

INSTRUCTIONS TO BIDDERS

Project: Specification for 2024 Targeted Interior Asbestos Abatement
at the Central Middle School.

Bids Due: December 2, 2024 at 2:00 p.m. (Local Time)

Send Bids

To: Mr. James Baustert, Buildings and Grounds Supervisor
Capital School District
198 Commerce Way
Dover, Delaware 19904

The Contractor shall submit three (3) complete copies of the bid with original signatures. Send the bid to the Capital School District. Provide a sealed envelope containing the bid with envelop outer markings as follows:

Mr. James Baustert, Buildings and Grounds Supervisor
Capital School District
198 Commerce Way
Dover, Delaware 19904

**“BID FOR 2024 TARGETED INTERIOR ASBESTOS ABATEMENT AT
THE CENTRAL MIDDLE SCHOOL
SEALED BID - DO NOT OPEN”**

Bids can be mailed using the U.S. Postal Service, hand-delivered or sent via an overnight delivery service. NO FACSIMILE OR EMAIL BIDS WILL BE ACCEPTED. The Contractor is responsible for submitting their bid by the required deadline and verifying that their bid has been received prior to the due date and time.

All entries must be typed or made in ink. Bids must be completed by the Contractor in accordance with all instructions for providing a bid as included in this Specification.

INSTRUCTIONS TO BIDDERS

**Specification for the 2024 Targeted Interior Asbestos Abatement
at the Central Middle School.**

Please provide the following with your bid:

1. Completion of the Bid Form including acknowledgment of all addendums and properly completed Non-Collusion Statement and all other requirements. **A copy of the Bidder Delaware Business License must be attached to the Bid Form.**
2. Completed Bid Bond Form and Bid Bond document.
3. Copy of your current Delaware Business License.
4. Copy of your current Certificate of Insurance (specimen).
5. List all Federal, State, and Local citations (e.g., Notice of Violation) received in the last five years.
6. List all litigation or pending litigation with the State of Delaware or any Delaware school district within the last five years. This list shall include the Contractor and/or any Subcontractors and/or Vendors used by the Contractor.
7. List the number of Workers (including Supervisors) to complete the Work.
8. List the number of Calendar Days and Working Days to complete the Work.
9. List of all project Subcontractors.
10. List equipment for completing the Work.
11. List of all past and current citations.

Arrangements can be made by the Contractor directly with the Owner for additional site visits prior to the bid due date by contacting Valentino (Val) De Rocili, Compliance Environmental, Inc., 302-674-4427, x101.

Bids shall remain valid for sixty (60) days from the date of opening.

The Capital School District reserves the right to reject all, or any bid, and to waive any informality or irregularity in any bid received. If applicable, a Schedule of Values section on the bid form will be used for accounting purposes only and not for determining the best bid for the project.

A bid bond is required. The Contractor shall use the form provided in the Specifications.

The awarded Contractor shall provide a Payment Bond and Performance Bond for 100-percent of the amount included as the Base Bid indicated on the Bid Form prior to beginning the work if the bid is greater-than \$ 50,000.00.

INSTRUCTIONS TO BIDDERS

**Specification for the 2024 Targeted Interior Asbestos Abatement
at the Central Middle School.**

The Contractor shall begin the work within five (5) calendar days from the date of a Notice to Proceed and shall perform all site work within the time frame as specified.

The Contractor and their Subcontractors shall comply with all of the requirements of the Delaware Department of Labor, Delaware Prevailing Wage Regulations. Accordingly, the Contractor shall prepare and submit all payroll and time sheet information directly to the Delaware Department of Labor as required and provide a copy to the Owner.

The Contractor shall maintain a drug testing program during the term of the contract in compliance with Delaware Regulation 4104.

Applications for payment shall be submitted by the Contractor to the Capital School District on AIA Documents G702/G703.

At completion of the project and prior to the release of retainage monies, the Contractor shall submit an affidavit of payment of debts and claims, and affidavit of release of liens (AIA sample documents G706/G706A provided in specification).

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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 targeted interior asbestos abatement at the Central Middle School as follows:

1. **Project Name:** 2024 Targeted Interior Asbestos Abatement at the Central Middle School.
2. **Project Location:** 211 Delaware Avenue, Dover, Delaware 19904
3. **Owner:** Capital School District, 198 Commerce Way, Dover, Delaware 19904.
4. **Work Period:** All required activities must be started on or about December 16, 2024. Substantial completion of the project must be achieved within sixty (60) calendar days for Base Bid work (Alternate Bid work not awarded) or one-hundred twenty (120) calendar days for Base Bid plus Alternate Bid work. Work shall begin after a Notice to Proceed is issued. The project time period will begin on the first day of contractor site activities.
5. **Desired Work Schedule and Sequence:** The Owner desires that all work be completed as soon as possible without the addition of overtime hours. The Contractor shall start and complete the project in this desired sequence:
 - a. All Base Bid work items and Alternate Bid (if awarded) work items must be completed while the asbestos abatement contractor has control of the work area. Prior to starting a work area, proper barrier walls and seals at floor access must be installed by the Contractor. After completion of a work area, clearance must be issued for that area. After clearance is granted, the work area will be occupied by other contractors to start and complete their work. Asbestos abatement work will be performed concurrent with construction activities during the duration of the project.
 - b. Start and complete all asbestos abatement activities in each section of the building as shown on the drawings prior to starting another section. This will allow for the systematic removal of asbestos without the risk of cross contaminating the entire building if a containment breach would occur and allow construction activities to follow the asbestos abatement work.
 - c. Perform the work using the following sequence:
 - i. Main Building First Floor; Work Area 1 (East Side).
 - ii. Main Building First Floor; Work Area 2 (West Side).
 - iii. Main Building Second Floor.
 - iv. Main Building Third Floor.
 - v. East Wing First Floor.
 - vi. East Wing Second Floor.
 - d. Perform the work in a manner to preserve access to potable water and electrical power supplied to the contractor by the owner.
 - e. Fire doors shall be removed as the last activity at each building work area.

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6. **Prevailing Wage Rates:** Current State of Delaware Prevailing Wage Rates are in effect. Wage rates are provided in the specification. The project is in Kent County. (Part II., General Specifications)
 7. **Liquidated Damages:** The Contractor shall pay liquidated damages at the rate of \$ 2,000.00 per calendar day if substantial completion is not achieved within the work period as listed above.
 8. **Owner's Representative:** Compliance Environmental, Inc. (CEI) will represent the Owner on this project.
- B. Contract Documents,** dated October 1, 2024 were prepared for the Project by Compliance Environmental, Inc., 150 South Bradford Street, Dover, Delaware 19904, CEI Project Number CEI-100124. Conditions and requirements are indicated on the Contract Documents including, but not limited to, this specification, drawings, and any addenda to the specifications.
- C. The Work** consists of the removal of asbestos-containing materials as listed on Tables 1 and 2 of these specifications and shown on the drawings. There are separate tables for Base Bid and Alternate Bid work. The work also requires the Contractor to complete all break-in points throughout the buildings to inspect within ceilings, walls and floors. Work areas are shown on the drawings for work described in this specification. The work also includes the removal of assumed asbestos-containing materials which were inaccessible during the asbestos building inspection. The work also requires the removal of non-asbestos-containing building materials to access asbestos-containing materials. All layers of material must be removed and disposed by the Contractor to perform the asbestos abatement and is included in the Contractor's bid. This work is being performed in preparation for renovation of the building. All asbestos-containing materials and assumed asbestos-containing materials must be removed on this project. The Contractor shall comply with all current requirements, procedures, standards, ordinances and regulations according to all Federal, State, County, Municipal, and local authorities including, but not limited to, 40 CFR 763, 40 CFR 61, 29 CFR 1910 and 29 CFR 1926.
1. **Work to be Performed Under This Contract:** includes complete removal and proper disposal of all asbestos-containing and asbestos-contaminated materials at the project as shown on the drawings, Table 1 and Table 2, and listed in the contract documents. Asbestos locations and assumed asbestos locations are shown on Contract Documents prepared by Compliance Environmental, Inc. The bulk sampling information is provided for reference.

The Contractor shall include in its bid, the cost of removal and disposal of all layers needed to be removed to access and completely remove all confirmed and assumed asbestos-containing materials at locations as shown on the drawings and listed within this specification.

The Contractor shall provide the necessary federal, state, municipal and local notifications regarding asbestos-abatement activities within the time requirements set forth by those agencies. The Contractor shall submit to the Owner's Representative a copy of all notices sent to any agencies within 48-hours after submitting any notice.

The total estimated asbestos-containing materials to be abated and location is shown on the attached Table 1 and Table 2. Table 1. shows the location and estimated quantity of positive asbestos-containing building materials that require abatement. Table 2. shows the location and estimated quantity of assumed asbestos-containing materials. **The Contractor shall provide in its lump sum cost for the project, all of the work included on the**

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drawings and in Table 1 and Table 2, and all other requirements in the Contract Documents.

2. **Work to be Performed Prior to Work Under This Contract:** The Owner shall remove non-fixed articles (e.g., furniture, computers, boxes) from work area(s) that are not contaminated. Applicable contaminated non-fixed articles requiring service by the Contractor are listed in the specification. Any small amount of debris remaining in work areas shall be moved to non-work areas prior to the start of any asbestos abatement work by the Contractor at no additional cost to the Owner.
3. **Project Site Notices:** The Contractor shall provide, as a minimum and at all times, at a visible location at the project site, the following:
 - a. Equal Employment Opportunity and Minimum Wage Information
 - b. State of Delaware DNREC 10-Day Notification
 - c. State of Delaware Prevailing Wage Determination
 - d. State of Delaware Contractor Registration
 - e. Site Supervisor and Worker Badges
 - f. Air Sampling Results (if any)
 - g. Emergency Planning Procedures
 - h. Subcontractor List
 - i. Safety Data Sheets
4. **Submittals Prior to Site Work:** The Contractor shall provide the following items to the Owner's Representative prior to asbestos abatement:
 - a. Signed Contract.
 - b. Signed Payment and Performance Bonds.
 - c. Certificate of Liability Insurance.
 - d. State of Delaware Business License and Asbestos Abatement Certification.
 - e. Copy of the State of Delaware DNREC 10-Day Notification.
 - f. Project Schedule.
 - g. Completed Initial Exposure Assessment Form (Appendix C, Section 01562)
 - h. Completed Certificates of Site Worker's Acknowledgment Forms (Appendix C, Section 01560).
 - i. Complete list of Project Supervisors and Workers including names and addresses.
 - j. Fit test results, medical results, and certifications for Project Supervisors and Workers.
5. **Assumed Asbestos Materials:** The project contains assumed asbestos-containing materials as shown in the specification. The Contractor shall include in its bid the cost of complete abatement and proper disposal of all assumed asbestos-containing materials. Some locations require that the Contractor "break-in" into wall, floor and ceiling for inspection by the Owner's Representative. The size, number and shape of the break-in shall be adequate as determined by the Owner's Representative to perform a proper inspection. Some locations shown on the drawing will require multiple break-ins. The Contractor shall include in its bid all costs associated with break-in activities and complete abatement of all of the quantities of assumed materials listed in the specifications at no additional cost to the Owner.

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6. **Unit Prices:** The unit prices listed on the bid form could be used to adjust the Contractor's base bid and alternates, add or deduct, for changes in quantities on the project. However, the Owner reserves the right to accept or reject any or all listed unit prices and to ask the Contractor to provide other pricing based upon project conditions.
7. **Measurements and Dimensions:** It is the Contractor's responsibility to verify all measurements prior to the openings of the bids. Any discrepancies in the measurements or work site conditions must be made prior to the opening of the bids.
8. **Work Area Security & Protection:** In performing the work, the Contractor is responsible for the security of the work area and protection of any and all equipment, materials, and surfaces not scheduled for work activities. The Contractor shall not be provided with a key to building(s) where work is to be performed. It is the Contractor's responsibility to adequately barricade, sign and control access to work areas in such a way to prevent accidental access to work areas.
9. **Damage Repair & Missing Item Replacement:** The Contractor shall repair or replace, at his own expense, any damage occurring during his activities to any building component not scheduled for asbestos abatement or movement. Any damaged or missing items will be replaced or paid for by the Contractor prior to receipt of final contract payment.
10. **Payment Requests:** The Owner's Representative shall review and recommend payment of all invoices from the Contractor. Invoices shall be submitted by the Contractor in a form acceptable to both the Owner's Representative and Owner.
11. **Critical Barriers:** Critical barriers consisting of two (2) single layers of 6-mil polyethylene sheeting applied separately by the Contractor with varying tape lines shall be installed, as a minimum, at ventilation systems, doors, windows, electrical wall switches and receptacle, and other openings in the work area. See Section 01526 for more information.
12. **Ventilation Systems:** The Contractor shall completely immobilize any ventilation systems in work areas by, as a minimum, by sealing supply and return ducts with critical barriers, locking and tagging the system "off," notifying building operators, and providing proper labeling. See Section 01513 for more information.
13. **Toilet Facilities:** The Contractor shall provide, at his own expense, toilet facilities for his use during the project.
14. **Waste Handling, Labeling and Disposal:** All asbestos materials shall be thoroughly and adequately wetted and double-bagged in 6-mil poly bags with both bags goose-necked or in double-layers of 6-mil poly for waste which will not fit into bags. All waste shall be sealed in a manner to prevent the contents of the bag from escaping. Double bagging within the work area inside of the containment is prohibited. Waste shall be wetted and placed into a single bagged (or poly wrap) inside of the containment work area and then moved out of the work area to the waste bag out area where the waste will be double bagged. The double bag shall also be goose-necked. All waste shall be properly handled and labeled for disposal by the Contractor. All asbestos-containing and contaminated materials shall be properly handled, labeled stored, transported and disposed by the Contractor in accordance with all federal, state, and local laws, regulations, ordinances, guidelines and the requirements of this specification and the waste disposal facility requirements. Prior authorization is required

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prior to the Contractor using any open-top dumpsters on the project for asbestos-containing or assumed asbestos-containing wastes.

15. **Used of Amended Water:** The Contractor shall use amended water during all asbestos abatement activities. **Dry removal is prohibited on this project.** Care shall be taken by the Contractor considering the right amount of water required not to create leaking conditions or hazards to the work area or surrounding area, including the ceiling of the first floor. The Contractor shall ensure that proper back-flow protection at all sources of water are installed and maintained.
16. **Personal Protective Equipment:** Don personal protective equipment prior to entering the containment area. Personal Protective Equipment (PPE) shall include as a minimum, full-body coveralls, head and foot covers, and full-faced PAPRs. Contractor employees shall not remove any PPE while in the containment.
17. **Containments, Negative Air Controls and Decontamination Units:** Install a three-stage decontamination unit, with a shower, at the entrance to the work area containments. The decontamination units shall be installed in such a manner as to allow for separate equipment room and bag-out area located off to the side. **In No Instance Will the Personal Decontamination Unit Be Used for Bag-out or Equipment Passage.** The Contractor shall install and maintaining Z-flaps at all entrances and exits at the containments. All containments shall have viewing ports according to State of Delaware regulations installed by the Contractor at several locations to adequately view all work areas from outside of the containments. All containments shall have labeled emergency exit locations (kick outs) to allow containment occupants to exit at locations other than the single entry and exit locations of the decontamination unit. All containments shall have “asbestos danger signs” near all entrances and exits, and the emergency contact list. As a minimum, all workers shall shower at the end of each shift. The Contractor shall inspect and ensure the integrity of all decontamination facilities daily on the project. All decontamination procedures shall be strictly implemented by the Contractor. Shower wastewater shall be either filtered or jelled. All filters and/or jelled water shall be disposed by the Contractor as contaminated waste. The Contractor shall place a fire extinguisher and have a first aid kit at each containment. An additional fire extinguisher shall be provided by the Contractor and placed at the entrance of each containment when containments exceed 1,000 square feet. Temporary ground fault electrical panels shall be installed outside of containment areas and used by the Contractor for all electrical connections. The Contractor shall use waterproof lights inside of all work areas. The Contractor shall install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. All work areas shall have critical barriers consist of two (2) layers of 6-mil plastic sheeting at all openings. Layers shall be applied separately by the Contractor with varying tape lines. Establish and maintain at all times a minimum pressure differential of minus 0.02 inches of water measured on a strip chart recorder or other approved method. The air exchange rate within all containments shall be at least four (4) air changes per hour. The pressure differential recorder shall be checked several times daily by the Contractor. The Contractor shall supply a calibrated differential pressure manometer capable of monitoring and recording on a strip chart and measuring differential pressure of 0.005 inches of water. The manometer shall be equipped with an automatically activated alarm system which will sound a warning if the pressure rises above the minimum value. All strips charts shall be submitted to the Owner’s Representative by the Contractor at the completion of the project. **Work will not begin or continue until an adequate differential pressure is achieved and**

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maintained. It is the Contractor's responsibility to adequately monitor the differential pressure in all containments and make the necessary adjustments needed to maintain the specified requirements.

18. **Mini-Containments:** Mini-containments shall only be used where specified. The mini-containment shall be a free-standing structure constructed of a single layer of 6-mil plastic sheeting on the floor, ceiling and walls of the structure. The containment shall have a three-stage decontamination unit, with a shower, at the entrance to the containment and have negative air controls to establish and maintain at all times a minimum pressure differential of minus 0.02 inches of water. The containment shall have "asbestos danger signs" near all entrances and exits. All decontamination procedures shall be strictly implemented by the Contractor.
19. **Floor Tile Machines:** The use of floor tile machines is allowed on this project at the discretion of the Contractor and if the Contractor can demonstrate after bidding and prior to the start of the work, that proper usage and effective decontamination procedures will be used by the Contractor. If the Contractor elects to use a floor tile machine for any portion of the work herein, prior to their usage, the Contractor shall submit a written Work Plan for review and have the Work Plan approved. The Work Plan shall contain, at a minimum, the following elements:

- a. The floor tile machine(s) will be visually inspected by the Owner's Representative prior to use on this Project to verify that the machine is clean and containing no viable debris or contamination. If not acceptable, the floor tile machine(s) cannot be used on this Project.
- b. The Contractor shall be responsible for any damage caused by the machine(s).
- c. Detailed description of the method(s) which will be used by the Contractor to decontaminate the equipment and verify using AHERA visual and air testing clearance protocols, that the equipment was effectively decontaminated. All visual and air testing required will be at no additional cost to the Owner. The Contractor shall provide documentation to the Owner's Representative that it has passed all AHERA visual and air testing clearance protocols prior removal of any floor tile machines from its decontamination area.
- d. Decontamination shall be performed prior to moving of the machine(s) out of any Work Area to effectively remove any asbestos residue. Decontamination shall be performed in a dedicated containment (the equipment decontamination/bag-out area can be used provided it can accommodate all of the required activities). After decontamination, the Contractor shall provide documentation to the Owner's Representative that the machine was properly decontaminated prior to removal of the machine out of any Work Area including all air testing results.

The Contractor acknowledges by submission of its bid, that there are no guarantees made by the Owner that approval of floor tiles machines will be granted and the Contractor reaffirms that if floor tile machines are not approved for use on this project, that manual scrapping methods will be used to complete the project in accordance with the Specifications at no additional cost to the Owner.

20. **Removal Procedures:**

a. **Floor Tile, Associated Mastics and Floor Grout:**

Some work areas contain multiple layers of floor tiles at some locations. Other areas have floor tile at multiple sizes, unknown sizes and floor grout. All asbestos floor tile layers including all non-asbestos floor tile layers on top of or below asbestos floor tiles and all associated mastics (if required) must be removed and disposed by the Contractor. Install containments, negative air controls and decontamination units as specified. The work area shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and one (1) layer of 6-mil plastic sheeting on ceilings and walls. Layers shall be applied separately by the Contractor with varying tape lines. Once negative air is established, the Contractor may start asbestos abatement work. The Contractor shall remove all door thresholds and floor moldings to completely remove all floor tile and mastics. The Contractor is responsible for proper handling, labeling, storage, transporting and disposal of all wastes. **The use of floor tile machines is allowed on this project at the discretion of the Contractor and if the Contractor can demonstrate after bidding and prior to the start of the work, that proper usage and effective decontamination procedures will be used by the Contractor in accordance with this Section.** Remove floor heater covers in work area (if applicable) to inspect the interior of units for asbestos. If asbestos floor tiles are found, follow specified removal and disposal procedure. Remove and dispose of any floor tile under window and/or wall mounted HVAC units. All waste shall be handled, labeled and disposed as specified. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by TEM. Work areas less than asbestos NESHAP quantities will have final air clearance samples analyzed by PCM. See Sections 01013, 01529, 02081, 02087 and other specification sections for more information.

b. **Pipe Coverings (Insulation & Fittings):**

Asbestos pipe coverings (insulation and fittings) are friable and shall be properly removed, bagged, transported and disposed by the Contractor. **Prior to removal, the Contractor shall verify that all utilities have been shut-off and purged.** Install containments, negative air controls and decontamination units as specified. Once negative air is established, the Contractor may start removing the pipe coverings. The Contractor shall use gross removal methods, glove bags or wrap and cut methods for complete removal of all pipe coverings. For removal or should the fiber counts reach the Permissible Exposure Limit (PEL) at any time, Type C, Grade D respirators operating in the pressure demand mode will be required. Install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. The work area shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and one (1) layer of 6-mil plastic sheeting on ceilings and walls, and two (2) layers of 6-mil plastic sheeting on the floor. Layers shall be applied separately by the Contractor with varying tape lines. The Contractor shall completely remove the pipe coverings in a manner which prevents damage to building materials and components. All waste shall be handled, labeled and disposed as specified. Final inspection shall consist of a visual inspection and air sampling. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by TEM. Work areas less than asbestos NESHAP

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quantities will have final air clearance samples analyzed by PCM. See Sections 01013, 01529, 02081, 02087 and other specification sections for more information.

c. **Fire Doors:**

All fire doors showing on the drawings shall be removed. Fire doors shall be bagged, wetted, labeled and properly disposed. Wrap the doors with two (2) layers of 6-mil plastic sheeting while the door is in place. Layers shall be applied separately by the Contractor with varying tape lines. Unhinge the door and dispose. If the method used by the Contractor will disturb asbestos-containing materials, install containments, negative air controls and decontamination units as specified. If the asbestos-containing material will be disposed, the Contractor shall construct a work area shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and one (1) layer of 6-mil plastic on ceilings and walls, and two (2) layers of 6-mil plastic sheeting on the floor. Layers shall be applied separately by the Contractor with varying tape lines. Once negative air is established, the Contractor may start removing the fire doors. Exterior fire doors shall be removed as the last activity on the project. All waste shall be handled, labeled and disposed as specified. Final inspection shall consist of a visual inspection and air sampling. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by TEM. Work areas less than asbestos NESHAP quantities will have final air clearance samples analyzed by PCM. See Sections 01013, 01529, 02081, 02087 and other specification sections for more information.

d. **Break-In Locations:**

Break-in points require opening up floors, walls, and ceilings at each location. Plumbing pipe insulation, fittings, asbestos heat shields, flooring materials and other asbestos-containing materials may be located inside floors and walls. Wall, ceiling and floor substrates vary throughout building. Each location shown on the drawings may require multiple break in points and may contain multiple asbestos-containing materials. Prior to any break-in, the Contractor shall construct a mini-containment and be prepared to abatement any asbestos-containing materials found at each location. If asbestos-containing materials are found, the Contractor shall immediately abate the material. See other sections of this specification for specific abatement requirements for the asbestos-containing material found within the break-in. The Contractor shall include in its bid the cost of this work for the number of break-in locations and assumed asbestos-containing materia quantities located on the tables within this specification.

e. **Asbestos Heat Shields:**

Wall mounted heating units are located at various locations throughout the school building. The heating units vary in model, size and shape. The heating units may be located at floor elevation, mounted on the ceiling or at near ceiling elevation. The Contractor shall open all wall heating units throughout the project for inspection. After opening of wall heating units, if suspected asbestos-containing materials are present the Contractor shall prepare for asbestos abatement activities. Prior to disturbing asbestos heat shields, the Contractor shall install containments, negative air controls and decontamination units as specified. If not performing the work in an existing containment, build a containment consisting of two (2) layers of 6-mil plastic sheeting as critical barriers and one (1) layer of 6-mil plastic sheeting on

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ceilings and walls, and two (2) layers of 6-mil plastic sheeting on the floor. Layers shall be applied separately by the Contractor with varying tape lines. Once negative air is established, the Contractor may start removing the asbestos heat shields. All waste shall be handled, labeled and disposed as specified. Final inspection shall consist of a visual inspection and air sampling. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by TEM. Work areas less than asbestos NESHAP quantities will have final air clearance samples analyzed by PCM. See Sections 01013, 01529, 02081, 02087 and other specification sections for more information.

f. Plaster, Joint Compound and Spackling:

Plaster, joint compounds and spackling is friable and shall be properly removed, bagged, transported and disposed by the Contractor. **Prior to removal, the Contractor shall verify that all utilities have been shut-off and purged.** Install containments, negative air controls and decontamination units as specified. Once negative air is established, the Contractor may start removing drywall containing asbestos joint compound and spackling. For removal or should the fiber counts reach the Permissible Exposure Limit (PEL) at any time, Type C, Grade D respirators operating in the pressure demand mode will be required. Install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. The work area shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and one (1) layer of 6-mil plastic sheeting on ceilings and walls, and two (2) layers of 6-mil plastic sheeting on the floor. Layers shall be applied separately by the Contractor with varying tape lines. The Contractor shall completely remove the pipe coverings in a manner which prevents damage to building materials and components. All waste shall be handled, labeled and disposed as specified. Final inspection shall consist of a visual inspection and air sampling. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by TEM. Work areas less than asbestos NESHAP quantities will have final air clearance samples analyzed by PCM. See Sections 01013, 01529, 02081, 02087 and other specification sections for more information.

g. Cement Panel Bagged Debris:

Dispose of asbestos cement panel debris currently stored in a trash bag as identified on the work summary table.

21. **Wooden Containment Barrier:** A wooden containment barriers (barricade with signs) shall be constructed prior to asbestos removal activities at all locations on the school campus shown on the drawings in a manner to prevent intentional and/or accidental entry into work areas. Barriers will remain in place after the project is completed. The barrier shall be constructed in a manner to prevent accidental entry into work areas. The Contractor shall place “Danger–Construction Area” signs at each barrier location mounted outside of protected areas in clear view. The barrier shall consist of, at a minimum, 5/8-inch thick OSB with wooden support studs at 16-inches on center. The barrier shall completely cover all openings (floor to ceiling deck) and be installed in a manner to prevent damage to the building components, including but not limited to, paint, ceilings, floor coverings and building components. The barrier shall extend above all drop-ceiling layers to the deck of the next floor. The barrier shall be sealed with two layers of 6-mil plastic sheeting on both sides to provide an air-tight seal.
22. **Abatement Activities:** All abatement of asbestos containing materials shall be performed in a proper wetted condition using amended water and be completed by the Contractor in accordance with this specification. Dry removal of asbestos containing materials is not permitted. See Section 01527 and 02081 for more information. The Contractor shall take the necessary precautions to protect all computer, fiber optic and electronic equipment including building sensors from damage during the Contractor's activities and also including, but not limited to, walls, ceilings, floors outside work areas, doors, thresholds, and fixed objects within work area(s). Any damaged painted surfaces shall be repaired at the Contractor's expense.
23. **Decontamination Units:** Three-stage decontamination stations (units) will be erected, operated, maintained, and removed by the Contractor. All decontamination procedures shall be strictly implemented by the Contractor. The decontamination stations will be erected in such a manner to allow for a secured entrance during non-working hours. At no time will workers move around outside of the work area without clothing. At no time will equipment be moved out of containment decontamination. The equipment and bag-out room must be used for equipment movements. No “pop-up” portable decontamination units will be allowed unless approved in writing. See Section 01563 for more information.
24. **Bag-Out:** Bag-out activities shall be completed by the Contractor prior to the end of the work day. All waste must be removed from work areas prior to the end of each work day. At no time will the workers be allowed to move around outside of the building in abatement coveralls with exception to bag-out activities, which will occur during approved hours each day. All waste shall be double bagged or double wrapped and shall be leak-proof. All bags shall contained amended water shall have a goose-neck seal and a label. All wrapped waste shall contained amended water and labeled. See Section 01527 for more information.
25. **Air Sampling:** All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance will be a visual inspection and samples will be by PCM for building scheduled for demolition and TEM for building scheduled for renovation. See Section 02081 and this specification for more information.

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26. **Aggressive Air Sampling:** The Contractor shall provide, at no additional cost to the Owner, the leaf blower(s) and fan(s) required by the Owner's Representative to perform proper aggressive air sampling.
27. **Waste Disposal:** All asbestos-containing materials and contaminated asbestos-containing materials shall be properly handled, stored and disposed by the Contractor the licensed and permitted landfill the Contractor provided on the bid form for the project. Any waste disposal facility proposal by the Contractor is subjected to approval by the Owner. **No abatement is to occur or continue until the arrival and preparation of a suitable closed top dumpster or a Delaware Solid Waste Approved Transport Vehicle. The dumpster and/or transport vehicle must be transported directly to the approved landfill facility. If the waste from this project is to be mixed with other projects, this must be done at a properly licensed Delaware transfer facility.** All non-asbestos-containing or non-asbestos-contaminated wastes shall be properly and safely stored by the Contractor inside of the building. Waste shall be stored in a manner which does not block ingress or egress of the building, rooms, closets, doors or windows and does not pose a fire or safety concern as determined by the Owner or the Owner's Representative. The Contractor shall provide all waste disposal documentation to the Owner's Representative. See Sections 01013 and 02084 of the specification for more information.
28. **Lock-Down:** All non-visible asbestos residue shall be encapsulated with a coating of penetrating encapsulant applied in strict accordance with the manufacturer's directions prior to clearance air sampling. The lock-down must be completely dry prior to clearance air sampling. The Contractor shall provide a schedule for the application of lock-down to the Owner's Representative prior to application. See Section 01527 for more information.
29. **Use of Drawings:** All drawings provided in the Specification are diagrammatic, not to proportion and are not to scale. Drawings are provided to the Contractor for reference purposes. The Contractor shall develop and verify the actual quantities and locations required for all of the work and consider these actual quantities when preparing its bid.
30. **Work Areas adjacent to Occupied Areas (if applicable):** When asbestos abatement work areas are adjacent to occupied areas, the Contractor shall install and maintain wooden partitions which extend from floor to ceiling with lockable access doors to prevent occupants from entering into work areas.
31. **Scaffolding, Lifts and Ladders:** If scaffolding is used, the Contractor must erect, use, and disassemble the scaffolding in accordance with OSHA Standards. Additionally, all lifts and ladders shall meet and be used in accordance with OSHA Standards. The Contractor shall insure that floors and all other building components are protected during the use of scaffolding, lifts and ladders. The Contractor shall use only trained personnel when using scaffolding, lifts and ladders.
32. **Exhaust from Negative Air Machines (if applicable):** Windows, doors or other building openings used to exhaust negative air shall be protected by the Contractor by installing plywood and bracing if the opening is located on the first floor or below. The plywood and bracing shall be installed in a manner by the Contractor that prevents damage to the building components and prevents unauthorized access into the building.

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33. **Permanent Objects in the Work Area (if applicable):** Where permanently mounted objects are present in the work area, that Contractor shall protect these objects from contamination and damage from their activities. However, window and/or wall mounted HVAC units could contain asbestos-containing materials. The Contractor shall remove covering on HVAC units to inspect, remove and dispose of all asbestos-containing materials included, but not limited to, floor tiles, floor covering, pipe insulation and heat shields.
34. **Electric Power:** All electric power shall be shut down in each work area where possible. The Owner shall provide limited low voltage temporary electric service (single phase, 120-volt, 100 amp circuit source). The Contractor shall provide the Owner with their specifications within ten (10) calendar days prior to scheduling the start of work. The Owner shall provide a plug type outlet within 300 feet of work locations. Adequate extension cords shall be provided by the Contractor. Temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in each work area shall be provided by the Contractor. If required by the Contractor, a licensed electrician shall be provided, at no additional cost, for making electrical connections and disconnections. If electric power is not available at all building sections, the Contractor shall provide their needed electric power at no additional cost to the Owner.
35. **Water Service:** The Owner shall provide limited cold service for small connections (3/4-inch hose maximum). The Contractor shall provide, at no additional cost to the Owner, all necessary connections and ensure proper back-flow protection. Hot heaters shall be supplied and operated by the Contractor at no additional cost to the Owner. The Contractor shall be responsible for turning on and off valves at their point of connection. If potable is not available at all building sections, the Contractor shall provide their needed at no additional cost to the Owner.
36. **Visitor Personal Protective Equipment:** The Contractor shall provide, at no additional cost to the Owner, respirators, disposable coveralls, head covers, and foot covers all at new condition.
37. **Contractor Project Staffing:** A minimum of three (3) asbestos personnel are required to be present at the project site at all times. The Contractor's on-site supervisor must be able to make timely decisions for this company. **Prior to any site activity, the Contractor shall submit the name and address of each supervisor, worker and any other person he intends to use at the project site for informational screening (e.g. registered sex offenders list and other lists) by the Owner. The Contractor shall be notified by the Owner if their personnel will be allowed to work at the project site based upon the results of the screening. The School District reserves the right to reject any proposed Contractor personnel for this project.** (Section 01043)
38. **Project Supervisor:** During all asbestos abatement work, a State of Delaware licensed Supervisor, employed by the Contractor, shall be on site at all times. The licensed Supervisor shall maintain all daily records as required.

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- 39. Project Monitor Must Be On-Site:** The Contractor shall not begin or continue work for any asbestos abatement related activities until a certified Project Monitor is resident on site. The Project Monitor must be on site at all times during asbestos abatement related activities. The Contractor shall provide adequate notice to the Professional Service Firm providing the Project Monitor. Adequate notice is the period of time agreed to by the Contractor and Professional Service Firm.
 - 40. Damage Repair:** The Contractor shall repair or replace, at his own expense, any damage occurring from his activities for items the Owner desires to save prior to demolition or any building component. Any damaged items will be replaced or paid for by the Contractor prior to receipt of final contract payment.
 - 41. Stop Work:** If the Owner, or the Owner's Representative presents a written stop work order to the Contractor, the Contractor shall immediately stop all work in a fashion not to create an asbestos exposure hazard to workers, building occupants, or others. See this Section for more information.
 - 42. Building and Property Usage:** The Contractor shall not unreasonably encumber the site with materials or equipment and may be required to share the project site with others. Stockpile of materials at locations after approved by the Owner's Representative. If additional off-site storage is need by the Contractor, the off-site storage will be provided by the Contractor at no additional cost to the Owner. Smoking or open fires will not be permitted within the building. Alcoholic beverages and non-prescription drugs use is prohibited within buildings or on the property. No permanent modifications shall be made to any building component, sidewalk, parking area, signage, or any other appurtenances without expressed written permission from the Owner. See this Section for more information.
- D. Single Prime Contract:** The Work will be constructed under a single prime contract. The Contractor shall not sublet this contract without expressed written permission from the Owner. Any subcontractors used by the Contractor must have been listed on the bid form. No substitution will be allowed without written permission from the Owner or Owner's Representative.
 - E. Pre-abatement assessment:** A comprehensive pre-abatement assessment will be completed by the Contractor, Owner's Representative, and any other individual authorized by the Owner. An agreed list of damage to structures, surfaces, equipment shall be developed and agreed upon prior to the commencement of work by the Contractor.
 - F. Contaminated Areas:** Any areas found to be contaminated in the opinion of the Owner's Representative or Owner after the removal of asbestos containing material shall be decontaminated using a combination of HEPA vacuum and wet cleaning techniques by the Contractor at no additional expense to the Owner.
 - G. Plan of Action:** The Contractor shall submit a detailed plan of action which details proposed procedures used for complying with all of the requirements of this specification. Included in the plan shall be the location and layout of decontamination areas, the sequence of asbestos work, the interface of all trades, methods used to ensure safety of the workers, building occupants, and visitors to the site, and a detailed description of methods that will be used to control pollution.

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- H. Potential Asbestos Hazard:** The disturbance of asbestos-containing materials may cause asbestos fibers to be released into the building and/or exterior atmosphere thereby creating a potential health hazard to workers, building occupants, and others. The Contractor shall inform all workers, supervisors, subcontractors, and Owner's Representatives who will be at the project site of the seriousness of the hazard and of proper work procedures which must be followed. The Contractor shall, continuously and at all times, take the measures necessary including, but not limited to, procedures, work practices, and methods, to ensure complete compliance with federal, state, and local regulations and eliminate the potential for asbestos exposure.
- I. Site Safety:** The Contractor shall at all times comply with all applicable federal, state and local, laws and regulations, including environmental, health and safety laws and regulations, pertaining to its services. The Contractor represents it is familiar with all aspects of the job site (including but not limited to site conditions and site access limitations) and hazards associated with asbestos removal and abatement. The Contractor shall be solely responsible for the safety of its personnel, subcontractors or any third party in its work areas or common areas and Contractor hereby releases and indemnifies Client and Owner's Representative from any and all claims brought by, or on behalf of itself, its employees or its subcontractors arising out of or in connection with its Contractor's services or presence at the job site. Prior to the start of daily work, and at the conclusion of each day, the Contractor shall visually inspect his work areas and all areas required to access his work areas. Any unsafe conditions found during any inspection shall be reported to the Owner's Representative immediately in writing subsequent to each inspection. The report provided by the Contractor to the Owner's Representative shall adequately describe the unsafe condition and the procedures the Contractor has immediately taken to correct the unsafe condition. The Contractor shall promptly report any and all accidents to the Owner's Representative in writing, and shall include sufficient details regarding the accident and procedures implemented by the Contractor to prevent similar accidents. The Contractor shall be responsible for reporting accidents to the appropriate regulating agency as may be required by applicable law or regulation.
- J. Specification Sections:** The work includes the removal of asbestos-containing materials according to the requirements provided in the following specification sections:
1. General and Administrative Requirements:
 - 01013: Summary of the Work–Asbestos Abatement
 - 01043: Project Coordination–Asbestos Abatement
 - 01097: Reference Standards and Definitions–Asbestos Abatement
 - 01098: Codes, Regulations and Standards–Asbestos Abatement
 - 01301: Submittals–Asbestos Abatement
 - 01601: Materials and Equipment–Asbestos Abatement
 - 01632: Product Substitutions–Asbestos Abatement
 - 01701: Contract Closeout–Asbestos Abatement
 2. Abatement Work:
 - 01503: Construction Facilities and Temporary Controls–Asbestos Abatement
 - 01513: Temporary Pressure Differential & Air Circulation System
 - 01526: Temporary Enclosures
 - 01527: Regulated Areas
 - 01529: Mini Enclosures and Glovebags
 - 01560: Worker Protection–Asbestos Abatement
 - 01562: Respiratory Protection
 - 01563: Decontamination Units

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3. Asbestos Removal Work Procedures:
02081: Removal of Asbestos-Containing Materials
02084: Disposal of Regulated Asbestos Containing Material
02085: Resilient Flooring Removal-Resilient Floor Covering Manufacturers
02087: Resilient Flooring Removal-Aggressive Asbestos Abatement
4. Decontamination of Work Areas:
01711: Project Decontamination
01712: Cleaning and Decontamination Procedures

1.3 WORK SEQUENCE

A. **The Work** will be conducted in distinct phases at each abatement location.

1. Each work phase shall consist of pre-cleaning, establishing of work areas, installation of engineering controls, abatement, post abatement inspection and sampling.
2. The following inspections will be performed by the Contractor and Owner's Representative simultaneously for project activities:
 - a. Pre-Cleaning: A visual inspection of all pre-cleaned surface areas. This inspection will occur prior to the installation of polyethylene sheeting on walls, floors, and other surfaces. Decontamination units must be operable and critical barriers installed prior to pre-cleaning activities.
 - b. Work Area: Work areas will be visually inspected each day prior to the start of work activities and upon work completion each day to insure that the integrity of the containment is in compliance with these specifications. This inspection does not relieve the Contractor of their responsibilities of performing the work in accordance with these specifications.
 - c. Post Abatement: A visual inspection of each work area will be performed following successful clearance air sampling and prior to commencing containment tear-down.
 - d. Substantial Completion: After completion of all applicable demolition, reinstallation, cleaning, and all other asbestos abatement activities, a final inspection will be performed after final cleaning of all work areas prior to re-occupancy of said areas by the Owner.

1.4 ASBESTOS-CONTAINING MATERIALS:

A. **The Work** of this contract involves activities that will disturb asbestos-containing materials (ACM). The location and type of ACM known to be present at the worksite is set forth in the "Schedule of Asbestos-Containing Materials" at the end of this section. If any other ACM or PACM is found, notify the Owner's Representative, other employers and employees about the location and quantity of the ACM or PACM immediately upon discovery.

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- B. Asbestos-containing building materials are known to be present at the project site. If the Contractor finds any other material which are suspected of containing asbestos, the Contractor shall immediately notify the Owner's Representative. See the attached Table 1. for a summary of confirmed asbestos-containing materials at the site. The Contractor is responsible for the proper removal, handling and disposal of all confirmed asbestos-containing materials at the site.
- C. Assumed asbestos-containing building materials are identified at the project site. See the attached Table 2. for a summary of assumed asbestos-containing materials at the site. The Contractor is responsible for the proper removal, handling and disposal of all assumed asbestos-containing materials at the site.

1.5 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. The Contractor shall inform all workers, supervisory personnel, subcontractors and Owner's Representatives who will be at the job site of the seriousness of the risk and of proper work procedures which must and will be followed.
- B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or Owner's Representatives 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.

1.6 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. **Use of Existing Elevators (if applicable):** Except for the Freight Elevator, use of elevators by the Contractor will not be permitted. The Contractor will be permitted to use the freight elevator for temporary freight service and the transportation of construction personnel during the construction period. This elevator must also be available to the Owner at all times; coordinate freight elevator usage with the Owner or Owner's Representative. Provide protective pads for the elevator car and other appropriate protective measures for the car and entrance doors and frames. During asbestos abatement activities the car is to be protected

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as set forth in the Division 1 Section on Temporary Enclosures.

2. **Smoking:** Smoking or open fires will not be permitted within the building enclosure or on the premises.
3. **Toilet Rooms (if applicable):** 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. If no toilet rooms are designated for this project, the Contractor shall provide temporary toilet facilities.

1.7 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. The Owner or Owner's Representative will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner occupancy.

1.8 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.
- C. **Air monitoring** required by OSHA is work of the Contractor and is not covered in this section

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1.9 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 (if required):** 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:

$$\text{Volume} = \frac{\left(\frac{\text{Number of Fibers}}{\text{Area of 100 fields}} \right) \times \text{Total Filter Area}}{\left(\frac{\text{Limit Value}}{4} \right)}$$

Where:

- Number of fibers = 5 fibers/100 fields, based on a limit of detection (LOD) of 7 fibers/mm² on the filter
- Area of 100 fields = 0.785mm²
- Total Filter Area = 385mm²
- 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/mm² 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. Baseline:

1. **Before Start of Work:** The Owner will secure air samples to establish a baseline.

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2. PCM Samples

Location Sampled	Number of Samples	Limit Value (Fibers/cc)	Approx. Volume (Liters)	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.)	Approx. 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. **Baseline:** 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.

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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 Sampled	Number of Samples	Limit Value (Fibers/cc)	Approx. Volume (Liters)	Rate (LPM)
Each Work Area	2	0.01	1,000	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 or Owner’s Representative’s discretion. If airborne fiber counts exceed allowed limits additional samples may be taken as necessary to monitor fiber levels.

1.10 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.

1.11 LABORATORY TESTING BY OWNER

- A. **The services of a testing laboratory** may be employed by the Owner or Owner’s Representative to perform laboratory analyses of the air samples. Samples available for analysis will be sent daily by 5:00 pm from Dover via a carrier for next day delivery to the laboratory, so that verbal reports on air samples can be obtained within 24 hours after receipt by the laboratory.
- B. **A complete record** of all air monitoring and results will be furnished to the Owner’s Representative, the Owner, and the Contractor.

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- C. **The Contractor will have access** to all air monitoring tests and results upon request.
- D. **Written Reports** of all air monitoring tests will be posted at the job site on a daily basis.
- E. **Additional laboratory samples and professional services time required for re-sampling** of areas for clearance due to failed samples because of the Contractor's activities will be paid for by the Contractor.

1.12 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 Owner or Owner's Representative 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).
 - 2. **Small Structures:** "Airborne Fibers" referred to above include asbestos structures (fibers, bundles, clusters or matrices) of any diameter and any length greater than 0.5 microns.

1.13 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. A NIOSH-582 certified microscopist will be on-site during the afternoon hours to provide analysis of available PCM samples by NIOSH Method 7400. Verbal report on air samples will be provided that day.

1.14 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 SITE WORKERS

- A. All workers and supervisors shall be currently certified by the State of Delaware and have their State of Delaware issue badge with them at all times while at the project site.
- B. All workers and supervisors shall have a copy of their current medical and respirator fit test

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documentation at all times while at the project site.

- C. The Contractor shall provide, at all times during any site activities, at least three (3) site workers which includes at least one (1) certified Supervisor and two (2) certified workers. The certified Supervisor shall remain on the outside of the work area as required.
- D. Prior to the start of work, the Contractor shall submit the level of respiratory protection intended for each operation of the project on the Initial Exposure Assessment form (See Section 01562).
- E. A signed copy of the Certificate of Workers Acknowledgement must be obtained from each site worker including supervisors prior to the start of work. (See Section 01530).

3.2 MINIMUM PERSONAL PROTECTION EQUIPMENT

- A. **All site workers engaged in asbestos abatement activities shall use, at all times and as a minimum, PAPR respiratory protection equipment.**

3.3 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 the Owner or Owner's Representative. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by the Owner or Owner's Representative.

Table 1. Action Level and Stop Action Fiber Concentrations.

ACTION LEVEL (Max Exposure) (f/cc)	STOP LEVEL (f/cc)	RESPIRATOR	RESPIRATOR ASSIGNED PROTECTION FACTOR
1	0.5	Half Face	10
100	50	PAPR	1,000
100	50	Supplied Air, Pressure Demand	1,000

1. If airborne fiber counts inside contained work areas exceed the stop level for any period of time cease all work except corrective action until fiber counts fall below the stop level and notify Owner's Representative. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by the Owner or Owner's Representative.
2. The Contractor shall stop work immediately if any visual emissions are observed.

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- B. Outside Work Area:** If any air sample taken outside of the Work Area exceeds the baseline established in Part 1 of this section, immediately and automatically stop all work except corrective action. The Owner or Owner's Representative 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 Owner or Owner's Representative.
 3. The Contractor shall stop work immediately if any visual emissions are observed.
- 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.

3.4 STOP WORK

- A. If the Owner, Owner or Owner's Representative, or Project Administrator** presents a written stop work order, immediately and automatically conform to that stop work order, while maintaining temporary enclosures and pressure differential. Do not recommence abatement work until authorized in writing by Owner, Owner, or Owner's Representative or Project Administrator.
- 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.

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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 to reduce airborne fiber levels.

C. Do not recommence work until authorized in writing by the Owner or Owner’s Representative.

3.5 SCHEDULE OF ASBESTOS-CONTAINING MATERIALS

See the attached Table 1. and Table 2. for approximate quantities and locations for positive asbestos-containing materials and assumed asbestos-containing materials on the project. There are separate tables for the Base Bid items and Alternate Bid items. All quantities were estimated. The Contractor shall field verify said quantities without delay and immediately inform the Owner’s Representative of any discrepancies.

3.5 LIST OF DRAWINGS

The interior work is shown on the drawings attached.

**2024 TARGETED INTERIOR ASBESTOS ABATEMENT AT THE
CENTRAL MIDDLE SCHOOL
Project Number: CEI-100124**

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 the **Capital School District**.

All the terms and conditions of **Project Number CEI-100124** 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.