, power, temporary facilities, **disposal,** permit fees, supervision, layout, clean up, etc. for the complete performance of all demolition work."

      2. DELETE the first sentence of scope item no. 4 and REPLACE with the following:

         "4. Salvage and store on-site all materials listed on Demolition Sheet Notes 1, 3, 5, 6, 8, and 9."

      3. ADD the following sentence to the end of scope item no. 4.:

"The Demolition Contractor will carefully demolish and stockpile on site the bricks to be salvaged as noted in Demolition Sheet Note 2. The Masonry Contractor will be responsible for cleaning, palletizing and protecting the salvaged brick prior to turning over to the owner for engraving or being re-used in the History Wall."

4. DELETE scope item no. 6 and REPLACE with the following:

   "6. All foundation walls, slabs-on-grade, footings, areaway walls, **interior & exterior steps, interior and exterior ramps, slabs,** vault walls, shop walls, yard walls, shall be demolished to 1'-0" below the lowest foundation of the new building subgrade with non-combustible fill material.

5. DELETE scope item no. 10 and REPLACE with the following:

   "10. This contractor is to remove all fluids **and refrigerants** from existing mechanical, plumbing, **elevators, fire protection piping,** and electrical equipment prior to demolition of said equipment in accordance with all Town of Middletown, State and Federal regulations."

6. ADD the following new scope items after scope item no. 40 on page 011100-10:
   "41. The Demolition Contractor will be responsible for performing demolition work prior to and in support of the Asbestos Abatement Contractor. The AHERA Asbestos Project Design/Technical Specifications contains the specific abatement required. The following work items related to the abatement are required:
   a. Where there are plaster ceilings above ACT ceilings, the Demolition Contractor (DC) will remove the ACT, lights, sprinklers, ducts, etc. to allow the Asbestos Abatement Contractor (AAC) to access the plaster ceiling. The AAC will cut the holes in the plaster ceiling to abate the areas above the ceilings. If the plaster is not contaminated the AAC will leave the demolished materials on site for the DC to remove. If the plaster is contaminated the abatement will be done by the AAC on a unit price or time & material basis.
   b. Where there are ACT ceilings, the AAC will remove the ceiling tiles to access the area above. The AAC will place the tiles in the room for removal and disposal by the DC.
   c. The electricity in the building will remain on during the abatement period. The Electrical Contractor (EC) for the new building will be responsible for disconnecting the power to the light fixtures that need to be abated. The AAC will hire a licensed electrician to provide any temporary power or lighting needed to perform their work.
   d. The Plumbing Contractor (PC) for the new building will be responsible for disconnecting any plumbing fixtures where countertops or casework need to be abated. The PC will also disconnect all appliances in the kitchen.

e. Where there is asbestos containing mastic on the foundation walls the DC will be responsible for demolishing this portion of the building to grade. They will then be responsible to remove the slab on grade and excavate around the foundations to expose the areas with mastic. The DC will, at the direction and supervision of the AAC and Environmental Testing Inc. (ETI), remove the foundations and place the materials in the asbestos removal dumpsters provided by the AAC.
f. The DC will remove the chairs in the auditorium before any abatement begins. The AAC is responsible for safe access to the areas above the ceilings. The AAC will cut the holes in the plaster ceiling to abate the areas above the ceilings. If the plaster is not contaminated the AAC will leave the demolished materials on site for the DC to remove. If the plaster is contaminated the abatement will be done by the AAC on a unit price or time & material basis.
g. The DC will remove all kitchen equipment before any abatement work begins.
h. The DC will remove the toilet partitions in all restrooms before any abatement work begins.

42. The existing aboveground oil storage tank adjacent to the 1 story Maint. Garage on drawing C-100 has already been removed. The Demolition Contractor is responsible for the removal of the underground oil lines from the concrete pad to inside the building. This removal must be done by a contractor approved by DNREC. The Sitework Contractor is responsible for removing the concrete foundation and bollards."

"43. The following items will be salvaged and removed by the owner, prior to the commencement of the demolition work:

School		Equipment	Disposition	Make/Model/Serial	Additional Info
EMMS		Speed Queen Washer	Trash	AWN412SP111TW01	1108005528
		Blast Chiller	Move to OBL/Now	Piper products RCM0845 P/Dx	FR02002895
		Ice Machine	De City	Follett 12C400A	E22277-329 13
		Two New Hydrovexs	Move to MHS 6/20	Blodgell 13255 top	101314KJ093 T
			Move to MHS 6/20	Blodgell 13256 bottom	101314KJ094B
		Four Pass Thrus	Move to OBL 6/20	Continental DL1RE-SS-PT	15486171
			De City	Continental DL1RE-SS-PT	15486172
			Move to OBL 6/20	Continental DL1WE-SS-PT	15486174
			De City	Continental DL1WE-SS-PT	15486175
		Garbage Disposal	Store at MHS 6/20	Salvajor 100	18901
		Display Warmer/Air Screen	Move to RMS	Hatco GR35DH-27D	9083921643
		Steamer	De City	Market Forge ETP-10	050517M-1156-0246
		Dryer	Move to MHS 6/20	General Electric ML751789C	#GTD33EASKOWW
		Safe	Move to OHS 6/20		
		Serving Line w/ Ice cream Box	De City	Piper #2-708 Serial 23577	
		Serving Line-Complete	Move to CLE 6/20		
		File Cabinets	Mgr Storing		
		Reach In Fridge	Move to MHS 6/20	Continental	
		Warmer	De City	Crestor	
		Convection Oven -Double Stack	De City/Now	Blodgett	
		Slicer	De City	Hobart	
		Blast Chiller-Working	De City/Now	Piper Products RCM081	#25956
		Flat Top Stove-Not working	De City/Now	Vulcon 776-A	#7830A
		Kettle	De City	Groen 1930 1970	#DCEF/3-40
		Wall Fans-All	DEMO		
		Butcher Block Prep Table	DEMO		
		Stainless Steel Prep Table	De City		
		Stainless Cabinet w/ Wheels	De City	46x32x19	
		3 compartment sink	DEMO		
		Stainless Steel HD Shelving	De City	50	
		Stainless Steel Dry Storage Shelving	De City	Lots	
		Metro WIR Plastic Shelving	De City	57x64x25	
		Heat Booster -Dishmachine	Store at AHS 6/20	Hatco brand	
		Stainless Steel Cart (dishroom)	De City		
		Book Case	Mgr Storing		
		Break Table	Mgr Storing		
		Milk Boxes (2) 8 count	Move to CLE 6/20		
		Utensil Cart (1)	Move to OBL 6/20		
		Serving line 28 deep x46 wide w/ 2 shelves	De City	Piper	

b. CONTRACT A-02 SITEWORK

1. DELETE the first sentence of scope item no. 4 and REPLACE with the following:

   "3. Provide site amenities (**decorative and steel pipe bollards,** bike racks, exterior basketball hoops (including associated striping), flagpoles, manual and automatic gates (including associated gate hardware, etc.)."

2. ADD the following after the last sentence of scope item no. 11.a:

   "There is approximately 2,200 linear feet of fence required in Phase 1A. This fence will be reconfigured, and an additional 200 linear feet will be required in Phase 2. See Sheet C182."

3. DELETE scope item 11.c and REPLACE with the following.:

   "c. Perform site demolition as required and proceed with construction of south parking lot **and perimeter access road in front of the Field House** (Phase 1B) and associated underground utilities, curbing, sidewalks, etc. as shown on Sheet C181. Construction of the Phase 1B parking lot **and perimeter access road** must be completed and turned over to the owner for use by 8/7/2020.

4. ADD the following after the last sentence of scope item no. 11.g:

   "Patch existing manholes where existing utilities are removed, in accordance with DelDOT of Town of Middletown requirements."

5. DELETE scope item 11.i and REPLACE with the following:

   "11.i The existing underground tank and oil lines, west of the existing gymnasium, has been removed. The existing aboveground oil storage tank adjacent to the 1 story Maint. Garage on drawing C-100 has already been removed. The Demolition Contractor is responsible for the removal of the underground oil lines from the concrete pad to inside the building. This removal must be done by a contractor approved by DNREC. The Sitework Contractor is responsible for removing the concrete foundation and bollards."

6. DELETE the last sentence from scope item no. 22. There is no rock excavation on this project.

7. DELETE scope item no. 34 on page 011100-15. The temporary fence requirements are described in scope item no. 11.

8. DELETE scope item no. 48 on page 011100-16. The temporary fence requirements are described in scope item no. 11.

9. DELETE scope item no. 60 on page 011100-17. This contractor does not have any BIM related work.

10. ADD the following new scope items after scope item no. 62 on page 011100-17:

    "63. Provide all site survey and layout of this contract work from a licensed surveyor. This work includes, but not limited to, accomplishing cuts and fills, locating utilities, layout of roads and walkways, and establishing site boundaries. Benchmarks and control points will be established by the CM.

    64. Before ANY excavation work is to commence, the Contractor/Excavator shall contact the utility companies or utility owners and advise them of the proposed work and ask them to mark the location of the underground utility installations. This notification shall be done within established or customary local response times. If the work is on private property and the utility company will not mark out the utilities, the Contractor/Excavator will hire a private locating service to mark the utilities. Once the utilities are located and marked, the Contractor/Excavator will excavate by hand or use a vacuum truck to expose the utilities and record the exact location and elevation of the utilities. The Contractor/Excavator must submit the Excavation Permit to EDiS Company verifying their assurance of communication with the utility companies or utility owners. The Contractor/Excavator must follow State, Local, and Federal Guidelines prior to proceeding with excavations. The Contractor/Excavator will have these marks restored as long as there is work to perform. Once the Contractor has installed new utilities, they will provide to EDiS Company an as-built drawing, within 7 days, showing the exact location and elevation of the utilities. The installing Contractor will be responsible for locating and marking these utilities for other contractors that may have work in the same area."

c. CONTRACT A-03 CONCRETE
   1. DELETE scope item no. 44 on page 011100-21. This contractor does not have any BIM related work.

d. CONTRACT A-04 MASONRY
   1. DELETE scope item no. 36 on page 011100-25. This contractor does not have any BIM related work.

   2. ADD the following new scope items after scope item no. 38 on page 011100-25:

"39. Provide monument sign in its entirety. This includes excavation, concrete foundations, masonry, and backfill. The monument sign is near the main entrance shown on A-100.

40. Salvage and store on-site all materials listed on Demolition Sheet Notes 2 and 7 and Alternates 9, 10 and 11. The Demolition Contractor will carefully demolish and stockpile on site the bricks to be salvaged as noted in Demolition Sheet Note 2. The Masonry Contractor will be responsible for cleaning, palletizing and protecting the salvaged brick prior to turning over to the owner for engraving or being re-used in the History Wall shown on A-448. The approximate square footage of the History Wall is 600 square feet. This does not include waste. Materials can be removed from the site for cleaning and returned to the site at the contractor's expense."

e. CONTRACT A-27 PLUMBING
   1. ADD the following new scope items after scope item no. 32 on page 011100-81:
      "33. The Plumbing Contractor will be responsible for performing disconnection work prior to and in support of the Asbestos Abatement Contractor. The AHERA Asbestos Project Design/Technical Specifications contains the specific abatement required. The following work items related to the abatement are required:
      a. The Plumbing Contractor (PC) for the new building will be responsible for disconnecting any plumbing fixtures where countertops or casework need to be abated. The PC will also disconnect all appliances in the kitchen.
      b. The Demolition Contractor (DC) will remove all kitchen equipment before any abatement work begins.
      c. The DC will remove the toilet partitions in all restrooms before any abatement work begins.

f. CONTRACT A-30 ELECTRICAL
   1. ADD the following new scope items after scope item no. 50 on page 011100-92:
      "51. The Electrical Contractor will be responsible for performing disconnection work prior to and in support of the Asbestos Abatement Contractor. The AHERA Asbestos Project Design/Technical Specifications contains the specific abatement required. The following work items related to the abatement are required:
      a. Where there are plaster ceilings above ACT ceilings, the Demolition Contractor (DC) will remove the ACT, lights, sprinklers, ducts, etc. to allow the Asbestos Abatement Contractor (AAC) to access the plaster ceiling. The AAC will cut the holes in the plaster ceiling to abate the areas above the ceilings. If the plaster is not contaminated the AAC will leave the demolished materials on site for the DC to remove. If the plaster is contaminated the abatement will be done by the AAC on a unit price or time & material basis.

b. Where there are ACT ceilings, the AAC will remove the ceiling tiles to access the area above. The AAC will place the tiles in the room for removal and disposal by the DC.
c. The electricity in the building will remain on during the abatement period. The Electrical Contractor (EC) for the new building will be responsible for disconnecting the power to the light fixtures that need to be abated. The AAC will hire a licensed electrician to provide any temporary power or lighting needed to perform their work.
d. The DC will remove all kitchen equipment before any abatement work begins.

MODIFICATIONS TO DRAWINGS:

DRAWINGS – VOLUME 1:

1. DRAWING C-001: Delete Drawing C-001, and replace with Drawing C-001, Revision 1, dated 03/27/2020, attached to this Addendum.
2. DRAWING C-100: Delete Drawing C-100, and replace with Drawing C-100, Revision 1, dated 03/27/2020, attached to this Addendum.
3. DRAWING C-101: Delete Drawing C-101, and replace with Drawing C-101, Revision 1, dated 03/27/2020, attached to this Addendum.
4. DRAWING C-102: Delete Drawing C-102, and replace with Drawing C-102, Revision 1, dated 03/27/2020, attached to this Addendum.
5. DRAWING C-103: Delete Drawing C-103, and replace with Drawing C-103, Revision 1, dated 03/27/2020, attached to this Addendum.
6. DRAWING C-110: Delete Drawing C-110, and replace with Drawing C-110, Revision 1, dated 03/27/2020, attached to this Addendum.
7. DRAWING C-111: Delete Drawing C-111, and replace with Drawing C-111, Revision 1, dated 03/27/2020, attached to this Addendum.
8. DRAWING C-120: Delete Drawing C-120, and replace with Drawing C-120, Revision 1, dated 03/27/2020, attached to this Addendum.
9. DRAWING C-121: Delete Drawing C-121, and replace with Drawing C-121, Revision 1, dated 03/27/2020, attached to this Addendum.
10. DRAWING C-122: Delete Drawing C-122, and replace with Drawing C-122, Revision 1, dated 03/27/2020, attached to this Addendum.
11. DRAWING C-123: Delete Drawing C-123, and replace with Drawing C-123, Revision 1, dated 03/27/2020, attached to this Addendum.
12. DRAWING C-141: Delete Drawing C-141, and replace with Drawing C-141, Revision 1, dated 03/27/2020, attached to this Addendum.
13. DRAWING C-142: Delete Drawing C-142, and replace with Drawing C-142, Revision 1, dated 03/27/2020, attached to this Addendum.
14. DRAWING C-501: Delete Drawing C-501, and replace with Drawing C-501, Revision 1, dated 03/27/2020, attached to this Addendum.

15. DRAWING A-410: Delete Drawing A-410, and replace with Drawing A-410, Revision 1, dated 03/27/2020, attached to this Addendum.
16. DRAWING A-448: Delete Drawing A-448, and replace with Drawing A-448, Revision 1, dated 03/27/2020, attached to this Addendum.

DRAWINGS – VOLUME 2:

1. DRAWING I-113: Delete Drawing I-113, and replace with Drawing I-113, Revision 2, dated 03/27/2020, attached to this Addendum.
2. DRAWING M-112: Delete Drawing M-112, and replace with Drawing M-112, Revision 1, dated 03/27/2020, attached to this Addendum. Changes include:
- REVISE layout in Ag. Classroom 129. Refer to revised drawing M-112.
3. DRAWING M-121: Delete Drawing M-121, and replace with Drawing M-121, Revision 1, dated 03/27/2020, attached to this Addendum. Changes include:
- REVISE layout in Corridor 200B. Refer to revised drawing M-121.

LIST OF ATTACHMENTS:

GENERAL

2nd Site Visit Sign-in Sheet, dated March 26, 2020.

PREVIOUS BID PACKAGES:

AHERA Asbestos Project Design/Technical Specifications for Pre-Demolition Asbestos Abatement at Everett Meredith Middle School, dated November 19, 2019.

SPECIFICATIONS:

SECTION 092116 - GYPSUM BOARD ASSEMBLIES, Revision 0, dated 2/21/2020.

DRAWINGS – VOLUME 1:

C-001 - INDEX PLAN
C-100 - EXISTING CONDITIONS AND DEMOLITION PLAN
C-101 - EXISTING CONDITIONS AND DEMOLITION PLAN
C-102 - EXISTING CONDITIONS AND DEMOLITION PLAN
C-103 - EXISTING CONDITIONS AND DEMOLITION PLAN
C-110 – SITE LAYOUT AND UTILITY PLAN
C-111 - SITE LAYOUT AND UTILITY PLAN
C-120 - GRADING PLAN
C-121 - GRADING PLAN
C-122 - GRADING PLAN
C-123 - GRADING PLAN
C-141 – SANITARY SEWER PLAN AND PROFILES

C-142 - SANITARY SEWER PLAN AND PROFILES
C-501 – SITE CONSTRUCTION DETAILS

A-410 - INTERIOR ELEVATIONS
A-448 - ENTRY WALLS AND HISTORY WALL

DRAWINGS – VOLUME 2:

I-113 - FIRST FLOOR FINISH PLAN - AREA 'C'

M-112 – FIRST FLOOR HVAC PLAN - AREA 'B'
M-121 - SECOND FLOOR HVAC PLAN - AREA 'A'

End of Addendum No. 2

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Tel. (302) 421-5700

SEND TO:
PROJECT: EMMS
SUBJECT: 2nd Site Visit
PREPARED BY: DATE: 3/26/20
NOTE:

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SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Metal stud wall framing.

C. Metal channel ceiling framing.

D. Gypsum sheathing.

E. Cementitious backing board.

F. Gypsum wallboard.

G. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 054000 - Cold-Formed Metal Framing: Exterior wind-load-bearing metal stud framing.

B. Section 061000 - Rough Carpentry: Wood blocking product and execution requirements.

C. Section 072100 - Thermal Insulation: Acoustic insulation.

D. Section 078400 - Firestopping: Top-of-wall assemblies at fire rated walls.

E. Section 079200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (Reaffirmed 2016).

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

D. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.

E. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014.

F. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2017.

G. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2016.

H. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.

I. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2016.

J. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.

K. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.

L. ASTM C1278/C1278M - Standard Specification for Fiber-Reinforced Gypsum Panel; 2007a (Reapproved 2015).

M. ASTM C1280 - Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing; 2013a.

N. ASTM C1325 - Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units; 2017.

O. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.

P. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels; 2015.

Q. ASTM C1658/C1658M - Standard Specification for Glass Mat Gypsum Panels; 2013.

R. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2016.

S. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).

T. ASTM E413 - Classification for Rating Sound Insulation; 2016.

U. GA-216 - Application and Finishing of Gypsum Board; 2016.

V. GA-226 - Application of Gypsum Board to Form Curved Surfaces; Gypsum Association; 2016.

W. UL (FRD) - Fire Resistance Directory; current edition.

1.04 SUBMITTALS

A. Product Data: Provide data on metal framing, gypsum board, glass mat faced gypsum board, accessories, and joint finishing system.

B. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

C. Test Reports: For stud framing products that do not comply with ASTM C645 or ASTM C754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum five years of documented experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.
   1. See PART 3 for finishing requirements.

B. Interior Partitions: Provide completed assemblies with the following characteristics:
   1. Acoustic Attenuation: STC as indicated calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

C. Shaft Walls at HVAC Shafts: Provide completed assemblies with the following characteristics:
   1. Air Pressure Within Shaft: Sustained loads of 5 lbf/sq ft with maximum mid-span deflection of L/240.
   2. Acoustic Attenuation: STC of 35-39 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

D. Fire Rated Assemblies: Provide completed assemblies with the following characteristics:
   1. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).
      a. Refer to Drawings for UL Assembly Numbers.

2.02 METAL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:
   1. Clarkwestern Dietrich Building Systems LLC: www.clarkdietrich.com.
   2. Marino: www.marinoware.com.
   3. Substitutions: See Section 016000 - Product Requirements.

B. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
   1. Steel Sheet Components: Comply with ASTM A1003 requirements for metal unless otherwise indicated.
   2. Protective coating: ASTM A653/A653M G40 hot-dip galvanized unless otherwise noted.
   3. Studs: "C" shaped with flat or formed webs with reinforcing ribs.
      a. Minimum Base-Metal Thickness: 0.019 inches (20 ga equivalent), in addition to the minimum thickness required by performance requirements for horizontal deflection.
      b. Depth: As indicated on Drawings.
   4. Ceiling Channels: C-shaped.
   5. Furring: Hat-shaped sections, minimum depth of 7/8 inch.

C. Loadbearing Studs for Application of Gypsum Board: As specified in Section 054000.

D. Shaft Wall Studs and Accessories: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and specified performance requirements.

E. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.

F. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
   1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
   2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot dipped galvanized coating.
   3. Provide components UL-listed for use in UL-listed fire-rated head of partition joint systems specified in Section 078400.
   4. Provide mechanical anchorage devices as described above that accommodate deflection while maintaining the fire-rating of the wall assembly.

G. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.
   1. Products:
      a. USG Corporation; Drywall Suspension System: www.usg.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

2.03 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
   1. CertainTeed Corporation: www.certainteed.com.
   2. Georgia-Pacific Gypsum: www.gpgypsum.com.

3. National Gypsum Company: www.nationalgypsum.com/#sle.
4. USG Corporation: www.usg.com.
5. Substitutions: See Section 016000 - Product Requirements.

B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces and ceilings, 8'-0" and higher, unless otherwise indicated. Use for inner layer of multi-layer applications, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   a. Mold resistant board is required at all locations.
3. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
4. Thickness:
   a. Vertical Surfaces: 5/8 inch.
   b. Ceilings: 5/8 inch.
5. Mold Resistant Paper Faced Products:
   a. National Gypsum Company; Gold Bond XP Gypsum Board.
   b. CertainTeed Corporation; ProRoc Brand Moisture & Mold Resistant Gypsum Board..
   c. Lafarge North America Inc; Mold Defense Drywall..
   d. USG Corporation; Sheetrock Brand Mold Tough Gypsum Panels.
   e. Substitutions: See Section 016000 - Product Requirements.

C. Abuse Resistant Wallboard:
1. Application: All locations, 8'-0" and below, except Gymnasium.
2. Surface Abrasion: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
3. Indentation: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
4. Soft Body Impact: Level 2, minimum, when tested in accordance with ASTM C1629/C1629M.
5. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
6. Paper-Faced Type: Gypsum wallboard as defined in ASTM C1396/C1396M.
7. Unfaced Type: Interior fiber-reinforced gypsum panels as defined in ASTM C1278/C1278M.
8. Type: Fire resistance rated Type X, UL or WH listed.
9. Thickness: 5/8 inch.
10. Edges: Tapered.
11. Paper-Faced Products:
    a. CertainTeed Corporation; Extreme Abuse Resistant Drywall with M2Tech.
    b. National Gypsum Company; Gold Bond Hi-Abuse XP Gypsum Board.
    c. USG; Fiberock Aqua-Tough Interior Panel.
    d. Substitutions: See Section 016000 - Product Requirements.

D. Impact Resistant Wallboard:
1. Application: Gypsum board partitions in Gymnasium.
2. Surface Abrasion: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
3. Indentation: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
4. Soft Body Impact: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.

5. Hard Body Impact: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
6. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
7. Paper-Faced Type: Gypsum wallboard as defined in ASTM C1396/C1396M.
8. Unfaced Type: Interior fiber-reinforced gypsum panels as defined in ASTM C1278/C1278M.
9. Type: Fire resistance rated Type X, UL or WH listed.
10. Thickness: 5/8 inch.
11. Edges: Tapered.
12. Paper-Faced Products:
    a. CertainTeed Corporation; Extreme Impact Resistant Drywall with M2Tech.
    b. National Gypsum Company; Gold Bond Hi-Impact XP Gypsum Board.
    c. USG Sheetrock Brand Mold Tough VHI Firecode X Panels.
    d. Substitutions: See Section 016000 - Product Requirements.

E. Backing Board For Wet Areas:
1. Application: Surfaces behind tile in wet areas including shower room tile installations.
2. Application: Exterior soffits where textured acrylic finish systems are indicated.
3. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
    a. Thickness: 1/2 inch.
    b. Products:
        1) Custom Building Products; Wonderboard: www.custombuildingproducts.com.
        2) National Gypsum Company; PermaBase Cement Board: www.nationalgypsum.com/#sle.
        3) USG Corporation; Durock Brand Cement Board: www.usg.com.
        4) Substitutions: See Section 016000 - Product Requirements.

F. Backing Board For Non-Wet Areas: Water-resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
1. Application: Vertical surfaces behind thinset tile, except in wet areas.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
4. Type: Type X, in locations indicated.
5. Type X Thickness: 5/8 inch.
6. Edges: Tapered.
7. Products:
    a. National Gypsum Company; Gold Bond Hi-Abuse XP Gypsum Board.
    b. Georgia-Pacific Gypsum LLC; DensShield Tile Backer..
    c. USG; Fiberock Aqua-Tough Interior Panel..
    d. Substitutions: See Section 016000 - Product Requirements.

G. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
1. Application: Exterior sheathing, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
4. Core Type: Type X, as indicated.

5. Type X Thickness: 5/8 inch.
6. Edges: Square.
7. Glass Mat Faced Products:
   a. CertainTeed Corporation; GlasRoc Type X Exterior Sheathing.
   b. Georgia-Pacific Gypsum; DensGlass Sheathing.
   c. National Gypsum Company; Gold Bond eXP Sheathing.
   d. Substitutions: See Section 016000 - Product Requirements.

H. Shaftwall and Coreboard: Type X; 1 inch thick by 24 inches wide, tongue-and-groove long edges, ends square cut.
1. Glass Mat Faced Type: Glass mat shaftliner gypsum panel or glass mat coreboard gypsum panel as defined in ASTM C1658/C1658M.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. Products:
   a. Georgia-Pacific Gypsum; DensGlass Ultra Shaftliner (mold-resistant).
   b. National Gypsum Company; Gold Bond Brand eXP Shaftliner.
   c. USG Corporation; Sheetrock Gypsum Liner Panels--Enhanced (mold-resistant)..
   d. Substitutions: See Section 016000 - Product Requirements.

2.04 ACCESSORIES

A. Acoustic Insulation: As specified in Section 072100.

B. Acoustic Sealant: As specified in Section 079200; Type 5.

C. Finishing Accessories: ASTM C1047, paper-faced galvanized steel, unless noted otherwise.
1. Types: As detailed or required for finished appearance.

D. Decorative Metal Trim:
1. Material: Extruded aluminum alloy 6063-T5 temper.
2. Finish: Anodized, clear.
3. Type: Profile as selected from manufacturer's standard range.
4. Reveal Trim:
   a. Shapes and configurations: As indicated on Drawings.
   b. Products:
      1) Fry Reglet Architectural Metals: www.fryreglet.com..
      2) Substitutions: See Section 016000 - Product Requirements.

E. Vertical Closure Between Partitions and Window Mullions: Extruded aluminum partition closures, pre-assembled and spring loaded to provide a tight fit for vertical junctures of partitions and window walls:
1. Extruded aluminum extrusions: 6063-T5 temper
   a. Finish: Acrylic-Polyester powder coat, as selected from manufacturer's standard colors.
2. Acoustical insulation: batt, factory-installed.
3. Manufacturer and Product: Mullion Mate Series 30, Gordon Inc.: www.gordon-inc.com.
4. Accessories: Provide partition end caps, aluminum extrusions to match partition thickness.

F. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
1. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
2. Chemical hardening type compound.

G. High Build Drywall Surfacer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.
   1. Products:
      a. CertainTeed Corporation; Level V Wall and Ceiling Primer/Surfacer with M2Tech: www.certainteed.com/#sle.
      b. USG Sheetrock Brand Tuff-Hide Primer-Surfacer.
      c. Substitutions: See Section 016000 - Product Requirements.

H. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.

I. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.

J. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 SHAFT WALL INSTALLATION

A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.
   1. Fasten runners to structure with short leg to finished side, using appropriate power-driven fasteners at not more than 24 inches on center.
   2. Install studs at spacing required to meet performance requirements.

B. Shaft Wall Liner: Cut panels to accurate dimension and install sequentially between special friction studs.
   1. On walls over sixteen feet high, screw-attach studs to runners top and bottom.
   2. Seal perimeter of shaft wall and penetrations with acoustical sealant.

3.03 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members at 16 inches on center.
   1. Level ceiling system to a tolerance of 1/1200.
   2. Laterally brace entire suspension system.

C. Studs: Space studs as required by performance requirements for horizontal deflection, 16 inches on center maximum.
   1. Extend partition framing to underside of structure as indicated.
   2. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

E. Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
   1. Orientation: Horizontal.

2. Spacing: At 16 inches on center.

F. Acoustic Furring: Where indicated, install resilient sound isolation clips at maximum 24 inches on center, and in accordance with manufacturer's instructions. Locate joints over framing members.

G. Blocking: Install wood blocking for support of:
1. Framed openings.
2. Wall mounted cabinets.
3. Plumbing fixtures.
4. Toilet partitions.
5. Toilet accessories.
6. Wall mounted door hardware, including wall stops.
7. Handrails and wall brackets.
8. Display cases, markerboards, tack boards.
9. TV and monitor mounts.

3.04 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
1. Place two beads continuously on substrate before installation of perimeter framing members.
2. Place continuous bead at perimeter of each layer of gypsum board.
3. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.05 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Non-Rated: Install gypsum board parallel to framing, with ends and edges occurring over firm bearing.

C. Double-Layer Non-Rated: Use gypsum board for first layer, placed perpendicular to framing or furring members, with ends and edges occurring over firm bearing. Place second layer parallel to framing or furring members. Offset joints of second layer from joints of first layer.

D. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

E. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
1. Seal joints, cut edges, and holes with water-resistant sealant.

F. Exterior Soffits: Install cementitious backing boards perpendicular to framing, with staggered end joints over framing members or other solid backing.
1. Seal joints, cut edges, and holes with water resistant sealant.

G. Cementitious Backing Board: Install over steel framing members where indicated, in accordance with ANSI A108.11-SystemDeleted and manufacturer's instructions.

H. Installation on Metal Framing: Use screws for attachment of gypsum board.

I. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.

3.06 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
   1. Not more than 30 feet apart on walls and ceilings over 50 feet long.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

D. Decorative Trim: Install at locations shown on drawings and in accordance with manufacturer's instructions.

E. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations indicated on the drawings. Provide vent area specified.

3.07 JOINT TREATMENT

A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, bedded and finished with chemical hardening type joint compound.

B. Paper Faced Gypsum Board: Use paper or fiberglass joint tape, bedded with chemical hardening type joint compound and finished with chemical hardening type joint compound.

C. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 5: Walls and ceilings to receive paint finish or wall coverings, in the following locations:
      a. Lobby
      b. Auditorium Lobby
      c. Auditorium
   2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
   4. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.

D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.
   2. Taping, filling and sanding is not required at base layer of double layer applications.

E. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

3.08 TOLERANCES

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

END OF SECTION

AHERA ASBESTOS PROJECT DESIGN/ TECHNICAL SPECIFICATION FOR PRE-DEMOLITION ASBESTOS ABATEMENT

RECEIVED
NOV 18 2019
FACILITIES MANAGEMENT

at

EVERETT MEREDITH MIDDLE SCHOOL
504 SOUTH BROAD, STREET
MIDDLETOWN, DELAWARE

prepared for

APPOQUINIMINK SCHOOL DISTRICT
313 SOUTH 5TH STREET
ODESSA, DELAWARE

APPROVED
Facilities Management
Doyle Tiller 11/20/2019
Doyle Tiller Date

by

ENVIRONMENTAL TESTING, INC.
100 SOUTH CASS STREET
MIDDLETOWN, DELAWARE

Gary Hayes - Accredited EPA Asbestos Project Designer
(APDR04222019-8)

PHILIP T. FONTENELLE
LICENSE NO. 11967
11/12/19
DELAWARE
PROFESSIONAL ENGINEER

PROJECT #18-123

November 13, 2019

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Sheet # 5 of 5 – Exterior Materials - Abatement

INVITATION TO BID

Sealed bids for Everett Meredith Middle School will be received by Appoquinimink School District (Bob Hershey) at Appoquinimink School District, District Office, 118 S. Sixth Street, Odessa, DE 19730 until 2:00 PM local time on February 4, 2020, at which time they will be publicly opened by Mr. Hershey. Bidder bears the risk of late delivery. Any bids received after the stated time will be returned unopened.

Project involves the Removal & Disposal of all asbestos materials prior to building demolition.

Attention is called to construction schedule as detailed in the Bid Documents.

This contract will be awarded on the basis of best value. Attention is called to the Bid Documents which detail the criteria and associated weights which shall be used as the basis of award.

A **MANDATORY** Pre-Bid Meeting will be held on January 16, 2020, at 3: PM at Everett Meredith Middle School, 504 South Broad Street, Middletown, Delaware 19709 for the purpose of establishing the listing of subcontractors and to answer questions. Representatives of each party to any Joint Venture must attend this meeting. **ATTENDANCE OF THIS MEETING IS A PREREQUISITE FOR BIDDING ON THIS CONTRACT.**

Sealed bids shall be addressed to the Appoquinimink School District (Bob Hershey) at Appoquinimink School District, District Office, 118 S. Sixth Street, Odessa, DE 19730. The outer envelope should clearly indicate: **"Meredith Middle School Asbestos Abatement - SEALED BID - DO NOT OPEN."**

Contract documents shall be obtained from the State of Delaware Procurement Website (mymarketplace.delaware.gov).

Bidders will not be subject to discrimination on the basis of race, creed, color, sex, sexual orientation, gender identity or national origin in consideration of this award, and Minority Business Enterprises, Disadvantaged Business Enterprises, Women-Owned Business Enterprises and Veteran-Owned Business Enterprises will be afforded full opportunity to submit bids on this contract. Each bid must be accompanied by a bid security equivalent to ten percent of the bid amount and all additive alternates. The successful bidder must post a performance bond and payment bond in a sum equal to 100 percent of the contract price upon execution of the contract. The Owner reserves the right to reject any or all bids and to waive any informalities therein. The Owner may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days notice by certified delivery, facsimile machine or other electronic means to those bidders receiving plans.

END OF ADVERTISEMENT FOR BIDS

INSTRUCTIONS TO BIDDERS

TABLE OF ARTICLES

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7. PERFORMANCE BOND AND PAYMENT BOND

8. FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

ARTICLE 1: GENERAL

1.1 DEFINITIONS

1.1.1 Whenever the following terms are used, their intent and meaning shall be interpreted as follows:

1.2 STATE: The State of Delaware.

1.3 AGENCY: Contracting State Agency as noted on cover sheet.

1.4 DESIGNATED OFFICIAL: The agent authorized to act for the Agency.

1.5 BIDDING DOCUMENTS: Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement for Bid, Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special Provisions (if any), the Bid Form (including the Non-collusion Statement), and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, as well as the Drawings, Specifications (Project Manual) and all Addenda issued prior to execution of the Contract.

1.6 CONTRACT DOCUMENTS: The Contract Documents consist of the, Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special Provisions (if any), the form of agreement between the Owner and the Contractor, Drawings (if any), Specifications (Project Manual), and all addenda.

1.7 AGREEMENT: The form of the Agreement shall be AIA Document A101, Standard Form of Agreement between Owner and Contractor where the basis of payment is a STIPULATED SUM. In the case of conflict between the instructions contained therein and the General Requirements herein, these General Requirements shall prevail.

1.8 GENERAL REQUIREMENTS (or CONDITIONS): General Requirements (or conditions) are instructions pertaining to the Bidding Documents and to contracts in general. They contain, in summary, requirements of laws of the State; policies of the Agency and instructions to bidders.

1.9 SPECIAL PROVISIONS: Special Provisions are specific conditions or requirements peculiar to the bidding documents and to the contract under consideration and are supplemental to the General Requirements. Should the Special Provisions conflict with the General Requirements, the Special Provisions shall prevail.

1.10 ADDENDA: Written or graphic instruments issued by the Owner/Architect prior to the execution of the contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

1.11 BIDDER OR VENDOR: A person or entity who formally submits a Bid for the material or Work contemplated, acting directly or through a duly authorized representative who meets the requirements set forth in the Bidding Documents.

1.12 SUB-BIDDER: A person or entity who submits a Bid to a Bidder for materials or labor, or both for a portion of the Work.

1.13 BID: A complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

1.14 BASE BID: The sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids (if any are required to be stated in the bid).

1.15 ALTERNATE BID (or ALTERNATE): An amount stated in the Bid, where applicable, to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents is accepted.

1.16 UNIT PRICE: An amount stated in the Bid, where applicable, as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

1.17 SURETY: The corporate body which is bound with and for the Contract, or which is liable, and which engages to be responsible for the Contractor's payments of all debts pertaining to and for his acceptable performance of the Work for which he has contracted.

1.18 BIDDER'S DEPOSIT: The security designated in the Bid to be furnished by the Bidder as a guaranty of good faith to enter into a contract with the Agency if the Work to be performed or the material or equipment to be furnished is awarded to him.

1.19 CONTRACT: The written agreement covering the furnishing and delivery of material or work to be performed.

1.20 CONTRACTOR: Any individual, firm or corporation with whom a contract is made by the Agency.

1.21 SUBCONTRACTOR: An individual, partnership or corporation which has a direct contract with a contractor to furnish labor and materials at the job site, or to perform construction labor and furnish material in connection with such labor at the job site.

1.22 CONTRACT BOND: The approved form of security furnished by the contractor and his surety as a guaranty of good faith on the part of the contractor to execute the work in accordance with the terms of the contract.

ARTICLE 2: BIDDER'S REPRESENTATIONS

2.1 PRE-BID MEETING

2.1.1 A pre-bid meeting for this project will be held at the time and place designated. Attendance at this meeting is a pre-requisite for submitting a Bid, unless this requirement is specifically waived elsewhere in the Bid Documents.

2.2 By submitting a Bid, the Bidder represents that:

2.2.1 The Bidder has read and understands the Bidding Documents and that the Bid is made in accordance therewith.

2.2.2 The Bidder has visited the site, become familiar with existing conditions under which the Work is to be performed, and has correlated the Bidder's his personal observations with the requirements of the proposed Contract Documents.

2.2.3 The Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception.

2.3 JOINT VENTURE REQUIREMENTS

2.3.1 For Public Works Contracts, each Joint Venturer shall be qualified and capable to complete the Work with their own forces.

2.3.2 Included with the Bid submission, and as a requirement to bid, a copy of the executed Joint Venture Agreement shall be submitted and signed by all Joint Venturers involved.

2.3.3 All required Bid Bonds, Performance Bonds, Material and Labor Payment Bonds must be executed by both Joint Venturers and be placed in both of their names.

2.3.4 All required insurance certificates shall name both Joint Venturers.

2.3.5 Both Joint Venturers shall sign the Bid Form and shall submit a copy of a valid Delaware Business License with their Bid.

2.3.6 Both Joint Venturers shall include their Federal E.I. Number with the Bid.

2.3.7 In the event of a mandatory Pre-bid Meeting, each Joint Venturer shall have a representative in attendance.

2.3.8 Due to exceptional circumstances and for good cause shown, one or more of these provisions may be waived at the discretion of the State.

2.4 ASSIGNMENT OF ANTITRUST CLAIMS

2.4.1 As consideration for the award and execution by the Owner of this contract, the Contractor hereby grants, conveys, sells, assigns and transfers to the State of Delaware all of its right, title and interests in and to all known or unknown causes of action it presently has or may now or hereafter acquire under the antitrust laws of the United States and the State of Delaware, relating to the particular goods or services purchased or acquired by the Owner pursuant to this contract.

ARTICLE 3: BIDDING DOCUMENTS

3.1 COPIES OF BID DOCUMENTS

3.1.1 Bidders may obtain complete sets of the Bidding Documents from the Architectural/Engineering firm designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein.

3.1.2 Bidders shall use complete sets of Bidding Documents for preparation of Bids. The issuing Agency nor the Architect assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

3.1.3 Any errors, inconsistencies or omissions discovered shall be reported to the Architect immediately.

3.1.4 The Agency and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall report any errors, inconsistencies, or ambiguities discovered to the Architect.

3.2.2 Bidders or Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Architect at least seven days prior to the date for receipt of Bids. Interpretations, corrections and changes to the Bidding Documents will be made by written Addendum. Interpretations, corrections, or changes to the Bidding Documents made in any other manner shall not be binding.

3.2.3 The apparent silence of the specifications as to any detail, or the apparent omission from it of detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and only material and workmanship of the first quality are to be used. Proof of specification compliance will be the responsibility of the Bidder.

3.2.4 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all permits, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.

3.2.5 The Owner will bear the costs for all impact and user fees associated with the project.

3.3 SUBSTITUTIONS

3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of quality, required function, dimension, and appearance to be met by any proposed substitution. The specification of a particular manufacturer or model number is not intended to be proprietary in any way. Substitutions of products for those named will be considered, providing that the Vendor certifies that the function, quality, and performance characteristics of the material offered is equal or superior to that specified. It shall be the Bidder's responsibility to assure that the proposed substitution will not affect the intent of the design, and to make any installation modifications required to accommodate the substitution.

3.3.2 Requests for substitutions shall be made in writing to the Architect at least ten days prior to the date of the Bid Opening. Such requests shall include a complete description of the proposed substitution, drawings, performance and test data, explanation of required installation modifications due the substitution, and any other information necessary for an evaluation. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval shall be final. The Architect is to notify Owner prior to any approvals.

3.3.3 If the Architect approves a substitution prior to the receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding.

3.3.4 The Architect shall have no obligation to consider any substitutions after the Contract award.

3.4 ADDENDA

3.4.1 Addenda will be mailed or delivered to all who are known by the Architect to have received a complete set of the Bidding Documents.

3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

3.4.3 No Addenda will be issued later than 4 days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which extends the time or changes the location for the opening of bids.

3.4.4 Each bidder shall ascertain prior to submitting his Bid that they have received all Addenda issued, and shall acknowledge their receipt in their Bid in the appropriate space. Not acknowledging an issued Addenda could be grounds for determining a bid to be non-responsive.

ARTICLE 4: BIDDING PROCEDURES

4.1 PREPARATION OF BIDS

4.1.1 Submit the bids on the Bid Forms included with the Bidding Documents.

4.1.2 Submit the original Bid Form for each bid. Bid Forms may be removed from the project manual for this purpose.

4.1.3 Execute all blanks on the Bid Form in a non-erasable medium (typewriter or manually in ink).

4.1.4 Where so indicated by the makeup on the Bid Form, express sums in both words and figures, in case of discrepancy between the two, the written amount shall govern.

4.1.5 Interlineations, alterations or erasures must be initialed by the signer of the Bid.

4.1.6 BID ALL REQUESTED ALTERNATES AND UNIT PRICES, IF ANY. If there is no change in the Base Bid for an Alternate, enter "No Change". The Contractor is responsible for verifying that they have received all addenda issued during the bidding period. Work required by Addenda shall automatically become part of the Contract.

4.1.7 Make no additional stipulations on the Bid Form and do not qualify the Bid in any other manner.

4.1.8 Each copy of the Bid shall include the legal name of the Bidder and a statement whether the Bidder is a sole proprietor, a partnership, a corporation, or any legal entity, and each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current Power of Attorney attached, certifying agent's authority to bind the Bidder.

4.1.9 Bidder shall complete the Non-Collusion Statement form included with the Bid Forms and include it with their Bid.

4.1.10 In the construction of all Public Works projects for the State of Delaware or any agency thereof, preference in employment of laborers, workers or mechanics shall be given to bona fide legal citizens of the State who have established citizenship by residence of at least 90 days in the State.

4.1.11 Each bidder shall include in their bid a copy of a valid Delaware Business License.'

4.1.12 Each bidder shall include a signed Affidavit for the Bidder certifying compliance with OMB Regulation 4104 - "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects." "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

4.2 BID SECURITY

4.2.1 All bids shall be accompanied by a deposit of either a good and sufficient bond to the agency for the benefit of the agency, with corporate surety authorized to do business in this State, the form of the bond and the surety to be approved by the agency, or a security of the bidder assigned to the agency, for a sum equal to at least 10% of the bid plus all add alternates, or in lieu of the bid bond a security deposit in the form of a certified check, bank treasurer's check, cashier's check, money order, or other prior approved secured deposit assigned to the State. The bid bond need not be for a specific sum, but may be stated to be for a sum equal to 10% of the bid plus all add alternates to which it relates and not to exceed a certain stated sum, if said sum is equal to at least 10% of the bid. The Bid Bond form used shall be the standard OMB form (attached).

4.2.2 The Agency has the right to retain the bid security of Bidders to whom an award is being considered until either a formal contract has been executed and bonds have been furnished or the specified time has elapsed so the Bids may be withdrawn or all Bids have been rejected.

4.2.3 In the event of any successful Bidder refusing or neglecting to execute a formal contract and bond within 20 days of the awarding of the contract, the bid bond or security deposited by the successful bidder shall be forfeited.

4.3 SUBCONTRACTOR LIST

4.3.1 As required by Delaware Code, Title 29, section 6962(d)(10)b, each Bidder shall submit with their Bid a completed List of Sub-Contractors included with the Bid Form. NAME ONLY ONE SUBCONTRACTOR FOR EACH TRADE. A Bid will be considered non-responsive unless the completed list is included.

4.3.2 Provide the Name and Address for each listed subcontractor. Addresses by City, Town or Locality, plus State, will be acceptable.

4.3.3 It is the responsibility of the Contractor to ensure that their Subcontractors are in compliance with the provisions of this law. Also, if a Contractor elects to list themselves as a Subcontractor for any category, they must specifically name themselves on the Bid Form and be able to document their capability to act as Subcontractor in that category in accordance with this law.

4.4 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

4.4.1 During the performance of this contract, the contractor agrees as follows:

A. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take affirmative action to ensure the applicants are employed, and that employees are treated during employment, without regard to their race, creed, sex, color, sexual orientation, gender identity or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.

B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, sex, color, sexual orientation, gender identity or national origin."

4.5 PREVAILING WAGE REQUIREMENT

4.5.1 Wage Provisions: For renovation and new construction projects whose costs exceed the thresholds contained in Delaware Code, Title 29, Section 6960, the minimum wage rates for various classes of laborers and mechanics shall be as determined by the Department of Labor, Division of Industrial Affairs of the State of Delaware.

4.5.2 The employer shall pay all mechanics and labors employed directly upon the site of work, unconditionally and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the specifications, regardless of any contractual relationship which may be alleged to exist between the employer and such laborers and mechanics.

4.5.3 The scale of the wages to be paid shall be posted by the employer in a prominent and easily accessible place at the site of the work.

4.5.4 Every contract based upon these specifications shall contain a stipulation that sworn payroll information, as required by the Department of Labor, be furnished weekly. The Department of Labor shall keep and maintain the sworn payroll information for a period of 6 months from the last day of the work week covered by the payroll.

4.6 SUBMISSION OF BIDS

4.6.1 Enclose the Bid, the Bid Security, and any other documents required to be submitted with the Bid in a sealed opaque envelope. Address the envelope to the party receiving the Bids. Identify with the project name, project number, and the Bidder's name and address. If the Bid is sent by mail, enclose the sealed envelope in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof. The State is not responsible for the opening of bids prior to bid opening date and time that are not properly marked.

4.6.2 Deposit Bids at the designated location prior to the time and date for receipt of bids indicated in the Advertisement for Bids. Bids received after the time and date for receipt of bids will be marked "LATE BID" and returned.

4.6.3 Bidder assumes full responsibility for timely delivery at location designated for receipt of bids.

4.6.4 Oral, telephonic or telegraphic bids are invalid and will not receive consideration.

4.6.5 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids, provided that they are then fully in compliance with these Instructions to Bidders.

4.7 MODIFICATION OR WITHDRAW OF BIDS

4.7.1 Prior to the closing date for receipt of Bids, a Bidder may withdraw a Bid by personal request and by showing proper identification to the Architect. A request for withdraw by letter or fax, if the Architect is notified in writing prior to receipt of fax, is acceptable. A fax directing a modification in the bid price will render the Bid informal, causing it to be ineligible for consideration of award. Telephone directives for modification of the bid price shall not be permitted and will have no bearing on the submitted proposal in any manner.

4.7.2 Bidders submitting Bids that are late shall be notified as soon as practicable and the bid shall be returned.

4.7.3 A Bid may not be modified, withdrawn or canceled by the Bidder during a thirty (30) day period following the time and date designated for the receipt and opening of Bids, and Bidder so agrees in submitting their Bid. Bids shall be binding for 30 days after the date of the Bid opening.

ARTICLE 5: CONSIDERATION OF BIDS

5.1 OPENING/REJECTION OF BIDS

5.1.1 Unless otherwise stated, Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids will be made available to Bidders.

5.1.2 The Agency shall have the right to reject any and all Bids. A Bid not accompanied by a required Bid Security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

5.1.3 If the Bids are rejected, it will be done within thirty (30) calendar day of the Bid opening.

5.2 COMPARISON OF BIDS

5.2.1 After the Bids have been opened and read, the bid prices will be compared and the result of such comparisons will be made available to the public. Comparisons of the Bids may be based on the Base Bid plus desired Alternates. The Agency shall have the right to accept Alternates in any order or combination.

5.2.2 The Agency reserves the right to waive technicalities, to reject any or all Bids, or any portion thereof, to advertise for new Bids, to proceed to do the Work otherwise, or to abandon the Work, if in the judgment of the Agency or its agent(s), it is in the best interest of the State.

5.2.3 An increase or decrease in the quantity for any item is not sufficient grounds for an increase or decrease in the Unit Price.

5.2.4 The prices quoted are to be those for which the material will be furnished F.O.B. Job Site and include all charges that may be imposed during the period of the Contract.

5.2.5 No qualifying letter or statements in or attached to the Bid, or separate discounts will be considered in determining the low Bid except as may be otherwise herein noted. Cash or separate discounts should be computed and incorporated into Unit Bid Price(s).

5.3 DISQUALIFICATION OF BIDDERS

5.3.1 An agency shall determine that each Bidder on any Public Works Contract is responsible before awarding the Contract. Factors to be considered in determining the responsibility of a Bidder include:

A. The Bidder's financial, physical, personnel or other resources including Subcontracts;

B. The Bidder's record of performance on past public or private construction projects, including, but not limited to, defaults and/or final adjudication or admission of violations of the Prevailing Wage Laws in Delaware or any other state;

C. The Bidder's written safety plan;

D. Whether the Bidder is qualified legally to contract with the State;

E. Whether the Bidder supplied all necessary information concerning its responsibility; and,

F. Any other specific criteria for a particular procurement, which an agency may establish; provided however, that, the criteria be set forth in the Invitation to Bid and is otherwise in conformity with State and/or Federal law.

5.3.2 If an agency determines that a Bidder is nonresponsive and/or nonresponsible, the determination shall be in writing and set forth the basis for the determination. A copy of the determination shall be sent to the affected Bidder within five (5) working days of said determination.

5.3.3 In addition, any one or more of the following causes may be considered as sufficient for the disqualification of a Bidder and the rejection of their Bid or Bids.

5.3.3.1 More than one Bid for the same Contract from an individual, firm or corporation under the same or different names.

5.3.3.2 Evidence of collusion among Bidders.

5.3.3.3 Unsatisfactory performance record as evidenced by past experience.

5.3.3.4 If the Unit Prices are obviously unbalanced either in excess or below reasonable cost analysis values.

5.3.3.5 If there are any unauthorized additions, interlineation, conditional or alternate bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite or ambiguous as to its meaning.

5.3.3.6 If the Bid is not accompanied by the required Bid Security and other data required by the Bidding Documents.

5.3.3.7 If any exceptions or qualifications of the Bid are noted on the Bid Form.

5.4 ACCEPTANCE OF BID AND AWARD OF CONTRACT

5.4.1 A formal Contract shall be executed with the successful Bidder within twenty (20) calendar days after the award of the Contract.

5.4.2 Per Section 6962(d)(13) a., Title 29, Delaware Code, "The contracting agency shall award any public works contract within thirty (30) days of the bid opening to the lowest responsive and responsible Bidder, unless the Agency elects to award on the basis of best value, in which case the election to award on the basis of best value shall be stated in the Invitation To Bid."

5.4.3 Each Bid on any Public Works Contract must be deemed responsive by the Agency to be considered for award. A responsive Bid shall conform in all material respects to the requirements and criteria set forth in the Contract Documents and specifications.

5.4.4 The Agency shall have the right to accept Alternates in any order or combination, and to determine the low Bidder on the basis of the sum of the Base Bid, plus accepted Alternates.

5.4.5 The successful Bidder shall execute a formal contract, submit the required Insurance Certificate, and furnish good and sufficient bonds, unless specifically waived in the General Requirements, in accordance with the General Requirement, within twenty (20) days of official notice of contract award. The successful Bidder shall provide, at least two business days prior to contract execution, copies of the Employee Drug Testing Program for the Bidder and all listed Subcontractors. Bonds shall be for the benefit of the Agency with surety in the amount of 100% of the total contract award. Said Bonds shall be conditioned upon the faithful performance of the contract. Bonds shall remain in affect for period of one year after the date of substantial completion.

5.4.6 If the successful Bidder fails to execute the required Contract, Bond and all required information, as aforesaid, within twenty (20) calendar days after the date of official Notice of the Award of the Contract, their Bid guaranty shall immediately be taken and become the property of the State for the benefit of the Agency as liquidated damages, and not as a forfeiture or as a penalty. Award will then be made to the next lowest qualified Bidder of the Work or readvertised, as the Agency may decide.

5.4.7 Each bidder shall supply with its bid its taxpayer identification number (i.e., federal employer identification number or social security number) and a copy of its Delaware business license, and should the vendor be awarded a contract, such vendor shall provide to the agency the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

5.4.8 The Bid Security shall be returned to the successful Bidder upon the execution of the formal contract. The Bid Securities of unsuccessful bidders shall be returned within thirty (30) calendar days after the opening of the Bids.

ARTICLE 6: POST-BID INFORMATION

6.1 CONTRACTOR'S QUALIFICATION STATEMENT

6.1.1 Bidders to whom award of a Contract is under consideration shall, if requested by the Agency, submit a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a statement has been previously required and submitted.

6.2 BUSINESS DESIGNATION FORM

6.2.1 Successful bidder shall be required to accurately complete an Office of Management and Budget Business Designation Form for Subcontractors.

ARTICLE 7: PERFORMANCE BOND AND PAYMENT BOND

7.1 BOND REQUIREMENTS

7.1.1 The cost of furnishing the required Bonds, that are stipulated in the Bidding Documents, shall be included in the Bid.

7.1.2 If the Bidder is required by the Agency to secure a bond from other than the Bidder's usual sources, changes in cost will be adjusted as provide in the Contract Documents.

7.1.3 The Performance and Payment Bond forms used shall be the standard OMB forms (attached).

7.2 TIME OF DELIVERY AND FORM OF BONDS

7.2.1 The bonds shall be dated on or after the date of the Contract.

7.2.2 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix a certified and current copy of the power of attorney.

ARTICLE 8: FORM OF AGREEMENT BETWEEN AGENCY AND CONTRACTOR

8.1 Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment is a Stipulated Sum.

END OF INSTRUCTIONS TO BIDDERS

APPOQUINIMINK SCHOOL DISTRICT
Everett Meredith Middle School
504 South Broad Street
Middletown, DE 19709

ETI PROJECT NUMBER 18-123

BID FORM

For Bids Due: February 4, 2020

To: Mr Robert Hershey
Appoquinimink School District School District
313 South Fifth Street
Odessa, DE 19730

Name of Bidder: _____

Delaware Business License No.: _____ **Taxpayer ID No.:** _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

(Other License Nos.): _____

Phone No.: ( ) _____ - _____ **Fax No.: ( )** _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____
($)

UNIT PRICES

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

UNIT PRICE No. 1: Remove & Dispose of all designated pipe insulation (approximately 1320 LF) $ _____

UNIT PRICE No. 2: Remove & Dispose of all designated pipe-fitting insulation (approximately 250 Fittings) $ _____

UNIT PRICE No. 3: Remove & Dispose of all designated pipe hanger insulation (approximately 20 pipe hangers) $ _____

UNIT PRICE No. 4: Remove & Dispose of all designated 12" floor tile/mastic (approximately 140 SF) $ _____

UNIT PRICE No. 5: Remove & Dispose of all designated 9" floor tile/mastic (approximately 150 SF) $ _____

UNIT PRICE No. 6: Remove & Dispose of all designated ceiling tile mastic dots (approximately 4050 SF) $ _____

APPOQUINIMINK SCHOOL DISTRICT
Everett Meredith Middle School
504 South Broad Street
Middletown, DE 19709

ETI PROJECT NUMBER 18-123

UNIT PRICE No. 7: Remove & Dispose of all designated Light Fixture Heat Shields (approximately 11 fixtures) $ _____

UNIT PRICE No. 8: Remove & Dispose of all designated sink undercoating (approximately 3 sinks) $ _____

UNIT PRICE No. 9: Remove & Dispose of all designated lab tables (approximately 13 sections; 195 SF) $ _____

UNIT PRICE No. 10: Remove & Dispose of designated Lab Hood with transite Panels (1 Hood) $ _____

UNIT PRICE No. 11: Remove & Dispose of all designated fire doors (approximately 15 Doors) $ _____

UNIT PRICE No. 12: Remove & Dispose of all designated Widows with caulk/glazing (approximately 19 Windows) $ _____

UNIT PRICE No. 13: Provide Labor to oversee foundation wall vapor barrier removal by demolition contractor (approximately 2 man days) $ _____

*** Enter total bid amount on lump sum line on Page 1**
Estimated number of shifts to complete abatement work _____/shifts

ALTERNATE 1: Remove and dispose of blackboard mastic inside tent containment **$_____/board**

ADDITIONAL UNIT RATES:

UNIT PRICE 1: Provide additional 3-stage decontamination unit **$_____**

UNIT PRICE 2: Provide additional 2-layer poly containment structure (approx 400 SF) **$_____**

UNIT PRICE 3: Provide additional 1-layer poly containment structure (approx 400 SF) **$_____**

UNIT PRICE 4: Provide Type-C respirator system **$_____**

APPOQUINIMINK SCHOOL DISTRICT
Everett Meredith Middle School
504 South Broad Street
Middletown, DE 19709

ETI PROJECT NUMBER 18-123

BID FORM

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ **By:** _____
(Authorized Signature)

(SEAL)

_____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Security
(Others as Required by Project Manuals)

APPOQUINIMINK SCHOOL DISTRICT
Everett Meredith Middle School
504 South Broad Street
Middletown, DE 19709

ETI PROJECT NUMBER 18-123

BID FORM

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	Subcontractors tax payer ID # or Delaware Business license #
1.	Asbestos Waste Hauler		
2.	OSHA Monitoring		
3.	OSHA Air Sample Analysis		
4.			

APPOQUINIMINK SCHOOL DISTRICT
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Middletown, DE 19709

ETI PROJECT NUMBER 18-123

BID FORM

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date *to Appoquinimink School District.*

All the terms and conditions of *(Project #18-123)* have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

E-MAIL: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____ _____ of _____ in the County of _____ _____ and State of _____ as **Principal**, and _____ _____ of _____ in the County of _____ and State of _____ as **Surety**, legally authorized to do business in the State of Delaware ("**State**"), are held and firmly unto the **State** in the sum of _____ _____ Dollars ($_____), or _____ percent not to exceed _____ _____ Dollars ($_____) of amount of bid on Contract No. _____, to be paid to the **State** for the use and benefit of _____ (***Appoquinimink School District***) for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bonded **Principal** who has submitted to the _____ (***Appoquinimink School District***) a certain proposal to enter into this contract for the furnishing of certain material and/or services within the **State**, shall be awarded this Contract, and if said **Principal** shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the _____ _____ (***Appoquinimink School District***) this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____ seal and dated this _____day of _____ in the year of our Lord two thousand and _____ (20___).

SEALED, AND DELIVERED IN THE
Presence of

_____
Name of Bidder (Organization)

Corporate Seal

By: _____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness:_____

By: _____

_____
Title

STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR A101-2017

The contract to be utilized on this project shall be the "Standard Form of Agreement Between Owner and Contractor" AIA Document A101-2017, including AIA Document A101 – 2017 Exhibit A, as well as Supplements to A101-2017 and Exhibit A and the State of Delaware's General Requirements.

AIA® Document A101™ – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the _____ day of _____ in the year _____
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)

The Architect:
(Name, legal status, address and other information)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement.

AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Sample

The Owner and Contractor agree as follows.

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

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EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

☐ The date of this Agreement.

☐ A date set forth in a notice to proceed issued by the Owner.

☐ Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

☐ Not later than ( ) calendar days from the date of commencement of the Work.

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☐ By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be ($), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price

§ 4.4 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

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ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than ( ) days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- **.1** That portion of the Contract Sum properly allocable to completed Work;
- **.2** That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- **.3** That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;
- **.2** The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- **.3** Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- **.4** For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- **.5** Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

Sample

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§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment
§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- **.1** the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- **.2** a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

§ 5.3 Interest
Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

_____ % _____

ARTICLE 6 DISPUTE RESOLUTION
§ 6.1 Initial Decision Maker
The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

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§ 6.2 Binding Dispute Resolution
For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2017

☐ Litigation in a court of competent jurisdiction

☐ Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION
§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS
§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

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§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction

.4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

(Insert the date of the E203-2013 incorporated into this Agreement.)

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages

.7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

☐ AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:

(Insert the date of the E204-2017 incorporated into this Agreement.)

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☐ The Sustainability Plan:

Title	Date	Pages

☐ Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

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SUPPLEMENT TO AGREEMENT BETWEEN OWNER AND CONTRACTOR A101-2017

The following supplements modify the "Standard Form of Agreement Between Owner and Contractor," AIA Document A101-2017. Where a portion of the Standard Form of Agreement is modified or deleted by the following, the unaltered portions of the Standard Form of Agreement shall remain in effect.

ARTICLE 3: DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

3.1 Delete paragraph 3.1 in its entirety and replace with the following:

"The date of Commencement of the Work shall be a date set forth in a notice to proceed issued by the Owner."

ARTICLE 5: PAYMENTS

5.1 PROGRESS PAYMENTS

5.1.3 Delete paragraph 5.1.3 in its entirety and replace with the following:

"Provided that a valid Application for Payment is received by the Architect that meets all requirements of the Contract, payment shall be made by the Owner not later than 30 days after the Owner receives the valid Application for Payment."

5.3 Insert the interest rate of "1% per month not to exceed 12% per annum."

ARTICLE 6: DISPUTE RESOLUTION

6.2 BINDING DISPUTE RESOLUTION

Check Other – and add the following sentence:

"Any remedies available in law or in equity."

ARTICLE 7: TERMINATION or SUSPENSION

7.1.1 Delete paragraph 7.1.1 in its entirety.

ARTICLE 8: MISCELLANEOUS PROVISIONS

8.4 Delete paragraph 8.4 in its entirety and replace with the following:

"The Contractor's representative shall not be changed without ten days written notice to the Owner."

END OF SUPPLEMENT TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

AIA® Document A101™ – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the _____ day of _____ in the year _____
(In words, indicate day, month and year.)

for the following **PROJECT**:
(Name and location or address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Document A201™–2017, General Conditions of the Contract for Construction. Article 11 of A201™–2017 contains additional insurance provisions.

THE OWNER:
(Name, legal status and address)

THE CONTRACTOR:
(Name, legal status and address)

TABLE OF ARTICLES

A.1 GENERAL

A.2 OWNER'S INSURANCE

A.3 CONTRACTOR'S INSURANCE AND BONDS

A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ A.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

§ A.2.3 Required Property Insurance

§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's

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property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:
(Indicate below the cause of loss and any applicable sub-limit.)

Cause of Loss	Sub-Limit

§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:
(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.2.3.3 Insurance for Existing Structures
If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.
The Owner shall purchase and maintain the insurance selected and described below.
(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

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☐ **§ A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance,** to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

☐ **§ A.2.4.2 Ordinance or Law Insurance,** for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

☐ **§ A.2.4.3 Expediting Cost Insurance,** for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

☐ **§ A.2.4.4 Extra Expense Insurance,** to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

☐ **§ A.2.4.5 Civil Authority Insurance,** for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

☐ **§ A.2.4.6 Ingress/Egress Insurance,** for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

☐ **§ A.2.4.7 Soft Costs Insurance,** to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

§ A.2.5 Other Optional Insurance.
The Owner shall purchase and maintain the insurance selected below.
(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

☐ **§ A.2.5.1 Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information.
(Indicate applicable limits of coverage or other conditions in the fill point below.)

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☐ **§ A.2.5.2 Other Insurance**
(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than _____ ($__) each occurrence, _____ ($__) general aggregate, and _____ ($__) aggregate for products-completed operations hazard, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal injury and advertising injury;
- .3 damages because of physical damage to, or destruction of, tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

Sample

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§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- **.1** Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- **.2** Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- **.3** Claims for bodily injury other than to employees of the insured.
- **.4** Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured
- **.5** Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- **.6** Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- **.7** Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- **.8** Claims related to roofing, if the Work involves roofing.
- **.9** Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- **.10** Claims related to earth subsidence or movement, where the work involves such hazards.
- **.11** Claims related to explosion, collapse, and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than _____ ($__) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than _____ ($__) each accident, _____ ($__) each employee, and _____ ($__) policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate.

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate.

§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than_____ ($__) per claim and_____ ($__) in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than_____ ($__) per claim and_____ ($__) in the aggregate.

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§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

☐ **§ A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below.

(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

☐ **§ A.3.3.2.2 Railroad Protective Liability Insurance,** with policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate, for Work within fifty (50) feet of railroad property.

☐ **§ A.3.3.2.3 Asbestos Abatement Liability Insurance,** with policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

☐ **§ A.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

☐ **§ A.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

☐ **§ A.3.3.2.6 Other Insurance**

(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits

Sample

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§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:
(Specify type and penal sum of bonds.)

Type	Penal Sum ($0.00)
Payment Bond	
Performance Bond	

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

Sample

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SUPPLEMENT TO A101-2017 – EXHIBIT A INSURANCE AND BONDS

The following supplements modify the "Standard Form of Agreement Between Owner and Contractor," AIA Document A101-2017 Exhibit A Insurance and Bonds. Where a portion of the Standard Form of Agreement is modified or deleted by the following, the unaltered portions of the Standard Form of Agreement shall remain in effect.

ARTICLE A.2 OWNER'S INSURANCE

A.2.1 General

Delete paragraph A.2.1 in its entirety.

A.2.2 Liability Insurance

Delete paragraph A.2.2 in its entirety, except in the case of school projects this paragraph shall remain.

A.2.3 Required Property Insurance

Delete paragraph A.2.3 in its entirety.

A.2.4 Optional Extended Property Insurance

Delete paragraph A.2.4 in its entirety.

A.2.5 Other Optional Insurance

Delete paragraph A.2.5 in its entirety.

ARTICLE A.3 CONTRACTORS INSURANCE AND BONDS

A.3.1.3 Additional Insured Obligations

In the first sentence after "coverage to include (1)" delete "(1) the Owner,".

Strike the remainder of the first sentence beginning at the semicolon "; and (2) the Owner" through the end of the sentence.

Delete the second sentence in its entirety.

A.3.3.2.1 Delete paragraph 3.3.2.1 in its entirety and replace with the following:
Property Insurance of the same type and scope satisfying the requirements identified in Section A.2.3, The Contractor shall comply with all obligations of the Owner under A.2.3 except to the extent provided below. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required.

STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET

PERFORMANCE BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal ("**Principal**"), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety ("**Surety**"), are held and firmly bound unto the _____ ("**Owner**") (***Appoquinimink School District***), in the amount of _____ ($_____), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole, firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 20__.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____ dated the _____ day of _____, 20__ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly provide and furnish all materials, appliances and tools and perform all the work required under and pursuant to the terms and conditions of the Contract and the Contract Documents (as defined in the Contract) or any changes or modifications thereto made as therein provided, shall make good and reimburse **Owner** sufficient funds to pay the costs of completing the Contract that **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, hereby stipulates and agrees, if requested to do so by **Owner**, to fully perform and complete the work to be performed under the Contract pursuant to the terms, conditions and covenants thereof, if for any cause **Principal** fails or neglects to so fully perform and complete such work.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other

transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omissions or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: _____

Witness or Attest: Address: _____

_____ By: _____(SEAL)
Name: Name:
Title:

(Corporate Seal)

SURETY

Name: _____

Witness or Attest: Address: _____

_____ By: _____ (SEAL)
Name: Name:
Title:

(Corporate Seal)

STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET

PAYMENT BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal ("**Principal**"), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety ("**Surety**"), are held and firmly bound unto the _____ ("**Owner**") (***Appoquinimink School District***), in the amount of _____ ($_____), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole firmly by these presents.

Sealed with our seals and dated this _____ day of_____, 20__.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____dated the _____ day of _____, 20__ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly pay all and every person furnishing materials or performing labor or service in and about the performance of the work under the Contract, all and every sums of money due him, her, them or any of them, for all such materials, labor and service for which **Principal** is liable, shall make good and reimburse **Owner** sufficient funds to pay such costs in the completion of the Contract as **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omission or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: _____

Witness or Attest: Address: _____

_____ By: _____(SEAL)
Name: Name:
Title:

(Corporate Seal)

SURETY

Name: _____

Witness or Attest: Address: _____

_____ By: _____(SEAL)
Name: Name:
Title:

(Corporate Seal)

APPLICATION AND CERTIFICATE FOR PAYMENT AIA DOCUMENT G702 (Instructions on reverse side) PAGE ONE OF PAGES

TO OWNER:

PROJECT:

APPLICATION NO.:
PERIOD TO:
PROJECT NOS.:

Distribution to:
☐ OWNER
☐ ARCHITECT
☐ CONTRACTOR
☐
☐

FROM CONTRACTOR:

VIA ARCHITECT:

CONTRACT DATE:

CONTRACT FOR:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. **ORIGINAL CONTRACT SUM** ..... $_____
2. **Net change by Change Orders** ..... $_____
3. **CONTRACT SUM TO DATE** (Line 1 ± 2) ..... $_____
4. **TOTAL COMPLETED & STORED TO DATE** ..... $_____
   (Column G on G703)
5. **RETAINAGE:**
   a. _____% of Completed Work $_____
   (Columns D + E on G703)
   b. _____% of Stored Material $_____
   (Column F on G703)
   Total Retainage (Line 5a + 5b or
   Total in Column I of G703) ..... $_____
6. **TOTAL EARNED LESS RETAINAGE** ..... $_____
   (Line 4 less Line 5 Total)
7. **LESS PREVIOUS CERTIFICATES FOR PAYMENT**
   (Line 6 from prior Certificate) ..... $_____
8. **CURRENT PAYMENT DUE** ..... $
9. **BALANCE TO FINISH, INCLUDING RETAINAGE**
   (Line 3 less Line 6) $_____

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner		
Total approved this Month		
TOTALS		
NET CHANGES by Change Order		

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of:
County of:
Subscribed and sworn to before me this day of

Notary Public:
My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED ..... $_____

(Attach explanation if amount certified differs from the amount applied for. Initial all figures on this Application and on the Continuation Sheet that are changed to conform to the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

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INSTRUCTION SHEET

FOR AIA DOCUMENT G702

A. GENERAL INFORMATION

1. Purpose and Related Documents

AIA Document G702, Application and Certificate for Payment, is to be used in conjunction with AIA Document G703, Continuation Sheet. These documents are designed to be used on a Project where a Contractor has a direct Agreement with the Owner. Procedures for their use are covered in AIA Document A201, General Conditions of the Contract for Construction, 1987 Edition.

2. Use of Current Documents

Prior to using any AIA document, the user should consult the AIA, an AIA component chapter or a current AIA Documents List to determine the current edition of each document.

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B. COMPLETING THE G702 FORM:

After the Contractor has completed AIA Document G703, Continuation Sheet, summary information should be transferred to AIA Document G702, Application and Certificate for Payment.

The Contractor should sign G702, have it notarized, and submit it, together with G703, to the Architect.

The Architect should review G702 and G703 and, if they are acceptable, complete the Architect's Certificate for Payment on G702. The Architect may certify a different amount than that applied for, pursuant to Paragraphs 9.5 and 9.6 of A201. The Architect should then initial all figures on G702 and G703 that have been changed to conform to the amount certified and attach an explanation. The completed G702 and G703 should be forwarded to the Owner.

The following is an example of an Application for Payment for work in progress. Please note that dollar amounts shown below are for illustrative purposes only, and are not intended to reflect actual construction costs.

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. **ORIGINAL CONTRACT SUM** ..... $ 100,000.00
2. **Net change by Change Orders** ..... $ 5,000.00
3. **CONTRACT SUM TO DATE** (Line 1 ± 2) ..... $ 105,000.00
4. **TOTAL COMPLETED & STORED TO DATE** ..... $ 40,000.00
   (Column G on G703)
5. **RETAINAGE:**
   a. _____% of Completed Work $ 3,000.00
   (Columns D + E on G703)
   b. _____% of Stored Material $ 500.00
   (Column F on G703)
   Total Retainage (Line 5a + 5b or Total in Column I of G703) ..... $ 3,500.00
6. **TOTAL EARNED LESS RETAINAGE** ..... $ 36,500.00
   (Line 4 less Line 5 Total)
7. **LESS PREVIOUS CERTIFICATES FOR PAYMENT** ..... $ 18,000.00
   (Line 6 from prior Certificate)
8. **CURRENT PAYMENT DUE** ..... $ 18,500.00
9. **BALANCE TO FINISH, INCLUDING RETAINAGE** $ 68,500.00
   (Line 3 less Line 6)

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner		
Total approved this Month	10,000.00	5,000.00
TOTALS	10,000.00	5,000.00
NET CHANGES by Change Order	5,000.00	

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR: Robert Apple

By: ROBERT APPLE, PRESIDENT Date: AUGUST 1, 1992

State of: VIRGINIA
County of: FAIRFAX
Subscribed and sworn to before me this FIRST day of AUGUST 1992

Notary Public: Jean Smith
My Commission expires: DEC. 31, 1993

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED ..... $ _____

(Attach explanation if amount certified differs from the amount applied for. Initial all figures on this Application and on the Continuation Sheet that are changed to conform to the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

C. MAKING PAYMENT

The Owner should make payment directly to the Contractor based on the amount certified by the Architect on AIA Document G702, Application and Certificate for Payment. The completed form contains the name and address of the Contractor. Payment should not be made to any other party unless specifically indicated on G702.

D. EXECUTION OF THE DOCUMENT

Each person executing the Agreement should indicate the capacity in which they are acting (i.e., president, secretary, partner, etc.) and the authority under which they are executing the Agreement. Where appropriate, a copy of the resolution authorizing the individual to act on behalf of the firm or entity should be attached.

CONTINUATION SHEET

AIA DOCUMENT G703 (Instructions on reverse side)

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT, containing Contractor's signed Certification, is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO.:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO.:

A	B	C	D	E	F	G		H	I
			WORK COMPLETED						
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C – G)	RETAINAGE (IF VARIABLE) RATE)

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INSTRUCTION SHEET

FOR AIA DOCUMENT G703

A. GENERAL INFORMATION

1. Purpose and Related Documents

AIA Document G702, Application and Certificate for Payment, is to be used in conjunction with AIA Document G703, Continuation Sheet. These documents are designed for use on Projects where the Contractor has a direct Agreement with the Owner. Procedures for their use are covered in AIA Document A201, General Conditions of the Contract for Construction, 1987 Edition.

2. Use of Current Documents

The user should consult the AIA, an AIA component chapter or a current AIA Documents List to determine the current edition of each document.

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B. COMPLETING THE G703 FORM:

Heading: This information should be completed in a manner consistent with similar information on AIA Document G702, Application and Certificate for Payment.

Columns A, B & C: These columns should be completed by identifying the various portions of the Project and their scheduled values consistent with the schedule of values submitted to the Architect at the commencement of the Project or as subsequently adjusted. The breakdown may be by sections of the Work or by Subcontractors and should remain consistent throughout the Project. Multiple pages should be used when required.

Column C should be subtotaled at the bottom when more than one page is used and totaled on the last page. Initially, this total should equal the original Contract Sum. The total of column C may be adjusted by Change Orders during the Project.

Column D: Enter in this column the amount of completed Work covered by the previous application (columns D & E from the previous application). Values from column F (Materials Presently Stored) from the previous application should not be entered in this column.

Column E: Enter here the value of Work completed at the time of this application, including the value of materials incorporated in the project that were listed on the previous application under Materials Presently Stored (column F).

Column F: Enter here the value of Materials Presently Stored for which payment is sought. The total of the column must be recalculated at the end of each pay period. This value covers both materials newly stored for which payment is sought and materials previously stored which are not yet incorporated into the Project. Mere payment by the Owner for stored materials does not result in a deduction from this column. Only as materials are incorporated into the Project is their value deducted from this column and incorporated into column E (Work Completed—This Period.)

Column G: Enter here the total of columns D, E and F. Calculate the percentage completed by dividing column G by column C.

Column H: Enter here the difference between column C (Scheduled Value) and column G (Total Completed and Stored to Date).

Column I: This column is normally used only for contracts where variable retainage is permitted on a line-item basis. It need not be completed on projects where a constant retainage is withheld from the overall contract amount.

Change Orders: Although Change Orders could be incorporated by changing the schedule of values each time a Change Order is added to the Project, this is not normally done. Usually, Change Orders are listed separately, either on their own G703 form or at the end of the basic schedule. The amount of the original contract adjusted by Change Orders is to be entered in the appropriate location on the G702 form.

Construction Change Directives: Amounts not in dispute that have been included in Construction Change Directives should be incorporated into one or more Change Orders. Amounts remaining in dispute should be dealt with according to Paragraph 7.3 in A201.

The following is an example of a Continuation Sheet for work in progress. Please note that dollar amounts shown below are for illustrative purposes only, and are not intended to reflect actual construction costs.

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED: FROM PREVIOUS APPLICATION (D + E)	WORK COMPLETED: THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C − G)	RETAINAGE (IF VARIABLE) RATE)
1	MOBILIZATION	5,000	5,000	0	0	5,000	100	0	NOT APPLICABLE TO CONSTANT RATE RETAINAGE
2	STUMP REMOVAL	5,000	5,000	0	0	5,000	100	0	
3	EARTH WORK	15,000	10,000	5,000	0	15,000	100	0	
4	LOWER RETAING WALL	10,000	0	5,000	0	5,000	50	5,000	
5	CURBS & MISC. CONC.	5,000	0	0	0	0	0	5,000	
6	PAVING, UPPER DRIVE	20,000	0	0	0	0	0	20,000	
7	PAVING, LOWER DRIVE	20,000	0	0	0	0	0	20,000	
8	PAVERS	10,000	0	0	10,000	10,000	50	10,000	
9	BRICK WORK	5,000	0	0	0	0	0	5,000	
		105,000	20,000	10,000	10,000	40,000		65,000	

Instruction Sheet revised 4/94 without procedural change.

GENERAL CONDITIONS

TO THE

CONTRACT

The General Conditions of this Contract are as stated in the American Institute of Architects Document AIA A201 (2017 Edition) entitled General Conditions of the Contract for Construction as revised by the Supplementary General Conditions and is part of this project manual as if herein written in full.

SUPPLEMENTARY GENERAL CONDITIONS A201-2017

The following supplements modify the "General Conditions of the Contract for Construction," AIA Document A201-2017. Where a portion of the General Conditions is modified or deleted by the Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

TABLE OF ARTICLES

1. GENERAL PROVISIONS
2. OWNER
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6. CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7. CHANGES IN THE WORK
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9. PAYMENTS AND COMPLETION
10. PROTECTION OF PERSONS AND PROPERTY
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12. UNCOVERING AND CORRECTION OF WORK
13. MISCELLANEOUS PROVISIONS
14. TERMINATION OR SUSPENSION OF THE CONTRACT

ARTICLE 1: GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

Strike the last sentence of Section 1.1.1 in its entirety and replace with the following:

"The Contract Documents also include Advertisement for Bid, Instructions to Bidder, sample forms, the Bid Form, the Contractor's completed Bid and the Award Letter."

Add the following Section:

"1.1.1.1 In the event of conflict or discrepancies among the Contract Documents, the Documents prepared by the State of Delaware, Division of Facilities Management shall take precedence over all other documents."

1.1.8 INITIAL DECISION MAKER

Strike the last sentence of Section 1.1.8 in its entirety and add the following to the end of the remaining sentence:

" and certify termination of the Agreement under Section14.2.2."

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

1.2.1.1 Insert "if possible" at the end of the second sentence.

Add the following Sections:

"1.2.4 In the case of an inconsistency between the Drawings and the Specifications, or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Architect's interpretation."

"1.2.5 The word "PROVIDE" as used in the Contract Documents shall mean "FURNISH AND INSTALL" and shall include, without limitation, all labor, materials, equipment, transportation, services and other items required to complete the Work."

"1.2.6 The word "PRODUCT" as used in the Contract Documents means all materials, systems and equipment."

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

Strike Section 1.5.1 in its entirety and replace with the following:

"All pre-design studies, drawings, specifications and other documents, including those in electronic form, prepared by the Architect under this Agreement are, and shall remain, the property of the Owner whether the Project for which they are made is executed or not. Such documents may be used by the Owner to construct one or more like Projects without the approval of, or additional compensation to, the Architect. The Contractor, Subcontractors, Sub-subcontractors, and Material or Equipment Suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and

for use in the execution of their Work under the Contract Documents. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or Material and Equipment Supplier on other Projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and Architect's consultants.

The Architect shall not be liable for injury or damage resulting from the re-use of drawings and specifications if the Architect is not involved in the re-use Project. Prior to re-use of construction documents for a Project in which the Architect is not also involved, the Owner will remove from such documents all identification of the original Architect, including name, address and professional seal or stamp."

Strike Section 1.5.2 in its entirety.

1.7 DIGITAL DATA USE AND TRANSMISSION

Strike Section 1.7 in its entirety and replace with the following:

"The parties shall agree upon protocols governing transmission and use of Instruments of Service or any other information or documentation in digital form."

1.8 BUILDING INFORMATION MODELS USE AND RELIANCE

Strike Section 1.8 in its entirety.

ARTICLE 2: OWNER

2.2 EVIDENCE OF THE OWNERS FINANCIAL ARRANGEMENTS

Strike Section 2.2 in its entirety.

2.3 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.3.3 Strike 2.3.3 in its entirety.

2.3.4 Add the following sentence at the end of the paragraph:

"The Contractor, at their expense shall bear the costs to accurately identify the location of all underground utilities in the area of their excavation and shall bear all cost for any repairs required, out of failure to accurately identify said utilities."

Strike Section 2.3.6 in its entirety and replace with the following:

"2.3.6 The Contractor shall be furnished free of charge (1) electronic set of the Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage and handling."

2.5 OWNER'S RIGHT TO CARRY OUT THE WORK

Add ", except as outlined in Section 3.15" after the reference to "Article 15" at the end of the last sentence of the Section.

ARTICLE 3: CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.2 Add "and Owner" after "report to the Architect" in the second sentence.

3.2.4 Strike "subject to Section 15.1.7" in the second sentence.

3.2.4 Strike the third sentence.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Sections:

"3.3.2.1 The Contractor shall immediately remove from the Work, whenever requested to do so by the Owner, any person who is considered by the Owner or Architect to be incompetent or disposed to be so disorderly, or who for any reason is not satisfactory to the Owner, and that person shall not again be employed on the Work without the consent of the Owner or the Architect."

"3.3.4 The Contractor must provide suitable storage facilities at the Site for the proper protection and safe storage of their materials, or as otherwise identified by the specifications. Consult the Owner and the Architect before storing any materials."

"3.3.5 When any room is used as a shop, storeroom, office, etc., by the Contractor or Subcontractor(s) during the construction of the Work, the Contractor making use of these areas will be held responsible for any repairs, patching or cleaning arising from such use."

3.4 LABOR AND MATERIALS

Add the Following Sections:

"3.4.4 Before starting the Work, each Contractor shall carefully examine all preparatory Work that has been executed to receive their Work. Check carefully, by whatever means are required, to insure that its Work and adjacent, related Work, will finish to proper contours, planes and levels. Promptly notify the Architect & Owner of any defects or imperfections in preparatory Work which will in any way affect satisfactory completion of its Work. Absence of such notification will be construed as an acceptance of preparatory Work and later claims of defects will not be recognized."

"3.4.5 Under no circumstances shall the Contractor's Work proceed prior to preparatory Work having been completely cured, dried and/or otherwise made satisfactory to receive this Work. Responsibility for timely installation of all materials rests solely with the Contractor responsible for that Work, who shall maintain coordination at all times."

3.5 WARRANTY

Add the following Sections:

"3.5.3 The Contractor will guarantee all materials and workmanship against original defects, except injury from proper and usual wear when used for the purpose intended, for two years after Acceptance by the Owner, and will maintain all items in perfect condition during the period of warranty."

"3.5.4 Defects appearing during the period of warranty will be made good by the Contractor at his expense upon demand of the Owner, it being required that all work will be in perfect condition when the period of warranty will have elapsed."

"3.5.5 Upon notification by the Owner of a defect covered by the Contractor's warranty, the Contractor shall respond within 4 hours of the notification."

"3.5.6 In addition to the General Warranty there are other warranties required for certain items for different periods of time than the two years as above, and are particularly so stated in that part of the specifications referring to same. The said warranties will commence at the same time as the General Warranty."

"3.5.7 If the Contractor fails to remedy any failure, defect or damage within a reasonable time after receipt of notice, the Owner will have the right to replace, repair, or otherwise remedy the failure, defect or damage at the Contractor's expense."

3.8 ALLOWANCES

Add the following Section:

"3.8.1.1 For costs to be covered under a project allowance, (included in the schedule of values) the Contractor shall submit a summary of those costs anticipated and an Allowance Access Authorization Form to the Architect and Owner, reflecting the projected costs. The Allowance Access Authorization Form must be signed by the Owner prior to initiating any work associated with the allowance."

3.10 CONTRACTOR'S CONSTRUCTION AND SUBMITTAL SCHEDULES

3.10.1 Add "estimated" after "and the" and before "date of" in the second sentence.

3.10.2 Strike "and thereafter as necessary to maintain a current submittal schedule" in the first sentence.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following Sections:

"3.11.1 During the course of the Work, the Contractor shall maintain a record set of drawings on which the Contractor shall mark the actual physical location of all piping, valves, equipment, conduit, outlets, access panels, controls, actuators, including all appurtenances that will be concealed once construction is complete, etc., including all invert elevations."

"3.11.2 At the completion of the project, the Contractor shall obtain a set of the conformed contract drawings from the Architect, and neatly transfer all information outlined in 3.11.1 to provide a complete record of the as-built conditions."

"3.11.3 Upon completion of the work noted in 3.11.2 the contractor shall schedule a meeting with the Architect/Engineer and Owner to review the final record drawings and closeout documents prior to submission. After this meeting the Contractor shall make adjustments per the review, and submit one (1) original markup and (2) copies of the red line drawings (as-built conditions, to the Owner and one (1) print to the Architect. In addition, attach one complete set of the as-built documents to each of the Operating and Maintenance Instructions/Manuals. The Contractor will include (2) USB drives, each

containing all "red line drawings (as-built) and Closeout Documents properly tabbed in accordance with closeout requirements as defined elsewhere in the contract documents."

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

3.12.10.2 Strike "If the Contract Documents require" from the beginning of the sentence.

3.12.10.2 Strike "to" between "professional" and certify" and replace with "shall".

3.17 Insert "indemnify and" between "shall" and "hold" in the second sentence.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.2 ADMINISTRATION OF THE CONTRACT

4.2.7 Strike the first sentence and replace with the following:

"The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples for the purpose of checking for conformance with the Contract Documents."

4.2.7 Strike the second sentence and replace with the following:

"The Architect's action will be taken with such reasonable promptness as to cause no delay in the Work in the activities of the Owner, Contractor or separate Contractors, while allowing sufficient time in the Owner's professional judgment to permit adequate review."

Add the following Section:

"4.2.10.1 There will be no full-time Project Representative provided by the Owner or Architect on this project."

"4.2.13 Add "and in compliance with all local requirements." to the end of the sentence."

ARTICLE 5: SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.3 Strike Section 5.2.3 in its entirety and replace with the following:

"If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection, subject to the statutory requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4."

5.2.4 Strike Section 5.2.4 in its entirety and replace with the following:

"The Contractor may not substitute any Subcontractor listed in its Bid unless the Contractor complies with the requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4. Failure to comply with this requirement shall subject the Contractor to a penalty as outlined in Section 5.2 of the Owner's General Requirements."

Add the following Section:

"5.2.5 The Contractor shall comply and shall ensure all Subcontractors comply with all requirements for drug testing as set forth in TITLE 19 LABOR DELAWARE ADMINISTRATIVE CODE 4000 Office of Management and Budget 4100 Division of Facilities Management **4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects."**

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.1 Strike "and waiver of subrogation" from the end of the second sentence.

6.1.4 Strike Section 6.1.4 in its entirety.

6.2 MUTUAL RESPONSIBILITY

6.2.3 Strike "shall" and replace with "may" in the second sentence.

ARTICLE 7: CHANGES IN THE WORK

(SEE ARTICLE 7: CHANGES IN WORK IN THE STATE OF DELAWARE DIVISION OF FACILITIES MANAGEMENT GENERAL REQUIREMENTS)

7.3.4.1 Strike "and other employee costs approved by the Architect" after "worker's compensation insurance,"

7.3.4.4 Add "work attributable to the" before "change" at the end of the sentence.

7.4 MINOR CHANGES IN WORK
Add "unless such changes are approved" at the end of the third sentence.

ARTICLE 8: TIME

8.2 PROGRESS AND COMPLETION

8.2.1 Add the following Section:

"8.2.1.1 Refer to Project Specifications Section SUMMARY OF WORK for Contract time requirements."

8.2.2 After "by the Contractor" strike "and" and insert "to".

8.2.4 Add the following Section:

"8.2.4 If the Work falls behind the Progress Schedule as submitted by the Contractor, the Contractor shall employ additional labor and/or equipment necessary to bring the Work into compliance with the Progress Schedule at no additional cost to the Owner."

8.3 DELAYS AND EXTENSION OF TIME

8.3.1 Strike "binding dispute resolution" and insert "any and all remedies at law or in equity".

Add the following Section:

"8.3.2.1 The Contractor shall update the status of the suspension, delay, or interruption of the Work with each Application for Payment. (The Contractor shall report the termination of such cause immediately upon the termination thereof.) Failure to comply with this procedure shall constitute a waiver for any claim for adjustment of time or price based upon said cause."

Strike Section 8.3.3 in its entirety and replace with the following:

8.3.3 "Except in the case of a suspension of the Work directed by the Owner, an extension of time under the provisions of Section 8.3.1 shall be the Contractor's sole remedy in the progress of the Work and there shall be no payment or compensation to the Contractor for any expense or damage resulting from the delay."

Add the following Section:

"8.3.4 By permitting the Contractor to work after the expired time for completion of the project, the Owner does not waive their rights under the Contract."

ARTICLE 9: PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Add the following Sections:

"9.2.1 The Schedule of Values shall be submitted using AIA Document G703, Continuation Sheet to G702."

"9.2.2 The Schedule of Values is to include a line item for Project Closeout Document Submittal. The value of this item is to be no less than 1.5% of the initial contract amount."

9.3 APPLICATIONS FOR PAYMENT

9.3.1 Strike Section 9.3.1 in its entirety and replace with the following:

"At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values for completed portions of the Work. The application shall be notarized, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage."

Add the following Sections:

"9.3.1.3 Application for Payment shall be submitted on AIA Document G702 "Application and Certificate for Payment", supported by AIA Document G703 "Continuation Sheet". Said Applications shall be fully executed and notarized."

"9.3.4 Until Closeout Documents have been received and outstanding items completed the Owner will pay 95% (ninety-five percent) of the amount due the Contractor on account of progress payments."

"9.3.5 The Contractor shall provide a current and updated Progress Schedule to the Architect with each Application for Payment. Failure to provide Schedule will be just cause for rejection of Application for Payment."

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Add the following Subsections to 9.5.1:

.8 failure to provide a current Progress Schedule;
.9 a lien or attachment is filed;
.10 failure to comply with mandatory requirements for maintaining Record Documents.

9.6 PROGRESS PAYMENTS

9.6.1 Strike Section 9.6.1 in its entirety and replace with the following:

"9.6.1 After the Architect has approved and issued a Certificate for Payment, payment shall be made by the Owner within 30 days after Owner's receipt of the Certificate for Payment."

9.6.8 Strike "Provided the Owner has fulfilled its payment obligations under the Contract Documents," in the first sentence.

9.7 FAILURE OF PAYMENT

Strike Section 9.7 in its entirety and replace with the following:

"If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within fourteen days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within thirty days after the date established in the Contract Documents, the amount certified by the Architect, then the Contractor may, upon thirty additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents."

9.8 SUBSTANTIAL COMPLETION

9.8.3 At the end of Section 9.8.3, add the following sentence:

"If the Architect is required to make more than 2 inspections of the same portion of work, the Contractor shall be responsible for all costs associated with subsequent inspections including but not limited to any Architect's fees."

9.8.5 Strike "shall" and insert "may" in the second sentence.

9.8.5 Insert "1/2 of the" after "make payment of" in the second sentence.

9.9 PARTIAL OCCUPANCY OR USE

9.9.1 Strike the the first sentence and replace with the following (the remainder of the Section remains as written):
"The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use authorized by public authorities having jurisdiction over the Project."

9.10.2 Strike "to remain in force after final payment is currently in effect" after "required by the Contract Documents" and replace with "shall remain in force until final payment is completed" in the first sentence.

9.10.4.4 Strike "if permitted by the Contract Documents,"

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

Add the following Sections:

10.1.1 Each Contractor shall develop a safety program in accordance with the Occupational Safety and Health Act of 1970. A copy of said plan shall be furnished to the Owner and Architect prior to the commencement of that Contractor's Work.

10.1.2 Each Contractor shall appoint a Safety Representative. Safety Representatives shall be someone who is on site on a full time basis. If deemed necessary by the Owner or Architect, Contractor Safety meetings will be scheduled. The attendance of all Safety Representatives will be required. Minutes will be recorded of said meetings by the Contractor and will be distributed to all parties as well as posted in all job offices/trailers etc.

10.2 SAFETY OF PERSONS AND PROPERTY

Add the following Section:

10.2.4.1 As required in the Hazardous Chemical Act of June 1984, all vendors supplying any material that may be defined as hazardous must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a caution warning on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in foreseeable emergency situations. Material Safety Data Sheets shall be provided directly to the Owner, along with the shipping slips that include those products.

10.2.5 Strike the second sentence in its entirety.

10.3 HAZARDOUS MATERIALS AND SUBSTANCES

10.3.3 Strike Section 10.3.3 in its entirety.

10.3.4 Insert "hazardous" in the last sentence after "handling of such".

10.3.6 Strike Section 10.3.6 in its entirety.

ARTICLE 11: INSURANCE AND BONDS

11.1 CONTRACTOR'S INSURANCE AND BONDS

11.1.1 Strike "Owner" from the the third sentence .

11.2 OWNER'S LIABILITY INSURANCE

Strike 11.2in its entirety, except that in the case of school projects in which case Section 11.2 shall remain.

11.3 WAIVERS OF SUBROGATION

Delete Section 11.3 in its entirety

11.4 LOSS OF USE, BUSINESS INTERRUPTION, AND DELAY IN COMPLETION INSURANCE

Delete Section 11.4 in its entirety

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.2.2 AFTER SUBSTANTIAL COMPLETION

Add the following Section:

"12.2.2.1.1 At any time during the progress of the Work, or in any case where the nature of the defects will be such that it is not expedient to have corrected, the Owner, at its option, will have the right to deduct such sum, or sums, of money from the amount of the Contract as it considers justified to adjust the difference in value between the non-conforming work and that required under contract including any damage to the structure."

12.2.2.1 Strike all references to "one year" or "one-year" and replace with "two years".

12.2.2.2 Strike "one-year" and replace with "two years".

12.2.2.3 Strike "one-year" and replace with "two years".

12.2.5 Strike "one-year" and replaced with "two years".

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

Strike the last sentence.

13.4 TESTS AND INSPECTIONS

13.4.1 Strike the last sentence and replace with the following:

"The Owner shall pay for tests, inspections, or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor."

13.5 INTEREST

Strike "the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located" and replace with "30 days of presentment of the authorized Certificate of Payment at the annual rate of 12% or 1% per month."

Insert the following Section:

"13.6 CONFLICTS WITH FEDERAL STATUTES OR REGULATIONS

13.6.1 If any provision, specifications or requirement of the Contract Documents conflict or is inconsistent with any statute, law or regulation of the government of the United State of America, the Contractor shall notify the Architect and Owner immediately upon discovery."

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1.1.4 Insert ", upon the Contractors' request," after ""furnish to the Contractor" .

14.1.3 Strike "and profit on Work not executed, and" after "as well as reasonable overhead" and replace with ", profit, and reasonable"

14.3 SUSPENSION BY OWNER FOR CONVENIENCE

14.3.2 Strike "Adjustment of the Contract Sum shall include profit".

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

14.4.3 Strike Section 14.4.3 in its entirety and replace with the following:

"In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and reasonable costs incurred by reason of such termination along with reasonable overhead."

ARTICLE 15: CLAIMS AND DISPUTES

15.1 CLAIMS

15.1.2 TIME LIMITS ON CLAIMS

Strike the last sentence.

15.1.3 NOTICE OF CLAIM

Strike all references to "21" and replace with "45".

15.1.5 CLAIMS FOR ADDITIONAL COSTS

Strike the first sentence and replace with the following:

"Contractor shall not proceed to execute any portion of the Work that is subject to the Claim without prior approval of the costs or method of payment for the costs associated with the Claim as determined by the Architect and approved by the Owner."

15.1.7 WAIVER OF CLAIMS FOR CONSEQUENTIAL DAMAGES

Strike Section 15.1.7 in its entirety.

15.2 INITIAL DECISION

15.2.1 Strike "and binding dispute resolution" in the fourth sentence and replace with "or any and all remedies at law or in equity".

15.2.5 Strike Section 15.2.5 in its entirety and replace with the following:

"The Architect will approve or reject Claims by written decision, which shall state the reasons therefore and shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Architect shall be subject to mediation and any or all remedies at law or in equity."

15.2.6 Strike Section 15.2.6 and its subSections in their entirety.

15.3 MEDIATION

15.3.1 Strike "binding dispute resolution" and replace with "any or all remedies at law or in equity".

15.3.2 Strike ", shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedure in effect on the date of the Agreement," in the first sentence.

15.3.2 Strike all references to "binding dispute resolution" and replace with "any or all remedies at law and in equity".

15.3.3 Strike Section 15.3.3 in its entirety.

15.4 ARBITRATION

Strike Section 15.4 and its Subsections in their entirety.

END OF SUPPLEMENTARY GENERAL CONDITIONS

STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
4425 NORTH MARKET STREET
WILMINGTON, DELAWARE 19802

TELEPHONE (302) 761-8200
FAX (302) 761-6601

Via Electronic and Regular Mail

October 18, 2019

Mr. Gary Hayes, President
Environmental Testing Inc
100 S Cass St
Middletown, DE 19709

Re: ASD - Abate Everett Meredith Middle School, New Castle County, DE

Dear Mr. Hayes:

I am responding to your request for a category determination for the ASD - Abate Everett Meredith Middle School, which is a state funded construction project located in New Castle County, DE. The work consists of asbestos abatement of the existing building. You estimate the total cost of construction for this project to be $336,500.

Based upon the information you provided the Department of Labor has determined that this project is a Building Construction project.

Delaware's Prevailing Wage Regulations provide that the rates applicable to a project are the rates in effect on the date of publication of the specifications for that project. I have enclosed a certified copy of the March 15, 2019, prevailing wage rates for Building Construction to be included in your bid specification. However, please be advised that, in the event that a contract for a project is not executed within one hundred and twenty (120) days from the earliest date the specifications were published, the rates in effect at the time of the execution of the contract shall be the applicable rates for the project.

This determination is directed solely to the parties identified herein. It is based on the unique facts relevant to this matter. It does not constitute precedent and should not be cited as such by future parties.

Lastly, please see the enclosed debarment list. Entities/individuals listed shall not be permitted to bid on, be awarded or work on Delaware State funded construction projects, in the timeframe specified, as provided for under 29 Del.C. §6960 or other applicable State statutes.

If you have any questions or I can provide any additional assistance, please do not hesitate to contact me at 302-761-8325.

Sincerely,

Curtis Washington
Labor Law Enforcement Officer
curtisl.washington@delaware.gov

Enclosures

STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
OFFICE OF LABOR LAW ENFORCEMENT
PHONE: (302) 761-8200

Mailing Address:
4425 North Market Street
3rd Floor
Wilmington, DE 19802

Located at:
4425 North Market Street
3rd Floor
Wilmington, DE 19802

PREVAILING WAGES FOR **BUILDING CONSTRUCTION** EFFECTIVE MARCH 15, 2019

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	23.92	29.46	42.87
BOILERMAKERS	71.61	36.33	53.41
BRICKLAYERS	55.09	55.09	55.09
CARPENTERS	55.63	55.63	44.22
CEMENT FINISHERS	75.54	52.62	23.19
ELECTRICAL LINE WORKERS	47.57	40.79	31.10
ELECTRICIANS	70.49	70.49	70.49
ELEVATOR CONSTRUCTORS	96.27	67.47	33.42
GLAZIERS	75.65	75.65	59.28
INSULATORS	57.88	57.88	57.88
IRON WORKERS	65.57	65.57	65.57
LABORERS	47.70	47.70	47.70
MILLWRIGHTS	74.23	74.23	59.84
PAINTERS	52.47	52.47	52.47
PILEDRIVERS	78.02	41.17	33.30
PLASTERERS	31.22	31.22	23.14
PLUMBERS/PIPEFITTERS/STEAMFITTERS	70.05	55.29	60.31
POWER EQUIPMENT OPERATORS	71.29	71.29	71.29
ROOFERS-COMPOSITION	25.12	24.79	22.64
ROOFERS-SHINGLE/SLATE/TILE	19.24	22.88	17.99
SHEET METAL WORKERS	72.53	72.53	72.53
SOFT FLOOR LAYERS	53.39	53.39	53.39
SPRINKLER FITTERS	60.04	60.04	60.04
TERRAZZO/MARBLE/TILE FNRS	64.45	64.45	64.45
TERRAZZO/MARBLE/TILE STRS	71.27	71.27	71.27
TRUCK DRIVERS	32.19	28.70	21.91

CERTIFIED: 10/09/2019

BY: _____
ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

NOTE: THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE (302) 451-3423.

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

PROJECT: ASD - Abate Everett Meredith Middle School, New Castle County

PREVAILING WAGE DEBARMENT LIST

The following contractors have been debarred for violations of the prevailing wage law 29Del.C. §6960 or other applicable State statutes.

Therefore, no public construction contract in this State shall be bid on, awarded to, or received by contractors and individuals on this list for a period of (3) three years from the date of the judgment or as deemed by a court of competent jurisdiction.

Contractor	Address	Date of Debarment
Mullen Brothers, Inc. and Daniel Mullen, individually	3375 Garnett Road, Boothwyn, PA 19060	Indefinite/ Civil Contempt
State Contractors Corporation, and Jose Oscar Rivera, individually	13004 Hathaway Drive Silver Spring, MD 20906	Indefinite/ 19 Del.C. 2374(f)
Green Granite and Jason Green, individually	604 Heatherbrooke Court Avondale, PA 19311	Indefinite/ Civil Contempt
Pro Image Landscaping, Inc. and Owner(s) individually	23 Commerce Street Wilmington, DE 19801 and/or 2 Cameo Road Claymont, DE 19703	Indefinite/19 Del.C. §108 & 10 Del.C. 542(c)
Liberty Mechanical, LLC and Owner(s), individually	2032 Duncan Road Wilmington, DE 19801	Indefinite/ 19 Del.C. 2374(f)
Integrated Mechanical and Fire Systems Inc. and Allison Sheldon, individually	4601 Governor Printz Boulevard Wilmington, DE 19809	Indefinite/19 Del.C. §108 & 10 Del.C. 542(c)

Updated: January 22, 2019

GENERAL REQUIREMENTS

TABLE OF ARTICLES

1. GENERAL PROVISIONS
2. OWNER
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8. TIME
9. PAYMENTS AND COMPLETION
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12. UNCOVERING AND CORRECTION OF WORK
13. MISCELLANEOUS PROVISIONS
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ARTICLE 1: GENERAL

1.1 CONTRACT DOCUMENTS

1.1.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to an extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

1.1.2 Work including material purchases shall not begin until the Contractor is in receipt of a bonafide State of Delaware Purchase Order. Any work performed or material purchases prior to the issuance of the Purchase Order is done at the Contractor's own risk and cost.

1.2 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

1.2.1 For Public Works Projects financed in whole or in part by state appropriation the Contractor agrees that during the performance of this contract:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take positive steps to ensure that applicants are employed and that employees are treated during employment without regard to their race, creed, sex, color, sexual orientation, gender identity or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.

2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, sex, color, sexual orientation, gender identity or national origin."

ARTICLE 2: OWNER

(NO ADDITIONAL GENERAL REQUIREMENTS – SEE SUPPLEMENTARY GENERAL CONDITIONS)

ARTICLE 3: CONTRACTOR

3.1 Schedule of Values: The successful Bidder shall within twenty (20) days after receiving notice to proceed with the work, furnish to the Owner a complete schedule of values on the various items comprising the work.

3.2 Subcontracts: Upon approval of Subcontractors, the Contractor shall award their Subcontracts as soon as possible after the signing of their own contract and see that all material, their own and those of their Subcontractors, are promptly ordered so that the work will not be delayed by failure of materials to arrive on time.

3.3 Before commencing any work or construction, the General Contractor is to consult with the Owner as to matters in connection with access to the site and the allocation of Ground Areas for the various features of hauling, storage, etc.

3.4 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions.

3.5 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

3.6 The Contractor warrants to the Owner that materials and equipment furnished will be new and of good quality, unless otherwise permitted, and that the work will be free from defects and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved, may be considered defective. If required by the Owner, the Contractor shall furnish evidence as to the kind and quality of materials and equipment provided.

3.7 Unless otherwise provided, the Contractor shall pay all sales, consumer, use and other similar taxes, and shall secure and pay for required permits, fees, licenses, and inspections necessary for proper execution of the Work.

3.8 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work. The Contractor shall promptly notify the Owner if the Drawings and Specifications are observed to be at variance therewith.

3.9 The Contractor shall be responsible to the Owner for the acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work under contract with the Contractor.

3.10 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work the Contractor shall remove from and about the Project all waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials. The Contractor shall be responsible for returning all damaged areas to their original conditions.

3.11 STATE LICENSE AND TAX REQUIREMENTS

3.11.1 Each Contractor and Subcontractor shall be licensed to do business in the State of Delaware and shall pay all fees and taxes due under State laws. In conformance with Section 2503, Chapter 25, Title 30, Delaware Code, "the Contractor shall furnish the Delaware Department of Finance within ten (10) days after entering into any contract with a contractor or subcontractor not a resident of this State, a statement of total value of such contract or contracts together with the names and addresses of the contracting parties."

3.12 The Contractor shall comply with all requirements set forth in Section 6962, Chapter 69, Title 29 of the Delaware Code.

3.13 During the contract Work, the Contractor and each Subcontractor, shall implement an Employee Drug Testing Program in accordance with OMB Regulation 4104 - "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects". "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.1 CONTRACT SURETY

4.1.1 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

4.1.2 All bonds will be required as follows unless specifically waived elsewhere in the Bidding Documents.

4.1.3 Contents of Performance Bonds – The bond shall be in the form approved by the Office of Management and Budget. The bond shall be conditioned upon the faithful compliance and performance by the successful bidder of each and every term and condition of the contract and the proposal, plans, specifications, and bid documents thereof. Each term and condition shall be met at the time and in the manner prescribed by the Contract, Bid documents and the specifications, including the payment in full to every person furnishing materiel or performing labor in the performance of the Contract, of all sums of money due the person for such labor and materiel. (The bond shall also contain the successful bidder's guarantee to indemnify and save harmless the State and the agency from all costs, damages and expenses growing out of or by reason of the Contract in accordance with the Contract.)

4.1.4 Invoking a Performance Bond – The agency may, when it considers that the interest of the State so requires, cause judgement to be confessed upon the bond.

4.1.5 Within twenty (20) days after the date of notice of award of contract, the Bidder to whom the award is made shall furnish a Performance Bond and Labor and Material Payment Bond, each equal to the full amount of the Contract price to guarantee the faithful performance of all terms, covenants and conditions of the same. The bonds are to be issued by an acceptable Bonding Company licensed to do business in the State of Delaware and shall be issued in duplicate.

4.1.6 Performance and Payment Bonds shall be maintained in full force (warranty bond) for a period of two (2) years after the date of the Certificate for Final Payment. The Performance Bond shall guarantee the satisfactory completion of the Project and that the Contractor will make good any faults or defects in his work which may develop during the period of said guarantees as a result of improper or defective workmanship, material or apparatus, whether furnished by themselves or their Sub-Contractors. The Payment Bond shall guarantee that the Contractor shall pay in full all persons, firms or corporations who furnish labor or material or both labor and material for, or on account of, the work included herein. The bonds shall be paid for by this Contractor. The Owner shall have the right to demand that the proof parties signing the bonds are duly authorized to do so.

4.2 FAILURE TO COMPLY WITH CONTRACT

4.2.1 If any firm entering into a contract with the State, or Agency that neglects or refuses to perform or fails to comply with the terms thereof, the Agency which signed the Contract may terminate the Contract and proceed to award a new contract in accordance with this Chapter 69, Title 29 of the Delaware Code or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond. Nothing herein shall preclude the Agency from pursing additional remedies as otherwise provided by law.

4.3 CONTRACT INSURANCE AND CONTRACT LIABILITY

4.3.1 In addition to the bond requirements stated in the Bid Documents, each successful Bidder shall purchase adequate insurance for the performance of the Contract and, by submission of a Bid, agrees to indemnify and save harmless and to defend all legal or equitable actions brought against the State, any Agency, officer and/or employee of the State, for and from all claims of liability which is or may be the result of the successful Bidder's actions during the performance of the Contract.

4.3.2 The purchase or nonpurchase of such insurance or the involvement of the successful Bidder in any legal or equitable defense of any action brought against the successful Bidder based upon work performed pursuant to the Contract will not waive any defense which the State, its agencies and their respective officers, employees and agents might otherwise have against such claims, specifically including the defense of sovereign immunity, where applicable, and by the terms of this section, the State and all agencies, officers and employees thereof shall not be financially responsible for the consequences of work performed, pursuant to said contract.

4.4 RIGHT TO AUDIT RECORDS

4.4.1 The Owner shall have the right to audit the books and records of a Contractor or any Subcontractor under any Contract or Subcontract to the extent that the books and records relate to the performance of the Contract or Subcontract.

4.4.2 Said books and records shall be maintained by the Contractor for a period of seven (7) years from the date of final payment under the Prime Contract and by the Subcontractor for a period of seven (7) years from the date of final payment under the Subcontract.

ARTICLE 5: SUBCONTRACTORS

5.1 SUBCONTRACTING REQUIREMENTS

5.1.1 All contracts for the construction, reconstruction, alteration or repair of any public building (not a road, street or highway) shall be subject to the following provisions:

1. A contract shall be awarded only to a Bidder whose Bid is accompanied by a statement containing, for each Subcontractor category, the name and address (city or town and State only – street number and P.O. Box addresses not required) of the subcontractor whose services the Bidder intends to use in performing the Work and providing the material for such Subcontractor category.

2. A Bid will not be accepted nor will an award of any Contract be made to any Bidder which, as the Prime Contractor, has listed itself as the Subcontractor for any Subcontractor unless:

   A. It has been established to the satisfaction of the awarding Agency that the Bidder has customarily performed the specialty work of such Subcontractor category by artisans regularly employed by the Bidder's firm;

   B. That the Bidder is duly licensed by the State to engage in such specialty work, if the State requires licenses; and

   C. That the Bidder is recognized in the industry as a bona fide Subcontractor or Contractor in such specialty work and Subcontractor category.

5.1.2 The decision of the awarding Agency as to whether a Bidder who list itself as the Subcontractor for a Subcontractor category shall be final and binding upon all Bidders, and no action of any nature shall lie against any awarding agency or its employees or officers because of its decision in this regard.

5.1.3 After such a Contract has been awarded, the successful Bidder shall not substitute another Subcontractor for any Subcontractor whose name was set forth in the statement which accompanied the Bid without the written consent of the awarding Agency.

5.1.4 No Agency shall consent to any substitution of Subcontractors unless the Agency is satisfied that the Subcontractor whose name is on the Bidders accompanying statement:

   A. Is unqualified to perform the work required;

   B. Has failed to execute a timely reasonable Subcontract;

   C. Has defaulted in the performance on the portion of the work covered by the Subcontract; or

   D. Is no longer engaged in such business.

5.1.5 Should a Bidder be awarded a contract, such successful Bidder shall provide to the agency the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

5.1.6 The Contractor may employ additional Subcontractors on the jobsite only after submitting a copy of the Subcontractor's Employee Drug Testing Program to the Owner for approval. A Contractor or Subcontractor shall not commence work until the Owner has concluded its review and determined that the submitted Employee Drug Testing Program complies with OMB Regulation 4104.

5.2 PENALTY FOR SUBSTITUTION OF SUBCONTRACTORS

5.2.1 Should the Contractor fail to utilize any or all of the Subcontractors in the Contractor's Bid statement in the performance of the Work on the public bidding, the Contractor shall be penalized in the amount of (project specific amount*). The Agency may determine to deduct payments of the penalty from the Contractor or have the amount paid directly to the Agency. Any penalty amount assessed against the Contractor may be remitted or refunded, in whole or in part, by the Agency awarding the Contract, only if it is established to the satisfaction of the Agency that the Subcontractor in question has defaulted or is no longer engaged in such business. No claim for the remission or refund of any penalty shall be granted unless an application is filed within one year after the liability of the successful Bidder accrues. All penalty amounts assessed and not refunded or remitted to the contractor shall be reverted to the State.

*one (1) percent of contract amount not to exceed $10,000

5.3 ASBESTOS ABATEMENT

5.3.1 The selection of any Contractor to perform asbestos abatement for State-funded projects shall be approved by the Office of Management and Budget, Division of Facilities Management pursuant to Chapter 78 of Title 16.

5.4 STANDARDS OF CONSTRUCTION FOR THE PROTECTION OF THE PHYSICALLY HANDICAPPED

5.4.1 All Contracts shall conform with the standard established by the Delaware Architectural Accessibility Board unless otherwise exempted by the Board.

5.5 CONTRACT PERFORMANCE

5.5.1 Any firm entering into a Public Works Contract that neglects or refuses to perform or fails to comply with its terms, the Agency may terminate the Contract and proceed to award a new Contract or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond.

ARTICLE 6: CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS

6.1 The Owner reserves the right to simultaneously perform other construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other Projects at the same site.

6.2 The Contractor shall afford the Owner and other Contractors reasonable opportunity for access and storage of materials and equipment, and for the performance of their activities, and shall connect and coordinate their activities with other forces as required by the Contract Documents.

ARTICLE 7: CHANGES IN THE WORK

7.1 The Owner, without invalidating the Contract, may order changes in the Work consisting of Additions, Deletions, Modifications or Substitutions, with the Contract Sum and Contract completion date being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Professional, as the duly authorized agent, the Contractor and the Owner.

7.2 The Contract Sum and Contract Completion Date shall be adjusted only by a fully executed Change Order.

7.3 The additional cost, or credit to the Owner resulting from a change in the Work shall be by mutual agreement of the Owner, Contractor and the Architect. In all cases, this cost or credit shall be based on the 'DPE' wages required and the "invoice price" of the materials/equipment needed.

7.3.1 "DPE" shall be defined to mean "direct personnel expense". Direct payroll expense includes prevailing wage rates plus a maximum multiplier of 1.35 times DPE. For example, if the prevailing wage rate is $50/hour, the DPE would be $67.50/hour (50 x 1.35).

7.3.2 "Invoice price" of materials/equipment shall be defined to mean the actual cost of materials and/or equipment that is paid by the Contractor, (or subcontractor), to a material distributor, direct factory vendor, store, material provider, or equipment leasing entity. Rates for equipment that is leased and/or owned by the Contractor or subcontractor(s) shall not exceed those listed in the latest version of the "Means Building Construction Cost Data" publication.

7.3.3 In addition to the above, the General Contractor is allowed a fifteen percent (15%) markup for overhead and profit for additional work performed by the General Contractor's own forces. For additional subcontractor work, the Subcontractor is allowed a fifteen (15) percent overhead and profit on change order work above and beyond the direct costs stated previously. To this amount, the General Contractor will be allowed a mark-up not exceeding seven and one half percent (7.5%) on the subcontractors work. These mark-ups shall include all costs including, but not limited to: overhead, profit, bonds, insurance, supervision, etc. No markup is permitted on the work of the subcontractors subcontractor. No additional costs shall be allowed for changes related to the Contractor's onsite superintendent/staff, or project manager, unless a change in the work changes the project duration and is identified by the CPM schedule. There will be no other costs associated with the change order.

ARTICLE 8: TIME

8.1 Time limits, if any, are as stated in the Project Manual. By executing the Agreement, the Contractor confirms that the stipulated limits are reasonable, and that the Work will be completed within the anticipated time frame.

8.2 If progress of the Work is delayed at any time by changes ordered by the Owner, by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions, unavoidable casualties or other causes beyond the Contractor's control, the Contract Time shall be extended for such reasonable time as the Owner may determine.

8.3 Any extension of time beyond the date fixed for completion of the construction and acceptance of any part of the Work called for by the Contract, or the occupancy of the building by the Owner, in whole or in part, previous to the completion shall not be deemed a waiver by the Owner of his right to annul or terminate the Contract for abandonment or delay in the matter provided for, nor relieve the Contractor of full responsibility.

8.4 SUSPENSION AND DEBARMENT

8.4.1 Per Section 6962(d)(14), Title 29, Delaware Code, "Any Contractor who fails to perform a public works contract or complete a public works project within the time schedule established by the Agency in the Invitation To Bid, may be subject to Suspension or Debarment for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the Project."

8.4.2 "Upon such failure for any of the above stated reasons, the Agency that contracted for the public works project may petition the Director of the Office of Management and Budget for Suspension or Debarment of the Contractor. The Agency shall send a copy of the petition to the Contractor within three (3) working days of filing with the Director. If the Director concludes that the petition has merit, the Director shall schedule and hold a hearing to determine whether to suspend the Contractor, debar the Contractor or deny the petition. The Agency shall have the burden of proving, by a preponderance of the evidence, that the Contractor failed to perform or complete the public works project within the time schedule established by the Agency and failed to do so for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the project. Upon a finding in favor of the Agency, the Director may suspend a Contractor from Bidding on any project funded, in whole or in part, with public funds for up to 1 year for a first offense, up to 3 years for a second offense and permanently debar the Contractor for a third offense. The Director shall issue a written decision and shall send a copy to the Contractor and the Agency. Such decision may be appealed to the Superior Court within thirty (30) days for a review on the record."

8.5 RETAINAGE

8.5.1 Per Section 6962(d)(5) a.3, Title 29, Delaware Code: The Agency may at the beginning of each public works project establish a time schedule for the completion of the project. If the project is delayed beyond the completion date due to the Contractor's failure to meet their responsibilities, the Agency may forfeit, at its discretion, all or part of the Contractor's retainage.

8.5.2 This forfeiture of retainage also applies to the timely completion of the punchlist. A punchlist will only be prepared upon the mutual agreement of the Owner, Architect and Contractor. Once the punchlist is prepared, all three parties will by mutual agreement, establish a schedule for its completion. Should completion of the punchlist be delayed beyond the established date due to the Contractor's failure to meet their responsibilities, the Agency may hold permanently, at its discretion, all or part of the Contractor's retainage.

ARTICLE 9: PAYMENTS AND COMPLETION

9.1 APPLICATION FOR PAYMENT

9.1.1 Applications for payment shall be made upon AIA Document G702. There will be a five percent (5%) retainage on all Contractor's monthly invoices until completion of the project. This retainage may become payable upon receipt of all required closeout documentation, provided all other requirements of the Contract Documents have been met.

9.1.2 A date will be fixed for the taking of the monthly account of work done. Upon receipt of Contractor's itemized application for payment, such application will be audited, modified, if found necessary, and approved for the amount. Statement shall be submitted to the Owner.

9.1.3 Section 6516, Title 29 of the Delaware Code annualized interest is not to exceed 12% per annum beginning thirty (30) days after the "presentment" (as opposed to the date) of the invoice.

9.2 PARTIAL PAYMENTS

9.2.1 Any public works Contract executed by any Agency may provide for partial payments at the option of the Owner with respect to materials placed along or upon the sites or stored at secured locations, which are suitable for use in the performance of the contract.

9.2.2 When approved by the agency, partial payment may include the values of tested and acceptable materials of a nonperishable or noncontaminative nature which have been produced or furnished for incorporation as a permanent part of the work yet to be completed, provided acceptable provisions have been made for storage.

9.2.2.1 Any allowance made for materials on hand will not exceed the delivered cost of the materials as verified by invoices furnished by the Contractor, nor will it exceed the contract bid price for the material complete in place.

9.2.3 If requested by the Agency, receipted bills from all Contractors, Subcontractors, and material, men, etc., for the previous payment must accompany each application for payment. Following such a request, no payment will be made until these receipted bills have been received by the Owner.

9.3 SUBSTANTIAL COMPLETION

9.3.1 When the building has been made suitable for occupancy, but still requires small items of miscellaneous work, the Owner will determine the date when the project has been substantially completed.

9.3.2 If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and without terminating the Contract, the Owner may make payment of the balance due for the portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment that it shall not constitute a waiver of claims.

9.3.3 On projects where commissioning is included, the commissioning work as defined in the specifications must be complete prior to the issuance of substantial completion.

9.4 FINAL PAYMENT

9.4.1 Final payment, including the five percent (5%) retainage if determined appropriate, shall be made within thirty (30) days after the Work is fully completed and the Contract fully performed and provided that the Contractor has submitted the following closeout documentation (in addition to any other documentation required elsewhere in the Contract Documents):

9.4.1.1 Evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the work have been paid,

9.4.1.2 An acceptable RELEASE OF LIENS,

9.4.1.3 Copies of all applicable warranties,

9.4.1.4 As-built drawings,

9.4.1.5 Operations and Maintenance Manuals,

9.4.1.6 Instruction Manuals,

9.4.1.7 Consent of Surety to final payment.

9.4.1.8 The Owner reserves the right to retain payments, or parts thereof, for its protection until the foregoing conditions have been complied with, defective work corrected and all unsatisfactory conditions remedied.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take all reasonable precautions to prevent damage, injury or loss to: workers, persons nearby who may be affected, the Work, materials and equipment to be incorporated, and existing property at the site or adjacent thereto. The Contractor shall give notices and comply with applicable laws ordinances, rules regulations, and lawful orders of public authorities bearing on the safety of persons and property and their protection from injury, damage, or loss. The Contractor shall promptly remedy damage and loss to property at the site caused in whole or in part by the Contractor, a Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.

10.2 The Contractor shall notify the Owner in the event any existing hazardous material such as lead, PCBs, asbestos, etc. is encountered on the project. The Owner will arrange with a qualified specialist for the identification, testing, removal, handling and protection against exposure or environmental pollution, to comply with applicable regulation laws and ordinances. The Contractor and Architect will not be required to participate in or to perform this operation. Upon completion of this work, the Owner will notify the Contractor and Architect in writing the area has been cleared and approved by the authorities in order for the work to proceed. The Contractor shall attach documentation from the authorities of said approval.

10.3 As required in the Hazardous Chemical Information Act of June 1984, all vendors supplying any materials that may be defined as hazardous, must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a warning caution on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in any foreseeable emergency situation. Material Safety Data Sheets must be provided directly to the Owner along with the shipping slips that include those products.

10.4 The Contractor shall certify to the Owner that materials incorporated into the Work are free of all asbestos. This certification may be in the form of Material Safety Data Sheet (MSDS) provided by the product manufacturer for the materials used in construction, as specified or as provided by the Contractor.

ARTICLE 11: INSURANCE AND BONDS

11.1 The Contractor shall carry all insurance required by law, such as Unemployment Insurance, etc. The Contractor shall carry such insurance coverage as they desire on their own property such as a field office, storage sheds or other structures erected upon the project site that belong to them and for their own use. The Subcontractors involved with this project shall carry whatever insurance protection they consider necessary to cover the loss of any of their personal property, etc.

11.2 Upon being awarded the Contract, the Contractor shall obtain a minimum of two (2) copies of all required insurance certificates called for herein, and submit one (1) copy of each certificate, to the Owner, within 20 days of contract award.

11.3 Bodily Injury Liability and Property Damage Liability Insurance shall, in addition to the coverage included herein, include coverage for injury to or destruction of any property arising out of the collapse of or structural injury to any building or structure due to demolition work and evidence of these coverages shall be filed with and approved by the Owner.

11.4 The Contractor's Property Damage Liability Insurance shall, in addition to the coverage noted herein, include coverage on all real and personal property in their care, custody and control damaged in any way by the Contractor or their Subcontractors during the entire construction period on this project.

11.5 Builders Risk (including Standard Extended Coverage Insurance) on the existing building during the entire construction period, may be provided by the Contractor under this contract. The Owner shall insure the existing building and all of its contents and all this new alteration work under this contract during entire construction period for the full insurable value of the entire work at the site. Note, however, that the Contractor and their Subcontractors shall be responsible for insuring building materials (installed and stored) and their tools and equipment whenever in use on the project, against fire damage, theft, vandalism, etc.

11.6 Certificates of the insurance company or companies stating the amount and type of coverage, terms of policies, etc., shall be furnished to the Owner, within 20 days of contract award.

11.7 The Contractor shall, at their own expense, (in addition to the above) carry the following forms of insurance:

11.7.1 Contractor's Contractual Liability Insurance

Minimum coverage to be:

Bodily Injury	$500,000	for each person
	$1,000,000	for each occurrence
	$1,000,000	aggregate
Property Damage	$500,000	for each occurrence
	$1,000,000	aggregate

11.7.2 Contractor's Protective Liability Insurance

Minimum coverage to be:

Bodily Injury	$500,000	for each person
	$1,000,000	for each occurrence
	$1,000,000	aggregate
Property Damage	$500,000	for each occurrence
	$500,000	aggregate

11.7.3 Automobile Liability Insurance

Minimum coverage to be:

Bodily Injury	$1,000,000	for each person
	$1,000,000	for each occurrence
Property Damage	$500,000	per accident

11.7.4 Prime Contractor's and Subcontractors' policies shall include contingent and contractual liability coverage in the same minimum amounts as 11.7.1 above.

11.7.5 Workmen's Compensation (including Employer's Liability):

11.7.5.1 Minimum Limit on employer's liability to be as required by law.

11.7.5.2 Minimum Limit for all employees working at one site.

11.7.6 Certificates of Insurance must be filed with the Owner guaranteeing fifteen (15) days prior notice of cancellation, non-renewal, or any change in coverages and limits of liability shown as included on certificates.

11.7.7 Social Security Liability

11.7.7.1 With respect to all persons at any time employed by or on the payroll of the Contractor or performing any work for or on their behalf, or in connection with or arising out of the Contractor's business, the Contractor shall accept full and exclusive liability for the payment of any and all contributions or taxes or unemployment insurance, or old age retirement benefits, pensions or annuities now or hereafter imposed by the Government of the United States and the State or political subdivision thereof, whether the same be measured by wages, salaries or other remuneration paid to such persons or otherwise.

11.7.7.2 Upon request, the Contractor shall furnish Owner such information on payrolls or employment records as may be necessary to enable it to fully comply with the law imposing the aforesaid contributions or taxes.

11.7.7.3 If the Owner is required by law to and does pay any and/or all of the aforesaid contributions or taxes, the Contractor shall forthwith reimburse the Owner for the entire amount so paid by the Owner.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.1 The Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed, and shall correct any Work found to be not in accordance with the requirements of the Contract Documents within a period of two years from the date of Substantial Completion, or by terms of an applicable special warranty required by the Contract Documents. The provisions of this Article apply to work done by Subcontractors as well as to Work done by direct employees of the Contractor.

12.2 At any time during the progress of the work, or in any case where the nature of the defects shall be such that it is not expedient to have them corrected, the Owner, at their option, shall have the right to deduct such sum, or sums, of money from the amount of the contract as they consider justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 CUTTING AND PATCHING

13.1.1 The Contractor shall be responsible for all cutting and patching. The Contractor shall coordinate the work of the various trades involved.

13.2 DIMENSIONS

13.2.1 All dimensions shown shall be verified by the Contractor by actual measurements at the project site. Any discrepancies between the drawings and specifications and the existing conditions shall be referred to the Owner for adjustment before any work affected thereby has been performed.

13.3 LABORATORY TESTS

13.3.1 Any specified laboratory tests of material and finished articles to be incorporated in the work shall be made by bureaus, laboratories or agencies approved by the Owner and reports of such tests shall be submitted to the Owner. The cost of the testing shall be paid for by the Contractor.

13.3.2 The Contractor shall furnish all sample materials required for these tests and shall deliver same without charge to the testing laboratory or other designated agency when and where directed by the Owner.

13.4 ARCHAEOLOGICAL EVIDENCE

13.4.1 Whenever, in the course of construction, any archaeological evidence is encountered on the surface or below the surface of the ground, the Contractor shall notify the authorities of the State Historic Preservation Office and suspend work in the immediate area for a reasonable time to permit those authorities, or persons designated by them, to examine the area and ensure the proper removal of the archaeological evidence for suitable preservation by the Division of Historical and Cultural Affairs.

13.5 GLASS REPLACEMENT AND CLEANING

13.5.1 The General Contractor shall replace without expense to the Owner all glass broken during the construction of the project. If job conditions warrant, at completion of the job the General Contractor shall have all glass cleaned and polished.

13.6 WARRANTY

13.6.1 For a period of two (2) years from the date of substantial completion, as evidenced by the date of final acceptance of the work, the contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect of equipment, material or workmanship performed by the contractor or any of his subcontractors or suppliers. However, manufacturer's warranties and guarantees, if for a period longer than two (2) years, shall take precedence over the above warranties. The contractor shall remedy, at his own expense, any such failure to conform or any such defect. The protection of this warranty shall be included in the Contractor's Performance Bond.

ARTICLE 14: TERMINATION OF CONTRACT

14.1 If the Contractor defaults or persistently fails or neglects to carry out the Work in accordance with the Contract Documents or fails to perform a provision of the Contract, the Owner, after seven days written notice to the Contractor, may make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. Alternatively, at the Owner's option, and the Owner may terminate the Contract and take possession of the site and of all materials, equipment, tools, and machinery thereon owned by the Contractor and may finish the Work by whatever method the Owner may deem expedient. If the costs of finishing the Work exceed any unpaid compensation due the Contractor, the Contractor shall pay the difference to the Owner.

14.2 "If the continuation of this Agreement is contingent upon the appropriation of adequate state, or federal funds, this Agreement may be terminated on the date beginning on the first fiscal year for which funds are not appropriated or at the exhaustion of the appropriation. The Owner may terminate this Agreement by providing written notice to the parties of such non-appropriation. All payment obligations of the Owner will cease upon the date of termination. Notwithstanding the foregoing, the Owner agrees that it will use its best efforts to obtain approval of necessary funds to continue the Agreement by taking appropriate action to request adequate funds to continue the Agreement."

END OF GENERAL REQUIREMENTS

EMPLOYEE DRUG TESTING REPORT FORM
Period Ending:_____

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors who work on Large Public Works Contracts funded all or in part with public funds maintain testing data that includes but is not limited to the data elements below.

Project Number: _____

Project Name: _____

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____
_____
_____

Number of employees who worked on the jobsite during the report period:_____

Number of employees subject to random testing during the report period:_____

Number of Negative Results _____ Number of Positive Results _____

Action taken on employee(s) in response to a failed or positive random test:
_____
_____
_____

Date: _____

This form is not required to be submitted to the Owner. Included as a reference to show information required to be maintained by the Contractor. The Owner shall have the right to periodically audit all Contractor and Subcontractor test results at the Contractor's or Subcontractor's offices (or by other means to make the data available for inspection by the Owner).

EMPLOYEE DRUG TESTING
REPORT OF POSITIVE RESULTS

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors who work on Large Public Works Contracts funded all or in part with public funds to notify the Owner in writing of a positive random drug test.

Project Number: _____

Project Name: _____

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____
_____
_____

Name of employee with positive test result:_____

Last 4 digits of employee SSN:_____

Date test results received:_____

Action taken on employee in response to a positive test result:
_____
_____
_____

Authorized Representative of Contractor/Subcontractor: _____
(typed or printed)

Authorized Representative of Contractor/Subcontractor: _____
(signature)

Date: _____

This form shall be sent by mail to the Owner within 24 hours of receipt of test results.

Enclose this test results form in a sealed envelope with the notation "Drug Testing Form – DO NOT OPEN" on the face thereof and place in a separate mailing envelope.

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End of TOC

SECTION 01013 - SUMMARY OF THE WORK - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. **The Project** consists of the removal and disposal of all remaining asbestos-containing materials from Everett Meredith Middle School areas as indicated below and in the Project Drawings prior to demolition.
1. **Project Location:** 504 South Broad Street, Middletown, DE.
2. **Owner:** Appoquinimink School District

B. **Contract Documents**, dated November 13, 2019 were prepared for the Project by Environmental Testing, Inc., 100 South Cass Street, Middletown, Delaware.

C. **The Work** consists of the removal and disposal of all asbestos materials at Everett Meredith Middle School: (see attached drawings and photographs for location of work).

TABLE 1
Meredith Middle School & Storage Building,
Summary of Asbestos Materials to be abated in 2020

Asbestos Material	Area	Approximate Quantity
Pipe Insulation*	-300 Level Loft* -Above Auditorium -Room 200 -Room 208 -Room 216 -Chase from Boiler Room to 300 Level Loft*	900 LF 350 LF 20 LF 10 LF 1 LF 40 LF*
Pipe Fitting/Hanger Insulation*	-Rooms 101,102,103 hallway -Ground Fl-Kitchen (above drop ceiling) -Ground Fl-Kitchen (above plaster ceiling) -Ground Floor - other (see drawing) -Room 204	20 Pipe Hangers 45 Fittings 110 Fittings 65 Fittings 10 Fittings
12”Floor Tile/mastic	Utility Room next to Chorus	140 SF
9” Floor tile/mastic	North Stairwell Lobby near Cafeteria & Auditorium	150 SF
Ceiling Tile Mastic	Ground Floor Hall/student service area First Floor (2 Classrooms; 218 & 206) Second Floor – Hallway	1500 SF 1500 SF 1050 SF
Light Fixture Heat Shields	Custodial Closets, closets, washrooms & Projection Room	11 Light Fixtures

TABLE 1 (continued)
Meredith Middle School & Storage Building,
Summary of Asbestos Materials to be abated in 2020

Asbestos Material	Area	Approximate Quantity
Sink Undercoating	Ground Floor – Nurses Washroom Room 103 Room 102	1 Sink 1 Sink 1 sink
Lab Tables	Rooms 205, 206	13 Sections
Transite Lab Hood	Room 206	1 Lab Hood
Fire Doors (assumed)	Several Areas (see Drawing)	15 Doors
Blackboard Mastic	Several Areas	TBD
Window Caulk/Glazing	Storage Building Exterior Gym Windows -upper level -upper level -lower level Main School – 1927 Bldg Lower Level	2 large windows 12 3-panel windows 2 4-panel windows 2 small windows 1 large window
Exterior Foundation Wall Vapor Barrier	Small Addition adjoining Band room (see Drawing)	70 LF (foundation wall)

* *Notes: Insulation in pipe chase from boiler room to attic area apparently changes from fiberglass to asbestos above boiler room. Piping located above ceiling in 300 Level loft, in Auditorium, in kitchen area, in stairwell near auditorium/cafeteria serving area and in other areas with plaster ceilings will require additional access openings in the ceiling plaster to allow removal of insulated pipe/pipe fitting sections. See drawing for approximate location of known asbestos materials. **Note: The abatement contractor is required to provide access openings through or remove all plaster ceilings as necessary to verify the location of asbestos pipe insulation above the ceilings. See Work Area Preparation below.**

SEQUENCE OF ABATEMENT AREAS: To allow coordination with the demolition schedule, the following sequence of abatement areas will be conducted:

- Exterior Garage near the Appo ECC (Windows),
- North Wing (Library),
- 3rd Floor/Attic 1928 Section
- 2nd Floor 1928 Section,
- Gym,
- Cafeteria,
- Auditorium/Central Building.

WORK AREA PREPARATION: Note: Prior to the start of abatement work in abatement areas requiring access to ceiling surfaces, the Demolition Contractor will remove the acoustical ceiling tiles, lights, sprinklers, ducts, etc. to allow the asbestos Abatement Contractor to access the plaster ceiling.

The Asbestos Abatement Contractor will cut the holes in the plaster ceiling to abate the areas above the ceilings. If the plaster is not contaminated, the asbestos abatement contractor will leave the demolished materials on site for the demolition contractor to remove. If the plaster is contaminated, the abatement will be done on a unit price or time and material basis.
In other areas where there are acoustical tiles located below Asbestos materials (e.g., pipe fitting/hanger insulation in the southeast

hallway and cafeteria serving area) the asbestos abatement contractor will remove the ceiling tiles to access the area above. Prior to removal of the acoustical tile the Abatement Contractor will inspect the tile surface for insulation debris and HEPA vacuum the tile surfaces as necessary. The abatement contractor will place uncontaminated tiles in the room for removal by the demolition contractor.

The electricity in the building will remain on during the abatement period. The Electrical Contractor for the new building will be responsible for disconnecting the power to the light fixtures that need to be abated. The Asbestos Abatement Contractor will hire a licensed electrician to provide any temporary power or lighting to perform their work.

The Plumbing Contractor for the new building will be responsible for disconnecting any plumbing fixtures where countertops or casework need to be abated.

On the building exterior, where there is asbestos-containing mastic on the foundation walls (see drawing), the Demolition Contractor will be responsible for demolishing the portion of the building to grade. They will be responsible to remove the slab on grade and to excavate around the foundations to expose the areas with mastic. The demolition contractor will, at the direction and supervision of the abatement contractor, remove the foundation wall sections covered with mastic and place the materials in the asbestos removal dumpsters provided by the asbestos abatement contractor.

The demolition contractor will remove the chairs in the auditorium before any abatement occurs. The asbestos abatement contractor is responsible for safe access to the areas above the ceilings. The asbestos abatement contractor will cut the holes in the plaster ceiling to abate the pipe insulation above the ceiling. If the plaster is not contaminated, the asbestos abatement contractor will leave the demolished materials on site for the demolition contractor. If the plaster is contaminated, the abatement will be done on a time and material basis.

The demolition contractor will remove all kitchen equipment before any abatement begins.

Note: abatement work conducted above the plaster ceiling of the 300 Level Loft area to remove pipe/insulation will require fall protection, and access openings through the ceiling to remove pipe sections, etc. The abatement contractor will inspect the areas of the plaster ceiling upper surface for debris and HEPA vacuum as necessary prior to removal of the plaster ceiling material. Non-contaminated plaster may be left onsite for disposal by the demolition contractor. Abatement work conducted above the plaster ceiling of the 300 Level

Loft area will require work area walkway planking,

No work can be started by the contractor until the Delaware Project Monitor is on site.

The abatement contractor will post all danger signs and notifications prior to the start of removal as outlined in the specification. Post warning signs at all entrances to each work area.

Provide a three-stage decontamination chamber with hot and cold shower for workers and others use as per Section 01563. Note: suggested locations for decontamination units are provided on the attached drawings. Provide a separate waste decontamination unit as per Section 01563. Note: Disposable "Pop-up" decontamination units will not be allowed for use in major setup areas. Also, disposable decontamination units are meant for one-time use and shall not be reused.

Provide worker protection as per Section 01560 and respiratory protection as per Section 01562. A minimum level of respiratory protection of a Powered Air-Purifying Respirator (PAPR) is required for other work on this project. Note: if gross removal of pipe insulation is conducted, use Type-C Supplied air respiratory protection.

Critically seal with two layers of six-mil poly and seal all penetrations and non-moveable objects in the work area as per Section 01526.

Construct full containment enclosure using 6-mil polyethylene around work area as per Section 01526.

Provide air filtration units with HEPA filters as per Section 01513 in sufficient number to achieve four air changes per hour. Pressure differential units shall be installed, with one backup unit, sufficient to achieve -0.02" H_2O pressure differential as indicated by strip chart manometer.

Prior to abatement, a pre-abatement inspection will be performed by the Owner's Representative to ensure compliance with specifications and State and Federal laws and regulations.

A final visual inspection and final clearance air testing will be performed by the Owner's Representative following abatement in each area.

Pipe Insulation: following work area preparation remove pipe/pipe insulation in each area by "cut and wrap method" or by glove bag technique inside containment area. Where required remove the plaster ceiling to access the pipe insulation. **For removal of pipe and**

insulation by the cut and wrap method, remove a small area of insulation (approximately 1 LF) by glove-bag technique at 6 or 8 foot intervals, wrap all remaining pipe insulation, cut the bare pipe, and remove the pipe and remaining insulation together. Remove pipe insulation by glove bag procedure at intersections of pipe to be cut as per Section 02081. All pipe sections will be wrapped with two layers of 6-mil polyethylene plastic for disposal.

Note: abatement work conducted above the plaster ceiling of the 300 Level Loft area and above the Auditorium ceiling to remove pipe/insulation will require fall protection, work area walkway planking, and additional access openings through the ceiling to remove pipe sections, etc.

Pipe Fitting Insulation: For pipe fittings located inside a floor tile containment area remove all pipe fittings by glove bag technique inside that containment area. For all other areas, remove pipe fitting insulation by glove bag technique in designated areas inside enclosure with air filtration and attached two-stage decontamination unit. Provide air filtration units with HEPA filters as per Section 01513 in sufficient number to achieve four air changes per hour. Pressure differential units shall be installed, with one backup unit, sufficient to achieve -0.02" H_2O pressure differential as indicated by strip chart manometer.

Using wet methods, remove all pipe fitting insulation by glove bag technique as per Section 02081 Removal of Asbestos.

Floor Tile/Mastic: Following work area preparation including full containment enclosure of the abatement area consisting of one layer of 6-mil polyethylene on all wall and ceiling surfaces as per Section 01526, remove all floor tile and mastic as per Section 02087 Resilient Floor Removal.

Ceiling Tile Mastic Dots: Following work area preparation including containment enclosure of the abatement area consisting of one layer of 6-mil polyethylene on all wall surfaces as per Section 01526, remove all ceiling mastic dots.

Blackboard Mastic: Following testing of blackboard mastic, remove asbestos-containing blackboard mastic inside containment area. Remove all blackboard mastic in designated areas inside enclosure with air filtration and attached two-stage decontamination unit. Provide air filtration units with HEPA filters as per Section 01513.

Light Fixture heat shields, transite lab hood, sink undercoating, projection room transite panels, fire doors: verify that utility service to items is disconnected (if necessary) and remove, wrap and dispose of items intact without disturbing the asbestos material.

Exterior Windows: Establish regulated area around perimeter of window areas. Place 6-mil polyethylene drop-cloth below window units being removed. Remove and dispose of windows intact with window glazing/ caulk. Remove all remaining window caulk adhering to adjoining building surfaces.

Foundation wall vapor barrier: Establish regulated area around perimeter of designated foundation wall containing adhering mastic. Wet foundation wall area during excavation conducted by demolition contractor working outside regulated area and ensure all wall surface and remaining debris are properly loaded to waste container for proper disposal.

Waste Disposal: All asbestos waste (unless otherwise stated) will be double bagged and placed in fiberboard drums or other suitable containers for disposal in such a manner that the material is not exposed by punctures, rips, tears, etc. through the disposal bags. Waste will be disposed of according to NESHAP and State of Delaware regulations as per Section 02084.

Emergency Criteria: The Contractor must inform all pertinent authorities such as police, ambulance and fire department of the scheduled work. A list of authorized personnel and telephone numbers shall be kept in the log book and also be posted if possible. This includes local police, ambulance and fire department addresses and telephone numbers.

Other Criteria: The Contractor is responsible for the integrity and security of the contained area and shall make arrangements with the Owner's Representative to maintain the security. In addition he must exchange emergency telephone numbers in case of a problem.
Notifications: Ten work day notifications are required to EPA Region III as well as to the State of Delaware Department of Natural Resources and Environmental Control (DNREC).

Certifications: All Contractors, workers and supervisors must be State of Delaware Certified.

1.3 WORK UNDER OTHER CONTRACTS

A. **Cooperate** fully with separate contractors so that work under those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

1.4 WORK SEQUENCE

A. **The Work** will be conducted during the summer of 2020 as directed by the School District. The sequence of construction has abatement starting at the end of June 2020. Abatement will proceed for a month and demolition will begin at the end of

July 2020.

1.5 ASBESTOS-CONTAINING MATERIALS:

A. The Work of this contract involves activities that will disturb asbestos-containing materials (ACM) or presumed asbestos-containing materials (PACM). The location and type of ACM known to be present at the worksite is set forth in the drawings. If any other ACM or PACM is found, notify the owner, other employers and employees about the location and quantity of the ACM or PACM within 24 hours of the discovery.

1.6 ASBESTOS HEALTH RISK:

A. The disturbance or dislocation of ACM may cause asbestos fibers to be released into the building`s atmosphere, thereby creating a potential health risk to workers and building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the job site of the seriousness of the risk and of proper work procedures which must be followed.

B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified ACM, take appropriate continuous measures as necessary to protect all building occupants from the risk of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

1.7 CONTRACTOR USE OF PREMISES

A. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy and use by the public.

2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Use of the Existing Building: Maintain the existing building

in a weather tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

1. **Smoking:** Smoking or open fires will not be permitted within the building enclosure or on the premises.

2. **Toilet Rooms:** Except for toilet rooms designated for use by the Contractor's personnel, use of existing toilets within the building, by the Contractor’s personnel, will not be permitted.

1.8 OCCUPANCY REQUIREMENTS

A. **Partial Owner Occupancy:** The Owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.

1.9 AIR MONITORING BY THE OWNER:

A. **The Owner has contracted for air monitoring.** Air monitoring may be conducted both outside and inside of the work area during the work, and for clearance sampling at the end of the project

1. **Outside of the Work Area:** The Owner's air monitoring firm may sample air outside of the work area to detect faults in the work area isolation such as:
   a. Contamination of the building outside of the work area with airborne asbestos fibers,
   b. Failure of filtration or rupture in the differential pressure system,
   c. Contamination of air outside the building envelop with airborne asbestos fibers.

2. **Inside the Work Area:** The Owner’s air monitoring firm may monitor airborne fiber counts in the Work Area. The purpose of this air monitoring is to detect airborne asbestos concentrations which may challenge the ability of the Work Area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

B. **Work area clearance:** Clearance air sampling by the Owner’s air

monitor at the completion of asbestos abatement work is described in Section 01711 Project Decontamination. While the building is scheduled for demolition, clearance air sampling in each work area will be conducted by Phase Contract Microscopy (PCM) since the building will have demolition contractors and other workers in the building during demolition. Samples having elevated concentrations may be reanalyzed by TEM.

C. **Air monitoring** required by OSHA is work of the Contractor and is not covered in this section

1.10 SCHEDULE OF AIR SAMPLES BY OWNER:

A. **Sample cassettes:** Samples will be collected on 25 mm. cassettes as follows:

1. **PCM:** 0.8 micrometer mixed cellulose ester.

2. **TEM:** 0.45 micrometer mixed cellulose ester or 0.40 micrometer polycarbonate, with 5.0 micron mixed cellulose ester backing filter.

B. **Number and Volume of Samples:** The number and volume of air samples given in the schedules is approximate. The exact number and volume of samples collected by the Owner may vary depending upon job conditions and the analytical method used.

C. **Sample Volume and Sensitivity:**

1. **PCM:** The sample volumes collected by the Owner's air monitor will be determined by the following formula:

$$\text{Volume} = \frac{\dfrac{(\text{Number of fibers})}{(\text{Area of 100 fields})} \times \text{Total Filter Area}}{\dfrac{(\text{Limit Value})}{4}}$$

Where:

Number of fibers	=	5 fibers/100 fields, based on a limit of detection (LOD) of 7 fibers/mm^2 on the filter
Area of 100 fields	=	$0.785mm^2$
Total Filter Area	=	$385mm^2$
Limit Value	=	as specified in the schedules of samples below

a. For purposes of this specification, the sample volume calculated above will be considered to be of sufficient size so that there is a 95% level of confidence that the value measured by each individual sample at the limit of detection (LOD) is less than or equal to the limit values specified below.

b. For purposes of this specification, the Limit of Detection (LOD) is defined as 7 fibers/mm^2 on the filter or 5 fibers/100 fields.

c. For purposes of this specification overloaded samples will be considered as exceeding the applicable limit value.

2. **TEM:** Analytical Sensitivity of 0.05 structures/cc as set forth in the AHERA regulation.

D. Base Line:

1. **Before Start of Work:** The Owner will secure air samples to establish a base line.

2. **PCM Samples**

Location Sampled	Number of Samples	Limit of Detection (Fibers/cc)	Volume (Liters)	Flow Rate (Liters/ Minute)
Each Work Area	5	0.01	*<1,000>*	1-10
Outside Each Work Area	5	0.01	*<1,000>*	1-10
Outside Building	5	0.01	*<1,000>*	1-10

3. **TEM Samples:**

Location Sampled	Number of Samples	Analytical Sensitivity (Struct./cc.)	Volume (Liters)	Rate (Liters/ Minute)
Each Work Area	1	0.005	1,300	1-10
Outside Each Work Area	1	0.005	1,300	1-10
Outside Building	1	0.005	1,300	1-10

4. **Base Line:** a level expressed in fibers per cubic centimeter which is twenty-five percent greater than the largest of the following:

   a. Average of the PCM samples collected outside each Work Area
   b. Average of the PCM samples collected outside the building
   c. 0.01 fibers per cubic centimeter

5. **Samples collected for TEM analysis** will be held without analysis. These samples will be analyzed under the conditions and terms set forth in "Fibers Counted" and

"Affect On Contract Sum".

E. Daily:

1. **From start of work** of Section 01526 Temporary Enclosures through the work of Section 01711 Project Decontamination, the Owner may take samples.

2. **Sample volume and sensitivity:** inside the work area may vary depending upon conditions in the work area. If samples are overloaded at the sample volume required for a limit value equal to the "Stop Action Levels" or "Immediate Stop Action Levels" given later in this section, the level is considered to have been exceeded.

3. **PCM Samples:**

Location Approx.	Number of Samples	Detection Limit (Fibers/cc)	Volume (Liters)	Flow Rate (Liters/min)
Each Work Area	2	*<0.1>*	*<100>*	1-10
Outside Each Work Area at Critical Barrier	1	0.01	*<1,000>*	1-10
Clean Room	1	0.01	*<1,000>*	1-10
Equipment Decon	1	0.01	*<1,000>*	1-10
Outside Building	1	0.01	*<1,000>*	1-10
Output of Pressure Differential System	1	0.01	*<1,000>*	1-10

F. Additional samples may be taken at Owner's or Designer's discretion. If airborne fiber counts exceed allowed limits additional samples may be taken as necessary to monitor fiber levels.

1.11 ANALYTICAL METHODS USED BY THE OWNER:

A. The following methods will be used by The Owner in analyzing filters used to collect air samples. Sampling rates may be varied from printed standards to allow for high volume sampling.

1. Phase Contrast Microscopy (PCM) will be performed using the NIOSH 7400 method.

2. Transmission Electron Microscopy (TEM) will be performed using the analysis method set forth in the AHERA regulation 40 CFR Part 763 Appendix A.

1.12 LABORATORY TESTING BY OWNER:

A. **The services of a testing laboratory** may be employed by the Owner to perform laboratory analyses of the air samples. A microscope and technician will be set up at the job site, or samples will be sent overnight on a daily basis, so that verbal reports on air samples can be obtained within 24 hours. The Contractor will have access to all air monitoring tests and results.

B. **The Contractor will have access** to all air monitoring tests and results upon request.

C. **Written Reports:** of all air monitoring tests will be posted at the job site on a daily basis.

1.13 FIBERS AND STRUCTURES

A. **Fibers Counted:** The following procedure will be used to resolve any disputes regarding fiber types when a project has been stopped due to excessive airborne fiber counts.

1. **Large Fibers:** "Airborne Fibers" referred to above include all fibers regardless of composition as counted by phase contrast microscopy (PCM), unless additional analysis by transmission or scanning electron microscopy demonstrates to the satisfaction of the Designer that non-asbestos fibers are being counted. "Airborne Fibers" counted in samples analyzed by transmission electron microscopy shall be asbestos fibers, greater than 5 microns in length. For purposes of stop action levels, subsequent to analysis by electron microscopy, the number of "Airborne Fibers" shall be determined by multiplying the number of fibers, regardless of composition, counted by PCM by the proportion of fibers that are asbestos as determined by TEM (a number equal to, asbestos fibers counted, divided by all fibers counted in the electron microscopy analysis).

1.14 ADDITIONAL TESTING:

A. **The Contractor may conduct** air monitoring and laboratory testing. If he elects to do this the cost of such air monitoring and laboratory testing shall be at no additional cost to the Owner.

1.15 PERSONAL MONITORING:

A. **Owner will not perform** air monitoring for the Contractor to meet Contractor's OSHA requirements for personal sampling or any other purpose.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 STOP ACTION LEVELS:

A. **Inside Work Area:** Maintain an average airborne count in the work area of less than the Stop Action Level given below for the type of respiratory protection in use. If the fiber counts rise above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8 hour period exceeds the Stop Action Level, stop all work except corrective action, leave pressure differential and air circulation system in operation and notify Designer. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by Designer.

STOP ACTION LEVEL (f/cc)	IMMEDIATELY STOP LEVEL (f/cc)	MINIMUM RESPIRATOR REQUIRED	PROTECTION FACTOR
0.5	2.5	PAPR	1000
1.0	5.0	Supplied Air Pressure Demand	1000

1. If airborne fiber counts exceed Immediate Stop Level given above for type of respiratory protection in use for any period of time cease all work except corrective action. Notify Designer. Do not recommence work until fiber counts fall below Stop Action Level given above for the type of respiratory protection in use. After correcting

cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by Designer.

B. **Outside Work Area:** If any air sample taken outside of the Work Area exceeds the base line established in Part 1 of this section, immediately and automatically stop all work except corrective action. The Designer will determine the source of the high reading and so notify the Contractor in writing.

1. If the high reading was the result of a failure of Work Area isolation measures initiate the following actions:
   a. Immediately erect new critical barriers as set forth in Section 01526 Temporary Enclosures to isolate the affected area from the balance of the building. Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, floor).
   b. Decontaminate the affected area in accordance with Section 01712 Cleaning & Decontamination Procedures.
   c. Require that respiratory protection as set forth in Section 01562 Respiratory Protection be worn in affected area until area is cleared for re-occupancy in accordance with Section 01711 Project Decontamination.
   d. Leave Critical Barriers in place until completion of work and insure that the operation of the pressure differential system in the Work Area results in a flow of air from the balance of the building into the affected area.
   e. If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a decontamination facility consisting of a Shower Room and Changing Room as set forth in Section 01563 Decontamination Units at entry point to affected area.
   f. After Certification of Visual Inspection in the Work Area remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in Section 01711 Project Decontamination.
2. If the high reading was the result of other causes initiate corrective action as determined by the Designer.

C. **Effect on Contract Sum:** Complete corrective work with no change in the Contract Sum if high airborne fiber counts were caused by Contractor's activities. The Contract Sum and schedule will be adjusted for additional work caused by high airborne fiber counts beyond the Contractor's control.

3.2 STOP WORK:

A. **If the Owner or the Project Administrator** presents a written stop work order, immediately and automatically conform to that stop work order, while maintaining temporary enclosures and pressure differential.

B. **Immediately initiate the following actions:** After being presented with a stop work order immediately:
   1. Cease all asbestos removal activities, or any other activities that disturbs ACM.
   2. Repair any fallen, ripped or otherwise failed work area isolation measures.
   3. Maintain in operation all work area isolation measures including those required by Sections 01526 "Temporary Enclosures," 01513 "Temporary Pressure Differential & Air Circulation System," 01563 "Decontamination Units."
   4. Maintain all worker protections including those required by Sections 01560 "Worker Protection - Asbestos Abatement," and 01562 "Respiratory Protection."
   5. Fog the air in the work area with a mist of amended water to reduce airborne fiber levels.

C. **Do not recommence work** until authorized in writing by the Owner or Designer

ASBESTOS-CONTAINING BUILDING MATERIALS:

TABLE 1
Meredith Middle School & Storage Building

Asbestos Material	Approximate Quantity	ASBESTOS CONTENT	OTHER COMPONENTS
Pipe Insulation	1200 LF	65% Chry	Binder
Pipe Fitting/Hanger Insulation*	10-20 Pipe Hangers 230 Fittings	65% Chry	Binder
12"Floor Tile/mastic	140 SF	6%/6% Chry	Binder
9" Floor tile/mastic	150 SF	6%/6% Chry	Binder
Ceiling Tile Mastic	4500 SF	10% Chry	Binder
Light Fixture Heat Shields	11 Light Fixtures		Binder
Sink Undercoating	2 Sinks	5% Chry	Binder
Lab Tables	13 Sections	8% Chry	Binder
Transite Lab Hood	1 Lab Hood	Assumed	Binder
Fire Doors (assumed)	15 Doors	Assumed	Binder
Blackboard Mastic	TBD	TBD	Binder
Window Caulk/Glazing	13 windows	2-6% Chry	Binder
Exterior Foundation Wall Vapor Barrier	70 LF (foundation wall)	4% Chry	Binder

END OF SECTION - 01013

SECTION 01028 - APPLICATIONS FOR PAYMENT - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. **This Section specifies** administrative and procedural requirements governing the Contractor's Applications for Payment.

1. Coordinate the Schedule of Values and Application for Payment with the Contractor's Construction Schedule, Submittal Schedule, and List of Subcontracts.

B. **Related Sections** - The following Sections contain requirements that relate to this Section.

1. **Contractor's Construction Schedule:** The Contractor's Construction Schedule is specified in Division 1 Section "Coordination - Asbestos Abatement."

2. **Submittal Schedule:** The Submittal Schedule is specified in Division 1 Section "Submittals."

1.3 SCHEDULE OF VALUES

A. **Coordination:** Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

a. Contractor's Construction Schedule.
b. Application for Payment forms, including Continuation Sheets.
c. List of subcontractors.
d. Schedule of allowances.
e. Schedule of alternates.
f. List of products.
g. List of principal suppliers and fabricators.
h. Schedule of submittals.

2. **Submit the Schedule of Values** to the Designer at the earliest possible date but no later than 7 days before the date scheduled for submittal of the initial Applications for Payment.

B. **Form:** Submit Schedule of Values on the form at the end of this section.

C. **Format and Content:** Submit a Schedule of Values that is based on functional, measurable, observable portions of the Work. Where appropriate breakdown the Work into phases, building areas or floors.

1. **Identification:** Include the following Project identification on the Schedule of Values:

   a. Project name and location.
   b. Name of the Designer.
   c. Project number.
   d. Contractor's name and address.
   e. Date of submittal.

2. **Breakdown Contract Sum** into each of the following items:
   a. Mobilization
   b. Preparation of Work Area
   c. Site Demolition
   d. Asbestos Abatement
   e. Project Decontamination
   f. Other Work
   g. Project Closeout

3. **Arrange the Schedule of Values** in tabular form with separate columns to indicate the following for each item listed:

   a. Related Specification Sections or Divisions
   b. Description of Work.
   c. Name of subcontractor.
   d. Name of manufacturer or fabricator.
   e. Name of supplier.
   f. Change Orders (numbers) that affect value.
   g. Dollar value.
      1) Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

4. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the

Project Manual table of contents. Where appropriate, break principal subcontract amounts down into several line items.

5. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.

6. **Unit-Cost Allowances:** Show the line-item value of unit-cost allowances, as a product of the unit cost, multiplied by the measured quantity. Estimate quantities from the best indication in the Contract Documents.

7. **Margins of Cost:** Show line items for indirect costs and margins on actual costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.

8. **Schedule Updating:** Update and resubmit the Schedule of Values prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT

A. **Payment-Application Times:** The date for each progress payment is the 15th day of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends 15 days prior to the date for each progress payment.

B. **Payment-Application Forms:** Use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment.

C. **Application Preparation:** Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Designer will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

D. **Transmittal:** Submit 3 signed and notarized original copies of

each Application for Payment to the Designer by a method ensuring receipt within 24 hours. One copy shall be complete, including waivers of lien and similar attachments, when required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Designer.

E. **Waivers of Mechanics Lien:** With each Application for Payment, submit partial waivers of mechanics liens from subcontractors, sub-subcontractors and suppliers for the construction period covered by the previous application.

1. Submit partial waivers form each subcontractor, sub-subcontractor or supplier on each item provided by such an entity, for the amount requested, prior to deduction for retainage, on each item.

2. When an application shows completion of an item, submit final or full waivers from the subcontractors, sub-subcontractors and suppliers providing that item.

3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.

F. **Waiver Delays:** Submit each Application for Payment with the Contractor's waiver of mechanics lien for the period of construction covered by the application.

1. Submit final Applications for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

G. **Waiver Forms:** Submit waivers of lien on forms, and executed in a manner, acceptable to the Owner.

H. **Initial Application for Payment:** Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment, include the following:

1. Submittals designated as required "Before Start of Work" by individual specification sections.
2. List of subcontractors.
3. List of principal suppliers and fabricators.
4. Schedule of Values.
5. Contractor's Construction Schedule (preliminary if not final).

6. Schedule of principal products.
7. Schedule of unit prices.
8. Submittal Schedule (preliminary if not final).
9. List of Contractor's staff assignments.
10. List of Contractor's principal consultants.
11. Copies of building permits.
12. Copies of authorizations and licenses from governing authorities for performance of the Work.
13. Initial progress report.
14. Report of preconstruction meeting.
15. Certificates of insurance and insurance policies.
16. Performance and payment bonds.
17. Data needed to acquire the Owner's insurance.
18. Initial settlement survey and damage report, if required.

I. **Application for Payment at Substantial Completion:** Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.

1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

2. Administrative actions and submittals that shall precede or coincide with this application include:

   a. Final cleaning.
   b. Application for reduction of retainage and consent of surety.
   c. List of incomplete Work, recognized as exceptions to Designer's Certificate of Substantial Completion.

J. **Final Payment Application:** Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:

1. Completion of Project closeout requirements.
2. Completion of items specified for completion after Substantial Completion.
3. Ensure that unsettled claims will be settled.
4. Ensure that incomplete Work is not accepted and will be completed without undue delay.
5. Transmittal of required Project construction records to the Owner.
6. Proof that taxes, fees, and similar obligations were paid.
7. Removal of temporary facilities and services.
8. Removal of surplus materials, rubbish, and similar elements.
9. Change of door locks to Owner's access.
10. Disposal receipts, bills of lading and other required

documentation of transportation and disposal of asbestos-containing waste.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).
END OF SECTION 01028

SECTION 01043 - COORDINATION - ASBESTOS ABATEMENT

PART
1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. **This Section includes** administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. General project coordination procedures.
2. Conservation.
3. Plan of Action.
4. Contingency Plan.
5. Project Directory.
6. Notifications.
7. Pre-Construction Inspection.
8. Contractor's Construction Schedule.
9. Administrative and supervisory personnel.
10. Pre-Construction Conference
11. Progress Meetings
12. Coordination meetings.
13. Record Keeping.
14. Special Reports.

B. **Related Sections:** The following Sections contain requirements that relate to this Section:

1. "Section 01701 - Project Closeout - Asbestos Abatement" for coordinating contract closeout.

1.3 COORDINATION

A. **Owner Occupancy:** Coordinate construction operations and scheduling with partial occupancy requirements of the Owner and the Owner's use of utilities.

B. **Coordinate construction operations** included in various Sections of these Specifications to assure efficient and orderly completion of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.
   1. Schedule construction operations in the sequence required to obtain the best results where execution of one part of the Work depends on execution of other components, before or after its own execution.
   2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
   3. Make provisions to accommodate items scheduled for later installation.

C. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
   1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.

D. **Administrative Procedures:** Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

   1. Preparation of schedules.
   2. Installation and removal of temporary facilities.
   3. Delivery and processing of submittals.
   4. Progress meetings.
   5. Project closeout activities.

E. **Conservation:** Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.

   1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work.

1.4 CONTINGENCY PLAN:

A. **Contingency Plan:** Prepare a contingency plan for emergencies or any other event that may require breaching of work area containment or modification or abridgement of decontamination or work area isolation procedures. Include in this plan procedures for performing electrical and mechanical repairs inside containment after abatement work has begun. Include in

plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency. Items to be addressed in the plan include, but are not limited to the following:

1. Fire
2. Accident
3. Life threatening injury
4. Non life threatening injury
5. Rescue
6. Power Failure
7. Pressure differential system failure
8. Breach of containment
9. Electrical faults or shock
10. Excessive heat / cold (if/when such limits are specified)
11. Supplied air system failure
12. Water leaks
13. Waste spills
14. Unauthorized entry into work area
15. Elevated air samples outside of containment
16. Repairs inside containment
17. Toxic releases

1.5 PROJECT DIRECTORY

A. **Develop a directory** of all entities involved in the project. Include the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site. Identify individuals, their duties and responsibilities. List business name, contact person, normal business and emergency telephone, pager and fax numbers and addresses of:
   1. Owner, Designer, and Project Administrator
   2. Contractor's General Superintendent, supervisory personnel and Contractor's home office
   3. Emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.
   4. Local, state, and federal agencies with jurisdiction over the project.

B. **Post:** Post copies of the Project Directory in the project meeting room, the temporary field office, each temporary telephone, and at entrance to clean room of Personnel Decontamination Unit

1.6 NOTIFICATIONS

A. **Notify other entities** at the job site of the nature of the asbestos abatement activities, location of asbestos-containing materials (ACM), requirements relative to asbestos set forth in these specifications and applicable regulations. Advance notification will be made to:

1. Employees who will perform asbestos abatement work or related activities, or who will be in the work area during the course of the work of this contract.
2. Employers of employees who work and/or will be working in adjacent areas during the course of the work of this contract.

B. **Notify emergency service agencies** including fire, ambulance, police or other agency that may service the abatement work site in case of an emergency. Notification is to include methods of entering work area, emergency entry and exit locations, modifications to fire notification or fire fighting equipment, and other information needed by agencies providing emergency services.

C. **Notifications of Emergency:** Any individual at the job site may notify emergency service agencies if necessary without effect on this Contract or the Contract Sum.

1.7 PRE-CONSTRUCTION INSPECTION:

A. **Inspect areas** in which work will be performed, prior to commencement of work. Prepare a listing of damage to structure, surfaces, equipment or of surrounding properties which could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit to Designer for record purposes prior to starting work.

1.8 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. Project Supervisor: Provide a full-time Project Supervisor at the work site who is experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, project scheduling, management, etc. This person is the Contractor`s Representative, and will function as the 'competent person' at the work site responsible for compliance with all applicable federal, state and local regulations, particularly those relating to ACM.

1. Training: The General Superintendent must have a current certification from a state approved trainer for a course

that meets the requirements of the EPA Model Accreditation Plan for asbestos abatement contractor/supervisor (40 CFR part 763, Subpart E, Appendix C).

2. Experience: The General Superintendent must have demonstrable experience in the successful management of asbestos abatement projects that are similar to the work of this contract.

   a. The General Superintendent must have a minimum of two (2) years experience in the on-site management of asbestos abatement projects.
   b. The General Superintendent must have had responsible charge of a minimum of ten (10) asbestos abatement projects similar in size and type to the work of this contract.

3. Competent Person: The General Superintendent is to be a Competent Person as required by OSHA in 29 CFR 1926.

B. Accreditation: The General Superintendent, Supervisors and Forepersons are to be accredited as an Asbestos Abatement Supervisor in accordance with the AHERA regulation 40 CFR Part 763, Subpart E, Appendix C.

1.9 PRE-CONSTRUCTION CONFERENCE:

A. **An initial progress meeting**, recognized as "Pre-Construction Conference" will be convened prior to start of any work. The preconstruction conference will be scheduled before start of construction, at a time convenient to the Owner and the Designer, but no later than 15 days after execution of the Agreement. Meet at the project site, or as otherwise directed, with General Superintendent, Owner, Designer, Project Administrator, and other entities concerned with the asbestos abatement work.

B. **Attendees:** Authorized representatives of the Owner, Designer, and their consultants will be in attendance. An authorized representative of the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

1. 72 hours advance notice will be provided to all participants prior to convening Pre-Construction Conference.

C. **Agenda:** This is an organizational meeting, to review responsibilities and personnel assignments, to locate regulated areas and temporary facilities including power, light, water, etc. Items of significance that could affect progress will be discussed, including the following:

1. Tentative construction schedule.
2. Critical work sequencing.
3. Designation of responsible personnel.
4. Procedures for processing field decisions and Change Orders.
5. Procedures for processing Applications for Payment.
6. Distribution of Contract Documents.
7. Submittal of Shop Drawings, Product Data, and Samples.
8. Preparation of record documents.
9. Use of the premises.
10. Parking availability.
11. Office, work, and storage areas.
12. Equipment deliveries and priorities.
13. Safety procedures.
14. First aid.
15. Security.
16. Housekeeping.
17. Working hours.

1.10 RECORD KEEPING:

A. **Daily Log:** Maintain a Daily Log in an area accessible to the Owner, Designer and Project Administrator) as a bound, sequential, hand-written record carefully prepared daily that documents but is not limited to the following items:
1. Meetings; purpose, attendees, brief discussion
2. Special or unusual events, i.e. barrier breeching, equipment failures, accidents
3. Documentation of Contractor's completion of the following:
   a. Inspection of work area preparation prior to start of removal and daily thereafter.
   b. Removal of any sheet plastic barriers
   c. Contractor's inspections prior to spray back, lock back, encapsulation, enclosure or any other operation that will conceal the condition of ACM or the substrate from which such materials have been removed.
   d. Removal of waste materials from work area
   e. Decontamination of equipment (list items)
   f. Contractors final inspection/final air test analysis.

B. **Entry/Exit Log:** Maintain within the Decontamination Unit a daily log documenting the dates and time of but not limited to, the following items:

1. Visitations; authorized and unauthorized with the following information
   a. Name
   b. Organization
   c. Entry time
   d. Exit Time
   e. Respiratory protection
2. Personnel, by name, entering and leaving the work area with the following information
   a. Printed Name
   b. Identification Number
   c. Entry Time
   d. Exit Time
   e. Respiratory Protection

C. **Air Monitoring Results:** Post personnel and area air monitoring results in Decontamination Unit within 24 hours of sample collection. Post the respiratory protection requirements for the work in progress.

D. **Records in Decontamination Unit:** Maintain the following documentation in the Decontamination Unit, in a location accessible to workers.
   1. Documentation of inspections by OSHA, EPA or local authority
   2. Respiratory Protection Program.

E. **Other records:** Maintain other documentation in a location that is accessible to the Owner, Designer, and Project Administrator including:
   1. Waste Manifests and shipping records
   2. Landfill receipts.
   3. Accident reports.

1.11 SPECIAL REPORTS:

A. **General:** Except as otherwise indicated, submit special reports directly to Owner within one day of occurrence requiring special report, with copy to Designer and others affected by occurrence.

B. **Reporting Unusual Events:** When an event of unusual and significant nature occurs at site (examples: failure of pressure differential system, rupture of temporary enclosures), prepare and submit report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When

such events are known or predictable in advance, advise Owner in advance at earliest possible date.

C. **Reporting Accidents:** Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury, or where work was stopped for over four hours during a scheduled shift.

D. **Report Discovered Conditions:** When an unusual condition of the building is discovered during the work (e.g. leaks, termites, corrosion) prepare and submit a special report indication condition discovered.

1.12 SUBMITTALS

A. **Before the Start of Work:** Submit the following to the Construction Manager in the same manner as product data.

1. Contingency Plans.
2. Project Directory.
3. Notifications: copy of notification sent to other entities at the work site, and to emergency service agencies.
4. Pre-Construction Inspection: Report on inspection carried out as required by this section.
5. Contractor's Construction Schedule.

B. **Project Close-out:** Submit two (2) copies for information purposes of all documents indicated in the following sections at final closeout of project as a project close-out submittal.

1. Section on Record Keeping.
2. Section on Special Reports.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

END OF SECTION - 01043

SECTION 01097 - REFERENCE STANDARDS AND DEFINITIONS - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. **General:** Basic contract definitions are included in the Conditions of the Contract.

1. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the reader locate the reference. Location is not limited.

2. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Designer, requested by the Designer, and similar phrases.

3. "Approved": The term "approved," when used in conjunction with the Designer's action on the Contractor's submittals, applications, and requests, is limited to the Designer's duties and responsibilities as stated in the Conditions of the Contract.

4. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

5. "Furnish": The term "furnish" means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.

6. "Install": The term "install" describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

7. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

   a. The term "experienced," when used with the term "installer," means having a minimum of 5 previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.

   b. Trades: Using terms such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades persons of the corresponding generic name.

8. "Project Site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

9. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

10. "Designer": This is the entity described as the "Architect" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." All references to Architect or Engineer in the Contract Documents in all cases refer to the Designer. The Designer will represent the Owner during construction and until final payment is due. The Designer will advise and consult with the Owner. The Owner's instructions to the Contractor will be forwarded through the Designer.

11. "Project Administrator": This is the entity described as the "Project Representative" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." The Project Administrator is a full time representative of the Owner at the job site with authority to stop the work upon written or verbal order if requirements of the Contract Documents are not met, or if in the sole judgment of the Project Administrator, Designer, or Owner, the interests of the Owner, safety of any person or the Owner's property are jeopardized by the work.

12. "Stop Work Order": is a written order to cease asbestos removal, encapsulation or enclosure activities. The Contractor must maintain work area enclosure, pressure differential isolation and ventilation of the work area, and decontamination units during the period that a Stop Work Order is in affect.

13. "General Superintendent": This is the Contractor's Representative at the work site. This person must be a Competent Person as defined by OSHA in 29 CFR 1926.

B. Definitions Relative to Asbestos Abatement:

1. "Adequately Wet" means to sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from the asbestos-containing material (ACM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.

2. "Asbestos": The asbestiform varieties of chrysotile (serpentine), amosite (cummingtonite-grunerite), crocidolite (riebeckite), tremolite, anthophyllite, actinolite, and any of these minerals that has been chemically treated and/or altered. For purposes of the contract documents materials described in the contract documents as asbestos are to be considered as asbestos.

3. "Asbestos-Containing Material (ACM)": Any material containing more than 1% asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

4. "Asbestos-Containing Waste Material": any waste that contains asbestos. This term includes filters or other materials contaminated with asbestos. This term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

5. "Asbestos debris": pieces of ACM that can be identified by color, texture, or composition, or dust, if the dust is determined by an accredited inspector to be ACM.

6. "Certified Industrial Hygienist (C.I.H.)": one certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

7. "Competent person" : an individual who meets the requirements of OSHA as a "competent person" for the specific activity involved in the work. The "competent person" must meet the requirements of 29 CFR 1926.32(f), and 29 CFR 1926.1101.

8. "Filter": A media component used to remove solid or liquid particles from air and water.

9. "Friable Asbestos": any asbestos-containing material that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

10. "Grinding": to reduce to powder or small fragments and includes manual or mechanical chipping or drilling.

11. "HEPA Filter": A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of all mono-dispersed particles of 0.3 microns in diameter.

12. "HEPA Filter Vacuum Collection Equipment (or vacuum cleaner)": High efficiency particulate air filtered vacuum collection equipment with a HEPA filter.

13. "Intact" : that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

14. "Leak-tight": that solids or liquids cannot escape or spill out. It also means dust-tight.

15. "Negative Pressure Enclosure (NPE) ": A pressure differential and ventilation system where the work area is maintained at a negative pressure relative to air pressure outside the work area.

16. "Nonfriable Material": any material that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure and has not been rendered friable.

17. "Personal Monitoring": Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

18. "Surfacing material": material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

19. "Thermal system insulation (TSI)": insulation applied to pipes, fittings, boilers, breeching, tanks, ducts or other components to prevent heat loss or gain.

20. "Time Weighted Average (TWA)": The average concentration of a contaminant in air during a specific time period as determined by the method prescribed in Appendix A of 29 CFR part 1926.1101.

21. "Visible Emissions": Any emissions containing particulate material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

22. "Working Day": Monday through Friday and includes holidays that fall on any of the days Monday through Friday as indicated in the notification requirements.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. **Specification Format:** These Specifications are organized into Divisions and Sections based on CSRF's 16-Division format and MasterFormat's numbering system.

B. **Specification Content:** This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. **Abbreviated Language:** Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words will be interpreted as

plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.

2. **Streamlined Language:** The Specifications generally use the imperative mood and streamlined language. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.

1.4 INDUSTRY STANDARDS

A. **Applicability of Standards:** Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. **Publication Dates:** Comply with the standards in effect as of the date of the Contract Documents.

C. **Conflicting Requirements:** Where compliance with 2 or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer to the Designer before proceeding for a decision on requirements that are different but apparently equal, and where it is uncertain which requirement is the most stringent.

1. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum acceptable. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Designer for a decision before proceeding.

D. **Copies of Standards:** Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.

E. **Standards:** which apply to asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

1. American National Standards Institute (ANSI)
   1430 Broadway
   New York, New York 10018
   (212)354-3300

   a. Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2
   b. Practices for Respiratory Protection Publication Z88.2

2. American Society for Testing and Materials (ASTM)
   100 Bar Harbor Drive
   West Conshocken, PA 19428-2959
   (610) 832-9585

   a. Safety and Health Requirements Relating to Occupational Exposure to Asbestos E 849

   b. ASTM Standard Practice for Visual Inspection of Asbestos Abatement Projects E1368

F. **Abbreviations and Names:** Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in the Contract Documents, are defined to mean the associated names. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

1. ACGIH American Conference of Governmental Industrial Hygienists
   1330 Kemper Meadow Dr.
   Cincinnati, OH 45240 (513) 742-2020

2. AIA The American Institute of Architects
   1735 New York Ave., NW
   Washington, DC 20006 (202) 626-7300

3. AIHA American Industrial Hygiene Assoc.
   2700 Prosperity Ave., Suite 250
   Fairfax, VA 22031 (703) 849-8888

4. ANSI American National Standards Institute
   11 West 42nd St., 13th Floor
   New York, NY 10036 (212) 642-4900

5. ASHRAE American Society of Heating,

Refrigerating and Air-Conditioning Engineers
1791 Tullie Circle, NE
Atlanta, GA 30329 (404) 636-8400

6. ASME American Society of Mechanical Engineers
345 East 47th St.
New York, NY 10017 (212) 705-7722

7. ASTM American Society for Testing and Materials
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959 (610) 832-9585

8. CGA Compressed Gas Assoc.
1725 Jefferson Davis Highway, Suite 1004
Arlington, VA 22202-4100 (703) 412-0900

9. IEEE Institute of Electrical and Electronic Engineers
345 E. 47th St.
New York, NY 10017 (212) 705-7900

10. IETA International Electrical Testing Assoc.
P.O. Box 687
Morrison, CO 80465 (303) 697-8441

11. ISO International Standards Organization

12. NEC National Electrical Code (from NFPA)

13. NECA National Electrical Contractors Assoc.
3 Bethesda Metro Center, Suite 1100
Bethesda, MD 20814 (301) 657-3110

14. NEMA National Electrical Manufacturers Assoc.
2101 L St., NW, Suite 300
Washington, DC 20037 (202) 457-8400

15. NFPA National Fire Protection Assoc.
One Batterymarch Park
P.O. Box 9101
Quincy, MA 02269-9101 (617) 770-3000 (800) 344-3555

16. NRCA National Roofing Contractors Assoc.
10255 W. Higgins Rd., Suite 600
Rosemont, IL 60018-5607 (708) 299-9070

17. UL Underwriters Laboratories
333 Pfingsten Rd.
Northbrook, IL 60062 (708) 272-8800

18. White Lung Association

PO Box 1483
Baltimore, MD 21203

G. **Federal Government Agencies:** Names and titles of federal government standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard- or Specification-producing agencies of the federal government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

1. CE Corps of Engineers
   (U.S. Department of the Army)
   Chief of Engineers - Referral
   Washington, DC 20314 (202) 272-0660

2. CFR Code of Federal Regulations
   (Available from the Government Printing Office)
   N. Capitol St. between G and H St., NW
   Washington, DC 20402 (202) 783-3238
   (Material is usually first published in the "Federal Register")

3. CPSC Consumer Product Safety Commission
   5401 Westbard Ave.
   Bethesda, MD 20207 (800) 638-2772

4. CS Commercial Standard
   (U.S. Department of Commerce)
   Government Printing Office
   Washington, DC 20402 (202) 783-3238

5. DOC Department of Commerce
   14th St. and Constitution Ave., NW
   Washington, DC 20230 (202) 482-2000

6. DOT Department of Transportation
   400 Seventh St., SW
   Washington, DC 20590 (202) 366-4000

7. EPA Environmental Protection Agency
   401 M St., SW
   Washington, DC 20460 (202) 260-2090

8. FS Federal Specification (from GSA)
   Specifications Unit (WFSIS)
   7th and D St., SW

Washington, DC 20407 (202) 708-9205

9. GSA General Services Administration
F St. and 18th St., NW
Washington, DC 20405 (202) 708-5082

10. MIL Military Standardization Documents
(U.S. Department of Defense)
Naval Publications and Forms Center
5801 Tabor Ave.
Philadelphia, PA 19120

11. NIST National Institute of Standards and Technology
(U.S. Department of Commerce)
Gaithersburg, MD 20899 (301) 975-2000

12. OSHA Occupational Safety and Health Administration
(U.S. Department of Labor)
200 Constitution Ave., NW
Washington, DC 20210 (202) 219-6091

13. PS Product Standard of NBS
(U.S. Department of Commerce)
Government Printing Office
Washington, DC 20402 (202) 783-3238

14. USPS U.S. Postal Service
475 L'Enfant Plaza, SW
Washington, DC 20260-0010 (202) 268-2000

H. **Trade Union Jurisdictions:** The Contractor shall maintain, and require subcontractors to maintain, complete current information on jurisdictional matters, regulations and pending actions, as applicable to construction activities. The manner in which Contract Documents have been organized and subdivided is not intended to be indicative of trade union or jurisdictional agreements.

1. Discuss new developments at project meetings at the earliest feasible dates. Record relevant information and actions agreed upon.

2. Assign and subcontract construction activities, and employ tradesmen and laborers in a manner that will not unduly risk jurisdictional disputes that could result in conflicts, delays, claims and losses.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01097

NOTIFICATION OF DEMOLITION AND RENOVATION

OPERATOR PROJECT #	POSTMARK	DATE RECEIVED	NOTIFICATION #

I. TYPE OF NOTIFICATION (O-Original R-Revised C-Canceled):

II. FACILITY INFORMATION (identify owner, removal contractor, and other operator)

OWNER NAME:		
ADDRESS:		
CITY:	STATE:	ZIP:
CONTACT:		TEL:
REMOVAL CONTRACTOR:		
ADDRESS:		
CITY:	STATE:	ZIP:
CONTACT:		TEL:
OTHER OPERATOR:		
ADDRESS:		
CITY:	STATE:	ZIP:
CONTACT:		TEL:

III. TYPE OF OPERATION (D-Demo O - Ordered Demo R - Renovation E - Emergency Renovation):

IV. IS ASBESTOS PRESENT? (Yes/No)

V. FACILITY DESCRIPTION (Include building name, number and floor or room number)

BLDG NAME:		
ADDRESS:		
CITY:	STATE:	ZIP:
SITE LOCATION:		
BUILDING SIZE:	# OF FLOORS:	AGE IN YEARS:
PRESENT USE:	PRIOR USE:	

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:

VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING: 1. REGULATED ACM TO BE REMOVED 2. CATEGORY I ACM NOT REMOVED 3. CATEGORY II ACM NOT REMOVED	RACM TO BE REMOVED	NONFRIABLE ASBESTOS MATERIAL NOT TO BE REMOVED		INDICATE UNIT OF MEASUREMENT BELOW	
		CAT I	CAT II	UNIT	
PIPE				Ln Ft:	Ln m:
SURFACE AREA				Sq Ft:	Sq m:
VOL RACM OFF FACILITY COMPONENT				Cu Ft:	Cu m:

VIII. SCHEDULED DATES ASBESTOS REMOVAL (MM/DD/YY) Start: Complete:

IX. SCHEDULED DATES DEMO/RENOVATION (MM/DD/YY) Start: Complete:

continued on page two

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:

XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:

XII. WASTE TRANSPORTER #1		
ADDRESS:		
CITY:	STATE:	ZIP:
CONTACT:		TEL:
WASTE TRANSPORTER #2		
ADDRESS:		
CITY:	STATE:	ZIP:
CONTACT:		TEL:
XIII. WASTE DISPOSAL SITE		
NAME:		
LOCATION:		
CITY:	STATE:	ZIP:
TELEPHONE:		
XIV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:		
NAME:	TITLE:	
AUTHORITY:		
CITY:	STATE:	ZIP:
DATE OF ORDER (MM/DD/YY)	DATE ORDERED TO BEGIN (MM/DD/YY)	
XV. FOR EMERGENCY RENOVATIONS		
Date and Hour of Emergency (MM/DD/YY):		
Description of the Sudden, Unexpected Event:		
Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:		
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER.		
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation) (Signature of Owner/Operator) (Date)		
XVIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT. (Signature of Owner/Operator) (Date)		

SECTION 01098 - CODES, REGULATIONS AND STANDARDS - ASBESTOS ABATEMENT

PART
1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY

A. This section sets forth governmental regulations which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

1. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.

2. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

1.3 CODES, REGULATIONS AND STANDARDS

A. **General Applicability of Codes, Regulations and Standards:** Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable codes and regulations have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.

B. **Contractor Responsibility:** The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Designer

harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of the contractor , the contractor's employees, or subcontractors.

C. **Federal Requirements:** which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

1. **OSHA:** U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

   a. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite;
      Final Rules Title 29, Part 1910, Section 1001 of the Code of Federal Regulations
      Final Rules Title 29, Part 1926, Section 1101 of the Code of Federal Regulations

   b. Respiratory Protection
      Title 29, Part 1910, Section 134 of the Code of Federal Regulations
      Title 29, Part 1926, Section 103 of the Code of Federal Regulations

   c. Personal Protective Equipment for General Industry
      Title 29, Part 1910, Section 132 of the Code of Federal Regulations
      Title 29, Part 1926, Sections 95 - 107 of the Code of Federal Regulations

   d. Access to Employee Exposure and Medical Records
      Title 29, Part 1926, Section 33 of the Code of Federal Regulations

   e. Hazard Communication
      Title 29, Part 1926, Section 59 of the Code of Federal Regulations

   f. Specifications for Accident Prevention Signs and Tags
      Title 29, Part 1910, Section 145 of the Code of Federal Regulations

   g. Permit Required Confined Space
      Title 29, Part 1910, Section 146 of the Code of Federal Regulations

   h. Construction Industry

Title 29, Part 1910, Section 1001 of the Code of Federal Regulations
Title 29, Part 1926, Section 1101 of the Code of Federal Regulations

i. Construction Industry - General Duty Standards
Title 29, Part 1926, Sections 20 through 35 of the Code of Federal Regulations

2. **DOT:** U. S. Department of Transportation, including but not limited to:

a. Hazardous Substances
Title 49, Part 171 and 172 of the Code of Federal Regulations

b. Hazardous Material Regulations
General Awareness and Training Requirements for Handlers, Loaders and Drivers
Title 49, Parts 171-180 of the Code of Federal Regulations

c. Hazardous Material Regulations
Editorial and Technical Revisions
Title 49, Parts 171-180 of the Code of Federal Regulations

3. **EPA:** U. S. Environmental Protection Agency (EPA), including but not limited to:

a. Asbestos Hazard Emergency Response Act (AHERA) Regulation
Title 40, Part 763, Sub-part E of the Code of Federal Regulations

b. EPA Model Accreditation Plan - Asbestos Containing Materials Final Rule & Notice
Title 40, Part 763, Sub-part E, Appendix C of the Code of Federal Regulations

c. National Emission Standard for Hazardous Air Pollutants (NESHAP)
National Emission Standard for Asbestos
Title 40, Part 61, Sub-part A, and Sub-part M (Revised Sub-part B) of the Code of Federal Regulations

D. **State Requirements:** which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

DELAWARE

Asbestos Contractor/Worker Certification Program

Delaware Department of Natural Resources and Environmental Control (DNREC)-

Delaware Regulations governing the control of Air Pollution Emission Standards for Asbestos, Nov. 1985-Section 10 Emission Standards for Asbestos.
Note: DNREC Order No. 89-A-12 issued August 30, 1989 amended Section 10.6 (Cleaning and Monitoring) of Section 10

E. Local Requirements: Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials.

1.4 NOTICES:

A. U.S. ENVIRONMENTAL PROTECTION AGENCY

1. Postmark or Deliver Written Notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M) to the regional Asbestos NESHAP Contact at least 10 working days prior to beginning any work on asbestos-containing materials (ACM). Send notification to the following address:

a. REGION 3
Asbestos NESHAP Contact
Air Management Division
USEPA
841 Chestnut Street
Philadelphia, PA 19107
(215) 597-6550

2. There is a copy of the NESHAP form at the end of this section.

3. Notification: Include the following information in the notification sent to the NESHAP contact:

a. Indication whether the notification is the original or revised notification
b. Name, address, and telephone number of owner or operator.
c. Name, address, and telephone number of contractor.
d. Type of Operation (demolition or renovation).

e. Description of the facility or affected part of the facility being demolished or renovated, including the size (square feet [square meters], number of floors), age, present and prior use of the facility.
f. Estimate of the approximate amount of RACM to be removed from the facility in terms of linear meters [linear feet] of pipe, and surface area in square meters [square feet] of other facility components. Also estimate the approximate amount of Category I and Category II nonfriable ACM in the affected part of the facility that will not be removed before demolition.
g. For facilities in which the amount of friable asbestos materials less than 80 linear meters (260 linear feet) on pipes and less than 15 square meters (160 square feet) or 1 cubic meter (35 cubic feet) if the length and width could not be measured. On other facility components, explain techniques of estimation.
h. Location and street address (including building number or name and floor or room number, if appropriate), city county, and state, of the facility being demolished or renovated.
i. Scheduled starting and completion dates of asbestos removal work (or any other activity, such as site preparation that would break up, dislodge, or similarly disturb asbestos material) in a demolition or renovation; planned renovation operations involving individual nonscheduled operations shall only include the beginning and ending dates of the report period as described in paragraph (a)(4)(iii) of 40 CFR 61.145.
j. Scheduled starting and completion dates of demolition or renovation.
k. Nature of planned demolition or renovation and method(s) to be used, including demolition or renovation techniques to be used and description of affected facility components.
l. Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61 Subpart M).
m. Name and location of the waste disposal site where the asbestos containing waste material will be deposited.
n. A certification that at least one person trained as required by paragraph (c)(8) of 40 CFR 61.145 will supervise the stripping and removal described by this notification.

B. OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION

1. Send a copy of evaluation and certification of alternative work procedures to the national office of OSHA, Office of Technical Support, Room N3653, 200 Constitution Avenue, NW, Washington, DC 20210 before work which involves the removal of more than 25 linear or 10 square feet (7.5 linear meters or 3 square meters) of thermal system insulation or surfacing material is begun using an alternative method.

C. STATE AND LOCAL AGENCIES:

1. Send written notification as required by state and local regulations prior to beginning any work on ACM. A ten-working day notice form is included at the end of this section for contractor use. Send this form to:

For Projects in Kent County:

DNREC Division of Environmental Control
89 Kings Highway, P.O. Box 1401
Dover, DE 19903

1.5 PERMITS:

A. Permit: All asbestos containing waste is to be transported by an entity maintaining a current "Industrial waste hauler permit" specifically for ACM, as required for transporting of waste ACM to a disposal site.

B. Contractor is responsible for obtaining any demolition, building, renovation or other permits, and for paying application fees, if any, where required by State or Local jurisdictions.

1.6 LICENSES:

A. Licenses: Maintain current licenses as required by applicable state or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

1.7 POSTING AND FILING OF REGULATIONS

A. Posting and Filing of Regulations: Post all notices required by applicable federal, state and local regulations. Maintain

two (2) copies of applicable federal, state and local regulations and standard. Maintain one copy of each at job site. Keep on file in Contractor's office one copy of each.

1.8 SUBMITTALS:

A. Before Start of Work: Submit the following to the Designer for review.

1. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work including:
   a. State and Local Regulations: Submit copies of codes and regulations applicable to the work.
2. Notices: Submit notices required by federal, state and local regulations together with proof of timely transmittal to agency requiring the notice.
3. Permits: Submit copies of current valid permits required by state and local regulations.
4. Licenses: Submit copies of all State and local licenses and permits necessary to carry out the work of this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01098

SECTION 01301 - SUBMITTALS - ASBESTOS ABATEMENT

PART
1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including the following:

1. Submittal schedule.
2. Product Data.

B. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits
2. Applications for payment
3. Performance and payment bonds
4. Insurance certificates
5. List of Subcontractors

C. RELATED SECTIONS

1. The following Sections contain requirements that relate to this Section:

   a. Division 1 Section "Applications for Payment - Asbestos Abatement" specifies requirements for submittal of the Schedule of Values.
   b. Division 1 Section "Coordination" specifies requirements governing submittal and distribution of meeting and conference minutes.
   c. Division 1 Section "Project Closeout-Asbestos Abatement" specifies requirements for submittal of Project Record Documents and warranties at project closeout.

1.3 SUBMITTAL PROCEDURES

A. **Coordination:** Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
   a. The Designer reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.

B. **Processing:** To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.

1. Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1.4 SUBMITTAL SCHEDULE

A. **Listing:** At the end of this section is a listing of the principal submittals required for the work. This listing is not necessarily complete, nor does the listing reflect the significance of each submittal requirement. The listing is included only for the convenience of users of the Contract Documents.

1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products as well as the Contractor's Construction Schedule.

B. **Schedule Updating:** Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.1 forms.

1.5 MISCELLANEOUS SUBMITTALS:

A. **Material Safety Data Sheets:** Process material safety data sheets as "product data." These are submitted for information purposes only.

B. **Closeout Submittals:** Refer to section "Project Closeout" and to individual sections of these specifications for specific submittal requirements of project closeout information.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01301

SECTION 01503 - TEMPORARY FACILITIES - ASBESTOS ABATEMENT

PART
1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY

A. **This Section includes requirements** for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.

B. **Utilities:**
   1. Water service and distribution.
   2. Temporary electric power and light.

C. **Security and protection facilities include**, but are not limited to, the following:

   1. Temporary fire protection.
   2. Barricades, warning signs, and lights.

1.3 DESCRIPTION OF REQUIREMENTS:

A. **General:** Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.4 QUALITY ASSURANCE

A. **Regulations:** Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

   1. Building code requirements.
   2. Health and safety regulations.
   3. Utility company regulations.
   4. Police, fire department, and rescue squad rules.
   5. Environmental protection regulations.

B. **Standards:** Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."

C. **Electrical Service:** Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."

1.5 PROJECT CONDITIONS

A. **Conditions of Use:** Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. **General:** Provide new materials and equipment. If acceptable to the Designer, the Contractor may use undamaged, previously used materials and equipment in serviceable condition. Provide materials and equipment suitable for use intended.

B. **Scaffolding:** Provide scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of scaffolding shall comply with applicable OSHA provisions.

1. Equip rungs of metal ladders, etc. with an abrasive non-slip surface.

2. Provide a nonskid surface on scaffold surfaces subject to foot traffic.

2.2 WATER SERVICE

A. **Temporary Water Service Connection:** Connections to the Owner's water system shall include backflow protection. Valves shall

be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment. Provide separate hoses and/or/ pumps for shower water and amended water, without the possibility of cross connection.

B. **Water Hoses:** Provide, heavy-duty, abrasion-resistant, flexible hoses in diameters and lengths necessary to adequately serve temporary facilities, and with a pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.

   1. Provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.

C. **Hot Water Heater:** Provide UL rated minimum 40 gallon (150 liters) electric hot water heater to supply hot water for the Decontamination Unit shower. Activate from 30 amp circuit breaker located within the Decontamination Unit subpanel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" X 12" X 6" (30 cm. X 30 cm. X 15 cm) deep pan, made of 19 gauge galvanized steel, with handles. A 3-quart (3 liter) kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the hot water heater with bailing wire or similar material. Wiring of the hot water heater shall be in compliance with NEMA, NECA, and UL standards.

D. **Hot Water:** may be secured from the building hot water system, provided backflow protection is installed at point of connection as described in this section under Temporary Water Service connection, and if authorized in writing by the Designer.

2.3 ELECTRICAL SERVICE:

A. **General:** Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.

B. **Temporary Power:** Provide service to Decontamination Unit subpanel with minimum 60 amp, 2 pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate electrical equipment required for completion of the work.

1. Connection to the building's main distribution panel is to be made by a licensed electrician

C. **Voltage Differences:** Provide identification warning signs at power outlets which are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.

D. **Electrical Outlets:** Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters (GFCI), reset button, and pilot light for connection of power tools and equipment.

1. Locate GFCI's exterior to Work Area so that circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.

E. **Electrical Power Cords:** Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

F. **Lamps and Light Fixtures:** Provide general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work or this section. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide vapor tight fixtures in work area and decontamination units. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

2.4 TEMPORARY STRUCTURES

A. **Temporary Toilet Units:** Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

2.5 FIRST AID

A. **First Aid Supplies:** Comply with governing regulations and recognized recommendations within the construction industry.

2.6 FIRE EXTINGUISHERS:

A. **Fire Extinguishers:** Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

B. **Comply with NFPA 10 and NFPA 241** for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. **General:** Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. **Provide** each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

C. **Require** that personnel accomplishing this work be licensed as required by local authority for the work performed.

D. **Relocate,** modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

3.2 SCAFFOLDING:

A. **Clean** as necessary debris from non-slip surfaces.

B. **At the completion of abatement work** clean construction aids within the work area.

3.3 TEMPORARY UTILITY INSTALLATION

A. **General:** Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.

2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.

3. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner or Designer. Neither the Owner nor Designer will accept cost or use charges as a basis of claims for Change Orders.

B. **Water Service:**

1. Water connection (without charge) to Owner's existing potable water system is limited to one 3/4" (19 mm) pipe-size connection, and a maximum flow of 10 g.p.m. (38 liters / minute) each to hot and cold water supply. Install using vacuum breakers or other backflow preventer as required by local authority. Hot water shall be supplied at a minimum temperature of 100 degrees F (35 degrees C). Supply hot and cold water to the Decontamination Unit in accordance with Section 01563.

a. Maintain hose connections and outlet valves in leakproof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

2. Sterilization: Sterilize temporary water piping prior to use.

C. **Electrical Service:**

1. Lock out: Lock out all existing power to or through the work area as described below. Unless specifically noted otherwise existing power and lighting circuits to the Work Area are not to be used. All power and lighting to the Work Area and Decontamination facilities are to be provided from temporary electrical panel described below.

   a. Comply with requirements to OSHA 29 CFR 1910.147 the control of hazardous energy lock out/tag out.

   b. Lock out power to Work Area by switching off breakers serving power or lighting circuits in work area. Tagout breakers with notation "DANGER circuit being worked on". Lock panel and have all keys under control of authorized person who has locked pane.

   c. Lock out power to circuits running through Work Area wherever possible by switching off and locking all breakers serving these circuits. Tag out breakers with notation "DANGER circuit being worked on". Sign and date danger tag. Lock panel and supply keys to authorized person who has applied locks. If circuits cannot be shut down for any reason, label at intervals of 4-feet" (1.25 meter) on center with signs reading, "DANGER live electric circuit. Electrocution hazard." All asbestos abatement work in the vicinity of the live circuit is to be performed dry. All necessary notifications and procedures for dry removal are to be followed.

   d. Lock out power to electrical equipment located in the work area, and to any fans or other equipment that is going to be worked on.

2. Temporary Electrical Panel: Provide temporary electrical panel sized and equipped to accommodate electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical system. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Designer. Panel is to be installed by a licences electrician.

3. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where

permitted, wiring circuits not exceeding 125 Volts, ac 20 Ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.

4. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.

5. Temporary Wiring: in the Work Area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.

6. Number of Branch Circuits: Provide sufficient branch circuits as required by the work. Branch circuits are to originate at temporary electrical panel. At minimum provide the following:

   a. For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).

   b. One outlet in the work area for each 2500 square feet (225 square meters) of work area

   c. One outlet at each decontamination unit, located in equipment room

7. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting visual inspection and air sampling during the work as follows:

   a. One in each work area

   b. One at clean side of each Decontamination Unit.

   c. One at each exhaust location for HEPA filtered fan units

D. Temporary Lighting:

1. Lock out: Lock out existing power to lighting circuits in Work Area as described in section 01526 Temporary Enclosures. Unless specifically noted otherwise existing lighting circuits to the Work Area are not to be used. All lighting to the Work Area and Decontamination

facilities is to be provided from temporary electrical panel described above.

2. Provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level:

   a. One 200-watt incandescent lamp per 1000 square feet (92.9 square meters) of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet (15.2 meters). At ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.

   b. Provide lighting in areas where work is being preformed as required to supply a 100 foot candle (1,076 lumens/sq meter) minimum light level.

   c. Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle (1,076 lumens/sq meter) minimum light level.

   d. Provide lighting in the Decontamination Unit as required to supply a 50 foot candle (538 lumens/sq meter) minimum light level.

3. Number of Lighting Circuits: Provide sufficient lighting circuits as required by the work. Lighting circuits are to originate at temporary electrical panel.

4. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

E. Sanitary Facilities:

1. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.

   a. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility.

2. Toilets: If outdoor self-contained toilet units are not available, install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.

3. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.

3.4 FIRE PROTECTION FACILITIES INSTALLATION

A. **Except for use of permanent fire protection** as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Designer.

B. **Temporary Fire Protection:** Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."

1. Locate fire extinguishers where convenient and effective for their intended purpose.

2. Store combustible materials in containers in fire-safe locations.

3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires.

4. Prohibit smoking within any building, structure, other enclosures or in hazardous fire-exposure areas.

C. **Permanent Fire Protection:** At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected

services, and place into operation and use. Instruct key personnel on use of facilities.

D. **Environmental Protection:** Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. **Supervision:** Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. **Maintenance:** Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.

C. **Termination and Removal:** Unless the Designer requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the Contractor's property.

2. At Substantial Completion, clean and renovate permanent facilities used during the construction period.

END OF SECTION 01503

SECTION 01513 - TEMPORARY PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 MONITORING

A. **Continuously monitor** and record the pressure differential between the Work Area and the building outside of the Work Area with a monitoring device incorporating a continuous recorder (e.g. strip chart).

1.3 QUALITY ASSURANCE:

A. **Monitor pressure differential** at Personnel and Equipment Decontamination Units with a differential pressure meter equipped with a continuous recorder. Meter shall be equipped with a warning buzzer which will sound if pressure differential drops below 0.02 inch of water.

PART 2 - PRODUCTS

2.1 HEPA FILTERED FAN UNITS:

A. **General:** Supply the required number of HEPA filtered fan units to the site in accordance with these specifications. Use units that meet the following requirements.

B. **Cabinet:** Constructed of durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches [0.76 meters] to fit through standard-size doorways. Provide units whose cabinets are:

1. Factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance
2. Arranged to provide access to and replacement of all air filters from intake end
3. Mounted on casters or wheels

C. **Fans:** Rate capacity of fan according to usable air-moving capacity under actual operating conditions.

D. **HEPA Filters:** Provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.

1. Provide units with a continuous rubber gasket located between the filter and the filter housing to form a tight seal.
2. Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles when tested in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions.
3. Provide filters that are marked with: the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.
4. Pre-filters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. Provide units with the following pre-filters:
   a. First-stage pre-filter: low-efficiency type (e.g., for particles 100 um and larger)
   b. Second-stage (or intermediate) filter: medium efficiency (eg., effective for particles down to 5 um)
   c. Provide units with pre-filters and intermediate filters installed either on or in the intake grid of the unit and held in place with special housings or clamps.

E. **Instrumentation:** Provide units equipped with:

1. Magnehelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed
2. A table indicating the usable air-handling capacity for various static pressure readings on the Magnehelic gauge affixed near the gauge for reference, or the Magnehelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) (Liters / Second (LPS)) air delivery at that point
3. Elapsed time meter to show the total accumulated hours of operation

F. **Safety and Warning Devices:** Provide units with the following safety and warning devices:

1. Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter
2. Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge
3. Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red)
4. Audible alarm if unit shuts down due to operation of safety systems

G. **Electrical components:** Provide units with electrical components approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit is to be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.

H. **Manufacturer:** Subject to compliance with requirements, provide products of the following:

1. **HEPA filtered Fan Units:** The following machines are standard 2000 CFM machines used in typical asbestos abatement jobs.

Aerospace America, Inc. "Aero-Clean 2000"
900 Truman Parkway
P.O. Box 189
Bay City, Michigan 48707
(517) 684-2121

Abatement Technologies "HEPA-AIRE 1990 and HEPA-AIRE 2000"
3305 Breckinridge Blvd. #118
Deluth, GA 30136
(800) 634-9091 or (404) 925-2761

Global Consumer Services, Inc.
4615-1U E. Industrial St.
Sims Valley, CA 93063
(805) 579-0230

M-Tec Corp. Micro-Trap
1300 W. Steel Rd. Alumina II
Unit #2
Morrisville, PA 19067
(215) 295-8208

2. **Large Capacity:** The following are large capacity 5000-6000 CFM machines used on large asbestos abatement jobs.

Abatement Technologies 3305 Breckinridge Blvd. #118 Deluth, GA 30136 (800) 634-9091 or (404) 925-2761	"HEPA-AIRE 5000" model H5000C

3. **Hazardous Locations:** The following are pneumatically powered machines for use in asbestos abatement jobs in hazardous locations where electric motors are prohibited.

Abatement Technologies 3305 Breckinridge Blvd. #118 Deluth, GA 30136 (800) 634-9091 or (404) 925-2761	"HEPA-AIRE PNEUMATIC" model H2000P

PART 3 - EXECUTION

3.1 PRESSURE DIFFERENTIAL ISOLATION

A. **Isolate the Work Area** from all adjacent areas or systems of the building with a Pressure Differential that will cause a movement of air from outside to inside at any breach in the physical isolation of the Work Area.

B. **Relative Pressure in Work Area:** Continuously maintain the work area at an air pressure that is lower than that in any surrounding space in the building, or at any location in the immediate proximity outside of the building envelope. This pressure differential when measured across any physical or critical barrier must equal or exceed a static pressure of:

1. 0.02 inches of water.

C. **Accomplish the pressure differential by exhausting** a sufficient number of HEPA filtered fan units from the work area. The number of units required will depend on machine characteristics, the seal at barriers, and required air circulation. The number of units will increase with increased make-up air or leaks into the Work Area. Determine the number of units required for pressure isolation by the following procedure:

1. Establish required air circulation in the work area, personnel and equipment decontamination units.
2. Establish isolation by increased pressure in adjacent areas or as part of seals where required.
3. Exhaust a sufficient number of units from the work area to develop the required pressure differential.

4. The required number of units is the number determined above plus one additional unit.
5. Vent HEPA filtered fan units to outside of building unless authorized in writing by Designer.
6. Mount units to exhaust directly or through disposable ductwork.
7. Use only new ductwork except for sheet metal connections and elbows.
8. Use ductwork and fittings of same diameter or larger than discharge connection on fan unit.
9. Use inflatable, disposable plastic ductwork in lengths not greater than 100 feet (30 meters).
10. Use spiral wire-reinforced flex duct in lengths not greater than 50 feet (15 meters).
11. Arrange exhaust as required to inflate duct to a rigidity sufficient to prevent flapping.
12. If direction of discharge from fan unit is not aligned with duct use sheet metal elbow to change direction. Use six feet (2 meters) of spiral wire reinforced flex duct after direction change.

3.2 AIR CIRCULATION IN THE WORK AREA:

A. **Air Circulation:** For purposes of this section air circulation refers to either the introduction of outside air to the Work Area or the circulation and cleaning of air within the Work Area.

B. **Air circulation in the Work Area** is a minimum requirement intended to help maintain airborne fiber counts at a level that does not significantly challenge the work area isolation measures. The Contractor may also use this air circulation as part of the engineering controls in the worker protection program.

C. **Determining the Air circulation Requirements:** The air flow volume (cubic meters per minute) exhausted (removed) from the workplace must exceed the amount of makeup air supplied to the enclosure. Provide a fully operational air circulation system supplying a minimum of the following air circulation rate:

1. 4 air changes per hour

D. Determine Number of Units needed to achieve required air circulation according to the following procedure:
1. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total air circulation requirement in cubic feet per minute (CFM) for the work area by dividing this volume by 60 and multiplying by the air change rate.

2. Air Circulation Required in Cubic Feet of Air per Minute (CFM) =

$$\frac{\text{Volume of work area (cu. ft.)}}{\text{60 (minutes per hour)}} \times \text{Number of air changes per hour}$$

3. Divide the air circulation requirement (CFM) ((LPS)) above by capacity of HEPA filtered fan unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute (Liters/second) with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machine's labeled operating characteristics.
4. Number of Units Needed =

$$\frac{\text{Air circulation Requirement (CFM) ((LPS))}}{\text{Capacity of Unit with Loaded Filters (CFM) ((LPS))}}$$

5. Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing.

3.3 EXHAUST SYSTEM:

A. **Pressure differential isolation and air circulation** and pressure differential in the Work Area are to be accomplished by an exhaust system as described below.
   1. Exhaust all units from the Work Area to meet air circulation requirement of this section.
   2. Location of HEPA Filtered Fan Units: Locate fan unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses Work Area as much as possible. This may be accomplished by positioning the HEPA filtered fan unit(s) at a maximum distance from the worker access opening or other makeup air sources.
   3. The end of the unit or its exhaust duct should be placed through an opening in the plastic barrier or wall covering. Seal plastic around the unit or duct with tape.
   4. Vent to Outside of Building, unless authorized in writing by the Designer.
   5. Air Handling Unit Exhaust: The exhaust plume from air handling units should be located away from adjacent personnel and intakes for HVAC systems.
   6. Decontamination Units: Arrange Work Area and decontamination units so that the majority of make up air comes through the Decontamination Units. Use only personnel or equipment Decontamination Unit at any time and seal the other so that make up air passes through unit in use.
   7. Supplemental Makeup Air Inlets: Provide where required for proper air flow through the Work Area in location

approved by the Designer by making openings in the plastic sheeting that allow air from outside the building into the Work Area. Locate auxiliary makeup air inlets as far as possible from the fan unit(s) (e.g., on an opposite wall), off the floor (preferably near the ceiling), and away from barriers that separate the Work Area from occupied clean areas. Cover with flaps to reseal automatically if the pressure differential system should shut down for any reason. Spray flap and around opening with spray adhesive so that if flap closes meeting surfaces are both covered with adhesive. Use adhesive that forms contact bond when dry.

3.4 AIR CIRCULATION IN DECONTAMINATION UNITS:

A. **Pressure Differential Isolation:** Continuously maintain the pressure differential required for the work area in the:
   1. Personnel Decontamination Unit: across the Shower Room with the Equipment Room at a lower pressure than the Clean room.

   2. Equipment Decontamination Unit: Across the Holding Room with the Wash Room at a lower pressure than the Clean Room.

B. **Air Circulation:** Continuously maintain air circulation in Decontamination Units at same level as required for Work Area.

C. **Air Movement:** Arrange air circulation through the Personnel Decontamination Unit so that it produces a movement of air from the Clean Room through the Shower Room into the Equipment Room. At each opening, the air flow velocity must be sufficient to provide visible indications of air movement into the work area. The velocity of air flow within the enclosure must be adequate to remove airborne contamination from each worker's breathing zone without disturbing the asbestos-containing material on surfaces.

3.5 USE OF THE PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM:

A. **General:** Each unit shall be serviced by a dedicated minimum 115V-20A circuit with ground fault circuit interrupter (GFCI) supplied from temporary power supply installed under requirements of Section 01503 "Temporary Facilities." Do not use existing branch circuits to power fan units.

B. **Air Flow Tests:** Air flow patterns will be checked before removal operations begin, at least once per operating shift and any time there is a question regarding the integrity of the

enclosure. The primary test for air flow is to trace air currents with smoke tubes or other visual methods. Flow checks are made at each opening and at each doorway to demonstrate that air is being drawn into the enclosure and at each worker's position to show that air is being drawn away from the workers location and toward the HEPA filtration unit.

C. **Demonstrate Condition of Equipment** for each HEPA filtered fan unit and pressure differential monitoring equipment including proper operation of the following:
   1. Squareness of HEPA Filter
   2. Condition of Seals
   3. Proper operation of all lights
   4. Proper operation of automatic shut down if exhaust is blocked
   5. Proper operation of alarms
   6. Proper operation of Magnehelic gauge
   7. Proper operation and calibration on pressure monitoring equipment

D. **Demonstrate Operation** of the pressure differential system to the Designer will include, but not be limited to, the following:
   1. Plastic barriers and sheeting move lightly in toward Work Area,
   2. Curtain of decontamination units move lightly in toward Work Area,
   3. There is a noticeable movement of air through the Decontamination Unit.
   4. Use smoke tube to demonstrate air movement from Clean Room through Shower Room to Equipment Room.
   5. Use smoke tubes to demonstrate a definite motion of air across all areas in which work is to be performed.
   6. Use a differential pressure meter or manometer to demonstrate the required pressure differential at every barrier separating the Work Area from the balance of the building, equipment, ductwork or outside.
   7. Modify the Pressure Differential System as necessary to demonstrate successfully the above.

E. **Use of System During Abatement Operations:**
   1. Start fan units before beginning work (before any asbestos-containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant pressure differential and air circulation until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.
   2. Monitoring Pressure Within the Enclosure: After the initial air flow patterns have been checked, the static

pressure must be monitored within the enclosure. Monitoring may be made using manometers, pressure gauges, or combinations of these devices. It is recommended that they be attached to alarms and strip chart recorders

3. Do not shut down air pressure differential system during encapsulating procedures, unless authorized by the Designer in writing. Supply sufficient pre-filters to allow frequent changes.
4. Start abatement work at a location farthest from the fan units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and fan units are operating again.
5. Corrective Actions: If the manometers or pressure gauges demonstrate a reduction in pressure differential below the required level, work should cease and the reason for the change investigated and appropriate changes made. The air flow patterns should be retested before work begins again.
6. At completion of abatement work, allow fan units to run as specified under section 01711, to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the Work Area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement work.

F. Dismantling the System:

1. When a final inspection and the results of final air tests indicate that the area has been decontaminated, fan units may be removed from the Work Area. Before removal from the Work Area, remove and properly dispose of pre-filter, decontaminate exterior of machine and seal intake to the machine with 6 mil (0.15 mm) polyethylene to prevent environmental contamination from the filters.

END OF SECTION - 01513

SECTION 01526 - TEMPORARY ENCLOSURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUBMITTALS:

A. **Before Start of Work** submit the following.

1. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for the following:
   a. Spray Cement.

PART 2 - PRODUCTS

2.1 SHEET PLASTIC:

A. **Polyethylene Sheet:** A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mil (0.15 mm) thick, clear, frosted, or black as indicated.

2.2 MISCELLANEOUS MATERIALS:

A. **Duct Tape:** Provide duct tape in 2 inch or 3 inch (50 mm or 75 mm) widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

B. **Spray Cement:** Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

PART 3 - EXECUTION

3.1 SEQUENCE OF WORK:

A. **Carry out work of this section sequentially.** Complete each of the following activities in accordance with requirements before proceeding to the next.
   1. Provide emergency exits and emergency lighting.

2. Control access
3. Provide respiratory and worker protection.
4. Provide Critical Barriers.
5. Prepare Area.
6. Provide Primary Barriers.
7. Provide Isolation Areas as required.
8. Provide Secondary Barrier.

3.2 GENERAL:

A. **Work Area:** the location where asbestos abatement work occurs. The Work Area is a variable of the extent of work of the Contract. It may be a portion of a room, a single room, or a complex of rooms. A "Work Area" is considered contaminated during the work, and must be isolated from the balance of the building, and decontaminated at the completion of the asbestos control work.

B. **Completely isolate the Work Area** from other parts of the building so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the Work Area(s) become contaminated with asbestos-containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in Section 01711. Perform all such required cleaning or decontamination at no additional cost to owner.

C. Construct enclosures to provide an air-tight seal around ducts and openings into existing ventilation systems and around penetrations for electrical conduits, telephone wires, water lines, drain pipes, etc. Construct enclosures to be both airtight and watertight except for those openings designed to provide entry and/or air flow control.

D. **Size:** Construct enclosure with sufficient volume to encompass all of the working surfaces yet allow unencumbered movement by the worker(s), provide unrestricted air flow past the worker(s), and ensure walking surfaces can be kept free of tripping hazards.

E. **Shape:** The enclosure may be any shape that optimizes the flow of ventilation air past the worker(s).

F. **Structural Integrity:** The walls, ceilings and floors must be supported in such a manner that portions of the enclosure will not fall down during normal use.

G. **Barrier Supports:** Provide frames as necessary to support all unsupported spans of sheeting.

H. **Place all tools**, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to completion of Work Area isolation.

I. **Areas Within an Enclosure:** Each enclosure consists of a work area, a decontamination area, and waste storage area. The work area where the asbestos removal operations occur are to be separated from both the waste storage area and the contamination control area by physical curtains, doors, and/or airflow patterns that force any airborne contamination back into the work area.

J. **Removing Mobile Objects:** Clean movable objects and remove them from the work area before an enclosure is constructed unless moving the objects creates a hazard. Mobile objects will be assumed to be asbestos contaminated and are to be either cleaned with amended water and a HEPA vacuum and then removed from the area or wrapped and then disposed of as asbestos-contaminated waste.

K. **Disabling HVAC Systems:** The power to the heating, ventilation, and air conditioning systems that service the regulated area must be deactivated and locked out. All ducts, grills, access ports, windows and vents must be sealed off with two layers of plastic to prevent entrainment of contaminated air.

L. **Lockout power to Work Area** by switching off all breakers serving power or lighting circuits in work area. A lock and tag shall be placed on each breaker used to de-energize circuits and equipment with notation "DANGER circuit being worked on". Lock panel and have all keys under control of authorized person who has applied the locks.

M. **Lockout power** to circuits running through work area wherever possible by switching off all breakers or removing fuses serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of authorized person who applied locks. If circuits cannot be shut down for any reason, label at intervals 4 feet (1.22 m) on center with signs reading, "DANGER live electric circuit. Electrocution hazard." Label circuits in hidden locations but which may be affected by the work in a similar manner.

N. **Inspection Windows:** Install inspection windows in locations shown on the plans or as directed by the Designer. Each inspection window is to have a 24 inch X 24 inch (610 X 610 mm) viewing area fabricated from 1/4 inch (6.35 mm) acrylic or

polycarbonate sheet. Install window with top at 6 feet-6 inches (1.98 m) above floor height in a manner that provides unobstructed vision from outside to inside of the Work Area. Protect window from damage from scratching, dirt or any coatings used during the work. A sufficient number of windows are to be installed to provide observation of all portions of the Work Area that can be made visible from adjacent areas. Inspection windows that open into uncontrolled area are to be covered with a removable plywood hatch secured by lock and key. Provide keys to Designer for all such locks.

3.3 EMERGENCY EXITS:

A. **Provide emergency exits and emergency lighting** as set forth below:
   1. Emergency Exits: At each existing exit door from the Work Area provide the following means for emergency exiting:
   2. Arrange exit door so that it is secure from outside the Work area but permits exiting from the Work Area.
   3. Mark outline of door on Primary and Critical Barriers with luminescent paint at least 1 inch (25.4 mm) wide. Hang a razor knife on a string beside outline. Arrange Critical and Primary barriers so that they can be easily cut with one pass of razor knife. Paint words "EMERGENCY EXIT" inside outline with luminescent paint in letters at least one foot high and 2 inches (50.8 mm) wide.
   4. Provide lighted EXIT sign at each exit.
   5. Provide battery-operated emergency lighting that switches on automatically in the event of a power failure.

3.4 CONTROL ACCESS:

A. **Isolate the Work Area** to prevent entry by building occupants into Work Area or surrounding controlled areas. Accomplish isolation by the following:

   1. Submit to Designer a list of doors and other openings that must be secured to isolate Work Area. Include on list notation if door or opening is in an indicated exit route.

   2. After receiving authorization from the Owner lock all doors into Work Area, or, if doors cannot be locked, chain shut. Notify the local fire department of the list of doors/or other openings which must be chained or otherwise secured shut. Cover any signs that direct emergency exiting, either outside or inside of Work Area, to locked doors. Do not obstruct doors required for emergency exits from Work Area or from building.

B. **Visual Barrier:** Where the Work Area is immediately adjacent to or within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6 mil (0.15 mm) in thickness so that the work procedures are not visible to building occupants. Where this visual barrier would block natural light, substitute frosted or woven rip-stop sheet plastic in locations approved by the Designer.

C. **Demarcation.** Demarcate the regulated area in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne concentrations of asbestos. Where critical barriers or negative pressure enclosures are used, they may demarcate the regulated area.

D. **Access.** Limit access to regulated areas to authorized persons as defined by OSHA, and to the Owner, Designer, Project Administrator or a representative authorized by one of these entities.

E. **Provide Warning Signs** at each locked door leading to Work Area reading as follows:

1. Print text in both English and Spanish

Legend	**Notation**
KEEP OUT	3 inch (77 mm) Sans Serif Gothic or Block
BEYOND THIS POINT	1 inch (25.4 mm) Sans Serif Gothic or Block
ASBESTOS ABATEMENT WORK	1 inch (25.4 mm) Sans Serif Gothic or Block
IN PROGRESS	1 inch (25.4 mm) Sans Serif Gothic or Block
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH	14 Point Gothic

2. Provide Warning Signs at each locked door leading to Work Area reading as follows

Legend	**Notation**
KEEP OUT	3 inch (77 mm) Sans Serif Gothic or Block
CONSTRUCTION	1 inch (25.4 mm) Sans Serif Gothic or Block
WORK AREA	1 inch (25.4 mm) Sans Serif Gothic or Block
PROTECTIVE CLOTHING REQUIRED BEYOND THIS POINT	14 Point Gothic

3. Immediately inside door and outside critical barriers post an approximately 20 inch by 14 inch (508 mm X 356 mm)

manufactured caution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

Legend
DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

4. Provide spacing between respective lines at least equal to the height of the respective upper line.

3.5 RESPIRATORY AND WORKER PROTECTION:

A. **Before proceeding** beyond this point in providing Temporary Enclosures:
   1. Provide Worker Protection per Section 01560
   2. Provide Respiratory Protection per Section 01562
   3. Provide Personnel Decontamination Unit per Section 01563

3.6 CRITICAL BARRIERS:

A. **Completely Separate** the Work Area from other portions of the building, and the outside by closing all openings with sheet plastic barriers at least 6 mil (0.15 mm) in thickness, or by sealing cracks leading out of Work Area with duct tape.

B. **Individually seal** all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the Work Area with duct tape alone or with polyethylene sheeting at least 6 mil (0.15 mm) in thickness, taped securely in place with duct tape. Maintain seal until all work including Project Decontamination is completed. Take care in sealing of lighting fixtures to avoid melting or burning of sheeting.

C. **Provide Sheet Plastic** barriers at least 6 mil (0.15 mm) in thickness as required to seal openings completely from the Work Area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.

D. **Mechanically Support** sheet plastic independently of duct tape or spray cement seals so that seals do not support the weight of the plastic. Following are acceptable methods of supporting

sheet plastic barriers. Alternative support methods may be used if approved in writing by the Designer.

1. Plywood squares 6 inch x 6 inch x 3/8 inch (152 mm x 152 mm x 9.53mm) held in place with one 6d smooth masonry nail or electro-galvanized common nail driven through center of the plywood and duct tape on plastic so that plywood clamps plastic to the wall. Locate plywood squares at each end, corner and at maximum 4 feet (1.22 m) on centers.

2. Nylon or polypropylene rope or wire with a maximum unsupported span of 10 feet (3.05 m), minimum 1/4 inch (6.35 mm) in diameter suspended between supports securely fastened on either side of opening at maximum 1 foot (304.8 mm) below ceiling. Tighten rope so that it has 2 inches (50.8 mm) maximum dip. Drape plastic over rope from outside Work Area so that a two foot long flap of plastic extends over rope into Work Area. Staple or wire plastic to itself 1 inch (25.4 mm) below rope at maximum 6 inches (152 mm) on centers to form a sheath over rope. Lift flap and seal to ceiling with duct tape or spray cement. Seal loop at bottom of flap with duct tape. Erect entire assembly so that it hangs vertically without a "shelf" upon which debris could collect.

E. **Provide Pressure Differential System** per Section 01513.

1. Clean housings and ducts of all overspray materials prior to erection of any Critical Barrier that will restrict access.

3.7 PREPARE AREA:

A. **Scaffolding:** If fixed scaffolding is to be used to provide access HEPA vacuum and wet clean area prior to scaffolding installation.

B. **Remove all electrical and mechanical items**, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, etc. which cover any part of the surface to be worked on with the work.

C. **Remove all general construction items** such as cabinets, casework, door and window trim, moldings, ceilings, trim, etc., which cover the surface of the work as required to prevent interference with the work. Clean, decontaminate and reinstall all such materials, upon completion of all removal work with

materials, finishes, and workmanship to match existing installations before start of work.

D. **Clean All Surfaces In Work Area** with a HEPA filtered vacuum or by wet wiping prior to the installation of primary barrier.

E. **Cleaning and Sealing Surfaces:** After cleaning with water and a HEPA vacuum, surfaces of stationary objects should be covered with two layers of plastic sheeting. The sheeting should be secured with duct tape or an equivalent method to provide a tight seal around the object.

3.8 PRIMARY BARRIER:

A. **Protect building and other surfaces** in the Work Area from damage from water and high humidity or from contamination from asbestos-containing debris, slurry or high airborne fiber levels by covering with a primary barrier as described below.

1. Sheet Plastic: Protect surfaces in the Work Area with two (2) layers of plastic sheeting on floor and walls, or as otherwise directed on the Contract Drawings or in writing by the Designer. Perform work in the following sequence.

3.9 STOP WORK:

A. **If the Critical or Primary barrier falls** or is breached in any manner stop asbestos removal work immediately and comply with "Stop Work" requirements of Section 01013 "Summary of Work - Asbestos Abatement". Do not start work until authorized in writing by the Designer.

3.10 EXTENSION OF WORK AREA:

A. **Extension of Work Area:** If the Critical Barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add affected area to the Work Area, enclose it as required by this Section of the specification and decontaminate it as described in Section 01711 Project Decontamination.

END OF SECTION - 01526

SECTION 01527 - REGULATED AREAS

PART
1 - GENERAL

1.1 RELATED DOCUMENTS:

A. **Drawings and general provisions of Contract**, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. **Worker Protection:** is specified in Section 01560 "Worker Protection.
B. **Respiratory Protection:** is specified in Section 01562 "Respiratory Protection"
C. **Wet Decontamination Facilities:** are described in Section 01563 "Decontamination Units."

1.3 DESCRIPTION OF WORK:

A. Work of this section consists of preparing a Regulated Area around the perimeter of roof areas of the Battery Herring prior to removal of asbestos-containing asphalt roof flashing.

PART 2 - EQUIPMENT

2.1 PRODUCTS

A. **HEPA Filter Vacuum Cleaners:**

1. Manufacturer: Subject to compliance with requirements, provide products of one of the Following:

Nilfisk of America, Inc. 225 Great Valley Parkway Malvern, PA 19355 (800) 645-3475	HEPA filtered Vacuums
Minuteman International 111 South Route 53 Addison, IL 60101 (708) 627-6900	Minuteman HEPA Vacuums
Pullman-Holt (White) Corp.	HEPA Filtered

PO Box 16647 Vacuums
Tampa, FL 33617
(813) 645-3475

B. **Plastic Sheet:**

1. Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mil (0.15 mm) thick , clear, frosted, or black as indicated.

PART 3 - EXECUTION

3.1 SECURING WORK AREA:

A. **Secure work** area from access by occupants, staff or users of the building. Accomplish this where possible, by locking doors, windows, or other means of access to the area, by scheduling work for periods of time that the building in unoccupied, or by constructing temporary wood stud and plywood barriers.

3.2 DEMARCATION OF REGULATED AREA:

A. **Demarcation.** Demarcate the Regulated Area with a sheet plastic drop cloth, signs and barrier tape. Configure the regulated area in a manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne concentrations of asbestos.

1. Drop Cloth: Cover ground in vicinity of Work Area and six (6) feet (1.82 meters) beyond, with 6 mil (0.15 mm) polyethylene drop sheet.

2. Signs: Post warning signs that carry the following legends in both English and Spanish:

a. First Sign: Provide warning signs at the perimeter of the regulated area reading as follows:

Legend	**Notation**
KEEP OUT	3 inch (76.2 mm) Block

b. Second Sign: Immediately outside the controlled area post an approximately 20 inch by 14 inch (508 mm x 356 mm) manufactured caution sign displaying the

following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

Legend:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

3. Barrier Tape: delineate area with 3 inch (76.2 mm) wide polyethylene ribbon with the printed warning, "CAUTION ASBESTOS REMOVAL". Install this ribbon at between 3 and 4 feet (0.91 and 1.22 meters) above the ground around the perimeter of the building at a distance of approximately 20 feet from the building. .

3.3 SCHEDULING:

A. **Work may be carried out** during normal working hours unless stated otherwise by the Department of Parks and Recreation.

3.4 GENERAL PROCEDURES:

A. **The following precautions and procedures** have application to work of this section. Workers must exercise caution to avoid release of asbestos fibers into the air:

1. Setup and management of the controlled area is to be under the supervision of a OSHA Competent Person as described in Section 01043 Project Coordination - Asbestos Abatement.

2. Before start of work comply with requirement for worker protection in section 01560, and respiratory protection in section 01562.

3. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the Regulated Area.

4. Shut down any air handling equipment bringing air into or out of the Regulated Area.

5. Clean any existing dust or debris from the ground surrounding the building prior to commencing work by wetting the debris and by use of a High Efficiency Particulate Air (HEPA) filtered vacuum.

6. Seal all openings, supply and exhaust vents, and convectors within ten (10) feet (3.05 meters) of the Work Area with 6 mil (0.15 mm) polycthylene sheeting secured and completely sealed with duct tape.

7. Perform the work per the appropriate specification section while on plastic drop sheet.

8. Immediately remove any asbestos-containing debris which collects on the drop sheet either by using a HEPA vacuum or by spraying with amended water, placing in a disposal bag while still wet, and cleaning the surface of plastic sheet.

9. Complete the following at completion of work in an area before stepping off drop sheet

   a. While standing on plastic sheet thoroughly HEPA vacuum ladder and any tools used and pass to worker standing off sheet.

   b. Worker standing off the sheet HEPA vacuum thoroughly the worker standing on the sheet.

   c. Worker on the sheet thoroughly HEPA vacuum all surfaces of the plastic sheet, bags, and any other items on the sheet including the worker's feet.

10. If moving to the next Work Area in the same secured area: Worker on the drop sheet is to don clean foot covers, placing each foot, in turn, off the sheet as the foot cover is put on. Remove clean foot covers at the next Work Area while standing on the sheet. Dispose of the used foot covers along with the plastic sheet at completion of work in that area. Do not reuse foot covers to move off the sheet.

11. If work day is complete or if next Work Area is in another secured area: all workers remove paper suits turning them

inside out while doing so. The person on the sheet steps with each foot off the sheet as the foot covers are removed.

12. Fold sheet and all its contents toward the center.

13. Place the sheet in a properly labeled disposal bag.

14. Neck down the bag and collapse it with the HEPA vacuum.

15. Twist the bag shut, bend over and seal with duct tape by wrapping around bag neck at least 3 times.

16. Clean all surfaces of the Work Area by use of a HEPA filter vacuum until no visible residue remains.

B. **At completion of work** require all workers to complete decontamination procedures in accordance with Section 01561 Worker Protection - Repair & Maintenance.

C. **Remove respirators** using the procedure in Section 01563 Decontamination Units.

D. **At completion of work** require all workers to complete wet decontamination procedures in accordance with Section 01560 Worker Protection - Asbestos Abatement.

END OF SECTION - 01527

SECTION 01560 - WORKER PROTECTION - ASBESTOS ABATEMENT

PART
1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

A. **Respiratory Protection:** is specified in Section 01562.

1.4 WORKER TRAINING:

A. **AHERA Accreditation:** All workers are to be accredited as Abatement Workers as required by the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).

B. **State and Local License:** All workers are to be trained, certified and accredited as required by the State of Delaware.

1.5 MEDICAL SURVEILLANCE:

A. **Provide a medical surveillance program** for all employees who are:

1. engaged in Class I, II and III work for a combined total of 30 or more days per year or,

a. For the purposes of this paragraph, any day in which a worker engages in Class II or Class III work or a combination thereof for one hour or less (taking into account the entire time spent on the removal operation, including cleanup) and, while doing so, adheres fully to the work practices specified in the OSHA standard (29 CFR 1926.1101) is not counted.

2. are exposed at or above the permissible exposure limit or excursion limit or,

3. before an employee can be assigned to work requiring use of a respirator.

B. **Provide a medical surveillance program** and physician's opinion before a respirator is assigned as required by 29 CFR 1910.134 and 29 CFR 1926.103(e)(10) .

C. **Provide medical examination** that as a minimum meets OSHA requirements as set forth in 29 CFR 1926.1101. In addition, require that the physician provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.

PART 2 - EQUIPMENT

2.1 PROTECTIVE CLOTHING:

A. **General.** Provide and require the use of protective clothing, such as coveralls or similar whole-body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of asbestos that exceed the TWA and/or excursion limit prescribed by 29 CFR 1926.1101 or for which a required negative exposure assessment is not produced, and for any employee performing Class I operations which involve the removal of over 25 linear or 10 square feet (7.5 linear meters or 3 square meters) of TSI or surfacing ACM or PACM.

B. **Coveralls:** Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the Work Area. Provide a sufficient number for all required changes, for all workers in the Work Area.

C. **Additional Protective Clothing:** Provide each worker with the protective clothing as required by Federal State and local regulations. This includes, but is not necessary limited by Hardhats, Cold weather gear, Glove, boots and goggles.

D. **Boots:** Provide work boots with non-skid soles, and where required by OSHA, foot protectives, for all workers. Provide boots at no cost to workers. Paint uppers of all boots red with waterproof enamel. Do not allow boots to be removed from the Work Area for any reason, after being contaminated with ACM.

Dispose of boots as asbestos-contaminated waste at the end of the work.

E. **Hard Hats:** Provide head protectives (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Designer, Project Administrator, and Owner. Label hats with same warning labels as used on disposal bags. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean, decontaminate and bag hats before removing them from Work Area at the end of the work.

F. **Goggles:** Provide eye protection (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury. Thoroughly clean, decontaminate and bag goggles before removing them from Work Area at the end of the work.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT:

A. Disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, Designer, Project Administrator, and other authorized representatives who may inspect the job site.

PART 3 - EXECUTION

3.1 GENERAL:

A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of fiber count in the Work Area.

B. Each time Work Area is entered remove all street clothes in the Changing Room of the Personnel Decontamination Unit and put on new disposable coverall, new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.

3.2 DECONTAMINATION PROCEDURES:

A. Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area:

1. Type C Supplied Air or Powered Air-Purifying Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area:

a. When exiting area, remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.

b. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:

c. Thoroughly wet body including hair and face. If using a Powered Air-Purifying Respirator (PAPR) hold blower unit above head to keep canisters dry.

d. With respirator still in place thoroughly wash body, hair, respirator face piece, and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to seal between face and respirator and under straps.

e. Take a deep breath, hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breath.

f. Carefully wash facepiece of respirator inside and out.

2. If using PAPR: shut down in the following sequence, first cap inlets to filter cartridges, then turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit). Thoroughly wash blower unit and hoses. Carefully wash battery pack with wet rag. Be extremely cautious of getting water in battery pack as this will short out and destroy battery.

a. Shower completely with soap and water.

b. Rinse thoroughly.

c. Rinse shower room walls and floor prior to exit.

d. Proceed from shower to Changing Room and change into street clothes or into new disposable work items.

3. Air Purifying-Negative Pressure Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with full face cartridge type respirator:

a. When exiting area, remove disposable coveralls, disposable headcovers, and disposable footwear covers or boots in the Equipment Room.

b. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid asbestos fibers while showering. The following procedure is required as a minimum:

c. Thoroughly wet body from neck down.

d. Wet hair as thoroughly as possible without wetting the respirator filter if using an air purifying type respirator.

e. Take a deep breath, hold it and/or exhale slowly, complete wetting of hair, thoroughly wetting face, respirator and filter (air purifying respirator). While still holding breath, remove respirator and hold it away from face before starting to breath.

f. Dispose of wet filters from air purifying respirator.

g. Carefully wash facepiece of respirator inside and out.

h. Shower completely with soap and water.

i. Rinse thoroughly.

j. Rinse shower room walls and floor prior to exit.

k. Proceed from shower to Changing Room and change into street clothes or into new disposable work items.

B. **Remote Shower:** The procedures above are to be used if the decontamination facility is used as a remote shower. If a worker cannot gain direct access to the Equipment Room require that he enter Decontamination Unit and proceed directly through Shower Room to Equipment Room. Decontamination procedure is then completed as required above.

C. Within Work Area:

1. Require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area. To eat, chew, drink or smoke, workers shall follow the procedure described above, then dress in street clothes before entering the non-Work Areas of the building.

3.3 CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT:

Following this section is a Certificate of Worker Training. After each worker has been included in the Contractor's Respiratory Protection Program, completed the training program and medical examination, secure a fully executed copy of this form.

END OF SECTION - 01560

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME_
_____ DATE _____

PROJECT ADDRESS

_____

CONTRACTOR'S NAME

_____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the Owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. This training must have been the equivalent in curriculum, training method and length to the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer.

Signature_____Social Security No_____
Printed Name_____Witness_____

SECTION 01562 - RESPIRATORY PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. **Drawings and general provisions of Contract**, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. **Instruct and train each worker** involved in asbestos abatement or maintenance and repair of friable asbestos-containing materials (ACM) in proper respiratory use and require that each worker always wear a respirator, properly fitted on the face in the Work Area from the start of any operation which may cause airborne asbestos fibers until the Work Area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

1.3 DEFINITIONS:

A. "Negative Pressure Respirator": A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

B. "Protection Factor": The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

C. "Respirator": A device designed to protect the wearer from the inhalation of harmful atmospheres.

1.4 STANDARDS:

A. **Except to the extent** that more stringent requirements are written directly into the Contract Documents, the latest edition of the following regulations and standards have the same force and effect (and are made a part of the Contract

Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.

1. **OSHA** - U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards Section 29 CFR 1910.1001, Section 1910.134, and Section 29 CFR 1926.1101.
2. **CGA** - Compressed Gas Association, Inc., New York, Pamphlet G-7, "Compressed Air for Human Respiration", and Specification G-7.1 "Commodity Specification for Air".
3. **CSA** - Canadian Standard Association, Rexdal, Ontario, Standard Z180.1, "Compressed Breathing Air".
4. **ANSI** - American National Standard Practices for Respiratory Protection, ANSI Z88.2.
5. **NIOSH** - National Institute for Occupational Safety and Health
   - NIOSH Respirator Decision Logic (May 1987) DHHS/NIOSH Publication No. 87-108;
   - NIOSH/EPA, "A Guide to Respiratory Protection for the Asbestos Abatement Industry" EPA-560-OPTS-86-001 (September 1986);
   - 42 CFR 84, NIOSH Standard for Certification of Non-Powered Air Purifying Respirator filters;
   - 30 CFR 11, NIOSH - Certification of Respirators
6. **MSHA** - Mine Safety and Health Administration

1.5 SUBMITTALS:

A. **Before Start of Work** submit the following to the Designer.

1. **Resume information:** Submit resume and information on training for individual monitoring the operation of supplied air respiratory systems. Submit training certifications where applicable.

1.6 AIR QUALITY FOR SUPPLIED AIR RESPIRATORY SYSTEMS:

A. **Provide air** used for breathing in supplied air respiratory systems that meets or exceeds standards set for C.G.A. type 1 (Gaseous Air) Grade H or CSA Z180.1 whichever presents the more stringent quality standard:

B. **Provide air** used for breathing in supplied air respiratory systems that meets or exceeds standards set for C.G.A. type 1 (Gaseous Air) Grade D:

1.7 ALLOWABLE CONTAMINANTS:

A. **Supply air** that has an asbestos concentration no greater than outside ambient conditions.

B. **Supply air** that meets the level of contaminants allowed according to the air quality standard specified.

C. **The following table** sets forth the quantity of any given contaminant allowed according to the referenced standards:

CONTAMINANT	CGA Type 1 (Gaseous Air) Grade D	Grade E	Grade H	CSA Z180.1
Carbon Monoxide, PPM/v	20	10	5	5
Carbon Dioxide, PPM/v	1000	500	500	500
Condensed Hydrocarbons, mg./cu. meter	5	5		1
Gaseous Hydrocarbons - as methane, PPM/v			10	25
Water Vapor - PPM/v dewpoint	(1) -50F	(1) -50F	(1) -50F	27 -63F
Objectionable Odors	None	None	None	None
Nitrogen Dioxide, PPM/v	-	-	0.5	0.2
Nitrous Oxide, PPM/v	-	-	-	5
Sulfur Dioxide, PPM/v	-	-	0.5	-
Halogenated solvents, PPM/v	-	-	1	-
Other gaseous contaminants	-	-	-	(2)
Inorganic particulates, mg./cu. meter	-	-	-	1

\- Indicates that the standard shows no limiting characteristics

(1) The CGA standards do not indicate a specific moisture limit when the ambient temperature is above freezing. However, since a moisture content no greater than a -50 Degrees Fahrenheit (-45.56 Degrees Celsius) dewpoint (66 PPM/v) is necessary for carbon monoxide elimination, the CO limits could not be met unless the air were dried to a -50 Degrees Fahrenheit (-45.56 Degrees Celsius) dewpoint or better.

(2) Maximum allowable content of trichlorotrifluoroethane, dichlorodifluoromethane, and chlorodifluoromethane is 2 PPM/v for each. Unlisted contaminants shall not exceed one-tenth of the Threshold Limit Values (TLV's) for Chemical Substances in Workroom air adopted by the American Conference of Governmental Industrial Hygienists (ACGIH).

1.8 DELIVERY:

A. **Deliver replacement parts**, etc., not otherwise labeled by NIOSH or MSHA to job site in manufacturer's containers.

PART 2 - EQUIPMENT

2.1 AIR PURIFYING RESPIRATORS

A. **Respirator Bodies:** Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit (0 degrees Celsius).

B. **Filter Cartridges:** Provide, at a minimum, HEPA type filters labeled with NIOSH Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with 42 CFR Part 84 and ANSI Z228.2. Also, additional cartridge sections may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH Certification.

C. **Non-permitted respirators.** Do not use single use, disposable or quarter face respirators.

2.2 SUPPLIED AIR RESPIRATOR SYSTEMS:

A. **Provide equipment** capable of producing air of the quality and volume required by the above reference standards applied to the job site conditions and crew size. Comply with provisions of this specification if more stringent than the governing standard.

B. **Facepiece and Hose:** Provide full facepiece and hose by same manufacturer that has been certified by NIOSH as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure facepiece.

C. **Auxiliary backup system:** In atmospheres which contain sufficient oxygen (greater than or equal to 19.5 percent oxygen) provide a pressure-demand full facepiece supplied air respirator equipped with an emergency back up HEPA filter.

D. **Escape air supply:** In atmospheres which are oxygen deficient (less than 19.5 percent oxygen) provide a pressure-demand full facepiece supplied air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA) which automatically maintains an uninterrupted air supply in pressure demand mode with a positive pressure face piece.

E. **Backup air supply:** Provide a reservoir of compressed air located outside the Work Area which will automatically maintain a continuous uninterruptable source of air automatically available to each connected facepiece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the back-up air supply to allow a minimum escape time of one-half hour times the number of connections available to the Work Area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average-sized adult male engaged in moderately strenuous activity.

F. **Warning device:** Provide a warning device that will operate independently of the building's power supply. Locate so that alarm is clearly audible above the noise level produced by equipment and work procedures in use, in all parts of the Work Area and at the compressor. Connect alarm to warn of:
   1. Compressor shut down or other fault requiring use of backup air supply
   2. Carbon Monoxide (CO) levels in excess of 5 PPM/V

G. **Carbon Monoxide (CO) Monitor:** Continuously monitor and record on a strip chart recorder Carbon Monoxide (CO) levels. Place monitors in the air line between compressor and back-up air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as specified under "Warning Devices".

H. **Compressor Shut Down:** Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sound if any of the following occur:
   1. Carbon Monoxide (CO) concentrations exceed 5 PPM/v in the air line between the filter bank and backup air supply
   2. Compressor temperature exceeds normal operating range

I. **Compressor Motor:** Provide a compressor driven by an electric motor. Do not use a gas or diesel engine to drive compressor. Insure that electrical supply available at the work site is adequate to energize motor.

J. **Compressor Location:** Locate compressor outside of building in location that will not impede access to the building, and that will not cause a nuisance by virtue of noise or fumes to occupied portions of the building.

K. **Air Intake:** Locate air intake remotely from any source of automobile exhaust or any exhaust from engines, motors, auxiliary generator or buildings.

L. **After-Cooler:** Provide an after-cooler at entry to filter system which is capable of reducing temperatures to outside ambient air temperatures.

M. **Self Contained Breathing Apparatus (SCBA):** Configure system to permit the recharging of ½ hour 2260 PSI (15.58 MPa) SCBA cylinders.

PART 3 - EXECUTION

3.1 GENERAL:

A. **Respiratory Protection Program:** Comply with ANSI Z88.2 "Practices for Respiratory Protection" and OSHA 29 CFR 1910.314 and 1926.103.

B. **Require** that respirators be used in the following circumstances:
   1. During all Class I asbestos jobs.
   2. During all Class II work where the ACM is not removed in substantially intact state,
   3. During all Class II and III work which is not performed using wet methods.
   4. During all Class II and III asbestos jobs where the employer does not produce a "negative exposure assessment".
   5. During all Class III jobs where TSI or surfacing ACM or PACM is being disturbed.
   6. During all Class IV work performed within regulated areas where employees performing other work are required to wear respirators.
   7. During all work covered by this section where employees are exposed above the OSHA PEL (TWA, or excursion limit).

8. In emergencies. During emergencies where the airborne asbestos fiber concentration is not known, a self-contained breathing apparatus (SCBA) must be used.

C. **Require** that respiratory protection be used at all times that there is any possibility of disturbance of ACM whether intentional or accidental.

D. **Require** that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with Section 01711.

E. **Regardless of Airborne Fiber Levels:** Require that the minimum level of respiratory protection used be half-face air-purifying respirators with high efficiency filters.

F. **Do not allow** the use of single-use, disposable, or quarter-face respirators for any purpose.

3.2 FIT TESTING:

A. **Initial Fitting:** Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by an individual qualified to do fit testing. Fit types and sizes of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing has been provided.

B. **Upon Each Wearing:** Require that each time an air-purifying respirator is put on it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2.

3.3 TYPE OF RESPIRATORY PROTECTION REQUIRED:

A. **General:** After reducing airborne asbestos levels to the lowest feasible level with engineering controls and work practices, provide respiratory protection as necessary to ensure that workers are not exposed to an airborne concentration of asbestos in excess of the Specified Permissible Exposure Limits (SPEL) set forth in this Section.

B. **Level of Respiratory Protection:** Determine the proper level of respiratory protection by dividing the expected or actual airborne fiber count in the Work Area by the "protection factors" given below. The level of respiratory protection

which supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below the Specified Permissible Exposure Limits (PEL) set forth in this Section is the minimum level of protection allowed.

C. **Specific Respiratory Protection Requirements:** Provide respiratory protection as indicated below as a minimum requirement:

1. **Powered Air-Purifying Respirators (PAPR):** Provide a minimum level of respiratory protection of powered air-purifying respirators (PAPR) during all asbestos work involving ACBM other than asbestos-containing thermal system insulation (TSI) or surfacing material. Use a higher level of respiratory protection as required by the OSHA Asbestos Construction Standard 29 CFR 1926.1101.

2. **Type "C" Supplied-air respirators:** full facepiece pressure demand supplied air respirators are to be used by all workers engaged in the removal of thermal system insulation (TSI) or surfacing materials, or demolition of pipes, structures, or equipment covered or insulated with asbestos, or in the removal or demolition of asbestos insulation or coverings, or any other activity which results in or may result in airborne asbestos fiber levels above 1.0 fibers per cubic centimeter (1.0 f/cc).

D. **Provide** a full facepiece supplied air respirator operated in the pressure demand mode equipped with an auxiliary positive pressure self-contained breathing apparatus for all workers within a regulated area where Class I work is being performed and for which an initial exposure assessment has not been produced.

3.4 SPECIFIED PERMISSIBLE EXPOSURE LIMITS (SPEL):

A. **Specified Permissible Exposure Limits (SPEL):** Ensure that no worker is exposed to an airborne concentration of asbestos in excess of the Time-Weighted Average (TWA) limit, and Excursion Limit (EL) set forth below.

1. **Time Weighted Average (TWA) limit** - Concentration of airborne asbestos fibers to which any worker may be exposed as an eight (8) hour time-weighted average (TWA) shall not exceed the following.
   a. 0.1 fibers per cubic centimeter

2. **Excursion Limit (EL)** - Concentration of airborne asbestos fibers to which any worker may be exposed as averaged over

a sampling period of thirty (30) minutes shall not exceed the following.

a. 1.0 fiber per cubic centimeter

B. **Fibers:** For purposes of this section, fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), or NIOSH 7400 procedure.

3.5 RESPIRATORY PROTECTION FACTOR:

A. Respirator Type	Protection Factor
1. **Air purifying:** Negative pressure respirator High efficiency filter Half facepiece	10
2. **Air purifying:** Negative pressure respirator High efficiency filter Full facepiece	50
3. **Powered air-purifying respirator** equipped with high efficiency filters or any supplied air respirator operated in continuous flow mode. Full facepiece	1,000
4. **Supplied air:** Positive pressure respirator Pressure demand or other positive pressure mode Full facepiece Equipped with an auxiliary HEPA cartridge or positive pressure Self-contained breathing apparatus (SCBA) for escape	1,000

3.6 AIR PURIFYING RESPIRATORS:

A. **Powered air purifying - half or full face mask:** Supply a sufficient quantity of high efficiency respirator filters

approved for asbestos so that workers can change filters at any time that flow through the facepiece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

3.7 SUPPLIED AIR RESPIRATOR:

A. **Air Systems Monitor:** Continuously monitor the air system operation including compressor operation, filter system operation, backup air capacity and all warning and monitoring devices at all times that system is in operation. Assign an individual, trained by manufacturer of the equipment in use or by a Certified Industrial Hygienist, in the operation and maintenance of the system to provide this monitoring. Assign no other duties to this individual which will take him away from monitoring the air system.

END OF SECTION - 01562

INITIAL EXPOSURE ASSESSMENT

Project No:_____ Date:_____

Project Name:_____

Facility:_____

Work Area(s):_____

Reference Job:_____

Description of Work:_____

Asbestos Containing Materials Asbestos/Type Percentage

_____

_____

_____

Task	Personal Monitoring Level High	Low	Average	Respirator Worn	Comments
Prep / Set up					
Removal of Surface Trt					
Removal of TSI					
Removal of Misc Mat.					
Bag Out					
Clean Up					
Other					

Experience Level of Work Force _____

Reference Job:_____

Description of Work:_____

Asbestos Containing Materials Asbestos/Type Percentage

_____

_____

_____

Task	Personal Monitoring Level High	Low	Average	Respirator Worn	Comments
Prep / Set up					
Removal of Surface Trt					
Removal of TSI					
Removal of Misc Mat.					

Bag Out _____ _____ _____ _____ _____

Clean Up _____ _____ _____ _____ _____

Other _____ _____ _____ _____ _____

Experience Level of Work Force _____

Expected Conditions of This Job

Task	Anticipated Level	Respirator	Comments
Prep / Set up	_____ f/cc	_____	_____
Removal of Surface Trt	_____ f/cc	_____	_____
Removal of TSI	_____ f/cc	_____	_____
Removal of Misc Mat.	_____ f/cc	_____	_____
Bag Out	_____ f/cc	_____	_____
Clean Up	_____ f/cc	_____	_____
Other	_____ f/cc	_____	_____

Experience Level of Work Force _____

SECTION 01563 - DECONTAMINATION UNITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. **Drawings and general provisions of Contract**, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. **Provide separate Personnel and Equipment Decontamination facilities.** Require that the Personnel Decontamination Unit be the only means of ingress and egress for the Work Area. Require that all materials exit the Work Area through the Equipment Decontamination Unit.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

A. **Refer to Section 01503 Temporary Facilities** - Asbestos Abatement for electrical requirements and requirements relative to connection of decontamination facilities to building systems such as water, sewer, and electrical.

1.4 SUBMITTALS

PART 2 - PRODUCTS

2.1 MATERIALS

A. **Polyethylene Sheet:** A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mil (0.15 mm) thick , clear, frosted, or black as indicated.

B. **Duct Tape:** Provide duct tape in 2 inch or 3 inch (51 mm or 76 mm) widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

C. **Spray Adhesive:** Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

D. **Shower Pan:** Provide one piece waterproof shower pan 4 feet x 8 feet x 6 inches deep (102 mm X 204 mm x 152 mm deep). Fabricate from seamless fiberglass minimum 1/16 inch (1.59 mm) thick reinforced with wood, 18 ga. stainless or galvanized steel with welded seems, copper or lead with soldered seams, or a seamless liner of minimum 60 mil (1.5 mm) thick elastomeric membrane.

E. **Shower Walls:** Provide 8 feet (2.44 m) long by approximately 7 feet (2.13 m) high walls fabricated from rigid, impervious, waterproof material, either corrugated fiberglass roofing or equivalent. Structurally support as necessary for stability.

F. **Shower Head and Controls:** Provide a factory-made shower head producing a spray of water which can be adjusted for spray size and intensity. Feed shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.

G. **Filters:** Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos-contaminated water from the Work Area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.
   1. Primary Filter - Passes particles 20 microns and smaller
   2. Secondary Filter - Passes particles 5 microns and smaller

H. **Hose Bib:** Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4 inch (19.05 mm) National Standard male hose outlet.

I. **Shower Stall:** For Wash Down Station provide leak tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3 feet x 3 feet (0.91m x 0.91 m) square with minimum 6 feet (1.83 m) high sides and back. Structurally support as necessary for stability. Equip with hose bib, as specified in this section, mounted at approximately 4 feet (1.22 m) above drain pan. Connect drain to a reservoir, pump water from reservoir through filters to a drain or store and use for amended water. Mount filters inside shower stall on back wall beneath hose bib.

J. **Elastomeric membrane:** Provide uniform flat sheets of flexible sheet roofing material fabricated from EPDM (ethylene propylene diene monomers) or Neoprene (polychloroprene), in a nominal 45 mil (1.14 mm) thickness.

K. **Lumber:** Provide kiln dried lumber of any grade or species.

L. **Sump Pump:** Provide totally submersible waterproof sump pump with integral float switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. Adjust float switch so that a minimum of 3 inch (76 mm) remains between top of liquid and top of sump pan.

PART 3 - EXECUTION

3.1 PERSONNEL DECONTAMINATION UNIT:

A. **Provide a Personnel Decontamination Unit** consisting of a serial arrangement of connected rooms or spaces, Changing Room, Drying Room, Shower Room, Equipment Room. Require all persons without exception to pass through this Decontamination Unit for entry into and exiting from the Work Area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through Personnel Decontamination Unit. Provide temporary lighting within Decontamination Units as necessary to reach a lighting level of 100 foot candles (1076 lumens/sq meter).

B. **Changing Room (clean room):** Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing.

1. Construct using polyethylene sheeting, at least 6 mil (0.15 mm) in thickness, to provide an airtight seal between the Changing Room and the rest of the building.

2. Locate so that access to Work Area from Changing Room is through Shower Room.

3. Separate Changing Room from the building by a sheet plastic flapped doorway.

4. Require workers to remove all street clothes in this room, dress in clean, disposable coveralls, and don respiratory protection equipment. Do not allow asbestos-contaminated items to enter this room. Require Workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.

5. An existing room may be utilized as the Changing Room if it is suitably located and of a configuration whereby workers may enter the Changing Room directly from the Shower Room. Protect all surfaces of room with sheet plastic as set forth in Section 01526 Temporary Enclosures. Authorization for this must be obtained from the Designer in writing prior to start of construction. Submit written request in accordance with Section 01632 "Substitutions" detailing layout and protective measures proposed.

6. Maintain floor of changing room dry and clean at all times. Do not allow overflow water from shower to wet floor in changing room.

7. Damp wipe all surfaces twice after each shift change with a disinfectant solution.

8. Provide posted information for all emergency phone numbers and procedures.

9. Provide 1 storage locker per employee.

10. Provide all other components indicated on the contract drawings.

C. **Airlock:** Provide an airlock between Drying Room and Changing Room. This is a transit area for workers.

1. Separate this room from Drying Room and Changing Room by sheet plastic flapped doorways.

2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

3. Separate this room from the Drying and Changing Rooms with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

D. **Drying Room:** Provide a drying room as an airlock and a place for workers to dry after showering.

1. Construct room by providing a pan continuous with or draining to Shower Room pan. Install a freely draining wooden or non-skid metal floor in pan at elevation of top of pan.

2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

3. Separate this room from the Changing Room and Shower Room with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

4. Separate from Changing Room by a sheet plastic flapped doorway.

5. Provide a continuously adequate supply of disposable bath towels.

6. Provide a rigid, tight-sealing hinged door between Drying Room and Clean Room. Arrange so that there is a sensible movement of air from clean room through breathing zone of worker in Shower and Drying Room toward Equipment Room.

E. **Shower Room:** Provide a completely watertight operational shower to be used for transit by cleanly dressed workers heading for the Work Area from the Changing Room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.

1. Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in shower pan at elevation of top of pan.

2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

3. Separate this room from the Drying Room and Airlock with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

4. Provide splashproof entrances to Drying Room and Airlock with doors arranged in the following configuration:

   a. At each entrance to the Shower Room construct a door frame out of nominal 2 inch x 4 inch (51 mm X 102 mm) lumber with 1-1/2 inch (39 mm) jambs (sides) and 1-1/2 inch (39 mm) head (top) and sill (bottom). Attach to this door frame two overlapping flaps of elastomeric membrane material, fastened at the head (top) and jambs (sides) (by clamping between a 1-1/2 inch (39 mm) x 3/4 inch (19mm) batten and frame). Overlap the flaps a minimum of 6 inch (152 mm) in a direction that presents a shingle-like configuration to the water stream from the shower. Overlap sill (bottom) by 1-1/2 inch (39 mm) minimum. Arrange so that any air movement out of the Work Area will cause the flaps to seal against the door frame.

5. Provide shower head and controls.

6. Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.

7. Provide a soap dish and a continuously adequate supply of soap and maintain in sanitary condition.

8. Arrange so that water from showering does not splash into the Changing or Equipment Rooms.

9. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the Work Area.

10. Provide flexible hose shower head.

11. Pump waste water to drain or to storage for use in amended water. If pumped to drain, provide 20 micron and 5 micron waste water filters in line to drain or waste water storage. Change filters daily or more often if necessary. Locate filters inside shower unit so that water lost during filter changes is caught by shower pan.

12. Provide hose bib.

13. Provide all other items indicated on contract drawings.

F. **Airlock:** Provide an airlock between Shower Room and Equipment Room. This is a transit area for workers. Separate this room from Equipment Room by a sheet plastic flap doorway.

1. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

2. Separate this room from the Equipment Room and Shower Room with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

3. Separate from Equipment Room by a sheet plastic flapped doorway.

G. **Equipment Room (contaminated area):** Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers.

1. Separate this room from the Work Area by a 6 mil (0.15 mm) polyethylene flapped doorway.

2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

3. Separate this room from the Shower Room and Work Area with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

4. Provide a drop cloth layer of sheet plastic on floor in the Equipment Room for every shift change expected. Roll drop cloth layer of plastic from Equipment Room into Work Area after each shift change. Replace before next shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

H. **Work Area:** Separate Work Area from the Equipment Room by polyethylene barriers. If the airborne asbestos level in the Work Area is expected to be high, as in dry removal, add an intermediate cleaning space between the Equipment Room and the Work Area. Damp wipe clean all surfaces after each shift change. Provide one additional floor layer of 6 mil (0.15 mm) polyethylene per shift change and remove contaminated layer after each shift.

I. **Decontamination Sequence:** Require that all workers adhere to the following sequence when entering or leaving the Work Area.

1. Entering Work Area: Worker enters Changing Room and removes street clothing, puts on clean disposable overalls and respirator, and passes through the Shower Room into the Equipment Room.

2. Any additional clothing and equipment left in Equipment Room needed by the worker are put on in the Equipment Room.

3. Worker proceeds to Work Area.

J. **Exiting Work Area:**

1. Before leaving the Work Area, require the worker to remove all gross contamination and debris from overalls and feet.

2. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment.

3. Extra work clothing such as boots, hard hats, goggles, gloves are to be stored in contaminated end of the Equipment Room.

4. Disposable coveralls are placed in a bag for disposal with other material.

5. Require that Decontamination procedures found in Section 01560 be followed by all individuals leaving the Work Area.

6. After showering, the worker moves to the Changing Room and dresses in either new coveralls for another entry or street clothes if leaving.

3.2 CLEANING OF DECONTAMINATION UNIT:

A. **Clean debris and residue** from inside of Decontamination Unit on a daily basis or as otherwise indicated on Contract Drawings. Damp wipe or hose down all surfaces after each shift change. Clean debris from shower pans on a daily basis.

B. **If the Changing Room** of the Personnel Decontamination Unit becomes contaminated with asbestos-containing debris, abandon the entire Decontamination Unit and erect a new Decontamination Unit. Use the former Changing Room as an inner section of the new Equipment Room.

3.3 SIGNS:

A. **Post** an approximately 20 inch by 14 inch (508 mm x 356 mm) manufactured caution sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

1. Provide signs in both English and Spanish.

2. Legend:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

3. Provide spacing between respective lines at least equal to the height of the respective upper line.

END OF SECTION - 01563

SECTION 01601 - MATERIALS AND EQUIPMENT - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.

B. **Related Sections:** The following Sections contain requirements that relate to this Section:

1. The Contractor's Construction Schedule is included under Section 01043 Coordination - Asbestos Abatement.

2. The Contractor's Schedule of Submittals is included under Section 01301 Submittals - Asbestos Abatement.

3. The applicability of industry standards to products specified is included under Section 01097 Reference Standards and Definitions - Asbestos Abatement.

4. The administrative procedures for handling requests for substitutions made after award of the Contract is included under Section 01632 Substitutions - Asbestos Abatement.

1.3 DEFINITIONS

A. **Definitions** used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.

1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

2. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature, that is current as of the date of the Contract Documents.

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

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

1.4 QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

B. Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1. The contractor is responsible for providing products and construction methods that are compatible with products and construction methods to be installed after completion of the work of this contract.

2. If a dispute arises between contractors over concurrently selectable, but incompatible products, the Designer will determine which products shall be retained and which are incompatible and must be replaced.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.

7. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

A. **General Product Requirements:** Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.

1. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. **Product Selection Procedures:** The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:

a. Where Specifications specify products or manufacturers by name, accompanied by the term "or equal" or "or approved equal," comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

1. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor

may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

2. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

3. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.

   a. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.

4. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. **Comply with manufacturer's instructions and recommendations** for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

   1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01601

SECTION 01632 - SUBSTITUTIONS - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. **This Section includes** administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

B. **Related Sections:** The following Sections contain requirements that relate to the Section:

1. **Division 1 Section "Reference Standards and Definitions - Asbestos Abatement"** specifies the applicability of industry standards to products specified.

2. **Division 1 Section "Coordination - Asbestos Abatement"** specifies requirements for submitting the Contractor's Construction Schedule.

3. **Division 1 Section "Submittals - Asbestos Abatement"** specifies requirements for submitting the Submittal Schedule.

4. **Division 1 Section "Materials and Equipment - Asbestos Abatement"** specifies requirements governing the Contractor's selection of products and product options.

1.3 DEFINITIONS

A. **Definitions** in this Article do not change or modify the meaning of other terms used in the Contract Documents.

B. **Substitutions:** Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are considered to be requests for substitutions. The following are not considered to be requests for substitutions:

1. Substitutions requested during the bidding period, and

accepted by Addendum prior to award of the Contract, are included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.

2. Revisions to the Contract Documents requested by the Owner or Designer.
3. Specified options of products and construction methods included in the Contract Documents.
4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. **Conditions:** The Designer will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Designer. If the following conditions are not satisfied, the Designer will return the requests without action except to record noncompliance with these requirements.

1. Extensive revisions to the Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of the Contract Documents.
3. The request is timely, fully documented, and properly submitted.
4. The specified product or method of construction cannot be provided within the Contract Time.
5. The Designer will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
6. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
7. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsibilities may include compensation to the Designer for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.
8. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
9. The specified product or method of construction cannot be

provided in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.

10. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
11. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01632

SECTION 01701 - CONTRACT CLOSEOUT - ASBESTOS ABATEMENT

PART
1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. **This Section includes** administrative and procedural requirements for contract closeout including, but not limited to, the following:
1. Inspection procedures.
2. Project record document submittal.
3. Submittal of warranties.
4. Final cleaning.

B. **Closeout requirements** for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.

1.3 SUBSTANTIAL COMPLETION

A. **Preliminary Procedures:** Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.
   a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
   b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
2. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
3. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue And remove temporary facilities from the site, along with mockups, construction tools, and similar elements.

4. Complete final cleanup requirements, including touch up painting.
5. Touch up and otherwise repair and restore marred, exposed finishes.

B. **Inspection Procedures:** On receipt of a request for inspection, the Designer will either proceed with inspection or advise the Contractor of unfilled requirements. The Designer will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
   1. The Designer will repeat inspection when requested and assured that the Work is substantially complete.
   2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

A. **Preliminary Procedures:** Before requesting final inspection for certification of final acceptance and final payment, complete the following; list exceptions in the request.

   1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
   2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
   3. Submit a certified copy of the Designer's final inspection list of items to be completed or corrected, endorsed and dated by the Designer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Designer.
   4. Submit consent of surety to final payment.
   5. Submit a final liquidated damages settlement statement.

B. **Reinspection Procedure:** The Designer will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Designer.
   1. If the Work is incomplete, the Designer will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
   2. If necessary, reinspection will be repeated.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. **General:** The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 1 Section "Construction Facilities and Temporary Controls." The cleaning in this Section is in addition to cleaning which is part of decontamination work. This section is intended to return the facility to the Owner in presentable condition.

B. **Cleaning:** Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.

   a. Remove labels that are not permanent labels.
   b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials.
   c. Replace chipped or broken glass and other damaged transparent materials.
   d. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
   e. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
   f. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.

C. **Removal of Protection:** Remove temporary protection and facilities installed for protection of the Work during construction.

D. **Compliance:** Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF SECTION 01701

SECTION 01711 - PROJECT DECONTAMINATION

PART 1 - GENERAL

1.1 SUMMARY:

A. **Work of This Section** includes the decontamination of the Work Area which has been, or may have been, contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to friable asbestos-containing materials (ACM) in the space.

B. **Work of This Section** includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work, including:
   1. Critical Barriers erected by work of Section 01526
   2. Decontamination Unit erected by work of Section 01563

1.2 RELATED DOCUMENTS:

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

1.3 DESCRIPTION OF REQUIREMENTS:

A. **General:** Decontamination of the Work Area following asbestos abatement.

B. **If the asbestos abatement work is on undamaged and non-friable materials** the decontamination procedure is a two step procedure with two cleanings of the Primary Barrier plastic to remove contamination, thus preventing contamination of the building when the Work Area isolation barriers are removed.

1.4 RELATED WORK SPECIFIED ELSEWHERE:

A. **Removal of Gross Debris** is integral with the performance of abatement work and as such is specified in the appropriate work section(s) of these specifications:

   1. Section 02087 Resilient Flooring Removal - Aggressive Asbestos Abatement

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 START OF WORK:

A. **Previous Work:** During completion of the asbestos abatement work specified in other sections, the drop cloth polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the asbestos abatement work.

B. **Visual inspection:** Perform visual inspections of the work area along with the Project Administrator at each step of the decontamination process.

C. **Start of Work:** Work of this section begins with the cleaning of the Critical Barrier. At start of work the following will be in place:

1. Critical Barrier: An airtight barrier between the Work Area and other portions of the building or the outside.
2. Decontamination Units: For personnel and equipment in operating condition.

3.2 FIRST CLEANING:

A. **First Cleaning:** Carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Air (HEPA) filtered vacuum. (Note: A HEPA vacuum may fail if used with wet material.) Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.

3.3 FINAL CLEANING:

A. **Final Cleaning:** Carry out a final cleaning of all surfaces in the Work Area in the same manner as the previous cleaning.

B. **Contractor's Testing:** At the completion of the above cleaning visually inspect all surfaces. Reclean if any dust, debris, etc. is found. If any debris or dust is found repeat the final cleaning.

3.4 VISUAL INSPECTION:

A. **After Final Cleaning Perform a Complete Visual Inspection** of the entire Work Area.

B. **Temporary lighting:** Provide a minimum of 100 foot candles (1075 Lumens/sq meter) of lighting on all surfaces in the areas to be subjected to visual inspection. Provide hand held lights providing 150 foot candles (1600 lumen/sq meter) at 4 feet (1.25 meter) capable of reaching all locations in work area.

C. **Lifts:** Provide ladders, scaffolding, and lifts as required to provide access to all surfaces in the area to be subjected to visual inspection. Access is to allow touching of all surfaces.

3.5 REMOVAL OF WORK AREA ISOLATION:

A. **After all requirements of this section** have been met:
   1. Seal HEPA vacuums and similar equipment with 6 mil (0.15 mm) polyethylene sheet and duct tape to form a tight seal at intake end before being moved from Work Area.
   2. Remove Personnel Decontamination Unit.
   3. Remove the Critical Barriers separating the Work Area from the rest of the building. Remove any small quantities of residual material found upon removal of the plastic sheeting with wet wiping, HEPA filtered vacuum cleaners and local area protection.
   4. Remove all equipment, materials, debris from the work site.
   5. Dispose of all regulated asbestos-containing waste material (RACM) as specified in Section 02084 Disposal of Regulated Asbestos Containing Material.

3.6 SUBSTANTIAL COMPLETION OF ABATEMENT WORK:

A. **Asbestos Abatement Work is Substantially Complete** upon meeting the requirements of this section including submission of:
   1. Certificate of Visual Inspection
   2. Receipts Documenting proper disposal as required by Section 02084 Disposal of Regulated Asbestos-Containing Material.
   3. Punch list detailing repairs to be made and incomplete items.

3.7 CERTIFICATE OF VISUAL INSPECTION:

A. **Following this section is a "Certificate of Visual Inspection".** This certification is to be completed by the Contractor and certified by the Project Administrator. Submit completed Certificate with Application for Final Payment. Final payment will not be made until this Certification is executed.

END OF SECTION - 01711

ENVIRONMENTAL TESTING, INC.
ASBESTOS ABATEMENT
FINAL VISUAL INSPECTION CERTIFICATION

PROJECT NAME _____ ETI PROJECT # _____
PROJECT LOCATION
WORK AREA

NUMBER OF PRIOR VISUAL INSPECTIONS THAT FAILED _____
(Reason, if failed, can be found in the daily log)

CERTIFICATION OF VISUAL INSPECTION: In accordance with Section 01711 "Project Decontamination" the Contractor's Supervisor hereby certifies that he/she has visually inspected the Work Area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, Decontamination Unit, sheet plastic, etc.) and has found no dust, debris or residue.

The Project Designer, Project Manager, and the Project Monitor, based on thorough visual inspection of the work area, hereby verify that this inspection has been thorough and complete. To best of their knowledge and belief the above mentioned Supervisor's Certification is a true and honest one.

CONTRACTOR'S SUPERVISOR:
Signature _____ Date _____
Print Name _____ License # _____
Print Company _____

PROJECT DESIGNER:
Signature _____ Date _____
Print Name _____ License # _____
Print Company _____

PROJECT MANAGER:
Signature _____ Date _____
Print Name _____ License # _____
Print Company _____

PROJECT MONITOR:
Signature _____ Date _____
Print Name _____ License # _____
Print Company _____

SECTION 02081 - REMOVAL OF ASBESTOS-CONTAINING MATERIALS

PART
1 - GENERAL

1.1 RELATED DOCUMENTS:

A. **Drawings and general provisions of Contract**, including General and Supplementary Conditions and Division - 1 Specification Sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. **Worker Protection** requirements are set forth in Section 01560 Worker Protection - Asbestos abatement.

B. **Installation of Critical and Primary Barriers**, and Work Area Isolation Procedures are set forth in Section 01526 Temporary Enclosures.

C. **Project Decontamination** procedures after removal of the Secondary Barrier are specified in Section 01711 Project Decontamination.

D. **Disposal of asbestos-containing waste** is specified in Section 02084 Disposal of Regulated Asbestos-Containing Material.

1.3 SUBMITTALS:

A. **Before Start of Work** submit the following to the Designer.

1. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for the following:

a. Surfactants.

b. Encapsulants.

c. Solvents.

PART 2 - PRODUCTS:

2.1 MATERIALS

A. **Wetting Materials:** For wetting prior to disturbance of ACM use amended water:

B. **Amended Water:** Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with five gallons (19 liters) of water.

C. **Polyethylene Sheet:** A single polyethylene film in the largest sheet size practicable to minimize seams, 6.0 mil (0.15 mm) thick clear, frosted, or black as indicated.

D. **Polyethylene Sheet:** As necessary and/or specified, provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil (0.15 mm) thick frosted or black as indicated.

E. **Duct Tape:** Provide duct tape in 2 inch or 3 inch (50mm or 75 mm) widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

F. **Spray Cement:** Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

G. **Disposal Bags:** Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags labeled as required by Section 02084 Disposal of Regulated Asbestos Containing Material.

H. **Fiberboard Drums:** Provide heavy duty leak tight fiberboard drums with tight sealing locking metal tops.

I. **Paper board Boxes:** Provide heavy duty corrugated paper board boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.

J. **Felt:** Standard felt approximately 1/16 inch (1.6 mm) thick and 36 inches (900 mm) to 72 inches (1800 mm) in width.

PART 3 - EXECUTION

3.1 SECONDARY BARRIER:

A. **Secondary Barrier:** Over the Primary Barrier, install as a drop cloth a clear 6 mil (0.15 mm) sheet plastic in all areas where asbestos removal work is to be carried out. Completely cover floor with sheet plastic. Where the work is within 10 feet (3 m) of a wall extend the Secondary Barrier up wall to ceiling. Support sheet plastic on wall with duct tape, seal top of Secondary plastic to Primary Barrier with duct tape so that debris is unable to get behind it. Provide cross strips of duct tape at wall support as necessary to support sheet plastic and prevent its falling during removal operations.

1. **Install Secondary Barrier** at the beginning of each work shift. Install only sufficient plastic for work of that shift.

2. **Remove Secondary Barrier** at end of each work shift or as work in an area is completed. Fold plastic toward center of sheet and pack in disposal bags. Keep material on sheet continuously wet until bagged.

3. **Install Walkways** of black 6 mil (0.15 mm) plastic between active removal areas and decontamination units to protect Primary Layer from tracked material. Install walkways at the beginning of, and remove at the end of, each work shift.

3.2 WORKER PROTECTION:

A. **Before beginning work** with any material for which a Material Safety Data Sheet has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

3.3 WET REMOVAL:

A. **Thoroughly wet** ACM to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for amended water to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. Perforate outer covering of any installation which has been painted and/or jacketed in order to allow penetration of amended water or use injection equipment to wet material under the covering. Where necessary, carefully strip away while simultaneously spraying amended water on the

installation to minimize dispersal of asbestos fibers into the air.

1. **Mist work area continuously** with amended water whenever necessary to reduce airborne fiber levels.

2. **Remove saturated ACM** in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to Wash Down Station adjacent to Material Decontamination Unit.

3. **Evacuate air from disposal bags** with a HEPA filtered vacuum cleaner before sealing.

B. **Pipe Insulation:** Spray with a mist of amended water. Allow amended water to saturate material to substrate. Cut bands holding preformed pipe insulation, slit jackets at seams, remove and hand-place in a disposal bag. Remove job-molded fitting insulation in chunks and hand place in a disposal bag. Do not drop to floor. Remove any residue on pipe or fitting with stiff bristle nylon hand brush. In locations where pipe fitting insulation is removed from pipe with straight runs insulated with fibrous glass or other non-asbestos-containing fibrous material, remove fibrous material 6" (150 mm) from the point where it contacts the asbestos-containing insulation.

1. **Warning Signs:** Post warning signs at the entry point to active electrical equipment as required by OSHA or other applicable regulation.

2. **Protective Equipment:** Provide workers working on or in the vicinity of active electrical with appropriate protective equipment including insulating gloves, boots, and non-conductive tools.

3. **Work Procedures:** Perform removal work using "Localized Control of Material Release" and "Local Ventilation and Collection System" procedures described below.

3.4 LOCALIZED CONTROL OF MATERIAL RELEASE:

A. **Pipe Insulation:** HEPA vacuum surface of pipe insulation. Cut bands holding preformed pipe insulation, slit jackets at seams while holding HEPA vacuum under cut, remove and hand-place in a disposal bag. Remove job-molded fitting insulation in chunks, using nozzle of HEPA vacuum to collect debris

generated, and hand-place in a disposal bag. Do not drop to floor. Remove any residue on pipe or fitting with wire brush. Brushing toward the nozzle of a HEPA vacuum. In locations where pipe fitting insulation is removed from pipe with straight runs insulated with fibrous glass or other non-asbestos-containing fibrous material, remove fibrous material 6 inches (150 mm) from the point where it contacts the asbestos-containing insulation. Use a two worker crew for work, with one worker removing material and one worker holding the nozzle of a HEPA vacuum in the location of disturbance.

3.5 LOCAL VENTILATION AND COLLECTION SYSTEM:

A. **Provide local ventilation and collection systems** as described below for each area where amosite or dry ACM is being removed or otherwise disturbed:

1. **Provide HEPA filtered fan units in addition** to those required by section 01513, in the vicinity of the work. Arrange so that the units exhaust into the Work Area oriented in a direction away from the work. Extend a 12 inch (300 mm) diameter flexible non-collapsing duct from the intake end to a point no more than 4 feet (1200 mm) from any scraping or wire brushing activity.

2. **Locate intake** of duct so that air flow is horizontally and slightly downward into intake. Replace primary filters on HEPA filtered fan units at an interval of no greater that 30 minutes. Allow no more than one scraping or wire brushing activity per fan unit.

B. **Pipe Insulation - Glove-bag Removal:** Remove ACM inside containment using glove bag according to the following procedure:

1. Use at least two persons to perform glovebag removal operations.
2. Use each glovebag only once

3. Do not move glovebag once it has been mounted in place.

4. Do not use glovebag on surface whose temperature exceeds 150°F (65.6°C).

5. Check materials adjacent to locations where glovebag will be installed. Wrap damaged (broken lagging, hanging, etc.), loose or friable material in 2 layers of 6 mil

(0.15 mm) plastic and "candy-stripe" with duct tape, or render material intact by some other method. Place one layer of duct tape around undamaged pipe at each location where the glove bag will be attached.

6. Slit top of the glove bag open (if necessary) and cut down the sides to accommodate the size of the pipe (about two inches longer than the pipe diameter) and allow additional so that the top of the glove bag will be clear of the pipe after installation.

7. Place necessary tools into pouch located inside glove bag. This will usually include: bone saw, utility knife, rags, scrub brush, wire cutters, tin snips and pre-wetted cloth.

8. Place a strip of duct tape along both edges of the open top slit of glove bag for reinforcement.

9. Place the glove bag around section of pipe to be worked on and staple top together through reinforcing duct tape. Staple down sides approximately 6 inches so that top of the glove bag is clear of pipe. Seal top and sides with duct tape. Next, duct tape the ends of glove bag to pipe itself, where previously covered with plastic or duct tape.

10. Install glovebag so that it completely covers the circumference of pipe or other structures where the work is to be done.

11. Use smoke tube and aspirator bulb to test seal. Place tube into water sleeve (two-inch opening to glove bag) squeezing bulb and filling bag with visible smoke. Remove smoke tube and twist water sleeve closed. While holding the water sleeve tightly, gently squeeze glove bag and look for smoke leaking out, (especially at the top and ends of the glove bag). If leaks are found, tape closed using duct tape and re-test.

12. Insert wand from garden sprayer through water sleeve. Duct tape water sleeve tightly around the wand to prevent leakage.

13. Thoroughly wet material to be worked on with amended water or removal encapsulant and allow to soak in. Wet adequately to penetrate and soak material through to substrate.

14. One person places their hands into the long-sleeved gloves while the second person directs garden sprayer at the work.

15. Use bone saw, if required, to cut insulation at each end of the section to be removed. A bone saw is a serrated heavy gauge wire with ring-type handles at each end. Throughout this process, spray amended water or removal encapsulant on the cutting area to keep dust to a minimum.

16. Remove insulation using putty knives or other tools. Place pieces in bottom of bag without dropping.

17. Rinse all tools with water inside the bag and place back into pouch.

18. Using scrub brush, rags and water, scrub and wipe down the exposed pipe.

19. Thoroughly wash and wipe down interior of glovebag to a point below the location where the bag will be twisted and taped to seal waste in bottom of bag.

20. Remove water wand from water sleeve and attach the small nozzle from HEPA-filtered vacuum. Turn on the vacuum only briefly to collapse the bag.

21. Remove the vacuum nozzle, twist water sleeve closed and seal with duct tape.

22. From outside the bag, pull the tool pouch away from the bag. Place duct tape over twisted portion and then cut the tool bag from the glove bag, cutting through the twisted/taped section. Contaminated tools may then be placed directly into next glove bag without cleaning. Alternatively, tool pouch with the tools can be placed in a bucket of water, opened underwater, and tools cleaned and dried. Discard rags and scrub brush with asbestos waste.

23. With removed insulation in the bottom of the bag, twist the bag several times and tape it to seal material in the bottom during removal of the glove bag from the pipe.

24. Slip a 6 mil (0.15 mm) disposal bag over the glove bag (still attached to the pipe). Remove tape or cut bag and open the top of the glove bag and fold it down into disposal bag.

25. Clean all surfaces in the Work Area using disposable cloths wetted with water with surfactant added. When these surfaces have dried, clean with a HEPA filtered vacuum.

26. Collapse the bag with a HEPA vacuum twist top of bag, seal with at least 3 wraps of duct tape, bend over and seal again with at least 3 wraps of duct tape.

END OF SECTION - 02081

SECTION 02084 - DISPOSAL OF REGULATED ASBESTOS-CONTAINING MATERIAL

PART
1 - GENERAL

1.1 RELATED DOCUMENTS:

A. **Drawings and general provisions of Contract**, including General and Supplementary Conditions and Division-1 Specification Sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. **Worker protection requirements** are set forth in Sections 01560 Worker Protection - Asbestos abatement

B. **Section 01098 Codes, Regulations and Standards - Asbestos Abatement** describes applicable federal, state and local regulations.

1.3 DESCRIPTION OF THE WORK:

A. **This section describes the disposal of Regulated Asbestos-Containing Materials (RACM).** Disposal includes packaging of Regulated Asbestos-Containing Materials. Disposal must be accomplished by land filling.

1.4 SUBMITTALS:

A. **Before Start of Work:** Submit the following.

1. **Copy of state or local license** for waste hauler.

2. **Name and address of landfill** where Regulated Asbestos Containing Materials are to be buried. Include contact person and telephone number.

B. **On a weekly basis** submit copies of all manifests and disposal site receipts to Designer.

C. **Waste Shipment Record:** Maintain a waste shipment record as required by the NESHAP regulation which indicates the waste generator, transporter, and disposal site, and which describes the nature, size, type of container, and form of asbestos

waste. Submit to Designer within 35 days of departure from building.

PART 2 - PRODUCTS:

2.1 MATERIALS

A. **Disposal Bags:** Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags labeled with three labels with text as follows:

1. **First Label:** Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE FIBERS IS
HAZARDOUS TO YOUR HEALTH

2. **Second Label:** Provide in accordance with U. S. Department of Transportation regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances

RQ-ASBESTOS WASTE
CLASS 9
NA2212-PG III

3. **Third Label:** Provide the name of the waste generator (Owner's name), the location from which the waste was generated and the names and addresses of the contractor and transporter. This label must be durable, able to repel dirt and moisture (e.g., permanent marker). Label must be placed directly on disposal bag(s) in a legible format.

PART 3 - EXECUTION

3.1 SEQUENCE

A. **Comply with the following sections** during all phases of this work:

1. **Section 01560** Worker Protection - Asbestos Abatement

2. **Section 01562** Respiratory Protection

3.2 GENERAL:

A. **All waste** is to be hauled by a waste hauler with all required licenses from all state and local authority with jurisdiction. See attached State of Delaware Asbestos Policy and Procedures for disposal of Asbestos-containing Material.

Note: Asbestos (Hazardous Material): Contractor is herewith reminded that under Federal Regulation 49 CFR Part 172 (Department of Transportation Regulations) which went into effect on September 30, 1991, asbestos is considered a hazardous substance (49 CFR Part 172.101 - Hazardous Substance Materials Table). Under the same regulations (49 CFR Part 172.560) hazardous materials placards are required. In compliance with the above, any motor vehicle in which these materials are transported must be operated by a person that has acquired a Commercial Drivers License (CDL) in compliance with DOT.

B. **Liquid waste:** Mix all liquid asbestos-containing waste or asbestos contaminated waste with a bladeable material so that it forms a bladeable (non-liquid) form, and have the concurrence of the landfill operator prior to disposal.

C. **Load all adequately wetted Regulated Asbestos-Containing Material** in disposal bags or leak-tight containers. All materials are to be contained in one of the following

1. **Two 6 mil (0.15 mm) disposal bags** or

2. **Two 6 mil (0.15 mm) disposal bags and a fiberboard drum** or

3. **Sealed steel drum** with no bag

D. **Protect interior of truck** or dumpster with Critical and Primary Barriers as described in Section 01526 Temporary Enclosures.

E. **Carefully load containerized waste** in fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.

F. **Warning Signs:** During loading and unloading mark dumpsters, receptacles and vehicles with a sign complying with

requirements of the EPA NESHAP regulation (40 CFR Part 61), in a manner and location that a person can read the following legend :

DANGER
ASBESTOS DUST HAZARD
CANCER AND LUNG DISEASE HAZARD
Authorized Personnel Only

G. **Do not store containerized materials outside of the Work Area.** Take containers from the Work Area directly to a sealed truck or dumpster.

H. **Do not transport disposal bagged materials on open trucks.** Label drums with same warning labels as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as Regulated Asbestos-Containing Material and dispose of in accordance with this specification.

I. **Advise the landfill** operator or processor, at least 24 hours in advance of transport, of the quantity of material to be delivered.

J. **At disposal site** unload containerized waste:

1. **At a disposal site,** sealed plastic bags may be carefully unloaded from the truck. If bags are broken or damaged, return to work site for rebagging. Clean entire truck and contents using procedures set forth in section 01711 Project Decontamination.

K. **Retain receipts from landfill** or processor for materials disposed of.

L. **At completion of hauling** and disposal of each load submit copy of waste manifest, chain of custody form, and landfill receipt to Designer.

END OF SECTION - 02084

SECTION 02087 - RESILIENT FLOORING REMOVAL - AGGRESSIVE ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. Asbestos abatement project requirements to be completed prior to start of the work of this section are set forth in the following sections:

1. 01503 Temporary Facilities - Asbestos Abatement
2. 01513 Temporary Pressure Differential & Air Circulation System
3. 01526 Temporary Enclosures - Complete Work Except Delete Floor Plastic.
4. 01560 Worker Protection - Asbestos abatement
5. 01562 Respiratory Protection
6. 01563 Decontamination Units

B. Asbestos abatement project requirements to be completed at completion of the work of this section are set forth in the following sections:

1. 01711 Project Decontamination

1.3 SUBMITTALS:

A. **Before Start of Work** submit the following.

1. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for all materials proposed for use on the work including:
   a. Surfactants.
   b. Adhesive Removal Solvents.

PART 2 - PRODUCTS

2.1 MATERIALS

A. **Wetting Materials:** For wetting prior to disturbance of asbestos-containing materials use:
   1. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the asbestos-containing material (ACM) and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50 percent polyoxy-ethylene ether mixed with five gallons (19 liters) of water.

   2. Dishwashing detergent that contains anionic, nonionic, and amphoteric surfactants.

B. **Foam or Viscous Liquid:** Provide material that contains no organic materials, is non-flammable, presents no physical hazard due to reactivity, presents no acute or chronic health hazard, and does not require special skills, knowledge, or equipment for application.

C. **Tile Adhesive Removal Solvent:** Provide a slow drying solvent intended to remove tile adhesive. Provide material that is not flammable, does not create combustible vapors and has no significant inhalation hazard.
   1. Provide materials that have less than 250 g/l of volatile organic solvents (VOCs).

D. **Polyethylene Sheet:** A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mil (0.15 mm) thick, clear, frosted, or black as indicated.

E. **Duct Tape:** Provide duct tape in 2 inch or 3 inch (50 or 75 mm) widths as indicated, with an adhesive formulated for use on sheet polyethylene.

F. **Spray Cement:** Provide, in aerosol cans, spray adhesive which is formulated for use on sheet polyethylene. Provide materials that do not contain methylene chloride.

G. **Disposal Bags:** Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags labeled as required by Section 02084 Disposal of Regulated Asbestos-Containing Material.

H. **Fiberboard Drums:** Provide heavy duty leak-tight fiberboard drums with tight sealing locking metal tops.

I. **Steel Drums:** Provide leak-tight steel drums with tight-sealing locking metal tops.

J. **Injection Molded Plastic Drums:** Provide leak-tight injection-molded plastic drums with tight sealing locking tops.

K. **Paper board Boxes:** Provide heavy-duty corrugated paperboard boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.

L. **Polyethylene Boxes:** Provide heavy-duty polyethylene boxes. Provide leak-tight boxes or boxes in sizes that will easily fit in disposal bags.

2.2 PRIMARY RESILIENT FLOORING REMOVAL EQUIPMENT

A. **Manual Spades:**

1. Hand operated scraper/chisels with long handles and replaceable blades for removal of resilient flooring.

2. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

a. Crain Cutter Co., Inc. — Various manual scrapers/strippers
156 So. Milpitas Blvd.
Milpitas, CA 95035
408-946-6100

b. Beno J. Gundlach Company — Various manual scrapers/strippers
P.O. Box 544
Belleville, IL 62222
618-233-1781

c. Roofing Equipment, Inc. — Taylor Tools "Spud Bar" and other manual scrapers/strippers
11075 East 47th Avenue
Denver, CO 80239
303-371-7667

d. Red Devil, Inc. — "The Slam Scraper"
2400 Vauxhall Road

Union, NJ 07083-1933
201-688-6900 or 800-4-A-DEVIL

PART 3 - EXECUTION

3.1 RESILIENT FLOOR COVERINGS:

A. **Pre-requisite activities:** Before starting removal of ACM using the procedures of this section complete work of the following sections:
   1. 01503 Temporary Facilities - Asbestos Abatement
   2. 01513 Temporary Pressure Differential & Air Circulation System
   3. 01526 Temporary Enclosures - Complete work except delete floor plastic.
   4. 01560 Worker Protection - Asbestos abatement
   5. 01562 Respiratory Protection
   6. 01563 Decontamination Units

B. **Preparation:** Prior to beginning the removal of any resilient floor covering complete the following:
   1. Remove appliances and furniture from the work area.
   2. Mix a detergent solution (16 ounces (0.5 liters) of liquid dishwashing detergent to 1 gallon (4 liters) of warm water) and pour into a garden sprayer.

C. **Seal Floor Penetrations:** Before using wet methods to remove resilient flooring, seal openings, and penetrations in the floor to prevent water leakage.

D. **Remove Resilient Flooring:** Use the three step process described in the following sections:
   1. First Step: "Removal of Resilient Tile Floor Covering"
   2. Second Step: "Removal of Heavy Residue of Adhesive" by hand scraping and mastic solvent.
   3. Third Step: "Removal of Adhesive Residue." After completion of the first two steps there will be a thin residue of adhesive left on the floor. This is removed using a additional applications of mastic solvent.
   4. At the completion of all work, leave the substrate in such a state as to comply with all requirements and recommendations of manufacturer of replacement flooring.

3.2 STEP ONE REMOVAL OF RESILIENT TILE FLOOR COVERING:

A. Remove resilient tile floor covering using the following procedure:

1. General:
   a. Remove binding strips or other restrictive molding from doorways, walls, etc. clean and dispose of as non-asbestos waste. Dispose of any materials that have glue or floor mastic on them as asbestos-containing waste.
2. Wet Floor:
   a. Wet floor with amended water, or detergent solution, so that entire surface is wet. Do not allow to puddle or run off to other areas. Cover with sheet polyethylene to allow humidity to release tile from floor. Allow time for humidity and water to loosen tiles prior to removal.
   b. Keep floor continuously wet throughout removal operation.
   c. Remove tiles using a manual spade. Continuously mist floor in area. Wet any debris generated as necessary to keep continuously wet. Keep floor where tile has been removed continuously wet until after completion of heavy adhesive residue removal.

B. Debris and Waste

1. Dispose of all friable materials in accordance with Section 02084 Disposal of Regulated Asbestos containing Material . Dispose of Category I non-friable waste in accordance with State and Local Regulations.
2. Pick up whole tiles, stack, place in boxes or wrap in felt, and place in labeled disposal bags. At the Contractor's option tiles may be placed directly into durable leak-tight containers.
3. Shovel broken tiles and debris into cardboard boxes that are placed in a disposal bag, or place directly in steel leak-tight drums.
4. Place bagged waste in a second disposal bag during decontamination and dispose of waste as required by Section 02084 Disposal of Regulated Asbestos-Containing Material.

3.3 STEP TWO - REMOVAL OF HEAVY RESIDUE OF ADHESIVE (if ACM):

A. Remove the heavy residue of adhesive left after removal of resilient tile flooring using the following procedure. If the residual adhesive is sufficiently thin that a slurry removal

can effectively remove the mastic, this step may be skipped and step three started.

1. Dampen Floor
   a. Dampen floor by misting with amended water, or detergent solution so that entire surface is wet. Do not allow to puddle or run off to other areas.
   b. Keep floor continuously damp throughout removal operation.
2. Adhesive Removal:
   a. Begin removal at a point farthest from the entrance to the work area. Work of this step may proceed concurrently with work of removal of tile.
   b. Remove heavy residue of adhesive backing using a mastic removal solvent.
3. Disposal and Debris
   a. Dispose of all friable materials in accordance with Section 02084 Disposal of Regulated Asbestos containing Material . Dispose of Category I non-friable waste in accordance with State and Local Regulations.
   b. Pick up scrapings and debris and deposit in a disposal bag or closed impermeable container and dispose of as required by Section 02084 Disposal of Regulated Asbestos-Containing Waste
4. Wet vacuum standing water with HEPA wet/dry vacuum.
5. Mop floor with amended water, or liquid detergent solution to remove all debris and residue.
6. Start in the corner of the room farthest from the entrance door and moisten an area of the adhesive approximately 3 by 10 feet (1 m by 3 m) with amended water, or detergent solution. Wet scrape with a stiff-bladed wall or floor scraper removing ridges and any loose adhesives until only a thin smooth film remains. Where deposits are heavy or difficult to scrape, heat with a hot-air blower prior to scraping.
   a. Dispose of all friable materials in accordance with Section 02084 Disposal of Regulated Asbestos Containing Material. Dispose of Category I non-friable waste in accordance with State and Local Regulations.
7. Wet vacuum standing water with HEPA wet/dry vacuum.
8. Mop floor with amended water, or liquid detergent solution to remove all debris and residue.
9. Continue the above steps until the adhesive is sufficiently reduced in thickness that it can be effectively removed with shot/bead blast equipment.

3.4 STEP THREE - REMOVAL OF ADHESIVE RESIDUE (if ACM):

A. After removal of resilient flooring and any heavy residue of adhesive, mastic, or backing material, in the previous step, remove all residue of adhesive from the floor using the following procedure:

1. Allow floor to dry after completion of the wet removal procedures used in previous steps.
2. Begin removal at a point farthest from the entrance to the work area.
3. Remove adhesive residue by mastic removal solvent.

3.5 ADHESIVE SOLVENT:

A. **Adhesive:** Remove adhesive residue by using adhesive removal solvents. Use solvents in accordance with manufacturers' instructions. Saturate adhesive with removal solvent and allow adhesive to soften. Remove by scraping, wet sanding, or wet scrub with floor cleaning machine with abrasive pad. Provide worker protection as required by material safety data sheet (MSDS) for any material used.

1. Mop floor with removal solvent as required by manufacturer's directions as required to completely remove all residue of adhesive.
2. Clean Floor after completion of removal of ACM by wet mopping with amended water. Mop three times allowing a drying time between each mopping.
3. Dispose of all rags, plastic sheet, etc. in accordance with requirements of Section 02084 "Disposal of Regulated Asbestos-Containing Material".

B. **Decontaminate Equipment:** After the completion of all work, decontaminate all equipment and machinery used for work of this section. Accomplish decontamination as required by the section on Project Decontamination.

3.6 WORK AREA CLEARANCE:

A. After completion of all resilient flooring and adhesive removal work and prior to removal of critical barriers, decontamination units, and shut down of pressure differential and ventilation system; complete project decontamination and clearance in accordance with section 01711 "Project Decontamination."

SECTION 02087-RESILIENT FLOORING REMOVAL - AGGRESSIVE ASBESTOS ABATEMENT

END OF SECTION 02087

APPENDIX A-1

LICENSES AND CERTIFICATIONS

LICENSE NO. 1989030609 DORBL

POST CONSPICUOUSLY

STATE OF DELAWARE
DIVISION OF REVENUE

VALID
01/01/17 - 12/31/19
NOT TRANSFERABLE

DLN: 17 60095 35

BUSINESS CODE 099
GROUP CODE 007

LICENSED ACTIVITY PROFESSIONAL AND/OR PRSL SRVCS-UNCLASSIFIED
PROFESSIONAL AND/OR PERSONAL SERVICES

2019

DATE ISSUED: 01/13/17

VALIDATED

LICENSE FEE: $ 225.00

BUSINESS LICENSE

MAILING ADDRESS

ENVIRONMENTAL TESTING INC
PO BOX 138
MIDDLETOWN DE 19709-0138

BUSINESS LOCATION

ENVIRONMENTAL TESTING INC
100 S CASS ST
MIDDLETOWN DE 19709-1354

IS HEREBY LICENSED TO PRACTICE, CONDUCT OR ENGAGE IN THE OCCUPATION OR BUSINESS ACTIVITY INDICATED ABOVE IN ACCORDANCE WITH THE LICENSE APPLICATION DULY FILED PURSUANT TO TITLE 30, DEL CODE.

DAVID GREGOR
DIRECTOR OF REVENUE

IMPORTANT - TEAR AT ABOVE PERFORATION AND DISPLAY IN A PUBLIC LOCATION

Federal E.I. No. or Social Security Number 1 51030 9546 001

Business Code 099
Group Code 007

Licensed Activity PROFESSIONAL AND/OR PRSL SRVCS-UNCLASSIFIED
PROFESSIONAL AND/OR PERSONAL SERVICES

The State of Delaware Business License printed above must be posted in a public area at the location address listed. If you have any questions regarding this license, please call (302) 577-8778.

REPLACEMENT LICENSES

Keep this portion of your license separate, in case you need a replacement for any lost, stolen or destroyed license. A $15 fee will be charged for the replacement of a license. Send the $15 along with a copy of this form or provide your Federal Employer Identification Number, or Social Security Number, suffix, Business Code, Business Name and address to Delaware Division of Revenue, Attn.: Business Master File, PO Box 8750, Wilmington, DE 19899-8750. You will receive your replacement license within three to four weeks.

OTHER IMPORTANT INFORMATION

Most licensees are also required to pay either gross receipts or excise taxes in addition to the license fee. You can file these taxes online or obtain a paper form from our website at www.revenue.delaware.gov. You must **submit all business tax returns** filed with the Division of Revenue **under the same identification number.** If you are a sole-proprietor, and have a federal employer identification number, use the employer identification number, not your social security number. Only sole proprietors with no employees are allowed to file under their social security number. Inquiries regarding your coupon booklets to pay withholding, corporate tentative, and Sub Chapter "S" estimated taxes, or to make changes to your name, address, or identification number, should be directed to the Business Master File Unit at **(302) 577-8778.**

INTERNET SITE

The Division of Revenue web address is: www.revenue.delaware.gov. Visit our web site for tax tips, links to telephone numbers, forms that you can download, links to other State agencies, the Delaware Code, the publication "Delaware Guide for Small Business" and lots more. Internet filing of personal income tax returns via the Division of Revenue's website is available. Internet filing for Withholding, Gross Receipts and Corporate Tentative payments is also available.

STATE OF DELAWARE

THIS CERTIFIES THAT

Environmental Testing, Inc.

Has satisfactorily completed the requirements prescribed by the Office of Management & Budget as a Asbestos Abatement Professional Service Firm this

Nineteenth Day of April Two Thousand Nineteen

This certification is valid for one (1) year to perform asbestos services within the State of Delaware.

This certification shall be proof that the above named Contractor has met the minimum requirements established by the State of Delaware for temporary certification. It is not intended as an overall endorsement of the Contractor's ability to provide services of varying size and shape. It does not endorse the methods and types of respiratory protection used by the Contractor.

Contractor's Address: 100 S. Cass St
Middletown, DE 19709

Expiration Date: April 19, 2020

Certification Number: PS-007

Director
Division of Facilities Management

AEROSOL MONITORING & ANALYSIS, INC.

This is to certify that

GARY A. HAYES

has met the attendance requirements and successfully completed the course entitled

1-DAY EPA ASBESTOS PROJECT DESIGNER REFRESHER

For Accreditation Under TSCA Title II

04/22/2019	04/22/2019	4/22/2020	MIKE DRABO
Course Date	***Exam Date***	***Expiration Date***	***Principal Instructor***
APDR04222019-8	VAAPDR04222019-8		E. Rush Barnett
Certification No.	***Virginia Certification No.***		***Course Director***

1331 Ashton Road *P.O.Box 646* *Hanover, MD 21076* *P: 410-684-3327* *F: 410-684-3724*

www.amatraining.com

AEROSOL MONITORING & ANALYSIS, INC.

This is to certify that

GARY A. HAYES

has met the attendance requirements and successfully completed the course entitled

1-DAY EPA ASBESTOS INSP/MGMT PLANNER REFRESHER

For Accreditation Under TSCA Title II

12/28/2018	12/28/2018	12/28/2019	DAVID TRUMAN	David Truman
Course Date	**Exam Date**	**Expiration Date**	**Principal Instructor**	
AIMPR12282018-1	VAAIMPR12282018-1		E. Rush Barnett	E. Rush Barnett
Certification No.	**Virginia Certification No.**		**Course Director**	

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AEROSOL MONITORING & ANALYSIS, INC.

This is to certify that

ARIC CHAROWSKY

has met the attendance requirements and successfully completed the course entitled

4-HOUR EPA ASBESTOS INSPECTOR REFRESHER

For Accreditation Under TSCA Title II

04/11/2019	04/11/2019	4/11/2020	DAVID TRUMAN	David Truman
Course Date	**Exam Date**	**Expiration Date**	**Principal Instructor**	
AIR04112019-4	VAAIR04112019-4		E. Rush Barnett	E. Rush Barnett
Certification No.	**Virginia Certification No.**		**Course Director**	

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United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200844-0

Eurofins EMLab P&K

Marlton, NJ

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2019-10-01 through 2020-09-30

Effective Dates

DEPARTMENT OF COMMERCE · UNITED STATES OF AMERICA

For the National Voluntary Laboratory Accreditation Program

National Voluntary
Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Eurofins EMLab P&K
3000 Lincoln Drive East, Suite A
Marlton, NJ 08053
Mrs. Claudia Palermo
Phone: 856-334-1002 Fax: 856-334-1040
Email: cpalermo@emlabpk.com
http://www.emlab.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 200844-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

For the National Voluntary Laboratory Accreditation Program

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101848-0

Environmental Testing, Inc.

Middletown, DE

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2018-10-01 through 2019-09-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Environmental Testing, Inc.
100 South Cass Street
P.O. Box 138
Middletown, DE 19709-0138
Mr. Gary Hayes
Phone: 302-378-5341 Fax: 302-378-9882
Email: ghayes@eti-del.com
http://www.eti-del.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101848-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

For the National Voluntary Laboratory Accreditation Program

APPENDIX A-2

SAMPLE DATA

EMLab P&K
A TestAmerica Company

Report for:

Gary Hayes
Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709

Regarding: Project: 18-123; Everett Meredith - Exterior Excavation (Vapor Check)
EML ID: 2213350

Approved by:

Approved Signatory
Balu Krishnan

Dates of Analysis:
Asbestos PLM: 07-26-2019

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

EMLab P&K
3000 Lincoln Drive East, Suite A, Marlton, NJ 08053
(866) 871-1984 Fax (856) 334-1040 www.emlab.com

Client: Environmental Testing, Inc.
C/O: Gary Hayes
Re: 18-123; Everett Meredith - Exterior Excavation (Vapor Check)

Date of Sampling: 07-23-2019
Date of Receipt: 07-25-2019
Date of Report: 07-26-2019

ASBESTOS PLM REPORT

Total Samples Submitted:	2
Total Samples Analyzed:	2
Total Samples with Layer Asbestos Content > 1%:	1

Location: 07231918-123-01B, Foundation Vapor Barrier Lab ID-Version‡: 10518288-1

Sample Layers	Asbestos Content
Black Tar with Brown Residue	ND
Sample Composite Homogeneity:	Good

Location: 07231918-123-02B, Black Mastic Vapor Barrier Lab ID-Version‡: 10518289-1

Sample Layers	Asbestos Content
Black Tar with Brown Residue	4% Chrysotile
Sample Composite Homogeneity:	Good

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY
www.EMLabPK.com

EMLab P&K

ASBESTO

00221350

REQUESTED SERVICES

CONTACT INFORMATION

PROJECT INFORMATION

TURN AROUND TIME CODES (TAT)

STD

ND

SD

Sample ID	Description	Sample Type	TAT	Total Volume	Notes

SAMPLE TYPE CODES

A	W
B	F
D	R
SO	O

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME

EMLab P&K
A TestAmerica Company

Report for:

Gary Hayes
Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709

Regarding: Project: Appoquinimink School District; Pre-demolition Sampling
EML ID: 2194438

Approved by:

Approved Signatory
Balu Krishnan

Dates of Analysis:
Asbestos PLM: 07-03-2019

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

EMLab P&K
3000 Lincoln Drive East, Suite A, Marlton, NJ 08053
(866) 871-1984 Fax (856) 334-1040 www.emlab.com

Client: Environmental Testing, Inc.
C/O: Gary Hayes
Re: Appoquinimink School District; Pre-demolition Sampling

Date of Sampling: 06-27-2019
Date of Receipt: 06-28-2019
Date of Report: 07-03-2019

ASBESTOS PLM REPORT

Total Samples Submitted:	1
Total Samples Analyzed:	1
Total Samples with Layer Asbestos Content > 1%:	0

Location: 01, EMMS-Gym Floor Mastic

Lab ID-Version‡: 10425471-1

Sample Layers	Asbestos Content
Brown Semi-Fibrous Material	ND
Black Mastic	ND
Composite Non-Asbestos Content:	80% Cellulose
Sample Composite Homogeneity:	Good

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY
www.EMLabPK.com

EMLab P&K

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Phoenix, AZ [illegible] (800) 651-4802
SSF, CA [illegible] (888) 888-8854

ASBESTOS

00219443 8

REQUESTED SERVIC

VOC Air	PCM Bulk				Bulk & Soil		Other Materials	

CONTACT INFORMATION

PROJECT INFORMATION

TURNAROUND TIME CODES (TAT)

STD

ND

SD

Sample ID	Description	Sample Type	TAT	Total Volume	Notes

SAMPLE TYPE CODES		RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
A	W				
B	T				
D	R				
SD	O				

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BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

ETI
Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
Fax: (302) 378-9882

CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	07/16/2018
ADDRESS:	313 South Fifth Street	DATE RECEIVED:	07/18/2018
CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	07/18/2018
CONTACT:	Robert Hershey	REPORT DATE:	07/18/2018
PROJECT:	PLM Analysis		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School, 504 South Broad Street, Middletown, DE		
COLLECTED BY:	CMC		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805416-001	Gym, SW Ceiling Area					
071618-123-1B	LAYER 1 Duct Insulation - coating, White, Non-homogeneous, Resinous, Non-Friable, 23°C	LAYER 1 100%	None Detected		Calcite Other Non-Fibrous Material	15% 85%
	LAYER 2 Duct Insulation - fabric, White, Non-homogeneous, Fibrous, Non-Friable, 23°C	LAYER 2 100%	None Detected		Cellulose Fiber	100%
	LAYER 3 Duct Insulation, Yellow, Non-homogeneous, Resinous, Friable, 23°C	LAYER 3 100%	None Detected		Fibrous Glass	100%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805416-002	Gym, SW Ceiling Area					
071618-123-2B	LAYER 1 Duct Insulation - fabric, White, Non-homogeneous, Fibrous, Non-Friable, 23°C	LAYER 1 100%	None Detected		Fibrous Glass Cellulose Fiber Metal Foil	20% 70% 10%
	LAYER 2 Duct Insulation, Yellow, Non-homogeneous, Resinous, Friable, 23°C	LAYER 2 100%	None Detected		Fibrous Glass	100%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805416-003	Storage Building Exterior					
071618-123-3B	Window Caulk, Grey, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	Chrysotile	2%	Binder/Filler	98%
	Asbestos Present: Yes	**Total % Asbestos:**		2.0%	**Total % Non-Asbestos:**	98.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

ETI
Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
Fax: (302) 378-9882

CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	07/16/2018
ADDRESS:	313 South Fifth Street	DATE RECEIVED:	07/18/2018
CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	07/18/2018
CONTACT:	Robert Hershey	REPORT DATE:	07/18/2018
PROJECT:	PLM Analysis		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School, 504 South Broad Street, Middletown, DE		
COLLECTED BY:	CMC		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805416-004 071618-123-4B	Storage Building Exterior Window Caulk, Grey, Homogeneous, Granular, Non-Friable Note: Not Analyzed; see sample 1805416-003 Not Analyzed; see sample 1805416-003					
	Asbestos Present:	**Total % Asbestos:**		Not Analyzed	**Total % Non-Asbestos:**	Not Analyzed
	Note: Not Analyzed; see sample 1805416-003					
1805416-005 071618-123-5B	Storage Building Exterior Window Caulk, Grey, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	Chrysotile	2%	Binder/Filler	98%
	Asbestos Present: Yes	**Total % Asbestos:**		2.0%	**Total % Non-Asbestos:**	98.0%
1805416-006 071618-123-6B	Storage Building Exterior Window Caulk, Grey, Homogeneous, Granular, Non-Friable Note: Not Analyzed; See sample 1805416-005					
	Asbestos Present:	**Total % Asbestos:**		Not Analyzed	**Total % Non-Asbestos:**	Not Analyzed
	Note: Not Analyzed; see sample 1805416-005					
1805416-007 071618-123-7B	Storage Building Exterior Window Glazing, White, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	Chrysotile	2%	Calcite Quartz Other Non-Fibrous	40% 3% 55%
	Asbestos Present: Yes	**Total % Asbestos:**		2.0%	**Total % Non-Asbestos:**	98.0%
1805416-008 071618-123-8B	Storage Building Exterior Window Glazing, White, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	Chrysotile	2%	Calcite Quartz Other Non-Fibrous	40% 3% 55%
	Asbestos Present: Yes	**Total % Asbestos:**		2.0%	**Total % Non-Asbestos:**	98.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

ETI
Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
Fax: (302) 378-9882

CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	07/16/2018
ADDRESS:	313 South Fifth Street	DATE RECEIVED:	07/18/2018
CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	07/18/2018
CONTACT:	Robert Hershey	REPORT DATE:	07/18/2018
PROJECT:	PLM Analysis		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School, 504 South Broad Street, Middletown, DE		
COLLECTED BY:	CMC		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805416-009 071618-123-9B	Storage Building Interior Spray Applied Insulation, White, Homogeneous, Fibrous, Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber	100%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805416-010 071618-123-10B	Storage Building Interior Ceiling Plaster, grey, Homogeneous, Cementitious, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Other Non-Fibrous	Trace 40% 60%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805416-011 071618-123-11B	Storage Building Interior Spray Applied Insulation, White, Homogeneous, Fibrous, Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber	100%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805416-012 071618-123-12B	Storage Building Interior Ceiling Plaster, grey, Homogeneous, Cementitious, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Other Non-Fibrous	Trace 40% 60%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805416-013 071618-123-13B	Storage Building Interior Spray Applied Insulation, White, Homogeneous, Fibrous, Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber	100%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805416-014 071618-123-14B	Storage Building Interior Ceiling Plaster, grey, Homogeneous, Cementitious, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Other Non-Fibrous	Trace 40% 60%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

ETI
Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
Fax: (302) 378-9882

CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	07/16/2018
ADDRESS:	313 South Fifth Street	DATE RECEIVED:	07/18/2018
CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	07/18/2018
CONTACT:	Robert Hershey	REPORT DATE:	07/18/2018
PROJECT:	PLM Analysis		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School, 504 South Broad Street, Middletown, DE		
COLLECTED BY:	CMC		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)

Analyst - Gary Hayes - Director of IH

Approved Signatory - Gary A. Hayes - Director of IH

Method Detection Limit: = <1%

* Fiber concentrations were determined by visually estimating the area percentage for each type.
* Asbestos fibers may not be detected by PLM in certain samples because of their size (<5um) or being bound with non-friable organic matrix. In such cases an alternative method of analysis is recommended.
* Test report relates only to the items tested.
* This report shall not be reproduced, except in full, without the written approval of this laboratory.
* The intra-laboratory est. RSD is 0.145 and the inter-laboratory est. RSD is 0.205
* This use of this report for purposes of product endorsement, certification, or approval by NIST, NVLAP, or any agency of the Federal Government is prohibited.
* This analysis may contain modifications to the test method which were recommended in EPA / 600 / R-93 / 116
* Optical Properties were utilized in distinguishing asbestos fibers from non-asbestos fibers

NVLAP®

NVLAP Lab Code: 101848-0

ENVIRONMENTAL TESTING, INC.
100 SOUTH CASS STREET
MIDDLETOWN, DELAWARE 19709
(302) 378-5341 FAX (302) 378 9882

BULK ASBESTOS SAMPLE LOG

CUSTOMER: APPOQUINIMINK SCHOOL DISTRICT
PROJECT NAME: ELBERT MEREDITH MIDDLE SCHOOL
PROJECT #: 18-123
SIGNATURE: MM DATE: 7/16/18

SAMPLE #	ETI #	F/N*	MATERIAL DESCRIPTION**	AREA	LOCATION	% ASBESTOS*
071618-123-01B	1805446 001	N	DUCT INSULATION	GYM	SW CEILING AREA ON DUCTWORK	ND
02B	1805446 002	N	"	"	NW CEILING AREA ON DUCTWORK	ND
03B	1805446 003	N	WINDOW CAULK GREY	STORAGE BUILDING EXTERIOR	W FACE, S WINDOW SMALL RR WINDOW	~~Not Analyzed~~ 2% Chrysotile
04B	1805446 004	N	WINDOW CAULK TAN	"	UNDER GREY CAULK	Not Analyzed (see 03B)
05B	1805446 005	N	WINDOW CAULK GREY	"	W FACE, N WINDOW SMALL RR WINDOW	2% Chrysotile
06B	1805446 006	N	WINDOW CAULK TAN	"	UNDER GREY CAULK	Not Analyzed (see 05B)
07B	1805446 007	N	WINDOW GLAZING	"	W FACE, N WINDOW	2% Chry
08B	1805446 008	N	"	"	W FACE, S WINDOW	2% Chrysotile
09B	1805446 009	N	SPRAY INSULATION	STORAGE BUILDING INTERIOR	CEILING - SW CORNER	ND
10B	1805446 010	N	CP	"	"	ND
11B	1805446 011	N	SPRAY INSULATION	"	CEILING - DAMAGED AREA ABOVE W. DOOR	ND

*F - Friable
N - Nonfriable

**BI - Boiler Insulation
CT - Ceiling Tile
CP - Ceiling Plaster
DW - Dry Wall
DI - Duct Insulation
FT - Floor Tile
ND - None Decled
PC - Pipe Cover
PE - Pipe Elbow
PI - Pipe Insulation
PT - Pipe Tee
SB - Spray Beam
SC - Spray Ceiling
SW - Spray Wall
TB - Transite Board
TI - Tank Insulation
WB - Wall Board
WP - Wall Plaster

RELINQ. MM RECD. [illegible] DATE 7/16/18 TIME _____
RELINQ. _____ RECD. _____ DATE _____ TIME _____

RELINQ. _____ RECD. _____ DATE _____ TIME _____
CONTACT: NOTES:

ENVIRONMENTAL TESTING, INC.
100 SOUTH CASS STREET
MIDDLETOWN, DELAWARE 19709
(302) 378-5341 FAX (302) 378 9882

BULK ASBESTOS SAMPLE LOG

CUSTOMER: Appoquinimink School District
PROJECT NAME: Everett Meredith Middle School
PROJECT #: 18-123
SIGNATURE: [illegible] DATE: 7/16/18

SAMPLE #	ETI #	F/N*	MATERIAL DESCRIPTION**	AREA	LOCATION	% ASBESTOS*
071618-123-12B	1805416-012	N	CP	Storage Building Interior	Ceiling - damaged area above N. door	ND
~~13~~ -13B	1805416-013	N	Spray Insulation	"	Ceiling - NW corner	ND
14B	1805416-014	N	CP	"	"	ND

*F - Friable
N - Nonfriable

**BI - Boiler Insulation
CT - Ceiling Tile
CP - Ceiling Plaster

DW - Dry Wall
DI - Duct Insulation
FT - Floor Tile

ND - None Dected
PC - Pipe Cover
PE - Pipe Elbow

PI - Pipe Insulation
PT - Pipe Tee
SB - Spray Beam

SC - Spray Ceiling
SW - Spray Wall
TB - Transite Board

TI - Tank Insulation
WB - Wall Board
WP - Wall Plaster

RELINQ. [illegible] RECD. _____ DATE _____ TIME _____
RELINQ. _____ RECD. [illegible] DATE 7/16/18 TIME _____

RELINQ. _____ RECD. _____ DATE _____ TIME _____
CONTACT: NOTES:

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
Fax: (302) 378-9882

CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	07/18/2018
ADDRESS:	313 South Fifth Street	DATE RECEIVED:	07/19/2018
CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	07/19/2018
CONTACT:	Robert Hershey	REPORT DATE:	07/19/2018
PROJECT:	PLM Analysis		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School		
COLLECTED BY:	ETI - CMC		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805421-001	Exterior Gym Building - N Face, W Window					
071818-18-123-01B	Window Caulk, White, Homogeneous, Granular, Friable, 23°C	LAYER 1 100%	Chrysotile	5%	Quartz Calcite Other Non-Fibrous	5% 45% 45%
	Asbestos Present: Yes	**Total % Asbestos:**		5.0%	**Total % Non-Asbestos:**	95.0%
1805421-002	Exterior Gym Building - Under White Window Caulk					
071818-18-123-02B	Window Caulk, Grey, Homogeneous, Granular, Friable, 23°C	LAYER 1 100%	Chrysotile	5%	Quartz Calcite Other Non-Fibrous	5% 45% 45%
	Asbestos Present: Yes	**Total % Asbestos:**		5.0%	**Total % Non-Asbestos:**	95.0%
1805421-003	Exterior Gym Building - N Face, E Window					
071818-18-123-03B	Window Caulk, White, Homogeneous, Granular, Friable, 23°C	LAYER 1 100%	Chrysotile	5%	Quartz Calcite Other Non-Fibrous	5% 45% 45%
	Asbestos Present: Yes	**Total % Asbestos:**		5.0%	**Total % Non-Asbestos:**	95.0%
1805421-004	Exterior Gym Building - Under White Window Caulk					
071818-18-123-04B	Window Caulk, Grey, Homogeneous, Granular, Friable, 23°C	LAYER 1 100%	Chrysotile	5%	Quartz Calcite Other Non-Fibrous	5% 45% 45%
	Asbestos Present: Yes	**Total % Asbestos:**		5.0%	**Total % Non-Asbestos:**	95.0%
1805421-005	Exterior Gym Building - W Face, N Window Lower Level					
071818-18-123-05B	Window Caulk, Grey, Homogeneous, Granular, Friable, 23°C	LAYER 1 100%	Chrysotile	6%	Quartz Calcite Other Non-Fibrous	4% 45% 45%
	Asbestos Present: Yes	**Total % Asbestos:**		6.0%	**Total % Non-Asbestos:**	94.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
Fax: (302) 378-9882

CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	07/18/2018
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CONTACT:	Robert Hershey	REPORT DATE:	07/19/2018
PROJECT:	PLM Analysis		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School		
COLLECTED BY:	ETI - CMC		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805421-006	Exterior Gym Building - W Face, N Window Lower Level					
071818-18-123-06B	Window Glazing, White, Homogeneous, Granular, Friable, 23°C	LAYER 1 100%	Chrysotile	6%	Quartz Calcite Other Non-Fibrous	4% 45% 45%
	Asbestos Present: Yes	**Total % Asbestos:**		6.0%	**Total % Non-Asbestos:**	94.0%
1805421-007	Exterior Gym Building - Upper Windows, N Face E Window					
071818-18-123-07B	Window Caulk, Grey. Homogeneous, Granular, Friable, 23°C	LAYER 1 100%	Chrysotile	5%	Quartz Calcite Other Non-Fibrous	5% 45% 45%
	Asbestos Present: Yes	**Total % Asbestos:**		5.0%	**Total % Non-Asbestos:**	95.0%
1805421-008	Exterior Gym Building - Upper Windows, N Face E Window					
071818-18-123-08B	Window Glazing, White. Homogeneous, Granular, Friable, 23°C	LAYER 1 100%	Chrysotile	6%	Quartz Calcite Other Non-Fibrous	4% 45% 45%
	Asbestos Present: Yes	**Total % Asbestos:**		6.0%	**Total % Non-Asbestos:**	94.0%
1805421-009	Storage Building, Exterior Roof - NW Corner of Room					
071818-18-123-09B	Roof Field Shingle, Black/Grey, Non-homogeneous, Granular/Fibrous/Resinous, Non-Friable, 23°C Note: Stone Particulate Present	LAYER 1 100%	None Detected		Synthetic Fiber Cellulose Fiber Quartz Calcite Tar	10% 10% 5% 15% 60%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805421-010	Storage Building, Exterior Roof - NW Corner of Room					
071818-18-123-10B	Tar Paper, Black, Homogeneous, Fibrous/Resinous, Friable, 24°C	LAYER 1 100%	None Detected		Fibrous Glass Quartz Calcite	25% Trace 5%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

Environmental Testing, Inc.
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CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	07/18/2018
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CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	07/19/2018
CONTACT:	Robert Hershey	REPORT DATE:	07/19/2018
PROJECT:	PLM Analysis		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School		
COLLECTED BY:	ETI - CMC		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805421-011	Storage Building, Exterior Roof - NW Corner of Room					
071818-18-123-11B	Flashing, Black, Homogeneous, Fibrous/Resinous, Non-Friable, 23°C	LAYER 1 100%	None Detected		Synthetic Fiber	5%
					Cellulose Fiber	5%
					Quartz	5%
					Calcite	10%
					Tar	75%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805421-012	Storage Building, Exterior Roof - NE Corner of Room					
071818-18-123-12B	Roof Field Shingle, Black, Non-homogeneous, Granular/Fibrous/Resinous, Non-Friable, 22°C Note: Stone Particulate Present	LAYER 1 100%	None Detected		Synthetic Fiber	10%
					Cellulose Fiber	10%
					Quartz	5%
					Calcite	15%
					Tar	60%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805421-013	Storage Building, Exterior Roof - NE Corner of Room					
071818-18-123-13B	Tar Paper, Black, Homogeneous, Fibrous/Resinous, Friable, 23°C	LAYER 1 100%	None Detected		Fibrous Glass	5%
					Synthetic Fiber	5%
					Cellulose Fiber	10%
					Quartz	5%
					Calcite	10%
					Tar	65%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805421-014	Storage Building, Exterior Roof - NE Corner of Room					
071818-18-123-14B	Flashing, Black, Homogeneous, Fibrous/Resinous, Non-Friable, 24°C	LAYER 1 100%	None Detected		Cellulose Fiber	10%
					Quartz	5%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

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CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	07/18/2018
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CONTACT:	Robert Hershey	REPORT DATE:	07/19/2018
PROJECT:	PLM Analysis		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School		
COLLECTED BY:	ETI - CMC		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)

Analyst - Marie Miller

Approved Signatory - Gary A. Hayes - Director of IH

Method Detection Limit: = <1%

* Fiber concentrations were determined by visually estimating the area percentage for each type.
* Asbestos fibers may not be detected by PLM in certain samples because of their size (<5um) or being bound with non-friable organic matrix. In such cases an alternative method of analysis is recommended.
* Test report relates only to the items tested.
* This report shall not be reproduced, except in full, without the written approval of this laboratory.
* The intra-laboratory est. RSD is 0.145 and the inter-laboratory est. RSD is 0.205
* This use of this report for purposes of product endorsement, certification, or approval by NIST, NVLAP, or any agency of the Federal Government is prohibited.
* This analysis may contain modifications to the test method which were recommended in EPA / 600 / R-93 / 116
* Optical Properties were utilized in distinguishing asbestos fibers from non-asbestos fibers

NVLAP Lab Code: 101848-0

ENVIRONMENTAL TESTING, INC.
100 SOUTH CASS STREET
MIDDLETOWN, DELAWARE 19709
(302) 378-5341 FAX (302) 378 9882

BULK ASBESTOS SAMPLE LOG

CUSTOMER: APPOQUINIMINK SCHOOL DISTRICT
PROJECT NAME: EVERETT MEREDITH MIDDLE SCHOOL
PROJECT #: 18-123
SIGNATURE: DMC DATE: 7/18/18

SAMPLE #	ETI #	F/N*	MATERIAL DESCRIPTION**	AREA	LOCATION	% ASBESTOS*
07/18/18-123-01B	1805921-001	N	WHITE WINDOW CALK	EXTERIOR - GYM BUILDING	N FACE : W WINDOW	5% chrys
02B	-002	N	GREY WINDOW CALK		UNDER WHITE WINDOW CALK	5% chrys
03B	-003	N	WHITE WINDOW CALK		N FACE : E WINDOW	5% chrys
04B	-004	N	GREY WINDOW CALK		UNDER WHITE WINDOW CALK	5% chrys
05B	-005	N	GREY WINDOW CALK	EXTERIOR - GYM BUILDING	W FACE : N WINDOW LOWER LEVEL -	6% chrys
06B	-006	N	WHITE WINDOW GLAZING		"	6% chrys
07B	-007	N	GREY WINDOW CALK	EXTERIOR - GYM BLDG UPPER WINDOWS	N FACE : E WINDOW	5% chrys
08B	-008	N	WHITE WINDOW GLAZING		"	6% chrys
09B	-009	N	ROOF FIELD SHINGLE	STORAGE BUILDING EXTERIOR: ROOF	NW CORNER OF ROOF	ND
10B	-010	N	TAR PAPER		"	
11B	-011	N	FLASHING		"	

*F - Friable
N - Nonfriable

**BI - Boiler Insulation
CT - Ceiling Tile
CP - Ceiling Plaster
DW - Dry Wall
DI - Duct Insulation
FT - Floor Tile
ND - None Dected
PC - Pipe Cover
PE - Pipe Elbow
PI - Pipe Insulation
PT - Pipe Tee
SB - Spray Beam
SC - Spray Ceiling
SW - Spray Wall
TB - Transite Board
TI - Tank Insulation
WB - Wall Board
WP - Wall Plaster

RELINQ. DMC RECD. _____ DATE _____ TIME _____
RELINQ. _____ RECD. [illegible] DATE 7/19/18 TIME _____

RELINQ. _____ RECD. _____ DATE _____ TIME _____
CONTACT: NOTES:

ENVIRONMENTAL TESTING, INC.
100 SOUTH CASS STREET
MIDDLETOWN, DELAWARE 19709
(302) 378-5341 FAX (302) 378 9882

BULK ASBESTOS SAMPLE LOG

CUSTOMER: APPOQUINIMINK SCHOOL DISTRICT
PROJECT NAME: EVERETT MEREDITH MIDDLE SCHOOL
PROJECT #: 18-123
SIGNATURE: DMC DATE: 7/18/18

SAMPLE #	ETI #	F/N*	MATERIAL DESCRIPTION**	AREA	LOCATION	% ASBESTOS*
071818-123-125	1305421-012	N	ROOF FIELD SHINGLE	STORAGE BUILDING EXTERIOR: ROOF	NE CORNER OF ROOF	ND
135	-013	N	TAR PAPER	↓	"	↓
145	-014	N	FLASHING		"	

*F - Friable
N - Nonfriable

**BI - Boiler Insulation
CT - Ceiling Tile
CP - Ceiling Plaster
DW - Dry Wall
DI - Duct Insulation
FT - Floor Tile
ND - None Decled
PC - Pipe Cover
PE - Pipe Elbow
PI - Pipe Insulation
PT - Pipe Tee
SB - Spray Beam
SC - Spray Ceiling
SW - Spray Wall
TB - Transite Board
TI - Tank Insulation
WB - Wall Board
WP - Wall Plaster

RELINQ. DMC RECD. _____ DATE _____ TIME _____
RELINQ. _____ RECD. [illegible] DATE 7/17/18 TIME _____

RELINQ. _____ RECD. _____ DATE _____ TIME _____
CONTACT: NOTES:

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
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CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	08/20/2018
ADDRESS:	313 South Fifth Street	DATE RECEIVED:	08/22/2018
CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	08/22/2018
CONTACT:	Robert Hershey	REPORT DATE:	08/23/2018
PROJECT:	Bulk Samples		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School		
COLLECTED BY:	ETI - CMC		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805457-001	1st Floor Girls Room, By Cafeteria - SE Corner, Above Ceiling					
082018-18-123-01B	LAYER 1 Pipe Elbow - Wrap, White, Homogeneous, Fibrous, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber	100%
	LAYER 2 Pipe Elbow, White, Homogeneous, Fibrous, Friable, 23°C	LAYER 2 100%	None Detected		Fibrous Glass Cellulose Fiber Other Non-Fibrous	80% 10% 10%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805457-002	1st Floor Kitchen Area. Wash Room - Above Ceiling					
082018-18-123-02B	LAYER 1 Pipe Elbow - Wrap, White, Homogeneous, Fibrous, Non-Friable, 24°C	LAYER 1 100%	None Detected		Cellulose Fiber	100%
	LAYER 2 Pipe Elbow, White, Homogeneous, Fibrous, Friable, 24°C	LAYER 2 100%	None Detected		Fibrous Glass Cellulose Fiber Other Non-Fibrous	80% 10% 10%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805457-003	Lower Level Basement - NE Corner, Above Ceiling					
082018-18-123-03B	LAYER 1 Pipe Insulation - Wrap, Black/Silver/Brown, Non-homogeneous, Resinous/Fibrous/Metallic, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Aluminum Foil Tar	40% 5% 10% 45%
	LAYER 2 Pipe Insulation, Yellow, Homogeneous, Fibrous, Friable, 23°C	LAYER 2 100%	None Detected		Fibrous Glass	100%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%

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POLARIZED LIGHT MICROSCOPY

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805457-004	Utility Room Next to Chorus Room - Above Drop Ceiling SE Corner					
082018-18-123-04B	1x1 Ceiling Tile, White/Brown, Non-homogeneous, Fibrous, Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Paint	90% Trace 10%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805457-005	Utility Room Next to Chorus Room - Above Drop Ceiling SE Corner					
082018-18-123-05B	Mastic, Dark Brown, Homogeneous, Resinous, Non-Friable, 23°C	LAYER 1 100%	Chrysotile	10%	Cellulose Fiber Quartz Calcite	2% 8% 10%
	Asbestos Present: Yes	**Total % Asbestos:**		10.0%	**Total % Non-Asbestos:**	90.0%
1805457-006	Utility Room Next to Chorus Room - Above Drop Ceiling NW Corner					
082018-18-123-06B	12" Floor Tile, White, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	Chrysotile	6%	Cellulose Fiber Quartz Calcite Other Non-Fibrous	2% 12% 45% 35%
	Asbestos Present: Yes	**Total % Asbestos:**		6.0%	**Total % Non-Asbestos:**	94.0%
1805457-007	Utility Room Next to Chorus Room - Above Drop Ceiling NW Corner					
082018-18-123-07B	Mastic, Black, Homogeneous, Resinous, Non-Friable, 23°C	LAYER 1 100%	Chrysotile	6%	Quartz Calcite	4% 5%
	Asbestos Present: Yes	**Total % Asbestos:**		6.0%	**Total % Non-Asbestos:**	94.0%
1805457-008	Room 103/South End at Building - Under Cabinet/South End of Room					
082118-18-123-01B	Sink Undercoating, White/Purple, Homogeneous, Granular, Friable, 23°C	LAYER 1 100%	Chrysotile	5%	Cellulose Fiber Quartz Calcite Other Non-Fibrous	35% 10% 10% 40%
	Asbestos Present: Yes	**Total % Asbestos:**		5.0%	**Total % Non-Asbestos:**	95.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

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CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	08/21/2018
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CONTACT:	Robert Hershey	REPORT DATE:	08/23/2018
PROJECT:	Bulk Samples		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School		
COLLECTED BY:	ETI - AC		

METHOD #: Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.

ACCEDITATION: National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP).
NVLAP Lab Code: 101848-0

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805457-009	Hallway Outside Room 102/103 - Above Drop Ceiling on Pipe Hanger					
082118-18-123-02B	Pipe Insulation, White, Homogeneous, Fibrous, Friable, 23°C	LAYER 1 100%	Chrysotile	65%	Cellulose Fiber Quartz Calcite Other Non-Fibrous	10% 5% 10% 10%
	Asbestos Present: Yes	**Total % Asbestos:**		65.0%	**Total % Non-Asbestos:**	35.0%
1805457-010	Room 102 Storage Closet - Above Drop Ceiling					
082118-18-123-03B	Pipe Coating, White/Tan/Silver, Non-homogeneous, Resinous/Fibrous/Metallic, Non-Friable, 24°C	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Aluminum Foil Quartz Calcite	40% 5% 10% 5% 20%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805457-011	Room 102 Storage Closet - Above Drop Ceiling					
082118-18-123-04B	Pipe Coating, White/Tan/Silver, Non-homogeneous, Resinous/Fibrous/Metallic, Non-Friable, 23°C	LAYER 1 100%	None Detected		Fibrous Glass Cellulose Fiber Aluminum Foil Quartz Calcite	5% 45% 10% 5% 5%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805457-012	First Floor Room 204 - Above Drop Ceiling By Entrance					
082118-18-123-05B	Pipe Elbow, Grey, Homogeneous, Fibrous, Friable, 23°C	LAYER 1 100%	None Detected		Fibrous Glass Mineral Wool Other Non-Fibrous Material	70% 10% 20%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805457-013	First Floor Room 204 - Above Drop Ceiling by Smart Board					
082118-18-123-06B	Pipe Elbow, White, Homogeneous, Fibrous, Friable, 23°C	LAYER 1 100%	Chrysotile	65%	Cellulose Fiber Quartz Calcite Other Non-Fibrous	5% 5% 10% 15%
	Asbestos Present: Yes	**Total % Asbestos:**		65.0%	**Total % Non-Asbestos:**	35.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

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PROJECT #:	18-123		
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ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805457-014	First Floor Room 205 - Storage Closet					
082118-18-123-07B	Lab Table - Top, Black, Homogeneous, Granular/Fibrous, Non-Friable, 24°C	LAYER 1 100%	Chrysotile	8%	Cellulose Fiber	2%
					Quartz	5%
					Calcite	5%
					Other Non-Fibrous	80%
	Asbestos Present: Yes	**Total % Asbestos:**		8.0%	**Total % Non-Asbestos:**	92.0%
1805457-015	First Floor/Room 216/ SW Corner of Room Above Drop Ceiling					
082218-18-123-01B	Pipe Insulation, Grey, Homogeneous, Fibrous, Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber	80%
					Other Non-Fibrous Material	20%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805457-016	First Floor/Room 208/Above Drop Ceiling Above Teachers Desk					
082218-18-123-02B	Pipe Insulation, Grey, Homogeneous, Fibrous, Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber	80%
					Other Non-Fibrous Material	20%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%

Analyst - Marie Miller

Approved Signatory - Gary A. Hayes - Director of IH

Method Detection Limit: = <1%

* Fiber concentrations were determined by visually estimating the area percentage for each type.
* Asbestos fibers may not be detected by PLM in certain samples because of their size (<5um) or being bound with non-friable organic matrix. In such cases an alternative method of analysis is recommended.
* Test report relates only to the items tested.
* This report shall not be reproduced, except in full, without the written approval of this laboratory.
* The intra-laboratory est. RSD is 0.145 and the inter-laboratory est. RSD is 0.205
* This use of this report for purposes of product endorsement, certification, or approval by NIST, NVLAP, or any agency of the Federal Government is prohibited.
* This analysis may contain modifications to the test method which were recommended in EPA / 600 / R-93 / 116
* Optical Properties were utilized in distinguishing asbestos fibers from non-asbestos fibers

NVLAP Lab Code: 101848-0

ENVIRONMENTAL TESTING, INC.
100 SOUTH CASS STREET
MIDDLETOWN, DELAWARE 19709
(302) 378-5341 FAX (302) 378 9882

BULK ASBESTOS SAMPLE LOG

CUSTOMER: APPO SCHOOL DIST
PROJECT NAME: 19-123 EMS
PROJECT #: 19-123
SIGNATURE: [illegible] DATE: 8/20/18

SAMPLE #	ETI #	F/N*	MATERIAL DESCRIPTION**	AREA	LOCATION	% ASBESTOS*
082018-123-01B	1805457-001	N	PIPE ELBOW	1ST FLOOR: GIRLS RR BY CAFETERIA	SE CORNER ABOVE CEILING	NO
02B	-002	N	"	1ST FLOOR: KITCHEN AREA - WASH ROOM	ABOVE CEILING.	
03B	-003	N	PIPE INSULATION	LOWER LEVEL BASEMENT	NE CORNER ABOVE CEILING.	
04B	-004	N	1X1 CT	UTILITY RM NEXT TO CHORUS RM	ABOVE PROP CEILING SE CORNER	
05B	-005	N	BLK MASTIC	"	"	10% chrys
06B	-006	N	12" VFT	"	NW CORNER.	6½% chrys
07B	-007	N	BLK MASTIC	"	"	6% chrys

*F - Friable
N - Nonfriable

**BI - Boiler Insulation
CT - Ceiling Tile
CP - Ceiling Plaster
DW - Dry Wall
DI - Duct Insulation
FT - Floor Tile
ND - None Dected
PC - Pipe Cover
PE - Pipe Elbow
PI - Pipe Insulation
PT - Pipe Tee
SB - Spray Beam
SC - Spray Ceiling
SW - Spray Wall
TB - Transite Board
TI - Tank Insulation
WB - Wall Board
WP - Wall Plaster

RELINQ. [illegible] RECD. [illegible] DATE _____ TIME _____
RELINQ. _____ RECD. [illegible] DATE 8/20/18 TIME _____

RELINQ. _____ RECD. _____ DATE _____ TIME _____
CONTACT: NOTES:

ENVIRONMENTAL TESTING, INC.
100 SOUTH CASS STREET
MIDDLETOWN, DELAWARE 19709
(302) 378-5341 FAX (302) 378 9882

BULK ASBESTOS SAMPLE LOG

CUSTOMER: Appoquinimink School District
PROJECT NAME: Everett Meridith
PROJECT #: 18-123
SIGNATURE: [illegible] DATE: 08/21/18

SAMPLE #	ETI #	F/N*	MATERIAL DESCRIPTION**	AREA	LOCATION	% ASBESTOS*
082118 18-123 01B	1805457 008	F	white sink undercoating	Room 103 / south end of Building	under cabinet / south end of room	5% chrys
02B	009	F	Pipe insulation	Hallway outside Room 102/103	Above drop ceiling on pipe hanger	65% chrys.
03B	010		Pipe Coating	Room 102 storage closet	Above drop ceiling	ND
04B	011		Pipe Coating	↓	↓	ND
05B	012	F	Pipe Elbow	First Floor Room 204	Above drop ceiling by Entrance	ND
06B	013	F	↓	↓	Above drop ceiling by smart Board	65% chrys
07B	014	N	Lab Table-Top	First Floor Room 205	storage closet	3% chrys

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ND - None Dected
PC - Pipe Cover
PE - Pipe Elbow
PI - Pipe Insulation
PT - Pipe Tee
SB - Spray Beam
SC - Spray Ceiling
SW - Spray Wall
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TI - Tank Insulation
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WP - Wall Plaster

RELINQ. _____ RECD. [illegible] DATE 8/21/18 TIME _____
RELINQ. _____ RECD. _____ DATE _____ TIME _____

RELINQ. _____ RECD. _____ DATE _____ TIME _____
CONTACT: NOTES:

ENVIRONMENTAL TESTING, INC.
100 SOUTH CASS STREET
MIDDLETOWN, DELAWARE 19709
(302) 378-5341 FAX (302) 378 9882

BULK ASBESTOS SAMPLE LOG

CUSTOMER: Appo SD
PROJECT NAME: Everett Meredith M.S
PROJECT #: 18-123
SIGNATURE: [illegible] DATE: 08/22/18

SAMPLE #	ETI #	F/N*	MATERIAL DESCRIPTION**	AREA	LOCATION	% ASBESTOS*
082218 18-123 01B	1805457 AL 015	F	Pipe insulation	~~First Floor Room 208~~ First Floor / Room 216	~~Above drop ceiling by teachers desk~~ SW corner of Rm. / Above drop ceiling	ND
02B	AL 016	F	Pipe insulation	First Floor / Room 208	Above drop ceiling above teachers desk	ND

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N - Nonfriable

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PE - Pipe Elbow
PI - Pipe Insulation
PT - Pipe Tee
SB - Spray Beam
SC - Spray Ceiling
SW - Spray Wall
TB - Transite Board
TI - Tank Insulation
WB - Wall Board
WP - Wall Plaster

RELINQ. [illegible] RECD. _____ DATE 8/22 TIME 15:00
RELINQ. _____ RECD. _____ DATE _____ TIME _____

RELINQ. _____ RECD. _____ DATE _____ TIME _____
CONTACT: NOTES:

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
Fax: (302) 378-9882

CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	09/26/2018
ADDRESS:	313 South Fifth Street	DATE RECEIVED:	09/26/2018
CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	09/27/2018
CONTACT:	Robert Hershey	REPORT DATE:	09/27/2018
PROJECT:	Bulk Samples		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School, Middletown, DE		
COLLECTED BY:	Aric		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805483-001 092618-18-123-01B	Room 115/Beneath Cabinet 12" Floor Tile, Beige, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	None Detected		Quartz Calcite Other Non-Fibrous	15% 45% 40%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805483-002 092618-18-123-02B	Room 115/Beneath Cabinet Mastic, Black/Brown, Non-homogeneous, Resinous, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Calcite	Trace 5% 10%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805483-003 092618-18-123-03B	Room 110/Beneath Cabinet 12" Floor Tile, Beige, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Calcite Other Non-Fibrous	Trace 15% 50% 35%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805483-004 092618-18-123-04B	Room 110/Beneath Cabinet Mastic, Black/Brown, Non-homogeneous, Resinous, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Calcite	2% 5% 13%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805483-005 092618-18-123-05B	Back Library Exit/On Staircase Landing 12" Floor Tile, Beige, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	None Detected		Quartz Calcite Other Non-Fibrous	10% 50% 40%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
Fax: (302) 378-9882

CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	09/26/2018
ADDRESS:	313 South Fifth Street	DATE RECEIVED:	09/26/2018
CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	09/27/2018
CONTACT:	Robert Hershey	REPORT DATE:	09/27/2018
PROJECT:	Bulk Samples		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School, Middletown, DE		
COLLECTED BY:	Aric		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805483-006	Back Library Exit/On Staircase Landing					
092618-18-123-06B	LAYER 1 Mastic, Yellow, Homogeneous, Resinous, Non-Friable, 23°C Note: No Black Mastic Present	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Calcite Binder/Filler	5% 5% 10% 80%
	LAYER 2 Leveling Compound, Grey, Homogeneous, Fibrous/Granular, Friable, 23°C	LAYER 2 100%	None Detected		Cellulose Fiber Calcite Other Non-Fibrous Material	10% 45% 45%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805483-007	Room 211/Beneath Cabinet					
092618-18-123-07B	12" Floor Tile, Beige, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	None Detected		Quartz Calcite Other Non-Fibrous	15% 50% 35%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805483-008	Room 211/Beneath Cabinet					
092618-18-123-08B	Mastic, Black/Brown, Non-homogeneous, Resinous, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Calcite	2% 5% 13%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805483-009	Room 214/Beneath Cabinet					
092618-18-123-09B	12" Floor Tile, Beige, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Calcite Other Non-Fibrous	Trace 10% 45% 45%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805483-010	Room 214/Beneath Cabinet					
092618-18-123-10B	Mastic, Black/Brown, Non-homogeneous, Resinous, Non-Friable, 23°C	LAYER 1 100%	None Detected		Cellulose Fiber Quartz Calcite	2% 5% 13%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%

BULK SAMPLE ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

Environmental Testing, Inc.
100 South Cass Street
Middletown, DE 19709
Tel: (302) 378-9881
Fax: (302) 378-9882

CUSTOMER:	Appoquinimink School District	DATE COLLECTED:	09/26/2018
ADDRESS:	313 South Fifth Street	DATE RECEIVED:	09/26/2018
CITY / STATE / ZIP:	Odessa DE 19730	ANALYSIS DATE:	09/27/2018
CONTACT:	Robert Hershey	REPORT DATE:	09/27/2018
PROJECT:	Bulk Samples		
PROJECT #:	18-123		
LOCATION:	Everett Meredith Middle School, Middletown, DE		
COLLECTED BY:	Aric		
METHOD #:	Polarized Light Microscopy (PLM) using Environmental Protection Agency (EPA) Interim test method 600 / M4-82-020.		
ACCEDITATION:	National Institute of Standards and Technology (NIST) under the National Volutary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 101848-0		

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1805483-011 092618-18-123-11B	Hallway (First Floor)/Middle of Hallway 12" Floor Tile, Beige, Homogeneous, Granular, Non-Friable, 23°C	LAYER 1 100%	None Detected		Quartz Calcite Other Non-Fibrous	10% 50% 40%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%
1805483-012 092618-18-123-12B	Hallway (First Floor)/Middle of Hallway Mastic, Black/Brown, Non-homogeneous, Resinous, Non-Friable, 23°C	LAYER 1 100%	None Detected		Synthetic Fiber Cellulose Fiber Quartz	2% 3% 5%
	Asbestos Present: No	**Total % Asbestos:**	No Asbestos Detected		**Total % Non-Asbestos:**	100.0%

Analyst - Marie Miller

Approved Signatory - Gary A. Hayes - Director of IH

Method Detection Limit: = <1%

* Fiber concentrations were determined by visually estimating the area percentage for each type.
* Asbestos fibers may not be detected by PLM in certain samples because of their size (<5um) or being bound with non-friable organic matrix. In such cases an alternative method of analysis is recommended.
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* The intra-laboratory est. RSD is 0.145 and the inter-laboratory est. RSD is 0.205
* This use of this report for purposes of product endorsement, certification, or approval by NIST, NVLAP, or any agency of the Federal Government is prohibited.
* This analysis may contain modifications to the test method which were recommended in EPA / 600 / R-93 / 116
* Optical Properties were utilized in distinguishing asbestos fibers from non-asbestos fibers

NVLAP Lab Code: 101848-0

ENVIRONMENTAL TESTING, INC.
100 SOUTH CASS STREET
MIDDLETOWN, DELAWARE 19709
(302) 378-5341 FAX (302) 378 9882

BULK ASBESTOS SAMPLE LOG

CUSTOMER: Appoquinimink SD
PROJECT NAME: Everett Meredith (Library wing ground Floor / First Floor)
PROJECT #: 18-123
SIGNATURE: [illegible]
DATE: 09 / 26 / 18

SAMPLE #	ETI #	F/N*	MATERIAL DESCRIPTION	AREA	LOCATION	% ASBESTOS*
092618 18-123 01B	1805483 -001	N	12" Floor Tile	Rm. 115	Beneath cabinet	ND
02B	-002	N	Mastic	↓	↓	
03B	-003	N	12" Floor Tile	Rm. 110	Beneath cabinet	
04B	-004	N	Mastic	↓	↓	
05B	-005	N	12" Floor Tile	Back library exit	on staircase landing	
06B	-006	N	Mastic	↓	↓	
07B	-007	N	12" Floor Tile	Rm. 211	Beneath cabinet	
08B	-008	N	Mastic	↓	↓	
09B	-009	N	12" Floor Tile	Room 214	Beneath cabinet	
10B	-010	N	Mastic	↓	↓	
11B	-011	N	12" Floor Tile	Hallway (First Floor)	middle of hallway	↓

BI - Boiler Insulation
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DW - Dry Wall
DI - Duct Insulation
FT - Floor Tile
ND - None Dected
PC - Pipe Cover
PE - Pipe Elbow
PI - Pipe Insulation
PT - Pipe Tee
SB - Spray Beam
SC - Spray Ceiling
SW - Spray Wall
TB - Transite Board
TI - Tank Insulation
WB - Wall Board
WP - Wall Plaster
F - Friable
N - Nonfriable

RELINQ. [illegible] RECD. 9/26/18 DATE _____ TIME _____
RELINQ. _____ RECD. [illegible] DATE 9/27/18 TIME _____
RELINQ. _____ RECD. _____ DATE _____ TIME _____
CONTACT: NOTES:

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MIDDLETOWN, DELAWARE 19709
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BULK ASBESTOS SAMPLE LOG

CUSTOMER: Appoquinimink SD
PROJECT NAME: Everett Meredith
PROJECT #: 18-123
SIGNATURE: [illegible] DATE: 09 / 26 / 18

SAMPLE #	ETI #	F/N*	MATERIAL DESCRIPTION	AREA	LOCATION	% ASBESTOS*
092018 18-123 12B	1805483 -012	N	mastic	Hallway (First Floor)	middle of hallway	ND

BI - Boiler Insulation
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TI - Tank Insulation
WB - Wall Board
WP - Wall Plaster
F - Friable
N - Nonfriable

RELINQ. [illegible] RECD. _____ DATE 9/26 TIME _____ RELINQ. _____ RECD. _____ DATE _____ TIME _____
RELINQ. _____ RECD. [illegible] DATE 9/27/18 TIME _____ CONTACT: NOTES:

APPENDIX A-3

PHOTOGRAPHS

Photo 1: Photo shows ACM pipe fittings above the ceiling in the Kitchen area.

Photo 2: Photo shows an accessible heating unit with ACM pipe fittings in the kitchen area.

Photo 3: Photo shows ACM pipe fittings located in the North-West corner of the cafeteria.

Photo 4: Photo shows ACM pipe insulation in the "Attic Space" above the second floor (third level).

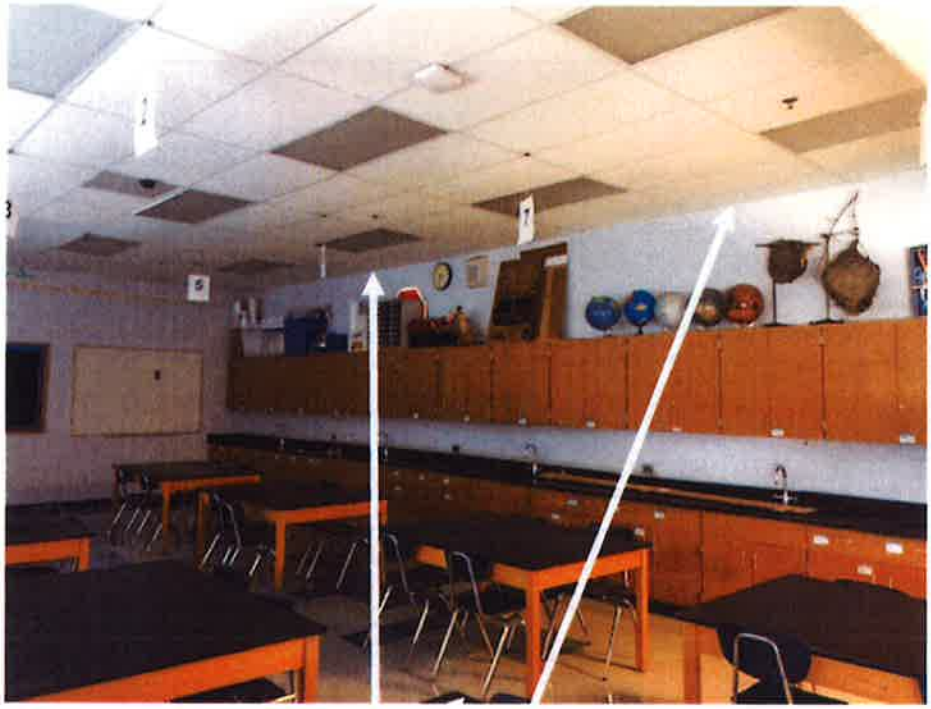

Photo 5: Photo shows classroom 200 where pipe insulation is present above the ceiling tile and inside of horizontal chase along the west wall.

Photo 6: Photo shows ACM mastic dots behind 1'X1' ceiling tiles.

Photo 7: Photo shows music room storage closet where ACM mastic is present beneath NON-ACM 12" Floor Tile. Ceiling Tile Mastic Dots and pipe fitting insulation are also present in this room.

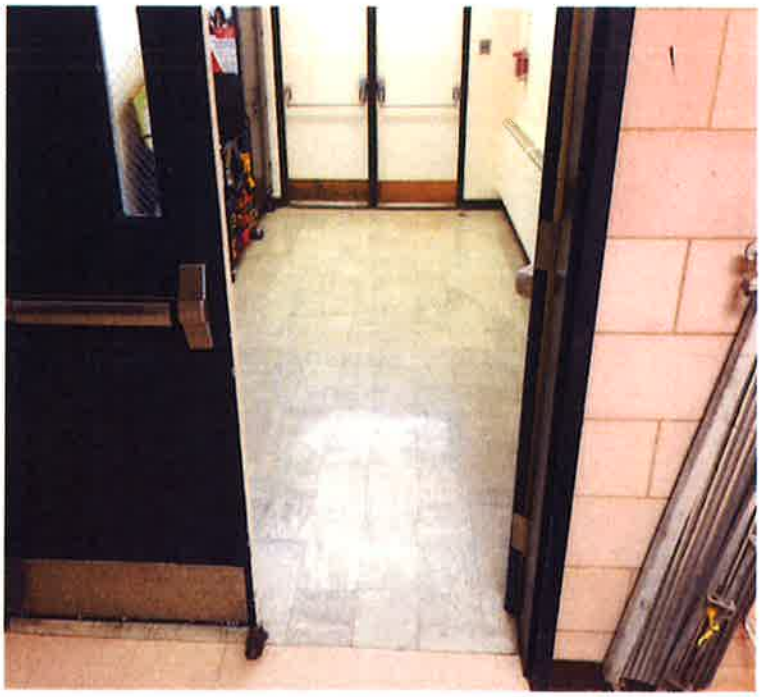

Photo 8: Photo shows ACM 9" Floor Tile/Mastic. See drawing for Location.

Photo 9: ACM Lab Tables are present in rooms 205 and 206. Some tables are islands as seen in this photo while others are used as wall benches/sinks.

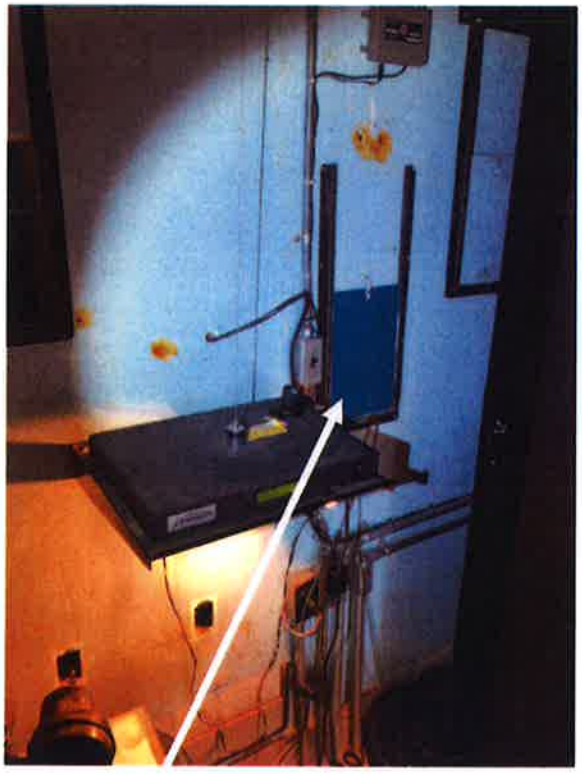

Photo 10: Photo shows ACM Transite panels in the Projection Room (3 small panels present).

Photo 11: One ACM transite fume hood is present in room 206.

Photo 12: Photo shows ACM heat shield on light fixture. Approximately 11 heat shields are present throughout the school.

Photo 13: Photo shows examples of windows that contain Exterior ACM window caulk/glazing

(12) 3-panel windows

Photo 14: Photo shows location of windows with ACM window caulk/glazing on west side of gymnasium.
(2) 4-panel windows

Photo 15: Two small windows containing ACM window caulk/glazing are present on the north side of the gymnasium building.

Photo 15: Photo shows two small windows with ACM window caulk/glazing on the storage building.

Photo 16: ACM exterior foundation vapor barrier is present around the perimeter of small addition to the band room. See drawing for location.

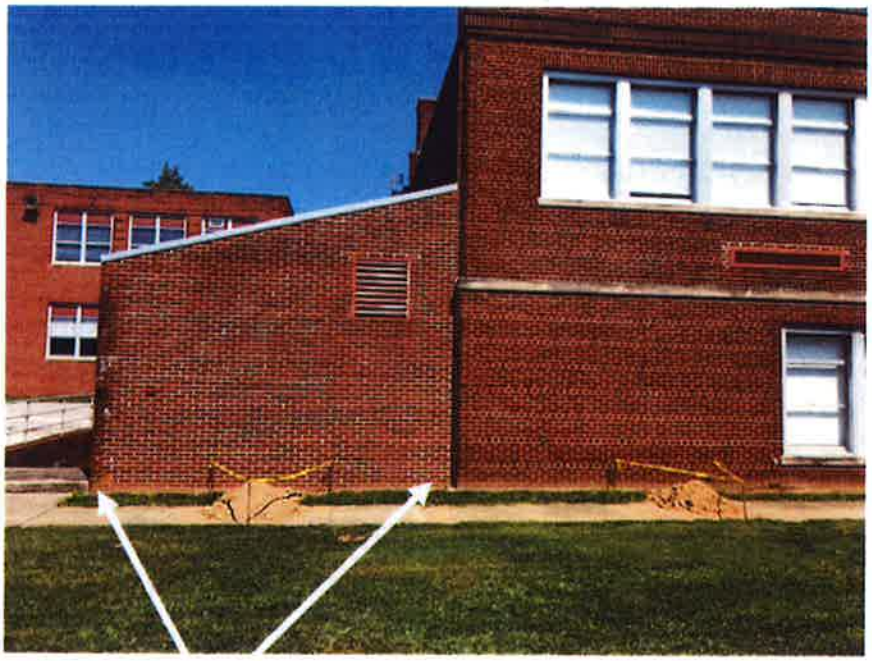

Photo 17: Photo showing the small addition with ACM exterior perimeter foundation vapor barrier.

APPENDIX A-4

DRAWINGS