SPECIFICATION

for

ASBESTOS ABATEMENT / REINSULATION

at the

JAMES R. LUDLOW ELEMENTARY SCHOOL

45 NORTH 6TH STREET

PHILADELPHIA, PA 19143

Prepared For:

The School District of Philadelphia
Office of Environmental Management
440 North Broad Street
3rd Floor, Room 3053
Philadelphia, Pennsylvania 19130

Prepared by:

BATTA Environmental Associates, Inc.
6 Garfield Way
Newark, DE. 19713

September 11, 2020
543519A

Prepared by: Kelly Mayberry | Project Manager

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PART I: GENERAL REQUIREMENTS

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract

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

B. Notices and Permits

Job Site Notices & Permits
PA Asbestos Abatement and Demolition/Renovation Notification Form
Department of Public Health, Air Management Services – Major Asbestos Permit
PA Department of Labor and Industry Asbestos Supervisor & Worker Licenses
Emergency Planning Procedures
Material Safety Data Sheets for Encapsulant, Glues, Etc.
Prevailing Wage Determination
Subcontractors List
Equal Employment Opportunity

1.2 DESCRIPTION OF WORK

A. Project Name

Asbestos Abatement/Decontamination at James R. Ludlow Elementary School #5340

1. Project Location: **James R. Ludlow Elementary School**
   45 North 6th Street
   Philadelphia, PA 19143
2. Owner: School District of Philadelphia
   440 North Broad Street, Room 3034
   Philadelphia, PA 19130

B. Contract Documents

Contract documents, dated March 18, 2020, were prepared for the Project by Batta Environmental Associates, Inc., Delaware Industrial Park, 6 Garfield Way, Newark, Delaware 19713. Conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:

1. Asbestos Abatement / Decontamination at James R. Ludlow Elementary School #5340.

2. Any addenda to the Specification.

C. Work to be Performed Prior to Work Under this Contract

1. All electricity and HVAC systems to the affected major work areas shall be shut down, tagged, and locked out. All lighting and conduits in the soffit/ceiling areas must be de-energized prior to the initiation of demolition/abatement work.

2. A temporary electric panel outside the work area(s) will be installed by a licensed electrician for use on the project.

3. All electricity and HVAC systems to the affected minor work areas shall remain active during the abatement work, and the abatement contractor will utilize GFCI protection whenever connecting to the local electrical system. HVAC systems in close proximity to the abatement work will be sealed off with poly sheet critical barriers.

D. Work to be Performed Subsequent to Work Under This Contract

Upon completion of the demolition and asbestos removal and subsequent decontamination of the affected areas, the asbestos contractor will ensure the work area and surrounding areas are clear of any project equipment and waste. The contractor will have areas where asbestos pipe insulation was removed that are to be reinsulated with standard fiberglass pipe covering or equivalent.

E. Scope of Work

Location	Material Description	Quantity
Faculty Lounge 300 Back Area	Pipe Insulation 2-6 inch	12 LF
Faculty Lounge 300 Back Area (above drop ceiling)	Pipe Insulation 2-6 inch	2 LF
Faculty Lounge 300 Back Area (above drop ceiling)	Pipe Fitting Insulation	2 EA
Hallway Closet adjacent to Classroom 303	Pipe Insulation 2-6 inch	12 LF
Classroom 303	Pipe Insulation 2-6 inch	12 LF
Classroom 303 (above drop ceiling)	Pipe Insulation 2-6 inch	1 LF
Classroom 303 Back Coat Closet	Pipe Insulation 2-6 inch	12 LF
Classroom 303 Pipe Shaft	Pipe Insulation > 6 inch	15 LF
Classroom 303 Pipe Shaft	Pipe Insulation 2-6 inch	15 LF
Hallway from Fire Tower to Classroom 301	Pipe Insulation 2-6 inch	12 LF
Hallway from Fire Tower to Classroom 301 (above drop ceiling)	Pipe Insulation 2-6 inch	1 LF
Boy's Restroom	Pipe Insulation 2-6 inch	3 LF
Custodial Closet adjacent Boy's Restroom	Pipe Fitting Insulation	1 EA
Hallway from Classrooms 302 to 307	Pipe Insulation 2-6 inch	36 LF
Hallway from Classrooms 302 to 307 (above drop ceiling)	Pipe Insulation 2-6 inch	3 LF
Classroom 309 Coat Closet	Pipe Insulation 2-6 inch	12 LF
Classroom 203 Pipe Shaft	Pipe Insulation > 6 inch	15 LF
Classroom 103 Pipe Shaft	Pipe Insulation > 6 inch	15 LF
Boiler Room	Pipe Fitting Insulation	23 EA
Main Attic	Pipe Insulation 2-6 inch	1125 LF
Main Attic	Pipe Insulation > 6 inch	75 LF
Main Attic	Pipe Fitting Insulation	80 EA
Tank Room	Pipe Fitting Insulation	8 EA
Tank Room	Pipe Gasket	2 SF
Tank Room Exterior	Window Caulk	15 LF
Tank Room Exterior	Building Caulk	65 LF
Tank Room Exterior	Roof Flashing	100 SF
Tank Room Roof	Roofing Material	265 SF
Main Roof	Roofing Material	4790 SF
Upper Canopy Roof - East Side	Roofing Material	1380 SF
Upper Canopy Walls - East Side	Roof Flashing	200 SF
Upper Canopy Walls - East Side	Building Caulk	285 LF
Upper Canopy Roof - West Side	Roofing Material	1360 SF
Upper Canopy Walls - West Side	Roof Flashing	225 SF
Upper Canopy Walls - West Side	Building Caulk	200 LF
Roof @ Chimney	Building Caulk	8 LF
Cafeteria Roof	Roofing Material	100 SF
Exterior - Plaza slab & base of walls	Building Caulk	235 LF

F. Project Schedule

To be Announced.

G. Licensing Requirements

The work will be performed by a Pennsylvania / Philadelphia licensed asbestos abatement contractor.

H. Guidelines

The Contractor shall follow all guidelines covered within this specification and the accompanying drawings. If there is any discrepancy, they shall immediately bring the discrepancies to the attention of the Consultant. If the solution deviates from the published specification or plan, it shall be put into writing and approved by the Consultant.

I. Contractor Responsibility

1. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local regulations pertaining to the 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, and shall hold the Owner harmless for failure to comply with any applicable safety or health regulation on the part of himself, his employees, or his subcontractors.

2. All work practices on this project involving asbestos abatement shall be in accordance with the City of Philadelphia, Department of Public Heath – Asbestos Control Regulation. This project is defined as a Major Asbestos Project as well as a number of Incidental and Minor Asbestos Projects in areas adjacent to the Major Project Areas under the regulations.

3. The Contractor is responsible for visiting the site and verifying quantities of asbestos containing materials, locations of utilities, and waste out routes prior to submitting a bid.

    a. No work shall be performed if the Contractor believes the work to be performed is a change and/or addition to the work scope outlined in the construction documents without first obtaining a Notice to Proceed (NTP) from the Owner.

4. The Owner shall not be responsible for compensating the Contractor for work performed that is considered a change and/or addition to the construction documents without the issuance of a NTP and/or a written work directive.

5. Project phasing, start and completion dates are subject to change at the discretion of the Owner.

6. The Contractor shall provide all labor, tools, materials and scaffold necessary to complete the project safely, in a timely fashion, and in accordance with the specification and all applicable regulations.
    a. All tools, ladders, equipment, etc. shall arrive at the project site in good condition and free of any visual residual asbestos contamination.

7. Any movable items remaining in the scheduled work areas at the time of the mobilization of the Contractor shall be removed by the Contractor.

8. The Contractor shall protect all non-movable furniture, cabinetry and equipment from damage throughout the duration of this project.

9. The Contractor shall supply, at their own expense, all construction materials, supplies, and all electrical, water, and waste connections, tie-ins, or extensions. Temporary service lines shall be installed to prevent tripping, slipping or falling. The Contractor must utilize a licensed electrician to install separate temporary electric panels, receptacles, and lights, all with ground fault interruption and current-overload protection. All temporary electrical set-ups shall be in accordance with OSHA regulation and NEMA standards.

10. The Contractor shall maintain current copies of certifications for workers on-site and shall keep copies of all pertinent specifications and regulations on-site. The API retains the right to prohibit work by employees without current certifications.

11. The Contractor shall maintain a detailed sign-in/sign-out log, which must be filled out by every person entering the work area. All entries shall be complete and legible.

12. The Contractor shall be responsible for security of the work site, fire/smoke detection, and maintenance of existing utility systems as it relates to the performance of this project.

13. The Contractor shall provide fire protection in accordance with all State and Local codes. This includes, but is not limited to:
    a. Providing a written fire prevention and emergency action plan.

b. Providing multi-purpose ABC rated fire extinguishers, and insure that on-site personnel are aware of the location and proper use of all fire extinguishers and other safety equipment.

c. Performing a fire watch of the overall work area. Designating a safety coordinator to implement the above actions. The Contractor's safety coordinator shall be responsible for:

   i. Fire/life safety entries shall be entered into the Contractor's log daily and shall be submitted with the Contractor's final report.

   ii. Daily entries shall include names, dates, duration, problems & corrective actions taken by the fire watch - must be signed by the safety coordinator.

14. Assure protection of AFD exhaust ducts from damage during asbestos abatement activities.

15. The Contractor Supervisor and Asbestos Project Inspector (API) shall perform a visual inspection of the entire floor immediately below all active abatement work areas at the end of each 8-hour shift to verify that no water leaks, fallen material, or any other type of damage has occurred.

    a. If water leaks, fallen material, or any other type of damage has occurred:

       i. all asbestos abatement work shall be halted;

       ii. the API shall immediately notify the Asbestos Project Manager, Construction Manager and Owner for direction and input;

       iii. the source of the leak or damage shall be determined;

       iv. the containment breech issue shall be rectified before any asbestos abatement work will be permitted to continue.

16. As required by the Asbestos Control Regulation, the Contractor shall provide a minimum 18" square transparent viewing window consisting of shatterproof material greater than or equal to 1/8" in thickness located at a height appropriate for accessible viewing and in such a manner as to maximize visibility of the abatement work area.

17. During the performance of final cleaning of all surfaces inside the active abatement work area, all horizontal surfaces "outside the work area" shall also be cleaned. This includes the dirty, shower and clean rooms of decontamination chambers attached to the asbestos abatement work area being tested and all immediate surroundings of representative makeup air entering each independent asbestos abatement work area being tested.

J. Owner's Responsibility

1. The Owner shall employ the services of an Asbestos Project Inspector (API) who is licensed by the City of Philadelphia to perform asbestos project inspection as defined by the Asbestos Control Regulation (ACR).

2. The Owner shall ensure the work areas will be unoccupied prior to abatement activity commencing.

3. The Owner shall make water and electricity available at the site at no cost to the Contractor. The Owner and/or Construction Manager shall notify the Contractor of scheduled system shut downs to ensure no interruptions to the project's engineering controls.

4. The Owner shall be responsible to remove all computers, monitors, printers, all other computer related components, personal effects, books, or other items deemed too valuable or sensitive to leave in the scheduled work areas to be handled by the Contractor. A list of such items includes:
   a. Personal items throughout any previously mentioned work areas;
   b. All computers and computer accessories in any previously mentioned work areas;
   c. Stored maintenance and building supply items, paper products, paints, cleaners, replacement ceiling tiles and florescent light bulbs, excess furniture, etc. located in any of the work areas scheduled for abatement, demolition and/or cleaning.
   d. Any other items deemed appropriate by the Owner.
   e. The Owner shall store items in areas not scheduled for asbestos abatement work.
   f. The Owner shall send written notices to the appropriate and responsible School District personnel informing them of this responsibility and the limit of the Contractor's responsibilities.
   g. Any movable items remaining in the scheduled work areas at the time of the mobilization of the Contractor shall be removed by the Contractor.

1.2 QUALITY ASSURANCE

A. Contractor Qualifications

The Contractor shall be a firm of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field), which

is regularly engaged in, and which maintains a regular force of workmen skilled in asbestos abatement, and shall have performed this work on previous projects. All contractors must be prequalified by the School District of Philadelphia in order to perform abatement work in any schools.

1. Contractors performing asbestos abatement work in Philadelphia are required to be licensed to do asbestos work in the City of Philadelphia. The Contractor shall comply with the licensing regulations of:

   City of Philadelphia
   Department of Public Health
   Air Management Services
   Asbestos Control Unit
   321 University Avenue
   Philadelphia, PA 19104-4597

   Personnel working on asbestos abatement projects in the State of Pennsylvania are required to be licensed through the State of Pennsylvania. All personnel shall be in compliance with the licensing regulations of:

   Department of Labor & Industry
   Bureau of Occupational & Industrial Safety
   651 Boas Street
   Harrisburg, PA 17121-0750

2. Pursuant to NESHAP requirements the Contractor should provide appropriate written notification at least 10 days prior to the start of asbestos abatement work. Three copies with an approved major asbestos permit are to be sent to:

   City of Philadelphia
   Department of Public Health
   Air Management Services
   Asbestos Control Unit
   321 University Avenue
   Philadelphia, PA 19104-4597

   A photocopy of the notification must also be sent to:

   Asbestos NESHAP Coordinator (3WC32)
   US EPA Region III
   1650 Arch Street
   Philadelphia, PA 19103-2029

B. Materials and Equipment

In procuring all materials and equipment used in this work, it is the Contractor's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this work meet or exceed the specified requirements, and are suitable for their intended use.

C. Owner's Right of Rejection

The Owner/Representative reserves the right to reject any materials or equipment incorporated into the work which fails to meet the specified minimum requirements of this specification.

D. Applicable Standards

1. Applicable standards listed in these specifications include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:
    a. 29 CFR 1926.1101 (OSHA);
    b. 29 CFR 1926.501 (OSHA);
    c. 40 CFR Part 61 (NESHAP);
    d. 40 CFR Part 763 (AHERA);
    e. 40 CFR 761 (PCB Regulations);
    f. Resource Conservation and Recovery Act (RCRA);
    g. 40 CFR 300-399, EPA Comprehensive Environmental Response Compensation & Liability Act
    h. 40 CFR 745, EPA Toxic Substances Control Act; LBP Poisoning Prevention
    i. EPA Renovation, Repair, and Painting (RRP) rule under the Toxic Substances Control Act
    j. 49 CFR 171-180, DOT Hazardous Material Regulations
    k. 42 CFR Part 84 & 30 CFR Part 11 (NIOSH/DHHS respirator standards);
    l. the Asbestos Control Regulation (Philadelphia Department of Public Health);
    m. Act 194 & Act 161 (Pennsylvania Department of Labor and Industry);
    n. Section F-315.8 (R) of the Philadelphia Fire Prevention Code;
    o. NADCA ACR 2006 (HVAC System cleaning standards);
    p. This Specification.

E. Laboratory Services

1. Codes and Standards
   a. The Asbestos consultant's laboratory shall be responsible for the quality assurance of the project.
   b. Air sampling shall be in accordance with USDOL/OSHA (29 CFR 1926.58).
   c. Laboratory analysis shall be in accordance with NIOSH Method 7402, and/or 7400, and AHERA (40 CFR 763, Subpart E, Appendix A).

2. Submittals
   a. Promptly process and distribute one (1) copy to the Owner/Representative and one (1) copy to the Contractor.
   b. Prompt reporting is necessary so that modifications to work methods and/or engineering controls will be implemented as soon as possible.
   c. The Asbestos consultant shall verbally notify all concerned parties within twenty-four (24) hours of the results of each test, followed by written notification within three (3) days.

3. Post-Abatement Air Samples
   a. Post-abatement air sampling shall not be done until written notice from the Contractor is received stating that he is ready for the post-abatement samples to be taken.
   b. Should post-abatement air sampling results include a fiber count greater than all applicable standards in the work area, the Contractor shall reclean the work area and re-sampling shall be performed. All costs of the additional samples will be at the Contractor's expense unless otherwise specified in writing and agreed upon in advance.

1.3 GENERAL ABATEMENT PROJECT CONDITIONS

A. Requirements

The asbestos abatement work areas are Major, Minor and Non-Friable Projects as defined by the Philadelphia Asbestos Control Regulation (ACR) and shall comply with all requirements therein.

1. The Contractor shall have a PA licensed Supervisor on site at all times during asbestos abatement activities. The Contractor shall not perform any abatement

activities, including prep, bag-out, and teardown unless a City of Philadelphia certified Asbestos Project Inspector (API) is on site.

2. The Contractor shall provide a schedule for all work areas listed. The schedule shall be approved by the Owner and API prior to the commencement of work. The schedule shall include dates and timelines for the completion of all work areas listed in addition to proposed crew sizes.

3. If the Contractor seeks a change in the procedures and/or methods for accomplishing a certain asbestos abatement task, the Contractor may submit a written request to the Asbestos Project Designer for an alternative method, identifying the procedure for which an alternative is being sought, and the reason for seeking a change. The Asbestos Project Designer shall review the request and render a decision within twenty-four (24) hours of receipt of the written request.

4. The Owner, API, and Contractor shall conduct an inspection for existing damages prior to the commencement of work. All parties shall agree in writing on building conditions and list all damaged materials, furnishings, etc.

5. Contractor access shall be confined to the work areas indicated in this Contract. The Contract may be proceeding concurrently with others in the building. The Contractor shall cooperate fully with the other Contractors in expediting the work of all trades, and avoid damage to the work of the other Contractors.

6. The Contractor shall be served with a Stop Work Order by the Project Designer and/or API when they are in non-compliance with this Contract Specification and/or other pertinent regulations (Refer to *Section L*).

7. The project shall remain halted until all matters identified in the Stop Work Order are corrected.

B. Asbestos Containing Materials

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 suspect ACM is found, notify the Owner, or Owner's Representative about the location and quantity of the suspect ACM within 24 hours of the discovery.

C. Asbestos Health Risk

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.

D. Contractor Use of Premises

1. **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.

2. **Owner Occupancy:** Allow for Owner occupancy and use by the public.

3. **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.

E. 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.

F. Occupancy Requirements

1. **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.

2. The Contractor will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner occupancy.

G. Site Security

1. Physical Isolation

   The area of asbestos removal shall be totally isolated from portions of the building not involved in the work.

2. Posting

   The Contractor shall post danger signs meeting the requirements of OSHA 29CFR 1926.58 (g)(l)(ii) at all entrances to the work area and at a sufficient distance from the work area to permit an individual to read the sign and take necessary protective measures to avoid exposure. Additional signs may be necessary following construction of work place barriers.

3. Personnel

   a. All workers and authorized personnel shall enter and exit the work area through the worker decontamination enclosure system.

   b. All personnel who enter the work area must sign the entry log, located in the clean room, upon entry and exit.

   c. All personnel, before entering the work area, shall read and be familiar with all posted regulations, personal protection requirements (including work place entry and exit procedures), and emergency procedures.

   d. All personnel shall proceed first to the clean room, remove all street clothes and don the appropriate respiratory equipment (as deemed adequate for the job conditions) and disposable coveralls, with head and foot covering. Hard hats, eye protection and gloves, shall also be utilized, if required. Clean respirators and protective clothing shall be provided and utilized by each person for each separate entry into the work area.

   e. Personnel wearing designated personal protective equipment shall proceed from the clean room through the shower room and equipment room to the main work area.

   f. Before exiting the work area, all personnel shall remove gross contamination from the outside of the respirators and protective clothing by brushing and/or wet wiping procedures (small HEPA vacuums with brush attachments may be utilized for this purpose; larger machines may tear the suits).

   g. Personnel shall proceed to the equipment room where they shall remove all protective equipment except respirators. Deposit disposable clothing into appropriately labeled containers for disposal. Reusable, contaminated footwear shall be stored in the equipment room when not in use in the work

area. Rubber boots may be decontaminated at the completion of the abatement for re-use.

h. Still wearing respirators, personnel shall proceed to the shower area, clean the outside of the respirators and their exposed face areas under running water prior to removal of respirator; personnel will then shower with soap to remove residual asbestos contamination. Various types of respirators will require slight modification of these procedures. An air line respirator with HEPA filter protection may be disconnected in the equipment room and worn into the shower. A powered air purifying respirator face-piece will have to be disconnected from the filter/power-pack assembly which is not waterproof, upon entering the shower. A dual cartridge respirator may be worn into the shower. Cartridges must be replaced for each new entry into the work area.

i. After showering and drying, personnel will proceed to the clean room and don clean disposable clothing if there will be later re-entry into the work area or street clothes if it is the end of the work shift.

H. Notifications

1. Pursuant to NESHAP requirements the contractor should provide appropriate written notification at least 10 days prior to the start of asbestos abatement work. Three copies with an approved major asbestos permit are to be sent to:

   City of Philadelphia
   Department of Public Health
   Air Management Services
   Asbestos Control Unit
   321 University Avenue
   Philadelphia, PA 19104-4597

   A photocopy of the notification must also be sent to:
   Asbestos NESHAP Coordinator (3WC32)
   US EPA Region III
   1650 Arch Street
   Philadelphia, PA 19103-2029

2. The Contractor shall submit written notification of the asbestos abatement project schedule to the local police and fire departments ten (10) days prior to beginning the project.

3. The Owner will provide a minimum of ten (10) calendar days advance notification of intended asbestos abatement to all occupants. This notice shall

conform to the Philadelphia ACR, *Section VI.B.2* and shall remain posted until the re-occupancy standard is met.

I. Mandatory Meetings / Submittals

1. **Pre-construction meeting** - The Contractor shall attend a pre-construction meeting scheduled by the Owner. The Contractor shall submit to the Owner the following, if not already submitted:
    - Copies of required notifications, insurance, and bonds.
    - Progress schedule

    a. The Contractor shall provide a schedule for all work areas listed. The schedule shall be approved by the Owner and API prior to the commencement of work. The schedule shall include the number of active abatement work areas at any given time, proposed crew sizes, and waiting periods following the delivery of the work area to the API for final visual inspections and clearance testing.

        i. Asbestos Abatement Work plan delineating phasing and preparation of the work site, including intended locations of water and electrical sources, and the intended storage locations for furniture and ceiling mounted light fixtures and other ceiling mounted items. Description of decontamination sequence, removal methods to be used and waste handling.

        ii. Supervisor credentials and delineation of responsibility for work site supervision, including name, telephone number and pager number for both the project manager and the on-site supervisor.

        iii. Worker qualifications, current licenses, fit tests, and medicals. These may be submitted as the crew is selected or changed, however, no workers will be permitted to remain on site without submission and approval of qualifications.

        iv. Safety Data Sheets (SDS) for the materials to be used on the job:

            1. Asbestos abatement encapsulant (only encapsulants approved by the Department of Public Health may be used)
            2. Heavy-duty polyethylene tape used for sealing fixed objects, the construction of critical barriers, decontamination chambers and floor/wall containments
            3. Name of Waste Hauler(s) and disposal site with EPA/DEP identification numbers
            4. Name of the firm or competent person performing the CONTRACTORs OSHA required personnel monitoring and the

laboratories PAT Certification and Philadelphia Laboratory Certification

5. A detailed *written* description of emergency procedures to be followed in the event of injury or fire. This submittal must include execution procedures, source of emergency assistance (including telephone numbers), and access procedures to be used by emergency personnel

2. Progress meetings

Meetings shall be held at the job site at the discretion of the Owner/Construction Manager/API to discuss the progress of the work, phasing and other Contractor coordination, work schedule, and any conflicts or problems. The representative of the Contractor must have authorization to speak for and make commitments for the Contractor. The General Contractor (GC) and Asbestos Abatement Contractor shall continuously coordinate to fulfill project milestones and phasing requirements. The Owner will not pay remobilization fees, charges and/or change orders issued by the GC and/or Asbestos Contractor.

J. General Requirements

1. Documents and Information Required on Site

The following information MUST be submitted prior to abatement: Major Asbestos Work Permit, EPA 10 Day Notification(s), Supervisor and Worker Badges, Current Medical Clearance and Fit Test Records, Work Plan, Safety Procedures, Evacuation Plan, Emergency Phone Numbers, MSDS information, Worker Acknowledgement Certificates, and Equipment Certification.

2. Badge Requirements

All workers must have a current State of Pennsylvania, Department of Labor & Industry Asbestos Supervisor or Worker Badge on site in order to work on this project.

3. PPE for all Removal Activities

Tyvek or equivalent coveralls/suits with pull over hoods & feet. For all abatement activities minimum PPE will be Half Face HEPA filtered Respirators, Hard Hats, Safety Glasses, Work Gloves, and Work Boots.

4. Ground Fault Protection

Contractor shall use GFCI protection on all electrical connections for this Project. The contractor may use a temporary distribution panel with GFCI breakers or

outlets, or use 3-wire extension cord with GFCI to connect to existing electrical outlets in facility.

5. Tools & Equipment

   All tools & equipment must meet OSHA standards or must be removed from site.

6. Electrical Lights, Tools & Equipment

   Electrical lights, and electrical tools and equipment in the work area shall be water resistant with 3-wires (or a double insulated piece of equipment with a manufacturer's OEM two prong cord if approved for use in damp locations) and equipment in the work area shall be grounded and utilize a GFCI.

7. Fire Extinguishers

   Contractor shall provide a minimum of one fire extinguisher for every 2,500 SF of containment and one fire extinguisher outside the containment near the decon.

8. First Aid Kit

   Contractor shall provide a stocked first aid kit in accordance with 29 CFR 1926.

9. Three Stage Decontamination Unit

   Will be constructed with three separate chambers consisting of a Dirty Equipment Room, a Shower Room complete with a functional shower with hot and cold water, soap, shampoo, and towels, and a Clean Room Chamber. The decon chamber shall be large enough to accommodate the number of workers on the project (*one shower per eight workers*).

10. Danger Signs

    Proper OSHA Danger signs will be posted at all the entrances to the regulated areas.

11. Decontamination Unit Waste Water

    Will be either filtered with a 5 micron filter, or bagged or drummed as asbestos waste.

12. Waste Bags

    All ACM waste bags must be at least 6-mil in thickness. All ACM waste will be double-bagged, goose necked, sealed with duct tape, and affixed with NESHAP labels prior to placing in waste container.

13. Stop Work Order

If at any time the Contractor is found to not be in compliance with the guidelines of this specification then a STOP WORK ORDER may be issued. Work will cease until corrective measures are taken to bring the work practices back in compliance and work may not continue until approval is granted by the Owner or Owner's representative.

14. Final Air Test Results

    Final clearance sampling will be in accordance with the Philadelphia ACR, AHERA, and School District of Philadelphia regulations and guidelines with the use of aggressive sampling protocol (See Work Area Clearance on page 7).

15. Land Fill & Chain of Custody

    The building owner directs the Contractor to utilize an EPA approved landfill to dispose of the asbestos waste. The Contractor is to provide the Owner with the completed waste manifest / chain of custody as well as the landfill receipts. Transportation and disposal of asbestos waste shall occur within thirty (30) days after removal. Category I non-friable asbestos material that is not in poor condition and is not friable may be disposed of as ID 13C, construction and demolition debris.

16. Vehicles or Transportation Containers

    All vehicles, transportation containers, and the transportation of asbestos waste will be in accordance with the Pennsylvania Department of Environmental Resources, and EPA regulations.

K. Emergency Planning

1. Emergency planning shall be developed and initiated prior to abatement activities, and all parties involved will be informed.

2. Emergency procedures shall be in written form and prominently posted in the clean change room and equipment room of the worker decontamination area. Everyone prior to entering the work area must read and sign the procedures to acknowledge receipt and understanding of the work site layout, location of emergency exits and emergency procedures.

3. Emergency planning shall include considerations of fire, explosion, toxic atmospheres, electric hazards, slips, trips and falls, confined spaces and heat related injury. Written procedures shall be developed and employee training in these procedures shall be provided.

4. Employees shall be trained in evacuation procedures in the event of work place emergencies:

   a. For non-life-threatening situations, employees injured or otherwise incapacitated, shall decontaminate following normal procedures with assistance from fellow workers, if necessary, before exiting the work place to obtain proper medical treatment.

L. Asbestos Project Inspector (API) Responsibility

1. The API shall act as the Owner's representative on the work site to assure and document compliance with this Specification and applicable regulations and to perform all project sampling and analysis required by the Philadelphia ACR and AHERA.

2. The API shall be responsible to see that required information and notifications are posted and are accessible for review by all concerned parties.

3. The API shall keep a daily log documenting the progress and performance of the Contractor over the course of the project.

4. The API shall perform continuous inspections to monitor the performance of the Contractor and to assure and document compliance with this Specification and applicable regulations. Inspections shall be performed during all phases of the project including verifying compliance with standard operating procedures, checking engineering controls, personal protection and decontamination systems, and handling and disposition of the resulting asbestos waste materials.

5. The API shall be responsible for performing all project sampling and analysis required by the Philadelphia ACR and AHERA.

6. The API shall routinely perform smoke testing at all critical barriers throughout the performance of asbestos abatement activities until the receipt of acceptable clearance air sample results to verify the integrity of critical barriers and presence of an adequate negative pressure differential.

7. The API shall notify the Owner and Air Management Services of the City of Philadelphia if the Contractor is found to be in non-compliance with the technical specifications or those Municipal, State or Federal regulations applicable to this project.

   a. The API shall serve written notice to the Contractor for all Contractor non-compliance actions.

8. The Contractor Supervisor and API shall perform a visual inspection of the entire floor immediately below all active abatement work areas at the end of each 8-hour shift to verify that no water leaks, fallen material, or any other type of damage has occurred.
    i. If water leaks, fallen material, or any other type of damage has occurred:
    ii. all asbestos abatement work shall be halted
    iii. the API shall immediately notify the Asbestos Project Manager, Construction Manager and Owner for direction and input
    iv. the source of the leak or damage shall be determined
    v. the containment breech issue shall be rectified before any asbestos abatement work will be permitted to continue.

9. The API shall conduct a detailed final inspection to ensure that no visible dust or debris remains on any surfaces. This includes all surfaces inside the abatement work area and all horizontal surfaces in the immediate surroundings of representative makeup air entering each independent asbestos abatement work area being tested.

M. Air Monitoring by the Owner

1. The Owner shall employ the services of an API who is in licensed by the City of Philadelphia to perform air monitoring and quality assurance of the Contractor's work practices.

2. The API shall collect pre-test and project air samples in accordance with the Philadelphia Asbestos Control Regulations and AHERA. Project air monitoring during abatement activities shall include samples inside and outside the work area to ensure airborne fiber concentrations remain at acceptable levels. Acceptable airborne fiber concentrations outside the work area shall be < 0.010 f/cc for PCM and < 0.010 s/cc for TEM. Pre-test and project samples shall be analyzed via Phase Contrast Microscopy (PCM), NIOSH Method 7400.

3. The API shall provide clearance air sampling:
    a. For Major Projects, five (5) clearance samples shall be collected and analyzed via TEM. Results shall be evaluated in accordance with the ACR. (Full AHERA final air tests of 5 TEMs inside the work area, and 5 outside the work area for projects with greater or equal to 160 square feet or 260 linear feet of ACM in the work area).

b. For Small and Minor Projects, five (5) clearance samples shall be collected and analyzed via Phase Contrast Microscopy (PCM) or TEM. Results shall be evaluated in accordance with the ACR.

c. For Non-Friable Projects, five (5) clearance samples shall be collected and analyzed via Phase Contrast Microscopy (PCM) or TEM. Results shall be evaluated in accordance with the ACR.

d. Clearance air sampling shall be performed using aggressive sampling protocols. Sampling procedures and clearance criteria shall follow all requirements of the Philadelphia ACR and AHERA.

4. The Owner shall be responsible for costs incurred for the initial required laboratory work. Any subsequent testing required due to limits exceeded during abatement or any clearance sampling shall be paid by the Contractor. These costs include both labor and analysis.

a. The API shall invoice the Owner, on a separate invoice, for all costs relating to labor and analyses resulting from additional testing required due to limits exceeded during abatement or failure of first round clearance sampling.

b. The Contractor's contract amount shall be reduced by an amount equal to the costs for labor and analyses resulting from additional testing required due to limits exceeded during abatement or failure of first round clearance sampling.

c. The Owner shall retain possession and ownership of all air sampling data and documentation. The Z-test method found in 40 CFR 763, Subpart E., Appendix A, is a test method in which inside and outside area averages can be used to pass an area based upon the outcome of the arithmetic comparison of both areas. However, the analysis and comparison of the inside and outside air samples via the Z-test method is not permitted as part of this project.

i. Inside the work area samples shall be analyzed using the geometric mean for TEM samples or the Re-occupancy standard of 0.010 f/cc by PCM. Outside the work area samples shall be analyzed and compared independently.

1. An Exceedance of the geometric mean inside the work area and/or an exceedance of 0.010 f/cc or 0.070 s/mm^2 outside the work area shall require corrective action re-cleaning by the Contractor.

ii. Inside and outside final clearance air samples shall be collected and analyzed via PCM or TEM. Results shall be evaluated in accordance with the ACR and AHERA.

iii. Acceptable airborne fiber concentrations for individual "outside the work area" air samples shall be < 0.010 f/cc for PCM and < 0.070 s/mm^2 for TEM.

iv. During all phases of the project, the API/Consulting Firm shall be required to notify the Department of Public Health in the event an "outside the work area" air sample is in exceedance of 0.010 f/cc.

5. The API will conduct daily air monitoring during the project both inside and outside of the work area during the work.
   a. Air monitoring required by OSHA is the responsibility of the Contractor.

6. **Monitoring** of airborne concentrations of asbestos shall be in accordance with 29 CFR 1910.1001, 29 CFR 1926.1101, and ASTM E 849. The Owner's representative shall monitor the airborne concentration of asbestos before starting work to obtain a baseline fiber concentration in the affected areas. Then monitor continuously during the course of the work inside the asbestos work area; outside the work area including outside the entrance to the asbestos work area and at the exhaust opening of the local exhaust system. If monitoring shows airborne concentrations greater than the asbestos control limits, stop all work, correct the conditions causing the excessive levels, and notify the Owner immediately. In addition, the Owner's representative shall conduct final clearance air tests after abatement is completed in accordance with the Asbestos Control Regulation before removal of the enclosure of the asbestos work area.

7. **Final Cleanup and Removal of Enclosure**: The Contractor must notify the API that the work area is ready for final inspection. The API will inspect the work area prior to decontamination and removal of the enclosure. Visual observation of asbestos materials, dust or debris is not permitted on any surface in or around the work area. Clean the work area in accordance with EPA approved methods. The Owner's API will perform air sampling for clearance purposes. Sampling will be performed using aggressive sampling protocols, using fans or similar equipment to create air movement during the clearance air sampling.

N. Stop Work

1. If the Owner or Owner's Representative presents a written stop work order, immediately and automatically conform to that stop work order, while maintaining temporary enclosures and pressure differential. After being presented with a stop work order, immediately initiate the following actions:
   a. Cease all asbestos removal activities, or any other activities that disturbs ACM.

b. Repair any fallen, ripped or otherwise failed work area isolation measures.

c. Maintain in operation all work area isolation measures.

d. Maintain all worker protections.

e. Fog the air in the work area with a mist of amended water to reduce airborne fiber levels.

2. **Do not recommence work** until authorized in writing by the API.

PART II: MATERIALS & EQUIPMENT

2.1 GENERAL MATERIALS

A. General

1. Deliver all materials in the original packages, containers or bundles bearing the name of the manufacturer and the brand name (where applicable).

2. Store all materials subject to damage, off the ground, away from wet or damp surfaces and under cover, sufficient to prevent damage or contamination. Replacement materials shall be stored outside of the work area until abatement is completed.

3. Damaged, deteriorating or previously used materials shall not be used and shall be removed from the work site and disposed of properly.

4. Polyethylene sheeting for stationary objects shall be a minimum of two (2) layers of six (6) mil poly sheeting. All floors shall be covered with two (2) layers of six (6) mil poly sheeting and shall be used in widths selected to minimize the frequency of joints. Walls shall be covered with one (1) layer of six (6) mil poly.

5. The method of attaching polyethylene sheeting shall be agreed upon in advance by the Contractor and Consultant or his designated representative and selected to minimize damage to equipment and surfaces. Method of attachment may include any combination of duct tape or other waterproof tape, furring strips, spray glue, staples, nails, screws or other effective procedures capable of sealing adjacent sheets of polyethylene under both wet and dry conditions (including the use of amended water).

6. Polyethylene sheeting utilized for worker decontamination enclosure shall be opaque, white or black in color.

7. Special materials required to protect objects in the work area should be detailed (e.g., plywood over carpeting or hardwood floors to prevent damage from scaffolds and falling material).

8. Disposal bags shall be of six (6) mil polyethylene, pre-printed with labels as required by EPA regulation 40 CFR 61.512 (b)(l)(iv) or OSHA requirement 28 CFR 1910.1001 (g)(2)(ii).

9. Disposal drums shall be metal or fiberboard with locking ring tops.

10. Stick-on labels, as per EPA or OSHA requirements for disposal drums.

All disposal bags and disposal drums shall include the following labels:

Name and address of owner of material.
Warning Label:

CAUTION
CONTAINS ASBESTOS FIBERS
AVOID OPENING OR BREAKING CONTAINER
BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

Provided in accordance with 29 CFR 191 0:1200 (f) of OSHA's Hazard Communication Standard.

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE ASBESTOS, TREMOLITE,
ANTHOPHYLLITE,
OR ACTINOLITE FIBERS IS HAZARDOUS TO YOUR HEALTH

Provided in accordance with the U.S. Department of Transportation regulation of hazardous waste marking, 49 CFR Parts 171 and 172. Hazardous Substances: Final Rule. Published November 21, 1986 and revised February 17, 1987.

RQ HAZARDOUS
SUBSTANCE
SOLID, NOS,
ORM-E, NA 9188
(ASBESTOS)

11. **Polyethylene**

All plastic sheeting shall be six (6) mil thick and of sufficient size to enclose the area with a minimum number of seams.

12. **Barrier Securing Materials**

All tape shall be a high-quality duct tape of appropriate width suitable for bonding sheet plastic and disposal waste bags and containers. All spray-on adhesive, glue and other barriers or securing material shall also be high quality products.

13. **Lumber**

Lumber utilized for construction on the work site shall be selected by the Contractor; however, all materials will be of appropriate size to provide safety to all personnel and free of all contaminants.

14. **Hand Tools**

All hand tools shall be furnished by the Contractor and shall be properly used by all personnel. Use only hand tools for the removal of asbestos containing materials whenever feasible. Do not use power tools to remove asbestos containing materials unless the tool is equipped with effective HEPA filtered exhaust ventilation systems. All vacuums and other tools must be clean and decontaminated from all residual asbestos debris before being used on this project.

15. **Glovebags**

Only glovebags specifically designed and approved for use in the City of Philadelphia removal projects shall be used.

16. **Disposal Containers**

a. Waste bags for disposal of asbestos materials shall be 6 mil thick, leak-tight plastic bag, pre-labeled in accordance with 29 CFR 1926,1101.

b. **Fiber or Metal Container Drums**

Waste bags may be stored inside rigid fiberboard or metal container drums for additional support of the weight of the asbestos waste. All fiberboard or metal container drums shall be thirty (30) gallon capacity and meet all applicable standards.

B. Removal

1. **Sprayers and Pumps**

   Sprayers with pumps capable of providing five hundred (500) pounds per square inch (psi) at the nozzle tip at a flow rate of two (2) gallons per minute, shall be used for spraying amended water.

2. **Squeegees and Dustpans**

   The Contractor shall provide rubber dustpans and squeegees for cleanup.

3. **Brushes**

   Brushes utilized for removing loose asbestos containing material shall have nylon or fiber bristles, not metal.

4. **Amended Water**

   Use water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter of wet ACM at all times during removal operations

5. **Penetrating Encapsulant**

   Encapsulants shall conform to USEPA requirements and shall contain no toxic or hazardous substances and no solvent.

2.2 EQUIPMENT

A. High Efficiency Particulate Air (HEPA) Filtration Devices (AFD)

1. HEPA Filtration
   a. The Contractor shall have available, air filtering equipment capable of filtering asbestos fibers to 0.3 microns of at least 99.97 percent efficiency and of sufficient quantity and capacity to provide a complete air change within the work area once every fifteen (15) minutes. Such equipment shall exhaust the filtered air so as to maintain negative pressure. Air shall enter through the decontamination chamber and waste exit ports, and exhaust through the HEPA air filtration unit by means of flexible duct leading outside the work area, outside of the building. The air filtering equipment should be positioned at the maximum distance from the decontamination chamber space will permit. Air flow shall be sufficient to prevent escape of airborne fibers. HEPA air filtration shall be in operation at all times until final air clearance has been achieved.

b. Air pressure levels at the work site shall be maintained at minus 0.02 inches of water and shall operate on a twenty-four (24) hour basis until satisfactory post-abatement air sampling results have been achieved.

c. The pressure differential will be monitored by the Contractor and verified by the API.

d. HEPA vacuums shall be leak proof to the filter and equipped with HEPA filters, capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter. Filters on the vacuum shall conform to AIHA Z9.2 and UL 586.

B. Respiratory and Personal Protective Equipment

1. The Contractor shall provide approved respirators and protective clothing to all workers. Authorized representatives of the Owner, State or other Government entity who arrive to inspect the work site shall be permitted access to the work area provided the visitor arrives with their own approved respirator. Protective clothing shall be provided to these visitors by the Contractor.

   a. The Contractor shall provide approved respirators to all visitors that can provide proof that a Pulmonary Function Test, Medical exam and chest x-ray has been performed on the visitor, and that a doctor has performed a pulmonary evaluation of the visitor indicating that the visitor has been deemed able to safely wear a respirator.

2. The Contractor shall require that each person entering the work area shall wear an approved respirator and protective clothing. There shall be no exceptions to this rule.

3. Provide respirators, and ensure that they are used as required by 29 CFR 1926.1101 and 1926.103 and the manufacturer's recommendations. Respirators shall be approved by the National Institute for Occupational Safety and Health NIOSH, under the provisions of 42 CFR 84, for use in environments containing airborne asbestos fibers. For air-purifying respirators, the particulate filter shall be high-efficiency particulate air (HEPA). The initial respirator selection and the decisions regarding the upgrading or downgrading of respirator type shall be made by the Project Designer based on the measured or anticipated airborne asbestos fiber concentrations to be encountered. Half face respirators with HEPA cartridges are the minimum required respiratory protection for abatement related activities on this project.

4. The Contractor shall conduct a qualitative or quantitative fit test for each worker required to wear a respirator. A respirator fit test shall be performed prior to

initially wearing a respirator and every 12 months thereafter. If physical changes develop that will affect the fit, a new fit test shall be performed. Functional fit checks shall be performed each time a respirator is put on and in accordance with the manufacturer's recommendation.

5. The Contractor shall establish in writing, and implement a respiratory protection program in accordance with 29 CFR 1926.1101 and 1910.134.

6. All persons performing asbestos abatement work requiring respiratory protection shall be clean shaven and have an unobstructed face mask seal. Only mustaches that do not exceed the corners of the upper lip and sideburns that do not extend below the earlobes are permitted.

7. Provide personnel exposed to asbestos with disposable “non-breathable,” whole body outer protective clothing, head coverings, and gloves. Provide disposable plastic, rubber, or cloth gloves to protect hands.

8. Provide safety eye protection that meets ANSI standards for personnel not utilizing full face respirators during all work activities on this project.

9. Provide hard hats that meet ANSI standards for all personnel working on this project for all types of work activities and whenever in the work area.

10. For containments with an attached three (3) stage decontamination unit, asbestos workers shall wear a single disposable suit including hood and footwear. Before exiting the work area, the workers shall remove their respirator filters and disposable suit in the shower after appropriate wetting. These shall be disposed of as asbestos waste.

11. For containments utilizing a remote decontamination unit, asbestos workers shall wear two (2) disposable coverall suits. Before exiting the work area, the worker shall remove both suits and change into a clean disposable suit in the one-stage chamber. The worker shall immediately proceed to the remote centralized, decontamination chamber, equipped with a shower and clean room. Dispose of clean suit and respirator cartridges in the centralized decontamination chamber.

C. Scaffolding/Walkways/Hoists/Ladders

1. The Contractor shall use appropriate ladders, scaffolds, lifts, and/or hoists to provide safe access for equipment demolition and removal of ACM. Personnel safety lines and harnesses are required where appropriate.

a. Fall protection equipment and guidelines shall comply with OSHA Regulation Standards 29 CFR 1926.501.

2. All scaffolding shall be of sound condition and assembled per OSHA requirements on a level, secure base. Scaffolding shall not be overloaded. The scaffolding shall be secured or tied into the building whenever possible. Guardrails consisting of top and mid-rails and toe boards shall always be installed. A post set-up inspection and daily inspections shall be conducted. Scaffold work platforms shall comply with OSHA Regulation Standards 29 CFR 1926.451.

3. All stairs, platforms, catwalks and walking surfaces shall be kept, as is practical, free from obstructions, accumulation of water, and tripping hazards, and where elevated, be protected by OSHA specified top-rails, mid-rails, and toe boards.

4. Ladders of sufficient quantity and of suitable length or height shall be provided. Only electrically non-conductive materials, such as wood or fiberglass, shall be used. Ladders shall be kept in good repair and inspected regularly. Personnel shall be instructed in the proper use of ladders. No structural alterations shall be made to any ladder.

5. All ladders, scaffolds, lifts, and/or hoists shall arrive at the project site in good condition and free of any visual residual asbestos contamination.

6. Any scaffolding used, erected and later dismantled, must be employed in a manner that does not damage the walls or other building surfaces, and is the responsibility of the Contractor.

7. A competent person is required for the installation and inspection of all scaffolding. A competent person is defined as “one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.”

8. Any scaffolding or ladders utilized during the course of this project will be properly decontaminated to the satisfaction of the A.P.I.

D. Portable Generators

Inspect generators prior to taking them to the job site to ensure they are operational and safe. Follow all safety guidelines by the manufacturer while using a generator on the jobsite. Use heavy duty three pronged extension cords and ground fault circuit interrupters (GFCIs) for all electrical connections to the generator. Never refuel the

generator while it is running and never use the generator in an enclosed environment or indoors.

PART III: EXECUTION

3.1 PREPARATION

A. Asbestos Abatement Work Plan

Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the building's HVAC system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris. The plan must be submitted at the Pre-Work Meeting and approved by the Owner's representative prior to commencement of work. Include written contingencies for:

- Fire
- Accident
- Pipe Breakage
- Negative Air System Failure
- Power Failure

B. Pre-Inspection

Prior to commencement of work, inspect areas in which work will be performed. Prepare a listing of damage to structure, surfaces, and equipment or of surrounding properties that could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit to Owner prior to starting work.

C. Temporary Services:

1. Water Service
    a. Water connection (without charge) to Owner’s existing potable water system is the responsibility of the Contractor. Install using vacuum breakers or other backflow preventer as required by local authority. Hot water shall be supplied at a minimum temperature of one hundred (100) degrees Fahrenheit. Supply

hot and cold water to the decontamination unit. In addition, water shall be supplied for all work site uses.

b. Maintain hose connections and outlet valves in leak-proof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drop pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

2. Electrical Services

a. Provide a weather-proof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide a sufficient illumination for safe work and traffic conditions in every area of work.

b. Lock out existing power 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.

i. Lock out power to work area by switching off breakers serving power of lighting circuits in work area. Circuit locking devices shall be used to lock out power to the work area. Lock panel and have all keys under control of the Owner's Designated Representative.

ii. Lock out power to circuits running through work area wherever possible by switching off breakers serving these circuits. Circuit locking devices shall be used to lock out power to the work area. Sign and date danger tag. Lock panel and turn keys over to the Owner's Representative for control. If circuits cannot be shut down for any reason, label at intervals 4'O" on center of tags reading, "DANGER live electric circuit". "Electrocution hazard".

c. Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by work. Connect temporary panel to existing building electrical system. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Owner's Representative.

d. Power Distribution System. Provide circuits of adequate size and proper characteristics for each use. In general, run wiring overhead, and rise vertically where wiring will be least exposed to damage from construction operations.

e. 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.

f. 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.

g. Number of Branch Circuits. Provide sufficient branch circuits as required by the work. All branch circuits are to originate at temporary electrical panel. At minimum, provide the following:

i. One (1) circuit for each HEPA filtered fan unit.

ii. For power tools and task lighting, provide one (1) temporary four-gang outlet for (four [4] outlets per circuit).

1. One (1) outlet in the work area for each two thousand, five hundred (2,500) square feet of work area.

2. One (1) outlet at each decontamination unit, located in Equipment Room.

iii. 110-120 Volt, 20 Amp branch circuits with a four-gang outlet for Owner's exclusive use while conducting air sampling.

1. One (1) in each work area.

2. One (1) at clean side of each decontamination unit.

3. One (1) at each exhaust location for HEPA filtered fan units.

iv. 110-120 Volt, 20 Amp branch circuits with 4-gang outlets for Owner's exclusive use while conducting air sampling.

3. Temporary Lighting

Lock out all existing power to lighting circuits in the work area. 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.

D. Decontamination Facilities:

1. The Contractor shall construct and place a three-stage decontamination unit at the entrance to all Major Project work areas.

2. Provide a personnel decontamination unit consisting of a serial arrangement of connected rooms or spaces, Clean Room, Shower Room and 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 the personnel decontamination unit. Provide temporary heating and lighting within the decontamination units as necessary to provide safe and comfortable conditions.

3. Three stage decontamination units shall be constructed as described below:
   a. **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.
      i. Construct, using two (2) layers of opaque polyethylene sheeting, at least six (6) mil in thickness, to provide an airtight seal between the Clean Room and the rest of the building.
      ii. Locate so that access to work area from the Clean Room is through the Shower Room.
      iii. Separate the Clean Room from the building by a sheet plastic flapped doorway.
      iv. Require workers to remove all street clothes in this room, dress in clean disposable coveralls, and on respiratory protection equipment. Do not allow access 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.
      v. Maintain floor of Clean Room dry and clean at all times. Do not allow water from shower to wet floor in Clean Room.
      vi. Damp wipe all surfaces twice after each shift change with a disinfectant solution.
      vii. Provide posted information for all emergency telephone numbers and procedures.
      viii. Provide one (1) storage locker per employee.
   b. **Shower Room**. Provide a completely watertight operation shower to be used by cleanly dressed workers heading for the work area from the Clean Room, or for showering by workers headed out of the work area after undressing in the Equipment Room.
      i. Construct room by providing a shower pan and two (2) shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in a shower pan at elevation of top of pan.

ii. Separate this room from the rest of the building with airtight walls fabricated of two (2) layers of opaque six (6) mil polyethylene sheeting.

iii. Separate this room from the Clean Room with airtight walls fabricated of six (6) mil polyethylene sheeting.

iv. Provide splash-proof entrance to Clean Room with doors of flapped polyethylene.

v. Provide shower head and controls supplied with doors of flapped polyethylene.

vi. Provide a continuously adequate supply of liquid bath soap and shampoo and maintain in sanitary condition.

vii. Provide a continuously adequate supply of disposable bath towels.

viii. Arrange so that the water from showering does not splash into the Clean or Equipment Room.

ix. 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.

x. Used filters shall be disposed of as asbestos containing waste material.

xi. Provide hose bib.

c. **Equipment Room (Contaminated Area)**. Require work equipment, footwear, and additional work clothing to be left here. This is a change and transit area for workers.

i. Separate this room from the work area by six (6) mil polyethylene flapped doorway.

ii. Separate this room from the rest of the building with airtight walls fabricated of two (2) layers of opaque six (6) mil polyethylene.

iii. Separate this room from the Shower Room and work area with airtight walls fabricated of six (6) mil polyethylene.

iv. Provide a drop cloth layer of sheet plastic in the floor of the Equipment Room for every shift change expected. Roll drop cloth layer of plastic from Equipment Room into the 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.

d. **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 (1) additional floor layer of six (6) mil polyethylene per shift change and remove contaminated layer after each shift.

4. For all other Minor and Non-Friable Projects, a one-stage decontamination unit shall be constructed and placed at the entrance to the work area, with a two-stage centralized decontamination unit/shower constructed prior to work in any project areas. Decontamination units shall have a sturdy frame comprised of studs or equivalent.

5. One stage decontamination units shall be constructed as described below:

   a. **One-stage unit**:

      i. Interior of the chamber shall be covered with two layers of six (6) mil polyethylene and triple flap airlocks shall be placed at entrance and exit;

      ii. Shall have a sturdy frame comprised of studs or an approved equivalent.

      iii. Shall have danger signs posted at the entrance;

      iv. Workers shall wear double suits while in the work area. Prior to exiting a contaminated work area, the worker shall change into a clean Tyvek suit prior to proceeding to the centralized, two stage, decontamination chamber, equipped with a shower, provided with hot and cold water, and a clean room. Dispose of suit and respirator cartridges in the centralized decontamination chamber.

      v. Shall be accompanied with a two-stage remote decontamination unit that provides hot and cold water for use in the shower room;

      vi. Shower water shall be added to waste materials or pumped through a five (5) micron filter element prior to discharging it to the sanitary sewer or floor drains.

6. Decontamination units shall have a sturdy frame comprised of studs or equivalent.

7. The Contractor shall provide one decontamination chamber for every eight (8) workers.

8. Asbestos abatement shall not commence until the Contractor can demonstrate to the API that the shower unit is fully operational.

9. **Decontamination Sequence**. Require that all workers and authorized visitors adhere to the following sequence when entering or leaving the work area.

   a. All individuals that enter the work area shall sign the entry log, located in the Clean Room, upon each entry and exit.

   b. **Entering the Work Area**. Workers enter the Clean Room and remove street clothing, put on clean disposable overalls and respirator, and pass through the Shower Room into the Equipment Room.

      i. Any additional clothing and equipment left in the Equipment Room needed by the worker is to be put on in the Equipment Room.

      ii. Worker proceeds to the work area.

   c. **Exiting the Work Area**

      i. Before leaving the work area, require the worker to remove all gross contamination and debris from the outside of the respirator, and protective clothing by wet wiping and HEPA vacuuming.

      ii. The worker then proceeds to the Equipment Room and removes all clothing except protection equipment.

      iii. Extra clothing such as boots, hard hats, goggles, gloves, are to be stored in contaminated end of the Equipment Room.

      iv. Disposable coveralls are placed in a bag for disposal with other material.

      v. Require that decontamination procedures found in Section V be followed by all individuals leaving the work area.

      vi. After showering, the worker moves to the Clean Room and dresses in either new coveralls for another entry or street clothes if leaving.

10. Construction of the decontamination units.

   a. **Walls and Ceilings**. Construct airtight walls and ceiling using two (2) layers of polyethylene sheeting, at least six (6) mil in thickness. Attach to existing building components or a temporary framework.

   b. **Floors**. Use two (2) layers (minimum) of six (6) mil polyethylene sheeting to cover floors in all areas of the decontamination units. Use only clear plastic to cover floors.

c. **Flap Doors**. Fabricated from three (3) overlapping sheets with openings a minimum of four (4) feet wide. Configure so that sheeting overlaps adjacent surfaces. Weight sheets at bottoms as required so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of four (4) feet between entrance and exit of any room. Provide a minimum of four (4) feet between doors.

d. If the decontamination unit is located within a work area, provide the unit with a minimum of 3/4" plywood "ceiling" and walls with polyethylene sheeting, at least six (6) mil in thickness covering the top of the "ceiling" and walls.

e. **Visual Barrier**. Where the decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least six (6) mil in thickness so that work privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct the barrier with wood or metal studs covered with a minimum of 1/4" thick hardboard of 1/2" plywood. Where the solid barrier is provided, sheeting need not be opaque. This is different from the isolation barriers that separate work areas from building occupants whenever work is occurring in areas that are not enclosed in walls with lockable entrances unless all building occupants can be removed from the entire floor while the abatement work is occurring. Isolation barriers shall be constructed with wood or equivalent framing and plywood (minimum 3/8" thickness). A lockable door may need to be installed at the barrier for access to the work area(s).

f. Alternate methods of providing decontamination facilities may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without written authorization from the Owner's Representative.

g. **Electrical**. Provide sub-panel at Clean Room or other easily accessible location to accommodate all removal equipment. Power the sub-panel directly from a building electrical panel box. Connect all electrical branch circuits in decontamination unit and particularly any pumps in the Shower Room to a ground-fault circuit-protection device.

E. General Work Area Preparation

1. The Contractor shall confine their apparatus, the storage of materials, tools, supplies and the activities of their workman to the limits established by the Owner and local ordinances.

2. The Contractor shall assure that building exits are not obstructed and that appropriate safety barriers are established to prevent access by unauthorized persons. The works areas are to be kept neat, clean and safe.

3. The Contractor shall post OSHA specified, asbestos specific danger signs at the entrance to each work area. Such signs shall also be posted when applicable to decontamination chambers, bagout chambers, critical and separation barriers, and waste storage containers.

4. Provide isolation barriers to separate the abatement work areas from the remaining occupied areas of each floor.

5. All necessary building occupants remaining in the building during the asbestos abatement project shall be denied access to the asbestos abatement work area(s) by isolation barriers and/or locked doors.

6. All moveable objects shall be removed from the work area(s). Movable objects shall be wet wiped & HEPA vacuumed prior to their relocation to a clean area.

7. AFDs and HEPA vacuums require different maintenance schedules and attention depending on the model. Check the user's manual to determine and comply with the maintenance, filer replacement, and cleaning requirements of each AFD and HEPA vacuum being used.
    a. At no time shall an AFD be dismantled and the inner HEPA filter replaced while onsite. Removal and replacement of HEPA filters shall be performed offsite.
    b. At no time shall a HEPA vacuum be opened for cleaning/emptying outside the active asbestos abatement work area.
    c. Cleaning/emptying a HEPA vacuum shall be performed inside an active asbestos abatement work area with a minimum negative pressure differential of - 0.02 inches of water column.
        i. Cleaning/emptying of HEPA vacuums shall be performed directly beside an operating AFD exhausting to the exterior.
        ii. HEPA vacuums shall be cleaned/emptied only during gross removal of asbestos and/or equipment demolition. No HEPA vacuums shall be cleaned/emptied, or opened for any other reason, during final cleaning and/or encapsulation.

8. AFDs and all other supplies and equipment shall arrive at the project site in good condition and free of any visual residual asbestos contamination.

9. Assure HVAC systems associated with, or that pass through any abatement work areas are shut down. Provide appropriate lock and tag out devices at the shut off point of the fan.

10. De-energize the work areas and all conduit running through the work areas.
    a. Appropriate lock and tag out devices shall be installed at the breakers.
    b. The Contractor shall provide a temporary electric panel with ground fault interruption.
    c. The Contractor shall supply sufficient temporary lighting to illuminate the work areas during asbestos abatement and paint stabilization. All active work areas shall be lighted to not less than the minimum illumination intensities listed in OSHA Regulation 29 CFR 1926.56(a), Table D-3 for Indoors: warehouses, corridors, hallways, and exit ways (e.g. - 5-foot candles).

2. Only approved noncombustible or flame-resistant materials shall be used for work area preparation. Polyethylene sheeting shall be certified to conform to NFPA 701.

F. Project Inspections

1. The following inspections must be performed during the project phases indicated:
    a. Pre-Cleaning: A visual inspection of all pre-cleaned surface areas must be performed by the Contractor's supervisor and or the Owner's representative. This inspection will occur prior to the installation of polyethylene covering of walls, floors, and other surfaces.
    b. Post-Removal: A visual inspection of each work area must be performed following successful clearance air sampling and prior to commencing tear-down. This inspection is to be performed by the Contractor's Supervisor and or the Owner's Representative.
    c. Substantial Completion: After each project is complete, including any applicable demolition, re-insulation, or cleaning, a final inspection will be performed by the Contractor's Supervisor and or the Owner's Representative before turning the work area over to the Owner.

3.2 REMOVAL

A. Removal Procedures:

No work shall occur without the presence of a Certified Philadelphia Asbestos Project Inspector (API) on site contracted directly with the Owner. The following procedures are in accordance with the Asbestos Control Regulation. Any Alternative Means and Methods must first be submitted to the Building Owner & API for approval and to be signed by the API before being submitted to Air Management Services, Asbestos Control Unit for approval.

1. **REMOVAL OF ASBESTOS CONTAINING MATERIALS – ATTIC SPACE**

   The Attic Space exists above the 3rd floor and below the roof deck and contains approximately 1,200 linear feet of asbestos pipe insulation running throughout an approximately 15,000 square foot space. There are catwalks running throughout the space. Pipe insulation is damaged throughout and debris is present throughout particularly near the catwalk areas which run along the main pipe runs. This entire space needs to be abated and cleaned up so that it is safe for other trades to access and install new roofing drains.

   a. The attic space can be accessed from an access door in the stairwell leading to the roof area. Install smaller HEPA filtration machines inside the Attic Space to provide filtration of the attic space air. The HEPA machine exhaust can be directed outside the building through louvers on the side of the building above the plaza. The purpose of the HEPA machines is not to establish a negative pressure differential in the attic space as that is not feasible with limited space and power resources but rather to clean and filter the air within the space as clean up and removal operations are underway.

   b. Install a 3-stage Worker Decontamination Enclosure System (DES) in the stairwell landing where the Attic Space Entry is. The dirty room will need to be inside the Attic Space and the Shower Room and Clean Room will be on the stairwell landing (see page 6).

   c. The contractor may need to install temporary lighting throughout the space. An electrician will need to set up a temporary panel to support the power needs for the HEPA machines, temporary lighting, and HEPA vacuums needed for the removal and cleanup of the Attic area.

   d. The contractor will need to access other areas beyond the catwalks on top of the plaster ceiling. Use wooden planks for support across supporting framework to access areas beyond catwalks.

   e. Remove all the asbestos pipe insulation throughout the Attic Space using proper containment-bag techniques. A minimum of two workers are required for each containment-bag. Each containment bag shall be equipped with a pump sprayer filled with amended water, tools for the removal of pipe insulation, and a HEPA vacuum attached to the bag. Each containment bag is

only to be used once and not to be repositioned elsewhere. Containment bags will be smoke tested for air tightness by the Contractor and overseen by the API.

f. Wet wipe and HEPA vacuum all suspect debris from catwalks, underneath catwalks, and throughout the top of what is the plaster ceiling of the 3rd floor. Continually mist the area down with amended water during all repair and cleanup operations. Once pipe insulation is removed above the Vertical Shaft install a two (2) layer 6-mil polyethylene critical barrier at the shaft opening to separate the Vertical Shaft work area from the Attic Space

g. After all removal and cleanup work is completed a visual inspection will be performed of the entire Attic Space by the Owner's representative and the Contractor's supervisor. In order to pass the visual inspection all accessible pipe insulation must be removed and open ends sealed with rewettable cloth and all suspect debris cleaned up. Upon passing the visual inspection the contractor will encapsulate the attic space area prior to running final air tests.

h. Final air tests will be performed by the Owner's representative utilizing TEM sampling protocol (5 inside the work area / 5 outside the work area – AHERA protocol). Aggressive air sampling protocol will be used during final clearance testing. Additional final air tests may be performed by the Philadelphia Federation of Teacher's (PFT) environmental representative (see page 7 under Work Area Clearance).

2. **REMOVAL OF ASBESTOS CONTAINING MATERIALS – 3rd FLOOR**

a. Install isolation barriers to separate work areas from building occupants whenever work is occurring in hallways or other areas that are not enclosed in walls with lockable entrances unless all building occupants can be removed from the entire floor while the abatement work is occurring. The isolation barriers shall be constructed with wood or equivalent framing and plywood (minimum 3/8" thickness). A lockable door may need to be installed at the barrier for access to the work area(s).

b. For work areas on each floor with less than 40 linear feet of pipe insulation and pipe fitting insulation, install a worker decontamination shower facility, equipped with a shower room and clean room at a remote location on the floor in the building central to the abatement work occurring on each floor. The shower facility shall consist of a clean room and shower room separated from each other by airlocks with a minimum of two (2) layers of 6-mil polyethylene sheeting or equivalent in each room. For work areas with 40 or more linear feet of pipe insulation and pipe fitting insulation, install a worker decontamination shower facility, equipped with a shower room and clean room at the entrance to each work area. A separate chamber for the bag out

of asbestos waste may be attached to the side of the dirty / equipment room or placed at another entrance to the work area.

c. Pre-clean each work area prior to prepping enclosures using a HEPA-filtered vacuum and wet wiping methods where feasible. Movable objects in the work area(s) shall be pre-cleaned and removed from the work area(s). All fixed objects within the work area(s) shall be sealed with one (1) layer of 6-mil polyethylene.

d. Erect the removal enclosure around the pipe insulation and/or fittings to be abated sealing all surfaces in one (1) layer of 6 mil polyethylene sheeting on the floor, walls, and ceiling forming an airtight seal with an airlock (*3 layers of 6 mil polyethylene overlapping each other sealed at the top and on alternating sides*) opening for entry and to allow make up air to enter the enclosure. For enclosures containing less than 40 combined linear feet or each of asbestos containing materials, install a single stage decontamination chamber where the workers can remove their outer layer coveralls before proceeding to the next work area or the remote decon located on that floor. For enclosures containing 40 or more combined linear feet or each of asbestos containing materials, install a full 3 stage decontamination shower facility connected to the removal enclosure.

e. Each enclosure with less than 40 combined linear feet or each of asbestos containing materials the enclosure will have at least one HEPA vacuum or junior HEPA machine (as appropriate for the size of the enclosure) connected the enclosure to establish a negative pressure differential (NPD) within the enclosure. Exhaust from the HEPA machine shall be vented outside the building. The NPD must be demonstrated through smoke testing and sufficient to provide at least two (2) air changes in the enclosure per hour. Each enclosure with 40 or more combined linear feet or each of asbestos containing materials the enclosure will have at least one full sized HEPA Air Filtration Device (AFD) (number of units to be appropriate for the size of the enclosure) connected to or within the enclosure to establish a negative pressure differential (NPD) within the enclosure. Exhaust from the HEPA AFD shall be vented outside the building. The NPD must be demonstrated through smoke testing and sufficient to provide at least four (4) air changes in the enclosure per hour.

f. The contractor shall follow proper removal procedures at all times in accordance with the City of Philadelphia, Air Management Services, Asbestos Control Regulation (ACR), the US EPA Regulations and Standards including the National Emissions Standards for Hazardous Air Pollutants (NESHAPS), and OSHA Asbestos in Construction Regulations, 1926.1101. All asbestos containing materials shall be continually wetted with amended water during removal procedures. Dry removal of asbestos will not be permitted. All

Regulated Asbestos Containing Materials (RACM) shall be regularly cleaned up and stored in industry standard waste bags, drums, or wrapped in two (2) layers of 6 mil polyethylene or equivalent with NESHAP and waste generator labels affixed to them. Asbestos waste material must be adequately wet and the bags shall be goose necked, sealed with duct tape, and wiped clean prior to being removed from the work area. RACM waste will be bagged out of the work area and stored in a lockable waste container.

g. Remove all the accessible pipe and fitting insulation in each work area using proper containment-bag (glovebag) techniques. A minimum of two workers are required for each containment-bag. Each containment bag shall be equipped with a pump sprayer filled with amended water, tools for the removal of pipe insulation, and a HEPA vacuum attached to the bag. Each containment bag is only to be used once and not to be repositioned elsewhere. Containment bags will be smoke tested for air tightness by the Contractor and overseen by the API. 6-mil polyethylene sheeting shall be installed on the floor beneath the pipe or pipe fitting insulation being removed, extending a minimum of five (5) feet in all directions or the full extent of the floor space in the enclosure.

h. After removal and final cleaning of all accessible pipe and pipe fitting insulation in each work area, seal up all openings in the floor, walls, and ceilings where the pipe enters with heat resistant and fire retardant foam to a depth of at least 1 inch into the cavity. (All insulation should be removed to a depth of at least 1 inch into the penetration whenever feasible.)

i. After complete removal and final cleaning of all asbestos containing materials throughout each work area, the API and the Contractor's supervisor will inspect each work area. Once the work area passes a visual inspection and contains no visible asbestos debris, then encapsulation of the work area shall occur prior to running final air tests.

j. Final air tests will be performed by the API in accordance with the ACR, AHERA, and the School District of Philadelphia requirements. Aggressive air sampling protocol will be used during final clearance testing. Additional final air tests may be performed by the Philadelphia Federation of Teacher's (PFT) environmental representative (see below under Work Area Clearance).

3. **REMOVAL OF ASBESTOS CONTAINING MATERIALS – TANK ROOM**

a. Regulate the entrance to the Tank Room on the roof with a two (2) layered 6 mil polyethylene critical flap with an OSHA asbestos danger sign on the flap. Pre-clean the work area of all asbestos pipe insulation debris prior to installing a two (2) layered 6 mil polyethylene drop cloth on the floor beneath areas where pipe fittings will be removed.

b. Remove all the accessible pipe insulation in each work area using proper containment-bag techniques. A minimum of two workers are required for each containment-bag. Each containment bag shall be equipped with a pump sprayer filled with amended water, tools for the removal of pipe insulation, and a HEPA vacuum attached to the bag. Each containment bag is only to be used once and not to be repositioned elsewhere. Containment bags will be smoke tested for air tightness by the Contractor and overseen by the API.

c. After all removal and cleanup work is completed a visual inspection will be performed of the Tank Room by the Owner's representative and the Contractor's supervisor. Upon passing the visual inspection the contractor will encapsulate the Tank Room area prior to running final air tests.

d. Final air tests will be performed by the Owner's representative utilizing PCM sampling protocol (5 inside the work area). Aggressive air sampling protocol will be used during final clearance testing. Additional final air tests may be performed by the Philadelphia Federation of Teacher's (PFT) environmental representative (see page 7 under Work Area Clearance).

4. **REMOVAL OF ASBESTOS CONTAINING MATERIALS – VERTICAL SHAFT**

The Vertical Shaft (approximately 4'x2') runs from the 1st floor up to the Attic Space and is accessible in the front closets in rooms 103, 203, and 303. The contractor may need to use a sectional ladder or other means inside the shaft to access the higher levels (no floors are present on the 2nd and third floors of the shaft). The contractor will need to submit an Alternative Methods Request for not using wall poly because the area is too tight to prep fully and the walls will need to be cleaned inside the shaft.

a. Install worker decontamination enclosure systems, equipped with a shower at the entrance to the front closets where the vertical shaft is accessed in classrooms 103, 203, and 303. Each worker decontamination enclosure system shall consist of a clean room, shower room, and an equipment room separated from each other by airlocks with a minimum of two (2) layers of 6-mil polyethylene sheeting or equivalent in each room.

b. Pre-clean the front closet areas prior to prepping. Prep each front closet with two (2) layers of 6-mil polyethylene on the floors, walls, and ceiling. The poly floor will run up the walls at least 12 inches thus overlapping the wall poly by 12 inches. At the 1st floor level seal all penetrations in the floor with two (2) layers of 6-mil polyethylene critical barriers. Install a two (2) layered 6-mil polyethylene floor in the shaft area and provide an additional two (2) layered 6-mil polyethylene drop cloth in the vertical shaft and 1st floor closet area for each shift of removal to be cleaned up and bagged out at the end of the shift. Whenever possible, install a Plexiglas viewing window at least 18" by 18" and

approximately 5' from the ground at a location where the work area can be viewed from outside the containment on each floor. The critical barrier at top of the Vertical Shaft should be installed during the Attic Phase.

c. Establish a proper negative pressure differential using High Efficiency Particulate Air (HEPA) filtered local exhaust systems units. Set up the HEPA unit(s) on the third floor to draw the air towards the top of the shaft and away from the 1st floor level where most of the bagging up of pipe insulation debris will occur (attic space may be used to set up HEPA machines as well). All exhaust from HEPA machines shall be vented outside the building. Establish and maintain a pressure differential of at least - 0.02 inches of water measured on a strip chart recorder or other approved method. Work will not begin or continue unless an adequate differential pressure is achieved and maintained.

d. The contractor shall follow proper removal procedures at all times in accordance with the City of Philadelphia, Air Management Services, Asbestos Control Regulation (ACR), the US EPA Regulations and Standards including the National Emissions Standards for Hazardous Air Pollutants (NESHAPS), and OSHA Asbestos in Construction Regulations, 1926.1101. All asbestos containing materials shall be continually wetted with amended water during removal procedures. Dry removal of asbestos will not be permitted. All Regulated Asbestos Containing Materials (RACM) shall be regularly cleaned up and stored in industry standard waste bags, drums, or wrapped in two (2) layers of 6 mil polyethylene or equivalent with NESHAP labels affixed to them. Asbestos waste material must be adequately wet and the bags shall be goose necked and sealed with duct tape prior to being removed from the work area. RACM waste will be bagged out of the work area and stored in a lockable waste container.

e. Remove all the accessible pipe insulation throughout the shaft using proper gross removal techniques. Clean all walls throughout the shaft of all asbestos insulation debris and dust. Bag up all asbestos debris continuously without letting RACM material accumulate and pile up in the work area. Continually wet all RACM and the work area with amended water.

f. After removal and final cleaning of all accessible pipe insulation in the Vertical Shaft work area seal up all openings on the 1st level floor where the pipe enters passes through the floor with foam. Repair any open ends with rewettable cloth and mastic.

g. After complete removal and final cleaning of all asbestos containing materials throughout the work area, the Owner's representative and Contractor's supervisor will inspect the work area. Once the work area passes a visual inspection and contains no visible asbestos debris, then encapsulation of the work area shall occur prior to running final air tests.

h. Final air tests will be performed by the Owner's representative utilizing TEM sampling protocol (minimum of 2 inside the work area). Aggressive air sampling protocol will be used during final clearance testing. Additional final air tests may be performed by the Philadelphia Federation of Teacher's (PFT) environmental representative (see page 7 under Work Area Clearance).

B. Work Area Clearance

1. Clearance air sampling will incorporate PCM and TEM air sampling techniques as is required for re-occupancy of the work area(s). The Contractor will encapsulate prior to running final clearance samples. PCM analytical results will be available within 2 hours of sample collection and TEM analytical results will be available within 24 hours of sample collection. The minimum number of clearance samples run will be as follows:

Amount of Asbestos		Minimum Number of Clearance Samples
Square Feet	Linear Feet	
1-5	0-1	0 (Project PCMs meet Re-occupancy)
>5-12	>1-3	5 PCM
>12-80	>3-40	5 PCM
>80-100	>40-110	2 TEM
>100-130	>110-180	3 TEM
>130-159	>180-259	4 TEM
≥160	≥260	5 TEM (AHERA Protocol)

2. Aggressive air sampling protocol will be employed using a leaf blower with one twenty-inch fan for each ten thousand (10,000) cubic feet of work area.

3. The Philadelphia Federation of Teachers (PFT) environmental representative shall be given the opportunity to run side by side final clearance testing with the Philadelphia Asbestos Project Inspector (API) after the API's final visual inspection passes. Once notified the PFT shall be allotted 24 hours with which to conduct this sampling. All side by side clearance testing performed with the PFT will be TEM finals

C. Asbestos Waste Disposal

1. The dropping, lowering, transporting or otherwise moving any open or packaged waste through any shaft during this project is strictly prohibited. When the asbestos abatement work area is a shaft, asbestos waste must be packaged and lowered in a controlled fashion to the base of the shaft. No dropping of waste in any shaft shall be permitted at any time.

2. Approval must be obtained from the API prior for temporary storage of any asbestos waste containers or construction debris on site, prior to being loaded into appropriate dumpsters. The waste shall be appropriately packaged according to the type of waste. A polyethylene drop cloth and covering shall be provided and the storage areas restricted by barrier tape and appropriate signage. Asbestos waste containers must be distinctly stored separately from other waste. No long-term storage may occur in these areas.

3. The loading, transportation, and disposal of asbestos waste at the landfill shall occur in accordance with regulatory requirements of NESHAPS and applicable state and local guidelines and regulations.

4. Waste disposal containers shall conform to one of the following:

   a. Two (2) six-mil polyethylene bags, one placed inside the other, separately sealed. The bags shall be carefully closed to minimize dead air space and taped shut.

      i. Six-mil polyethylene disposal bags containing asbestos and asbestos contaminated materials shall be placed into a second six-mil polyethylene bag inside an approved bag-out chamber or decontamination chamber while being removed from the work area. **The second bag shall not be applied inside the work area.**

      ii. Material first shall be placed into burlap bags or equivalent to prevent edges/corners from tearing or penetrating polyethylene waste bags. The encased material may then be placed in two (2) six mil polyethylene bags, as per *Subsection a* above.

   b. One (1) six mil polyethylene sealed bag inside an air and water tight drum.

5. The Contractor shall label asbestos waste with the name of the generator and the location from which the waste was generated.

6. The container used for transporting and disposing of ACM waste shall be clearly and properly labeled as specified in EPA and DOT regulations. In addition to generator labels, containers must carry the following labels:

DANGER	**CAUTION**
CONTAINS ASBESTOS FIBERS	**Contains Asbestos Fibers**
AVOID CREATING DUST	**Avoid Opening or Breaking Container**
CANCER AND LUNG DISEASE HAZARD	**Breathing Asbestos is Hazardous to your Health**
	RQ ASBESTOS 9,NA2212,PG III
-and	**(ASBESTOS)**

7. During waste load out, post asbestos specific danger signs along the waste disposal route, and on and around the vehicle or dumpster being used to transport the waste off site.
    a. Polyethylene drop cloths shall be utilized along routes in which bagged ACM waste is passed through the building. Proposed waste removal route shall be presented to the API and Asbestos Project Manager/Designer for approval prior to performing delivery of asbestos waste material to the intended waste container. The API must document the proposed route and the APIs subsequent approval in an activity log.
    b. Waste routes must be approved by the Owner and on-site API prior to the commencement of work. All waste being transported through the building must be placed in covered/enclosed containers bearing proper warning signs. The waste route must be kept clean.
        i. The rolling of waste drums or the dropping of waste bags down stairs is strictly prohibited.
        ii. After transport of waste through the building is completed, the Contractor shall wet mop the waste removal route to assure continued cleanliness and removal of any debris associated with the waste transport tasks.
    c. All documentation of transportation and disposal transactions such as dump receipts, trip tickets and waste manifests shall be completed and delivered to the Owner for their records.
        i. As the work progresses, to prevent exceeding available storage capacity on-site, sealed and labeled containers of asbestos containing waste shall be removed and transported directly to the pre-arranged, approved asbestos disposal location.
        ii. Disposal must occur at an authorized site in accordance with regulatory requirements of NESHAPS, and applicable state and local guidelines, and regulations.

iii. All dump receipts, trip tickets, transportation manifests or other documentation of disposal shall be delivered to the Owner/Representative for his records. A recommended record-keeping format utilizes a chain-of-custody form which includes the names and addresses of the Owner/Representative, Contractor, pick-up site, and disposal site, the estimated quantity of the asbestos waste and type of containers used. The form should be signed by the Owner/Representative, the Contractor, and the Disposal Site Operator, as the responsibility for material changes hands. If a separate hauler is employed, his name, address, telephone number and signature should also appear on the form.

iv. Should the Owner not receive a receipt of the waste shipment record within 35 days, the Owner shall contact the Contractor to determine the status/disposition of the waste.

v. Should the Owner not receive a receipt of the waste shipment record within 45 days, the Owner shall notify the EPA.

d. **Transportation to the Landfill**

i. Once drums, bags and wrapped components have been removed from the work area, they shall be loaded into an enclosed registered truck for transportation.

ii. To avoid back injuries when moving containers, hand trucks, carts and proper lifting techniques are to be utilized. Trucks with lift gates are helpful for raising drums during truck loading.

iii. The enclosed cargo area of the truck shall be free of debris and lined with six (6) mil, polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first and extend up the side walls. Wall sheeting shall be overlapped and taped into place.

iv. Drums shall be placed on level surfaces in the cargo area and packed tightly together to prevent shifting and tipping. Large structural components shall be secured to prevent shifting and bags placed on top. Do not throw containers into truck cargo area.

v. Personnel loading asbestos containing waste shall be protected by disposable clothing, including head, body and foot protection, and at a minimum, half face, dual cartridge respirators equipped with high efficiency filters shall be utilized.

vi. Any debris or residue observed by the A.P.I. on containers or surfaces leaving the work area, resulting from cleanup or disposal activities, shall be immediately cleaned up using HEPA filtered vacuum equipment and/or wet methods as appropriate.

vii. Large metal dumpsters are sometimes used for asbestos waste disposal. These shall have doors or tops that can be closed and locked to prevent vandalism or other disturbance of the bagged asbestos debris and wind dispersion of asbestos fibers. Unbagged material shall not be placed in these containers, nor shall it be used for non-asbestos waste. Bags shall be placed, not thrown, into these containers to avoid splitting. Containers will be properly labeled with appropriate signs.

e. **Disposal at a Landfill**

i. Asbestos waste shall be transported directly to an approved landfill and not to a transfer station. Upon reaching the landfill, trucks are to approach the drum location as closely as possible for unloading of the asbestos containing waste.

ii. Bags, drums, and components shall be inspected as they are off-loaded at the disposal site. Material in damaged containers shall be re-packed in empty drums or bags, as necessary. Local requirements may not allow the disposal of asbestos waste in drums. Check with appropriate agency and institute appropriate alternative procedures.

iii. Waste containers shall be placed on the ground at the disposal site, not pushed or thrown out of trucks (weight of wet material could rupture containers).

iv. Personnel off-loading containers at the disposal site shall wear protective equipment consisting of disposable head, body, and foot protection, and at a minimum, half face, dual cartridge respirators equipped with high efficiency filters shall be utilized.

v. Following the removal of all containerized waste, the truck cargo shall be decontaminated using HEPA vacuums and/or sheeting shall be removed of and discarded, along with contaminated cleaning materials and protective clothing, in bags or drums at the disposal site. This is the responsibility of the registered waste hauler.

vi. If landfill personnel have not been provided with personal protective equipment for the disposal operation by the landfill operator, the Contractor shall supply protective and respiratory

protection for the duration for this operation, as requested in writing by the landfill operator.

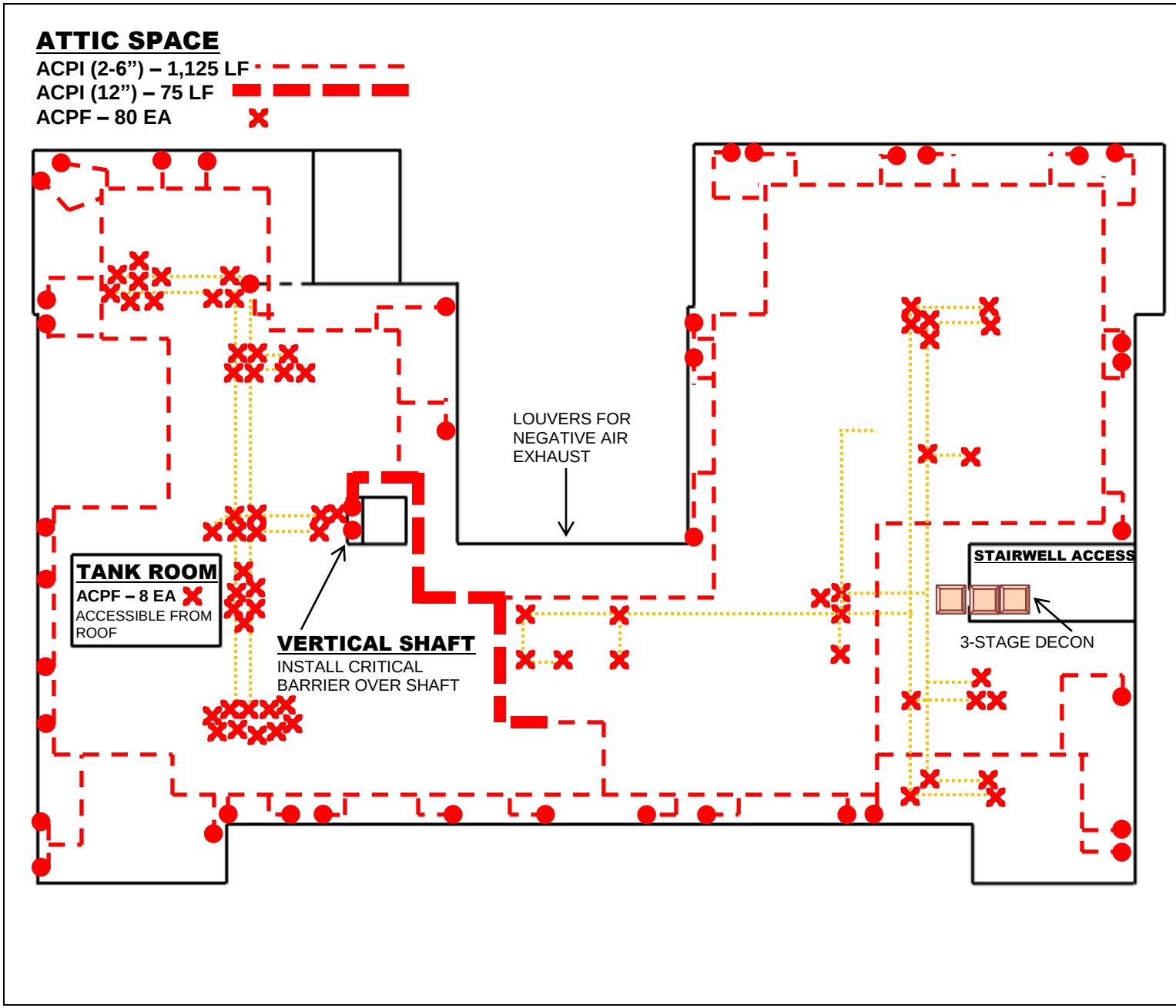
D. Project Closeout

1. After achieving acceptable air sample clearance and dismantling the work area, the Contractor shall be released after the following items are completed:
   a. Removal of all temporary signs, labels, tape and glue/tape adhesive residue.
   b. Removal of all temporary devices, facilities, and equipment.
   c. Cleaning the project site and storage areas of trash, etc.
   d. Replacement/repair of any damage.
   e. SDP deems the repair work (if any) is acceptable for re-occupancy.
   f. Removal of all waste containers (asbestos, scrap, and construction debris) from site and proper disposal of waste.
2. Upon completion of the project, the Contractor shall submit final documentation to the Owner, including but not limited to, all waste handling/shipping documentation/manifests.

END OF SPECIFICATION

APPENDIX A

ASBESTOS LOCATION DRAWINGS



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PROJECT TITLE

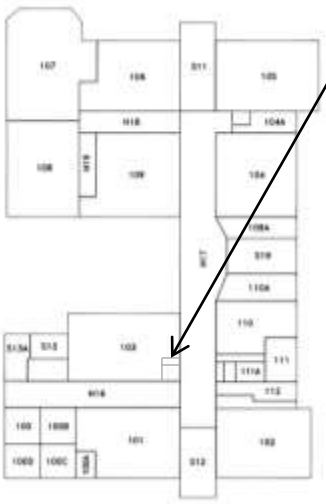
SCHOOL DISTRICT OF PHILADELPHIA
JAMES R. LUDLOW ELEMENTARY SCHOOL

45 NORTH 6th STREET,
PHILADELPHIA, PA 19143

ASBESTOS CONTAINING MATERIALS LOCATIONS

ULCS #5340

DATE:	5/7/19
PROJECT NO.:	543519A
CAD DWG FILE	543519A-1013
DRAWN BY:	JMK
CHECKED BY:	NKB
DWG NO.:	01
REVISION: 0	ORGINAL
SCALE	NTS



VERTICAL SHAFT
ACPI (2-6") – 15 LF
ACPI (12") – 40 LF

NO ASBESTOS INSULATION ON PIPES ABOVE ATTIC LEVEL

ATTIC SPACE

INSTALL CRITICAL BARRIER DURING ATTIC PHASE

ROOM 303 CLOSET

ACPI 2-6" – 15 LF

ROOM 203 CLOSET

ACPI 12" – 40 LF

ROOM 103 CLOSET

PREP ROOM 103 CLOSET AS PART OF VERTICAL SHAFT CONTAINMENT TO ALLOW ROOM TO BAG UP ACPI DEBRIS

BATTA Environmental

- Geo-Environmental
- Indoor Air Quality
- Env. Engineering

www.battaenv.com

Philadelphia, PA
Two Penn Center Plaza
Suite 200
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Phone: 215-854-6349
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Fort Worth, TX
1113 Cushing Drive
Forth Worth, TX 76177

Phone:855-86-2282
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PROJECT TITLE

SCHOOL DISTRICT OF PHILADELPHIA
JAMES R. LUDLOW ELEMENTARY SCHOOL

45 NORTH 6th STREET,
PHILADELPHIA, PA 19143

ASBESTOS CONTAINING MATERIALS LOCATIONS

ULCS #5340

DATE:	5/7/19
PROJECT NO.:	543519A
CAD DWG FILE	543519A-1013
DRAWN BY:	JMK
CHECKED BY:	NKB
DWG NO.:	02
REVISION: 0	ORGINAL
SCALE	NTS

APPENDIX B

ASBESTOS INSPECTION REPORT (AIR)

City of Philadelphia - Department of Public Health
Public Health Services - Air Management Services
Asbestos Control Unit - 321 University Av., 19104

Asbestos Inspection Report
School District of Philadelphia projects ONLY

Office Use Only

Date Received L&I:	Date Received AMS:
Date Inspected:	Inspector #

1. Name of Building: James R. Ludlow Elementary School — Phone # 215-684-5060

2. Name of Building Owner: School District of Philadelphia — Phone # 215-400-4750
440 North Broad Street, Philadelphia, PA 19130

3. Name of Licensed Investigator: Kelly Mayberry — License # AIC-0532 — Phone # 302-737-3376

4. Name of Certified Lab: Batta Laboratories, LLC — License # 112 — Phone # 302-737-3376

5. Scope of Work: (include all locations) Structural Repairs

A review of the SDP Design Drawings was performed ☒ **Yes (List Information Below)** ☐ **No -Schedule a meeting with OEMS**

Reviewed 100% Drawings

Asbestos Containing Material Present? ☒ Yes (List Below) ☐ No

6. List Asbestos Containing Material (ACM) located in the planned renovation/demolition area(s). Damaged ACM must be listed and then repaired or removed prior to renovation. You (Investigator) must label all ACM that may be left in the work area. Page 1 of 1

Location	Description	Type (Code 1)	Amount Square	Amount Linear	Condition (Code 2)	Action (Code 3)
See Table 1 (attached)						

Code 1
FRI - Friable
NF1 - Non-Friable, Cat. 1
NF2 - Non-Friable, Cat. 2

Code 2
DD - Deteriorated or Delaminated
ND - Non-Damaged

Code 3
REM - Removal necessary prior to Demo/Reno
NRN - No removal necessary, label ACM
REP - Repair & Label ACM, removal not necessary

I hereby certify that the foregoing statements are true and the information contained in this report is true. This certification is made subject to the penalties set forth in 18 PA. C.S. S4904 relating to unsworn falsification to authorities. Furthermore I certify that the inspection, sampling, and labeling requirements of section X of the Asbestos Control Regulation (ACR) have been met. The building owner has been notified of the ACR requirements and given a copy of this report. If the inspection has revealed ACM which will be disturbed by the proposed work or if it has revealed ACM in bad condition, the building owner has been notified to remove or repair the ACM in accordance with the ACR prior to renovation or demolition activity.

Signature of Licensed Asbestos Investigator:	Date:	Signature of Building Owner:	Date:
Kelly Mayberry	9/11/2020		

Asbestos Inspection Report
School District of Philadelphia projects ONLY

 Project Name: James R. Ludlow Elementary School *Project No.*

7. List all locations inspected that do **NOT** have asbestos containing material present:

Location	Location	Location	Location
See Table 2 (attached)			

8. List all homogeneous materials present in this school:

ASBESTOS CONTAINING MATERIALS	NON-ASBESTOS MATERIALS
Pipe Insulation 2-6 inch	Plaster Walls
Pipe Fitting Insulation	Plaster Ceiling
Blackboard Glue Dots	Floor Tile VAT 12" x 12"
Pipe Insulation > 6 inch	Yellow Mastic a/w Floor Tile VAT 12" x 12"
Floor Tile VAT 9" x 9"	Gray Leveling Compound
Vibration Damper Cloth	Black Mastic a/w Floor Tile VAT 12" x 12"
Sink Undercoat Mastic	
Pipe Gasket	
Window Caulk	
Building Caulk	
Roof Flashing	
Roofing Material	

9. Caution labels affixed to all ACM ? ☐ Yes ☒ No

All contractors' employees involved in the demolition or renovation activity must receive a copy or have access to this Asbestos Inspection Report.

Signature Kelly Mayberry Date 9/11/2020

		James R. Ludlow School	**School District of Philadelphia**							NOTE: Category I Non-friable ACM can be removed by the General Contractor provided it is not rendered friable during removal/abatement
		550 W. Master Street, Philadelphia, PA 19122								
		ULCS# 5340	**Asbestos Inspection Report**							
		Year Built: 1913	Project Name: Structural Repairs Project							
		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	3	Faculty Lounge 300 Back Area	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Faculty Lounge 300 Back Area	Pipe Insulation 2-6 inch	FRI	Confirmed	2	LF	ND	REM	Above drop ceiling
1	3	Faculty Lounge 300 Back Area	Pipe Fitting Insulation	FRI	Confirmed	2	EA	ND	REM	Above drop ceiling
1	3	Hallway Closet adjacent to Classroom 303	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Classroom 303	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Classroom 303	Pipe Insulation 2-6 inch	FRI	Confirmed	1	LF	ND	REM	Above drop ceiling
1	3	Classroom 303 Back Coat Closet	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Classroom 303 Pipe Shaft	Pipe Insulation > 6 inch	FRI	Assumed	15	LF	DD	REM	
1	3	Classroom 303 Pipe Shaft	Pipe Insulation 2-6 inch	FRI	Assumed	15	LF	DD	REM	
1	3	Hallway from Fire Tower to Classroom 301	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Hallway from Fire Tower to Classroom 301	Pipe Insulation 2-6 inch	FRI	Confirmed	1	LF	ND	REM	Above drop ceiling
1	3	Boy's Restroom	Pipe Insulation 2-6 inch	FRI	Confirmed	3	LF	ND	REM	
1	3	Custodial Closet adjacent Boy's Restroom	Pipe Fitting Insulation	FRI	Confirmed	1	EA	DD	REM	remnants of PFI next to slop sink
1	3	Hallway from Classrooms 302 to 307	Pipe Insulation 2-6 inch	FRI	Confirmed	36	LF	ND	REM	
1	3	Hallway from Classrooms 302 to 307	Pipe Insulation 2-6 inch	FRI	Confirmed	3	LF	ND	REM	Above drop ceiling
1	3	Classroom 309 Coat Closet	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	2	Classroom 203 Pipe Shaft	Pipe Insulation > 6 inch	FRI	Assumed	15	LF	DD	REM	
1	1	Classroom 103 Pipe Shaft	Pipe Insulation > 6 inch	FRI	Assumed	15	LF	DD	REM	
1	BS	Boiler Room	Pipe Fitting Insulation	FRI	Confirmed	23	EA	ND	REM	
1	A	Main Attic	Pipe Insulation 2-6 inch	FRI	Confirmed	1125	LF	DD	REM	
1	A	Main Attic	Pipe Insulation > 6 inch	FRI	Confirmed	75	LF	DD	REM	
1	A	Main Attic	Pipe Fitting Insulation	FRI	Confirmed	80	EA	DD	REM	
1	R	Tank Room	Pipe Fitting Insulation	FRI	Confirmed	8	EA	DD	REM	
1	R	Tank Room	Pipe Gasket	NF1	Assumed	2	LF	ND	REM	
1	R	Tank Room Exterior	Window Caulk	NF1	Assumed	15	LF	ND	REM	
1	R	Tank Room Exterior	Building Caulk	NF1	Assumed	65	LF	ND	REM	
1	R	Tank Room Exterior	Roof Flashing	NF1	Assumed	100	SF	ND	REM	Extends from Main Roof
1	R	Tank Room Roof	Roofing Material	NF1	Assumed	265	SF	ND	REM	
1	R	Main Roof	Roofing Material	NF1	Assumed	4790	SF	ND	REM	
1	R	Upper Canopy Roof - East Side	Roofing Material	NF1	Assumed	1380	SF	ND	REM	
1	R	Upper Canopy Walls - East Side	Roof Flashing	NF1	Assumed	200	SF	ND	REM	Extends from Main Roof
1	R	Upper Canopy Walls - East Side	Building Caulk	NF1	Assumed	285	LF	ND	REM	
1	R	Upper Canopy Roof - West Side	Roofing Material	NF1	Assumed	1360	SF	ND	REM	
1	R	Upper Canopy Walls - West Side	Roof Flashing	NF1	Assumed	225	SF	ND	REM	Extends from Main Roof
1	R	Upper Canopy Walls - West Side	Building Caulk	NF1	Assumed	200	LF	ND	REM	
1	R	Roof @ Chimney	Building Caulk	NF1	Assumed	8	LF	ND	REM	
1	R	Cafeteria Roof	Roofing Material	NF1	Assumed	100	SF	ND	REM	in Plaza area
1	EXT	Exterior - Plaza slab & base of walls	Building Caulk	NF1	Assumed	235	LF	ND	REM	

		James R. Ludlow School	**School District of Philadelphia**							
		550 W. Master Street, Philadelphia, PA 19122								
		ULCS# 5340	**Asbestos Inspection Report**							
		Year Built: 1913	Project Name: Structural Repairs Project							
		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	3	Faculty Lounge 300	Ceiling Tile 2' x 4'	---	Non Suspect ACM	288	SF	--	---	
1	3	Faculty Lounge 300	Plaster Walls	---	NAD	864	SF	--	---	
1	3	Faculty Lounge 300	Partition Room Dividers	---	Non Suspect ACM	288	SF	--	---	
1	3	Faculty Lounge 300	Wood Floor	---	Non Suspect ACM	288	SF	--	---	
1	3	Faculty Lounge 300	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	3	Faculty Lounge 300 Back Area	Ceiling Tile 2' x 4'	---	Non Suspect ACM	288	SF	--	---	
1	3	Faculty Lounge 300 Back Area	Plaster Walls	---	NAD	864	SF	--	---	
1	3	Faculty Lounge 300 Back Area	Partition Room Dividers	---	Non Suspect ACM	288	SF	--	---	
1	3	Faculty Lounge 300 Back Area	Wood Floor	---	Non Suspect ACM	288	SF	--	---	
1	3	Faculty Lounge 300 Back Area	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	3	Faculty Lounge 300 Back Area	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Faculty Lounge 300 Back Area	Pipe Insulation 2-6 inch	FRI	Confirmed	2	LF	ND	REM	Above drop ceiling
1	3	Faculty Lounge 300 Back Area	Pipe Fitting Insulation	FRI	Confirmed	2	EA	ND	REM	Above drop ceiling
1	3	Faculty Lounge 300 Restroom	Plaster Ceiling	---	NAD	64	SF	--	---	
1	3	Faculty Lounge 300 Restroom	Plaster Walls	---	NAD	384	SF	--	---	
1	3	Faculty Lounge 300 Restroom	Cement Floor	---	Non Suspect ACM	64	SF	--	---	
1	3	Faculty Lounge 300 Restroom	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	3	Fire Tower	Concrete Ceiling	---	Non Suspect ACM	230	SF	--	---	
1	3	Fire Tower	Plaster Ceiling	---	NAD	120	SF	--	---	
1	3	Fire Tower	Brick Wall	---	Non Suspect ACM	1176	SF	--	---	
1	3	Fire Tower	Cement Floor	---	Non Suspect ACM	350	SF	--	---	
1	3	Hallway Closet adjacent to Classroom 303	Plaster Ceiling	---	NAD	72	SF	--	---	
1	3	Hallway Closet adjacent to Classroom 303	Plaster Walls	---	NAD	432	SF	--	---	
1	3	Hallway Closet adjacent to Classroom 303	Cement Floor	---	Non Suspect ACM	72	SF	--	---	
1	3	Hallway Closet adjacent to Classroom 303	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Classroom 303	Ceiling Tile 2' x 4'	---	Non Suspect ACM	744	SF	--	---	
1	3	Classroom 303	Plaster Walls	---	NAD	1320	SF	--	---	
1	3	Classroom 303	Wood Floor	---	Non Suspect ACM	744	SF	--	---	
1	3	Classroom 303	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	3	Classroom 303	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Classroom 303	Pipe Insulation 2-6 inch	FRI	Confirmed	1	LF	ND	REM	Above drop ceiling
1	3	Classroom 303	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	3	Classroom 303 Back Coat Closet	Plaster Ceiling	---	NAD	49	SF	--	---	
1	3	Classroom 303 Back Coat Closet	Plaster Walls	---	NAD	336	SF	--	---	
1	3	Classroom 303 Back Coat Closet	Wood Floor	---	Non Suspect ACM	49	SF	--	---	
1	3	Classroom 303 Back Coat Closet	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Classroom 303 Pipe Shaft	Pipe Insulation > 6 inch	FRI	Assumed	15	LF	DD	REM	
1	3	Classroom 303 Pipe Shaft	Pipe Insulation 2-6 inch	FRI	Assumed	15	LF	DD	REM	
1	3	Classroom 303 Front Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	49	SF	--	---	
1	3	Classroom 303 Front Coat Closet	Plaster Walls	---	NAD	336	SF	--	---	
1	3	Classroom 303 Front Coat Closet	Wood Floor	---	Non Suspect ACM	49	SF	--	---	
1	3	Hallway from Fire Tower to Classroom 301	Ceiling Tile 2' x 4'	---	Non Suspect ACM	480	SF	--	---	
1	3	Hallway from Fire Tower to Classroom 301	Plaster Walls	---	NAD	1152	SF	--	---	
1	3	Hallway from Fire Tower to Classroom 301	Cement Floor	---	Non Suspect ACM	480	SF	--	---	
1	3	Hallway from Fire Tower to Classroom 301	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Hallway from Fire Tower to Classroom 301	Pipe Insulation 2-6 inch	FRI	Confirmed	1	LF	ND	REM	Above drop ceiling
1	3	Classroom 301	Ceiling Tile 2' x 4'	---	Non Suspect ACM	696	SF	--	---	
1	3	Classroom 301	Plaster Walls	---	NAD	1272	SF	--	---	

		James R. Ludlow School	**School District of Philadelphia**							
		550 W. Master Street, Philadelphia, PA 19122								
		ULCS# 5340	**Asbestos Inspection Report**							
		Year Built: 1913	Project Name: Structural Repairs Project							
		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	3	Classroom 301	Floor Tile VAT 12" x 12"	---	NAD	696	SF	--	---	
1	3	Classroom 301	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	3	Classroom 301	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	3	Classroom 301 Closet	Plaster Ceiling	---	NAD	72	SF	--	---	
1	3	Classroom 301 Closet	Plaster Walls	---	NAD	432	SF	--	---	
1	3	Classroom 301 Closet	Floor Tile VAT 12" x 12"	---	NAD	72	SF	--	---	
1	3	Stairwell between Classrooms 301 and 302	Plaster Ceiling	---	NAD	230	SF	--	---	
1	3	Stairwell between Classrooms 301 and 302	Plaster Walls	---	NAD	924	SF	--	---	
1	3	Stairwell between Classrooms 301 and 302	Cement Floor	---	Non Suspect ACM	230	SF	--	---	
1	3	Classroom 302	Ceiling Tile 2' x 4'	---	Non Suspect ACM	816	SF	--	---	
1	3	Classroom 302	Plaster Walls	---	NAD	1392	SF	--	---	
1	3	Classroom 302	Wood Floor	---	Non Suspect ACM	816	SF	--	---	
1	3	Classroom 302	Fiberglass Pipe Insulation	---	Non Suspect ACM	36	LF	--	---	
1	3	Classroom 302	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	3	Classroom 302 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	90	SF	--	---	
1	3	Classroom 302 Coat Closet	Plaster Walls	---	NAD	552	SF	--	---	
1	3	Classroom 302 Coat Closet	Wood Floor	---	Non Suspect ACM	90	SF	--	---	
1	3	Custodial Closet adjacent to Classroom 302	Plaster Ceiling	---	NAD	25	SF	--	---	
1	3	Custodial Closet adjacent to Classroom 302	Plaster Walls	---	NAD	240	SF	--	---	
1	3	Custodial Closet adjacent to Classroom 302	Cement Floor	---	Non Suspect ACM	25	SF	--	---	
1	3	Girl's Restroom	Concrete Ceiling	---	Non Suspect ACM	168	SF	--	---	
1	3	Girl's Restroom	Concrete Block Wall	---	Non Suspect ACM	696	SF	--	---	
1	3	Girl's Restroom	Ceramic Tile Floors	---	Non Suspect ACM	168	SF	--	---	
1	3	Music Room 304	Ceiling Tile 2' x 4'	---	Non Suspect ACM	900	SF	--	---	
1	3	Music Room 304	Plaster Walls	---	NAD	1440	SF	--	---	
1	3	Music Room 304	Wood Floor	---	Non Suspect ACM	900	SF	--	---	
1	3	Music Room 304	Blackboard Glue Dots	NF1	Assumed	150	SF	ND	NRN	
1	3	Music Room 304	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	3	Music Room 304 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	84	SF	--	---	
1	3	Music Room 304 Coat Closet	Plaster Walls	---	NAD	600	SF	--	---	
1	3	Music Room 304 Coat Closet	Wood Floor	---	Non Suspect ACM	84	SF	--	---	
1	3	Music Room 305	Ceiling Tile 2' x 4'	---	Non Suspect ACM	900	SF	--	---	
1	3	Music Room 305	Plaster Walls	---	NAD	1440	SF	--	---	
1	3	Music Room 305	Wood Floor	---	Non Suspect ACM	900	SF	--	---	
1	3	Music Room 305	Blackboard Glue Dots	NF1	Assumed	100	SF	ND	NRN	
1	3	Music Room 305	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	3	Music Room 305 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	84	SF	--	---	
1	3	Music Room 305 Coat Closet	Plaster Walls	---	NAD	600	SF	--	---	
1	3	Music Room 305 Coat Closet	Wood Floor	---	Non Suspect ACM	84	SF	--	---	
1	3	Classroom 306	Ceiling Tile 2' x 4'	---	Non Suspect ACM	900	SF	--	---	
1	3	Classroom 306	Plaster Walls	---	NAD	1440	SF	--	---	
1	3	Classroom 306	Wood Floor	---	Non Suspect ACM	900	SF	--	---	
1	3	Classroom 306	Blackboard Glue Dots	NF1	Assumed	150	SF	ND	NRN	
1	3	Classroom 306	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	3	Classroom 306 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	84	SF	--	---	
1	3	Classroom 306 Coat Closet	Plaster Walls	---	NAD	600	SF	--	---	
1	3	Classroom 306 Coat Closet	Wood Floor	---	Non Suspect ACM	84	SF	--	---	
1	3	Classroom 306 Coat Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	

		James R. Ludlow School	**School District of Philadelphia**							
		550 W. Master Street, Philadelphia, PA 19122								
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Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	3	Boy's Restroom	Concrete Ceiling	---	Non Suspect ACM	168	SF	--	---	
1	3	Boy's Restroom	Concrete Block Wall	---	Non Suspect ACM	696	SF	--	---	
1	3	Boy's Restroom	Ceramic Tile Floors	---	Non Suspect ACM	168	SF	--	---	
1	3	Boy's Restroom	Pipe Insulation 2-6 inch	FRI	Confirmed	3	LF	ND	REM	
1	3	Custodial Closet adjacent Boy's Restroom	Plaster Ceiling	---	NAD	25	SF	--	---	
1	3	Custodial Closet adjacent Boy's Restroom	Plaster Walls	---	NAD	240	SF	--	---	
1	3	Custodial Closet adjacent Boy's Restroom	Cement Floor	---	Non Suspect ACM	25	SF	--	---	
1	3	Custodial Closet adjacent Boy's Restroom	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	3	Custodial Closet adjacent Boy's Restroom	Pipe Fitting Insulation	FRI	Confirmed	1	EA	DD	REM	remnants of PFI next to slop sink
1	3	Classroom 307	Ceiling Tile 2' x 4'	---	Non Suspect ACM	759	SF	--	---	
1	3	Classroom 307	Plaster Walls	---	NAD	1344	SF	--	---	
1	3	Classroom 307	Wood Floor	---	Non Suspect ACM	759	SF	--	---	
1	3	Classroom 307	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	3	Classroom 307	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	3	Classroom 307 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	90	SF	--	---	
1	3	Classroom 307 Coat Closet	Plaster Walls	---	NAD	552	SF	--	---	
1	3	Classroom 307 Coat Closet	Wood Floor	---	Non Suspect ACM	90	SF	--	---	
1	3	Stairwell between Classrooms 307 and 308	Plaster Ceiling	---	NAD	230	SF	--	---	
1	3	Stairwell between Classrooms 307 and 308	Plaster Walls	---	NAD	924	SF	--	---	
1	3	Stairwell between Classrooms 307 and 308	Cement Floor	---	Non Suspect ACM	230	SF	--	---	
1	3	Hallway from Classrooms 302 to 307	Ceiling Tile 2' x 4'	---	Non Suspect ACM	1254	SF	--	---	
1	3	Hallway from Classrooms 302 to 307	Plaster Walls	---	NAD	2736	SF	--	---	
1	3	Hallway from Classrooms 302 to 307	Cement Floor	---	Non Suspect ACM	1254	SF	--	---	
1	3	Hallway from Classrooms 302 to 307	Pipe Insulation 2-6 inch	FRI	Confirmed	36	LF	ND	REM	
1	3	Hallway from Classrooms 302 to 307	Pipe Insulation 2-6 inch	FRI	Confirmed	3	LF	ND	REM	Above drop ceiling
1	3	Classroom 308	Ceiling Tile 2' x 4'	---	Non Suspect ACM	759	SF	--	---	
1	3	Classroom 308	Plaster Walls	---	NAD	1344	SF	--	---	
1	3	Classroom 308	Wood Floor	---	Non Suspect ACM	759	SF	--	---	
1	3	Classroom 308	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	3	Classroom 308	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	3	Classroom 308 Coat Closet	Plaster Ceiling	---	NAD	90	SF	--	---	
1	3	Classroom 308 Coat Closet	Plaster Walls	---	NAD	552	SF	--	---	
1	3	Classroom 308 Coat Closet	Wood Floor	---	Non Suspect ACM	90	SF	--	---	
1	3	Classroom 308 Coat Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	3	Classroom 309	Ceiling Tile 2' x 4'	---	Non Suspect ACM	759	SF	--	---	
1	3	Classroom 309	Plaster Walls	---	NAD	1344	SF	--	---	
1	3	Classroom 309	Wood Floor	---	Non Suspect ACM	759	SF	--	---	
1	3	Classroom 309	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	3	Classroom 309	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	3	Classroom 309 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	90	SF	--	---	
1	3	Classroom 309 Coat Closet	Plaster Walls	---	NAD	552	SF	--	---	
1	3	Classroom 309 Coat Closet	Wood Floor	---	Non Suspect ACM	90	SF	--	---	
1	3	Classroom 309 Coat Closet	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	REM	
1	3	Classroom 310	Ceiling Tile 2' x 4'	---	Non Suspect ACM	759	SF	--	---	
1	3	Classroom 310	Plaster Walls	---	NAD	1344	SF	--	---	
1	3	Classroom 310	Wood Floor	---	Non Suspect ACM	759	SF	--	---	
1	3	Classroom 310	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	3	Classroom 310	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	

		James R. Ludlow School	**School District of Philadelphia**							
		550 W. Master Street, Philadelphia, PA 19122								
		ULCS# 5340	**Asbestos Inspection Report**							
		Year Built: 1913	Project Name: Structural Repairs Project							
		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	3	Classroom 310 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	84	SF	--	---	
1	3	Classroom 310 Coat Closet	Plaster Walls	---	NAD	480	SF	--	---	
1	3	Classroom 310 Coat Closet	Wood Floor	---	Non Suspect ACM	84	SF	--	---	
1	3	Classroom 311	Ceiling Tile 2' x 4'	---	Non Suspect ACM	870	SF	--	---	
1	3	Classroom 311	Plaster Walls	---	NAD	1416	SF	--	---	
1	3	Classroom 311	Floor Tile VAT 12" x 12"	---	NAD	870	SF	--	---	
1	3	Classroom 311	Blackboard Glue Dots	NF1	Assumed	100	SF	ND	NRN	
1	3	Classroom 311	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	3	Classroom 311 Closet on exterior side	Plaster Ceiling	---	NAD	36	SF	--	---	
1	3	Classroom 311 Closet on exterior side	Plaster Walls	---	NAD	288	SF	--	---	
1	3	Classroom 311 Closet on exterior side	Floor Tile VAT 12" x 12"	---	NAD	36	SF	--	---	
1	3	Classroom 311 Closet on exterior side	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	3	Classroom 311 Closet on Hall side	Ceiling Tile 2' x 4'	---	Non Suspect ACM	30	SF	--	---	
1	3	Classroom 311 Closet on Hall side	Plaster Walls	---	NAD	264	SF	--	---	
1	3	Classroom 311 Closet on Hall side	Floor Tile VAT 12" x 12"	---	NAD	30	SF	--	---	
1	3	Hallway from Classroom 310 to 308	Ceiling Tile 2' x 4'	---	Non Suspect ACM	333	SF	--	---	
1	3	Hallway from Classroom 310 to 308	Plaster Walls	---	NAD	888	SF	--	---	
1	3	Hallway from Classroom 310 to 308	Cement Floor	---	Non Suspect ACM	333	SF	--	---	
1	2	Classroom 200	Ceiling Tile 2' x 4'	---	Non Suspect ACM	528	SF	--	---	
1	2	Classroom 200	Plaster Walls	---	NAD	1104	SF	--	---	
1	2	Classroom 200	Wood Floor	---	Non Suspect ACM	528	SF	--	---	
1	2	Classroom 200	Fiberglass Pipe Insulation	---	Non Suspect ACM	36	LF	--	---	
1	2	Classroom 200	Blackboard Glue Dots	NF1	Assumed	100	SF	ND	NRN	
1	2	Classroom 200 Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	64	SF	--	---	
1	2	Classroom 200 Closet	Plaster Walls	---	NAD	384	SF	--	---	
1	2	Classroom 200 Closet	Cement Floor	---	Non Suspect ACM	64	SF	--	---	
1	2	Classroom 200 Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	2	Fire Tower	Concrete Ceiling	---	Non Suspect ACM	230	SF	--	---	
1	2	Fire Tower	Plaster Ceiling	---	NAD	120	SF	--	---	
1	2	Fire Tower	Brick Wall	---	Non Suspect ACM	1176	SF	--	---	
1	2	Fire Tower	Cement Floor	---	Non Suspect ACM	350	SF	--	---	
1	2	Hallway Closet adjacent to Classroom 203	Plaster Ceiling	---	NAD	72	SF	--	---	
1	2	Hallway Closet adjacent to Classroom 203	Plaster Walls	---	NAD	432	SF	--	---	
1	2	Hallway Closet adjacent to Classroom 203	Cement Floor	---	Non Suspect ACM	72	SF	--	---	
1	2	Classroom 203	Ceiling Tile 2' x 4'	---	Non Suspect ACM	744	SF	--	---	
1	2	Classroom 203	Plaster Walls	---	NAD	1320	SF	--	---	
1	2	Classroom 203	Wood Floor	---	Non Suspect ACM	744	SF	--	---	
1	2	Classroom 203	Fiberglass Pipe Insulation	---	Non Suspect ACM	48	LF	--	---	
1	2	Classroom 203	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	2	Classroom 203 Back Coat Closet	Plaster Ceiling	---	NAD	49	SF	--	---	
1	2	Classroom 203 Back Coat Closet	Plaster Walls	---	NAD	336	SF	--	---	
1	2	Classroom 203 Back Coat Closet	Wood Floor	---	Non Suspect ACM	49	SF	--	---	
1	2	Classroom 203 Back Coat Closet	Pipe Insulation 2-6 inch	FRI	Confirmed	15	LF	ND	NRN	
1	2	Classroom 203 Back Coat Closet	Pipe Fitting Insulation	FRI	Confirmed	4	EA	ND	NRN	
1	2	Classroom 203 Pipe Shaft	Pipe Insulation > 6 inch	FRI	Assumed	15	LF	DD	REM	
1	2	Classroom 203 Front Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	49	SF	--	---	
1	2	Classroom 203 Front Coat Closet	Plaster Walls	---	NAD	336	SF	--	---	
1	2	Classroom 203 Front Coat Closet	Wood Floor	---	Non Suspect ACM	49	SF	--	---	

		James R. Ludlow School	**School District of Philadelphia**							
		550 W. Master Street, Philadelphia, PA 19122								
		ULCS# 5340	**Asbestos Inspection Report**							
		Year Built: 1913	Project Name: Structural Repairs Project							
		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	2	Hallway from Fire Tower to Classroom 201	Ceiling Tile 2' x 4'	---	Non Suspect ACM	480	SF	--	---	
1	2	Hallway from Fire Tower to Classroom 201	Plaster Walls	---	NAD	1152	SF	--	---	
1	2	Hallway from Fire Tower to Classroom 201	Cement Floor	---	Non Suspect ACM	480	SF	--	---	
1	2	Hallway from Fire Tower to Classroom 201	Pipe Insulation 2-6 inch	FRI	Confirmed	24	LF	ND	NRN	
1	2	Classroom 201	Ceiling Tile 2' x 4'	---	Non Suspect ACM	696	SF	--	---	
1	2	Classroom 201	Plaster Walls	---	NAD	1272	SF	--	---	
1	2	Classroom 201	Floor Tile VAT 12" x 12"	---	NAD	696	SF	--	---	
1	2	Classroom 201	Yellow Mastic a/w Floor Tile VAT 12" x 12"	---	NAD	696	SF	--	---	
1	2	Classroom 201	Gray Leveling Compound	---	NAD	696	SF	--	---	
1	2	Classroom 201	Fiberglass Pipe Insulation	---	Non Suspect ACM	48	LF	--	---	
1	2	Classroom 201	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	2	Classroom 201 Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	72	SF	--	---	
1	2	Classroom 201 Closet	Plaster Walls	---	NAD	432	SF	--	---	
1	2	Classroom 201 Closet	Floor Tile VAT 12" x 12"	---	NAD	72	SF	--	---	
1	2	Stairwell between Classrooms 201 and 202	Plaster Ceiling	---	NAD	230	SF	--	---	
1	2	Stairwell between Classrooms 201 and 202	Plaster Walls	---	NAD	924	SF	--	---	
1	2	Stairwell between Classrooms 201 and 202	Cement Floor	---	Non Suspect ACM	230	SF	--	---	
1	2	Classroom 202	Ceiling Tile 2' x 4'	---	Non Suspect ACM	816	SF	--	---	
1	2	Classroom 202	Plaster Walls	---	NAD	1392	SF	--	---	
1	2	Classroom 202	Wood Floor	---	Non Suspect ACM	816	SF	--	---	
1	2	Classroom 202	Fiberglass Pipe Insulation	---	Non Suspect ACM	50	LF	--	---	
1	2	Classroom 202	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	1	EA	--	---	
1	2	Classroom 202	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	2	Classroom 202 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	90	SF	--	---	
1	2	Classroom 202 Coat Closet	Plaster Walls	---	NAD	552	SF	--	---	
1	2	Classroom 202 Coat Closet	Wood Floor	---	Non Suspect ACM	90	SF	--	---	
1	2	Custodial Closet adjacent to Classroom 202	Plaster Ceiling	---	NAD	25	SF	--	---	
1	2	Custodial Closet adjacent to Classroom 202	Plaster Walls	---	NAD	240	SF	--	---	
1	2	Custodial Closet adjacent to Classroom 202	Cement Floor	---	Non Suspect ACM	25	SF	--	---	
1	2	Girl's Restroom	Concrete Ceiling	---	Non Suspect ACM	168	SF	--	---	
1	2	Girl's Restroom	Concrete Block Wall	---	Non Suspect ACM	696	SF	--	---	
1	2	Girl's Restroom	Ceramic Tile Floors	---	Non Suspect ACM	168	SF	--	---	
1	2	Classroom 204	Ceiling Tile 2' x 4'	---	Non Suspect ACM	900	SF	--	---	
1	2	Classroom 204	Plaster Walls	---	NAD	1440	SF	--	---	
1	2	Classroom 204	Wood Floor	---	Non Suspect ACM	900	SF	--	---	
1	2	Classroom 204	Blackboard Glue Dots	NF1	Assumed	150	SF	ND	NRN	
1	2	Classroom 204	Fiberglass Pipe Insulation	---	Non Suspect ACM	48	LF	--	---	
1	2	Classroom 204 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	84	SF	--	---	
1	2	Classroom 204 Coat Closet	Plaster Walls	---	NAD	600	SF	--	---	
1	2	Classroom 204 Coat Closet	Wood Floor	---	Non Suspect ACM	84	SF	--	---	
1	2	IMC 206	Ceiling Tile 2' x 4'	---	Non Suspect ACM	1800	SF	--	---	
1	2	IMC 206	Plaster Walls	---	NAD	2880	SF	--	---	
1	2	IMC 206	Floor Tile VAT 12" x 12"	---	NAD	1800	SF	--	---	
1	2	IMC 206	Yellow Mastic a/w Floor Tile VAT 12" x 12"	---	NAD	1800	SF	--	---	
1	2	IMC 206	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	2	IMC 206	Fiberglass Pipe Insulation	---	Non Suspect ACM	96	LF	--	---	
1	2	IMC 206 Closet on Classroom 207 side	Ceiling Tile 2' x 4'	---	Non Suspect ACM	84	SF	--	---	
1	2	IMC 206 Closet on Classroom 207 side	Plaster Walls	---	NAD	600	SF	--	---	

		James R. Ludlow School	**School District of Philadelphia**							
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		ULCS# 5340	**Asbestos Inspection Report**							
		Year Built: 1913	Project Name: Structural Repairs Project							
		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	2	IMC 206 Closet on Classroom 207 side	Floor Tile VAT 12" x 12"	---	NAD	84	SF	--	---	
1	2	IMC 206 Closet on Classroom 204 side	Ceiling Tile 2' x 4'	---	Non Suspect ACM	84	SF	--	---	
1	2	IMC 206 Closet on Classroom 204 side	Plaster Walls	---	NAD	600	SF	--	---	
1	2	IMC 206 Closet on Classroom 204 side	Floor Tile VAT 12" x 12"	---	NAD	84	SF	--	---	
1	2	Boy's Restroom	Plaster Ceiling	---	NAD	168	SF	--	---	
1	2	Boy's Restroom	Concrete Block Wall	---	Non Suspect ACM	696	SF	--	---	
1	2	Boy's Restroom	Ceramic Tile Floors	---	Non Suspect ACM	168	SF	--	---	
1	2	Custodial Closet adjacent Classroom 206	Plaster Ceiling	---	NAD	25	SF	--	---	
1	2	Custodial Closet adjacent Classroom 206	Plaster Walls	---	NAD	240	SF	--	---	
1	2	Custodial Closet adjacent Classroom 206	Cement Floor	---	Non Suspect ACM	25	SF	--	---	
1	2	Custodial Closet adjacent Classroom 206	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	2	Classroom 207	Ceiling Tile 2' x 4'	---	Non Suspect ACM	759	SF	--	---	
1	2	Classroom 207	Plaster Walls	---	NAD	1344	SF	--	---	
1	2	Classroom 207	Wood Floor	---	Non Suspect ACM	759	SF	--	---	
1	2	Classroom 207	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	2	Classroom 207	Fiberglass Pipe Insulation	---	Non Suspect ACM	50	LF	--	---	
1	2	Classroom 207	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	1	EA	--	---	
1	2	Classroom 207 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	90	SF	--	---	
1	2	Classroom 207 Coat Closet	Plaster Walls	---	NAD	552	SF	--	---	
1	2	Classroom 207 Coat Closet	Wood Floor	---	Non Suspect ACM	90	SF	--	---	
1	2	Stairwell between Classrooms 207 and 208	Plaster Ceiling	---	NAD	230	SF	--	---	
1	2	Stairwell between Classrooms 207 and 208	Plaster Walls	---	NAD	924	SF	--	---	
1	2	Stairwell between Classrooms 207 and 208	Cement Floor	---	Non Suspect ACM	230	SF	--	---	
1	2	Stairwell between Classrooms 207 and 208	Pipe Insulation 2-6 inch	FRI	Confirmed	3	LF	ND	NRN	
1	2	Stairwell between Classrooms 207 and 208	Pipe Fitting Insulation	FRI	Confirmed	1	EA	ND	NRN	
1	2	Hallway from Classroom 202 to 207	Ceiling Tile 2' x 4'	---	Non Suspect ACM	1254	SF	--	---	
1	2	Hallway from Classroom 202 to 207	Plaster Walls	---	NAD	2736	SF	--	---	
1	2	Hallway from Classroom 202 to 207	Cement Floor	---	Non Suspect ACM	1254	SF	--	---	
1	2	Hallway from Classroom 202 to 207	Pipe Insulation 2-6 inch	FRI	Confirmed	60	LF	ND	NRN	
1	2	Hallway from Classroom 202 to 207	Pipe Insulation 2-6 inch	FRI	Confirmed	14	LF	ND	NRN	Above drop ceiling
1	2	Hallway from Classroom 202 to 207	Pipe Fitting Insulation	FRI	Confirmed	15	EA	ND	NRN	Above drop ceiling
1	2	Classroom 208	Ceiling Tile 2' x 4'	---	Non Suspect ACM	759	SF	--	---	
1	2	Classroom 208	Plaster Walls	---	NAD	1344	SF	--	---	
1	2	Classroom 208	Wood Floor	---	Non Suspect ACM	759	SF	--	---	
1	2	Classroom 208	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	2	Classroom 208	Fiberglass Pipe Insulation	---	Non Suspect ACM	50	LF	--	---	
1	2	Classroom 208	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	1	EA	--	---	
1	2	Classroom 208 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	90	SF	--	---	
1	2	Classroom 208 Coat Closet	Plaster Walls	---	NAD	552	SF	--	---	
1	2	Classroom 208 Coat Closet	Wood Floor	---	Non Suspect ACM	90	SF	--	---	
1	2	Classroom 208 Coat Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	2	Classroom 208 Coat Closet	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	1	EA	--	---	
1	2	Classroom 209	Ceiling Tile 2' x 4'	---	Non Suspect ACM	759	SF	--	---	
1	2	Classroom 209	Plaster Walls	---	NAD	1344	SF	--	---	
1	2	Classroom 209	Wood Floor	---	Non Suspect ACM	759	SF	--	---	
1	2	Classroom 209	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	2	Classroom 209	Fiberglass Pipe Insulation	---	Non Suspect ACM	48	LF	--	---	
1	2	Classroom 209 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	90	SF	--	---	

		James R. Ludlow School	**School District of Philadelphia**							
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		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	2	Classroom 209 Coat Closet	Plaster Walls	---	NAD	552	SF	--	---	
1	2	Classroom 209 Coat Closet	Wood Floor	---	Non Suspect ACM	90	SF	--	---	
1	2	Classroom 209 Coat Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	8	LF	--	---	
1	2	Classroom 210	Ceiling Tile 2' x 4'	---	Non Suspect ACM	759	SF	--	---	
1	2	Classroom 210	Plaster Walls	---	NAD	1344	SF	--	---	
1	2	Classroom 210	Wood Floor	---	Non Suspect ACM	759	SF	--	---	
1	2	Classroom 210	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	2	Classroom 210	Fiberglass Pipe Insulation	---	Non Suspect ACM	48	LF	--	---	
1	2	Classroom 210 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	84	SF	--	---	
1	2	Classroom 210 Coat Closet	Plaster Walls	---	NAD	480	SF	--	---	
1	2	Classroom 210 Coat Closet	Wood Floor	---	Non Suspect ACM	84	SF	--	---	
1	2	Classroom 211	Ceiling Tile 2' x 4'	---	Non Suspect ACM	870	SF	--	---	
1	2	Classroom 211	Plaster Walls	---	NAD	1416	SF	--	---	
1	2	Classroom 211	Wood Floor	---	Non Suspect ACM	870	SF	--	---	
1	2	Classroom 211	Blackboard Glue Dots	NF1	Assumed	100	SF	ND	NRN	
1	2	Classroom 211	Fiberglass Pipe Insulation	---	Non Suspect ACM	36	LF	--	---	
1	2	Classroom 211 Closet on windows side	Plaster Ceiling	---	NAD	36	SF	--	---	
1	2	Classroom 211 Closet on windows side	Plaster Walls	---	NAD	288	SF	--	---	
1	2	Classroom 211 Closet on windows side	Wood Floor	---	Non Suspect ACM	36	SF	--	---	
1	2	Classroom 211 Closet on windows side	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	2	Classroom 211 Closet on windows side	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	3	EA	--	---	
1	2	Classroom 211 Closet on Hall side	Ceiling Tile 2' x 4'	---	Non Suspect ACM	30	SF	--	---	
1	2	Classroom 211 Closet on Hall side	Plaster Walls	---	NAD	264	SF	--	---	
1	2	Classroom 211 Closet on Hall side	Wood Floor	---	Non Suspect ACM	30	SF	--	---	
1	2	Hallway from Classrooms 210 to 208	Ceiling Tile 2' x 4'	---	Non Suspect ACM	333	SF	--	---	
1	2	Hallway from Classrooms 210 to 208	Plaster Walls	---	NAD	888	SF	--	---	
1	2	Hallway from Classrooms 210 to 208	Cement Floor	---	Non Suspect ACM	333	SF	--	---	
1	1	Entrance/Waiting Area for Office 100B	Ceiling Tile 2' x 4'	---	Non Suspect ACM	120	SF	--	---	
1	1	Entrance/Waiting Area for Office 100B	Plaster Walls	---	NAD	264	SF	--	---	
1	1	Entrance/Waiting Area for Office 100B	Wood Floor	---	Non Suspect ACM	120	SF	--	---	
1	1	Entrance/Waiting Area for Office 100B	Sheetrock Wall	---	Non Suspect ACM	264	SF	--	---	
1	1	Counselor's Office 100A	Ceiling Tile 2' x 4'	---	Non Suspect ACM	180	SF	--	---	
1	1	Counselor's Office 100A	Plaster Walls	---	NAD	324	SF	--	---	
1	1	Counselor's Office 100A	Wood Floor	---	Non Suspect ACM	180	SF	--	---	
1	1	Counselor's Office 100A	Sheetrock Wall	---	Non Suspect ACM	324	SF	--	---	
1	1	Entrance/Waiting Area for Counselor's Office	Ceiling Tile 2' x 4'	---	Non Suspect ACM	91	SF	--	---	
1	1	Entrance/Waiting Area for Counselor's Office	Plaster Walls	---	NAD	240	SF	--	---	
1	1	Entrance/Waiting Area for Counselor's Office	Wood Floor	---	Non Suspect ACM	91	SF	--	---	
1	1	Entrance/Waiting Area for Counselor's Office	Sheetrock Wall	---	Non Suspect ACM	240	SF	--	---	
1	1	Entrance/Waiting Area for Counselor's Office	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	NRN	
1	1	Entrance/Waiting Area for Counselor's Office	Pipe Insulation 2-6 inch	FRI	Confirmed	2	LF	ND	NRN	Above drop ceiling
1	1	Entrance/Waiting Area for Counselor's Office	Pipe Fitting Insulation	FRI	Confirmed	3	EA	ND	NRN	Above drop ceiling
1	1	Speech Office 100B	Ceiling Tile 2' x 4'	---	Non Suspect ACM	144	SF	--	---	
1	1	Speech Office 100B	Plaster Walls	---	NAD	288	SF	--	---	
1	1	Speech Office 100B	Wood Floor	---	Non Suspect ACM	144	SF	--	---	
1	1	Speech Office 100B	Sheetrock Wall	---	Non Suspect ACM	288	SF	--	---	
1	1	Speech Office 100B	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	1	Counselor's Suite 100 Restroom	Plaster Ceiling	---	NAD	56	SF	--	---	

		James R. Ludlow School	**School District of Philadelphia**							
		550 W. Master Street, Philadelphia, PA 19122								
		ULCS# 5340	**Asbestos Inspection Report**							
		Year Built: 1913	Project Name: Structural Repairs Project							
		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	1	Counselor's Suite 100 Restroom	Plaster Walls	---	NAD	360	SF	--	---	
1	1	Counselor's Suite 100 Restroom	Cement Floor	---	Non Suspect ACM	56	SF	--	---	
1	1	Counselor's Suite 100 Restroom	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	1	Counselor's Suite 100 Restroom	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	3	EA	--	---	
1	1	Dean's Office 101	Ceiling Tile 2' x 4'	---	Non Suspect ACM	696	SF	--	---	
1	1	Dean's Office 101	Plaster Walls	---	NAD	1272	SF	--	---	
1	1	Dean's Office 101	Wood Floor	---	Non Suspect ACM	696	SF	--	---	
1	1	Dean's Office 101	Fiberglass Pipe Insulation	---	Non Suspect ACM	50	LF	--	---	
1	1	Dean's Office 101	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	1	EA	--	---	
1	1	Dean's Office 101	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	1	Dean's Office 101 Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	72	SF	--	---	
1	1	Dean's Office 101 Closet	Plaster Walls	---	NAD	432	SF	--	---	
1	1	Dean's Office 101 Closet	Wood Floor	---	Non Suspect ACM	72	SF	--	---	
1	1	Dean's Office 101 Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	1	Fire Tower	Concrete Ceiling	---	Non Suspect ACM	230	SF	--	---	
1	1	Fire Tower	Plaster Ceiling	---	NAD	120	SF	--	---	
1	1	Fire Tower	Brick Wall	---	Non Suspect ACM	1176	SF	--	---	
1	1	Fire Tower	Cement Floor	---	Non Suspect ACM	350	SF	--	---	
1	1	Hallway Closet adjacent to Classroom 103	Plaster Ceiling	---	NAD	72	SF	--	---	
1	1	Hallway Closet adjacent to Classroom 103	Plaster Walls	---	NAD	432	SF	--	---	
1	1	Hallway Closet adjacent to Classroom 103	Cement Floor	---	Non Suspect ACM	72	SF	--	---	
1	1	Classroom 103	Ceiling Tile 2' x 4'	---	Non Suspect ACM	744	SF	--	---	
1	1	Classroom 103	Plaster Walls	---	NAD	1320	SF	--	---	
1	1	Classroom 103	Wood Floor	---	Non Suspect ACM	744	SF	--	---	
1	1	Classroom 103	Fiberglass Pipe Insulation	---	Non Suspect ACM	48	LF	--	---	
1	1	Classroom 103	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	2	EA	--	---	
1	1	Classroom 103	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	1	Classroom 103 Back Coat Closet	Plaster Ceiling	---	NAD	49	SF	--	---	
1	1	Classroom 103 Back Coat Closet	Plaster Walls	---	NAD	336	SF	--	---	
1	1	Classroom 103 Back Coat Closet	Wood Floor	---	Non Suspect ACM	49	SF	--	---	
1	1	Classroom 103 Pipe Shaft	Concrete Ceiling	---	Non Suspect ACM	12	SF	--	---	
1	1	Classroom 103 Pipe Shaft	Plaster Walls	---	NAD	192	SF	--	---	
1	1	Classroom 103 Pipe Shaft	Cement Floor	---	Non Suspect ACM	12	SF	--	---	
1	1	Classroom 103 Pipe Shaft	Pipe Insulation > 6 inch	FRI	Assumed	15	LF	DD	REM	
1	1	Classroom 103 Pipe Shaft	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	1	Classroom 103 Front Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	49	SF	--	---	
1	1	Classroom 103 Front Coat Closet	Plaster Walls	---	NAD	336	SF	--	---	
1	1	Classroom 103 Front Coat Closet	Wood Floor	---	Non Suspect ACM	49	SF	--	---	
1	1	Hallway from Fire Tower to Classroom 101	Ceiling Tile 2' x 4'	---	Non Suspect ACM	480	SF	--	---	
1	1	Hallway from Fire Tower to Classroom 101	Plaster Walls	---	NAD	1152	SF	--	---	
1	1	Hallway from Fire Tower to Classroom 101	Cement Floor	---	Non Suspect ACM	480	SF	--	---	
1	1	Hallway from Fire Tower to Classroom 101	Pipe Insulation 2-6 inch	FRI	Confirmed	24	LF	ND	NRN	
1	1	Hallway from Fire Tower to Classroom 101	Pipe Insulation 2-6 inch	FRI	Confirmed	4	LF	ND	NRN	Above drop ceiling
1	1	Hallway from Fire Tower to Classroom 101	Pipe Fitting Insulation	FRI	Confirmed	8	EA	ND	NRN	Above drop ceiling
1	1	Stairwell between Office 101 and Classroom 102	Plaster Ceiling	---	NAD	230	SF	--	---	
1	1	Stairwell between Office 101 and Classroom 102	Plaster Walls	---	NAD	924	SF	--	---	
1	1	Stairwell between Office 101 and Classroom 102	Cement Floor	---	Non Suspect ACM	230	SF	--	---	
1	1	Classroom 102	Ceiling Tile 2' x 4'	---	Non Suspect ACM	816	SF	--	---	

		James R. Ludlow School	**School District of Philadelphia**							
		550 W. Master Street, Philadelphia, PA 19122								
		ULCS# 5340	**Asbestos Inspection Report**							
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		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	1	Classroom 102	Plaster Walls	---	NAD	1392	SF	--	---	
1	1	Classroom 102	Wood Floor	---	Non Suspect ACM	816	SF	--	---	
1	1	Classroom 102	Fiberglass Pipe Insulation	---	Non Suspect ACM	50	LF	--	---	
1	1	Classroom 102	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	3	EA	--	---	
1	1	Classroom 102	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	1	Classroom 102 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	90	SF	--	---	
1	1	Classroom 102 Coat Closet	Plaster Walls	---	NAD	552	SF	--	---	
1	1	Classroom 102 Coat Closet	Wood Floor	---	Non Suspect ACM	90	SF	--	---	
1	1	Custodial Closet adjacent to Classroom 102	Plaster Ceiling	---	NAD	25	SF	--	---	
1	1	Custodial Closet adjacent to Classroom 102	Plaster Walls	---	NAD	240	SF	--	---	
1	1	Custodial Closet adjacent to Classroom 102	Cement Floor	---	Non Suspect ACM	25	SF	--	---	
1	1	Girl's Restroom	Concrete Ceiling	---	Non Suspect ACM	168	SF	--	---	
1	1	Girl's Restroom	Concrete Block Wall	---	Non Suspect ACM	696	SF	--	---	
1	1	Girl's Restroom	Ceramic Tile Floors	---	Non Suspect ACM	168	SF	--	---	
1	1	Girl's Restroom	Pipe Insulation 2-6 inch	FRI	Confirmed	16	LF	ND	NRN	
1	1	Girl's Restroom	Pipe Fitting Insulation	FRI	Confirmed	2	EA	ND	NRN	
1	1	Hallway Closet adjacent Girl's Restroom	Plaster Ceiling	---	NAD	20	SF	--	---	
1	1	Hallway Closet adjacent Girl's Restroom	Plaster Walls	---	NAD	216	SF	--	---	
1	1	Hallway Closet adjacent Girl's Restroom	Wood Floor	---	Non Suspect ACM	20	SF	--	---	
1	1	Principal's Office	Ceiling Tile 2' x 4'	---	Non Suspect ACM	168	SF	--	---	
1	1	Principal's Office	Plaster Walls	---	NAD	624	SF	--	---	
1	1	Principal's Office	Floor Tile VAT 12" x 12"	---	NAD	84	SF	--	---	
1	1	Principal's Office	Floor Tile VAT 12" x 12"	---	NAD	84	SF	--	---	
1	1	Principal's Office	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	1	Principal's Office Restroom	Plaster Ceiling	---	NAD	28	SF	--	---	
1	1	Principal's Office Restroom	Plaster Walls	---	NAD	132	SF	--	---	
1	1	Principal's Office Restroom	Floor Tile VAT 12" x 12"	---	NAD	14	SF	--	---	
1	1	Principal's Office Restroom	Floor Tile VAT 12" x 12"	---	NAD	14	SF	--	---	
1	1	Principal's Office Restroom	Fiberglass Pipe Insulation	---	Non Suspect ACM	7	LF	--	---	
1	1	Principal's Office Restroom	Pipe Fitting Insulation	FRI	Confirmed	2	EA	ND	NRN	
1	1	Principal's Office Closet	Plaster Ceiling	---	NAD	20	SF	--	---	
1	1	Principal's Office Closet	Plaster Walls	---	NAD	216	SF	--	---	
1	1	Principal's Office Closet	Floor Tile VAT 12" x 12"	---	NAD	20	SF	--	---	
1	1	Main Office	Ceiling Tile 2' x 4'	---	Non Suspect ACM	392	SF	--	---	
1	1	Main Office	Plaster Walls	---	NAD	1008	SF	--	---	
1	1	Main Office	Floor Tile VAT 12" x 12"	---	NAD	196	SF	--	---	
1	1	Main Office	Floor Tile VAT 12" x 12"	---	NAD	196	SF	--	---	
1	1	Main Office	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	1	Main Office	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	2	EA	--	---	
1	1	Main Office Server Room	Plaster Ceiling	---	NAD	60	SF	--	---	
1	1	Main Office Server Room	Plaster Walls	---	NAD	384	SF	--	---	
1	1	Main Office Server Room	Floor Tile VAT 9" x 9"	NF1	Confirmed	60	SF	ND	NRN	
1	1	Main Office Closet adjacent to Server Room	Plaster Ceiling	---	NAD	32	SF	--	---	
1	1	Main Office Closet adjacent to Server Room	Plaster Walls	---	NAD	288	SF	--	---	
1	1	Main Office Closet adjacent to Server Room	Floor Tile VAT 9" x 9"	NF1	Confirmed	32	SF	ND	NRN	
1	1	Main Office Closet on Copy Room side	Plaster Ceiling	---	NAD	18	SF	--	---	
1	1	Main Office Closet on Copy Room side	Plaster Walls	---	NAD	144	SF	--	---	
1	1	Main Office Closet on Copy Room side	Floor Tile VAT 9" x 9"	NF1	Confirmed	18	SF	ND	NRN	

		James R. Ludlow School	**School District of Philadelphia**							
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		ULCS# 5340	**Asbestos Inspection Report**							
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		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	1	Copy Room 110	Plaster Ceiling	---	NAD	192	SF	--	---	
1	1	Copy Room 110	Plaster Walls	---	NAD	768	SF	--	---	
1	1	Copy Room 110	Wood Floor	---	Non Suspect ACM	192	SF	--	---	
1	1	Copy Room 110	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	1	Copy Room 110	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	10	EA	--	---	
1	1	Copy Room Restroom	Plaster Ceiling	---	NAD	15	SF	--	---	
1	1	Copy Room Restroom	Plaster Walls	---	NAD	160	SF	--	---	
1	1	Copy Room Restroom	Cement Floor	---	Non Suspect ACM	15	SF	--	---	
1	1	Main Entrance	Plaster Ceiling	---	NAD	336	SF	--	---	
1	1	Main Entrance	Plaster Walls	---	NAD	784	SF	--	---	
1	1	Main Entrance	Terrazzo Floor	---	Non Suspect ACM	336	SF	--	---	
1	1	Nurse's Office	Ceiling Tile 2' x 4'	---	Non Suspect ACM	192	SF	--	---	
1	1	Nurse's Office	Plaster Walls	---	NAD	768	SF	--	---	
1	1	Nurse's Office	Wood Floor	---	Non Suspect ACM	192	SF	--	---	
1	1	Nurse's Office	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	1	Nurse's Office	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	2	EA	--	---	
1	1	Nurse's Office Restroom	Plaster Ceiling	---	NAD	15	SF	--	---	
1	1	Nurse's Office Restroom	Plaster Walls	---	NAD	160	SF	--	---	
1	1	Nurse's Office Restroom	Cement Floor	---	Non Suspect ACM	15	SF	--	---	
1	1	Classroom 104	Ceiling Tile 2' x 4'	---	Non Suspect ACM	900	SF	--	---	
1	1	Classroom 104	Plaster Walls	---	NAD	1440	SF	--	---	
1	1	Classroom 104	Floor Tile VAT 12" x 12"	---	NAD	900	SF	--	---	
1	1	Classroom 104	Fiberglass Pipe Insulation	---	Non Suspect ACM	48	LF	--	---	
1	1	Classroom 104	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	5	EA	--	---	
1	1	Classroom 104 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	84	SF	--	---	
1	1	Classroom 104 Coat Closet	Plaster Walls	---	NAD	600	SF	--	---	
1	1	Classroom 104 Coat Closet	Floor Tile VAT 12" x 12"	---	NAD	84	SF	--	---	
1	1	Boy's Restroom	Concrete Ceiling	---	Non Suspect ACM	168	SF	--	---	
1	1	Boy's Restroom	Concrete Block Wall	---	Non Suspect ACM	696	SF	--	---	
1	1	Boy's Restroom	Ceramic Tile Floors	---	Non Suspect ACM	168	SF	--	---	
1	1	Custodial Closet adjacent to Classroom 105	Plaster Ceiling	---	NAD	25	SF	--	---	
1	1	Custodial Closet adjacent to Classroom 105	Plaster Walls	---	NAD	240	SF	--	---	
1	1	Custodial Closet adjacent to Classroom 105	Cement Floor	---	Non Suspect ACM	25	SF	--	---	
1	1	Custodial Closet adjacent to Classroom 105	Fiberglass Pipe Insulation	---	Non Suspect ACM	14	LF	--	---	
1	1	Custodial Closet adjacent to Classroom 105	Pipe Fitting Insulation	FRI	Confirmed	1	EA	ND	NRN	
1	1	Classroom 105	Ceiling Tile 2' x 4'	---	Non Suspect ACM	759	SF	--	---	
1	1	Classroom 105	Plaster Walls	---	NAD	1344	SF	--	---	
1	1	Classroom 105	Wood Floor	---	Non Suspect ACM	759	SF	--	---	
1	1	Classroom 105	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	1	Classroom 105	Fiberglass Pipe Insulation	---	Non Suspect ACM	50	LF	--	---	
1	1	Classroom 105	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	1	EA	--	---	
1	1	Classroom 105 Restroom	Ceiling Tile 2' x 4'	---	Non Suspect ACM	48	SF	--	---	
1	1	Classroom 105 Restroom	Plaster Walls	---	NAD	192	SF	--	---	
1	1	Classroom 105 Restroom	Floor Tile VAT 12" x 12"	---	NAD	48	SF	--	---	
1	1	Classroom 105 Restroom	Sheetrock Wall	---	Non Suspect ACM	72	SF	--	---	
1	1	Classroom 105 Coat Closet	Ceiling Tile 2' x 2'	---	Non Suspect ACM	60	SF	--	---	
1	1	Classroom 105 Coat Closet	Plaster Walls	---	NAD	240	SF	--	---	
1	1	Classroom 105 Coat Closet	Wood Floor	---	Non Suspect ACM	60	SF	--	---	

		James R. Ludlow School	**School District of Philadelphia**							
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		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	1	Classroom 105 Coat Closet	Sheetrock Wall	---	Non Suspect ACM	72	SF	--	---	
1	1	Stairwell between Classrooms 105 and 106	Plaster Ceiling	---	NAD	230	SF	--	---	
1	1	Stairwell between Classrooms 105 and 106	Plaster Walls	---	NAD	924	SF	--	---	
1	1	Stairwell between Classrooms 105 and 106	Cement Floor	---	Non Suspect ACM	230	SF	--	---	
1	1	Hallway from Classrooms 102 to 105	Ceiling Tile 2' x 4'	---	Non Suspect ACM	1254	SF	--	---	
1	1	Hallway from Classrooms 102 to 105	Plaster Walls	---	NAD	2736	SF	--	---	
1	1	Hallway from Classrooms 102 to 105	Cement Floor	---	Non Suspect ACM	1254	SF	--	---	
1	1	Hallway from Classrooms 102 to 105	Pipe Insulation 2-6 inch	FRI	Confirmed	36	LF	ND	NRN	
1	1	Hallway from Classrooms 102 to 105	Pipe Fitting Insulation	FRI	Confirmed	4	EA	ND	NRN	Above drop ceiling
1	1	Hallway from Classrooms 102 to 105	Pipe Insulation 2-6 inch	FRI	Confirmed	7	LF	ND	NRN	Above drop ceiling
1	1	Hallway from Classrooms 102 to 105	Fiberglass Pipe Insulation	---	Non Suspect ACM	6	LF	--	---	
1	1	Classroom 106	Ceiling Tile 2' x 4'	---	Non Suspect ACM	667	SF	--	---	
1	1	Classroom 106	Plaster Walls	---	NAD	1248	SF	--	---	
1	1	Classroom 106	Floor Tile VAT 12" x 12"	---	NAD	667	SF	--	---	
1	1	Classroom 106	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	1	Classroom 106	Fiberglass Pipe Insulation	---	Non Suspect ACM	50	LF	--	---	
1	1	Classroom 106	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	1	EA	--	---	
1	1	Classroom 106 Coat Closet	Ceiling Tile 2' x 4'	---	Non Suspect ACM	36	SF	--	---	
1	1	Classroom 106 Coat Closet	Plaster Walls	---	NAD	288	SF	--	---	
1	1	Classroom 106 Coat Closet	Floor Tile VAT 12" x 12"	---	NAD	36	SF	--	---	
1	1	Classroom 107	Ceiling Tile 2' x 4'	---	Non Suspect ACM	920	SF	--	---	
1	1	Classroom 107	Plaster Walls	---	NAD	1512	SF	--	---	
1	1	Classroom 107	Floor Tile VAT 12" x 12"	---	NAD	920	SF	--	---	
1	1	Classroom 107	Black Mastic a/w Floor Tile VAT 12" x 12"	---	NAD	920	SF	--	---	
1	1	Classroom 107	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	1	Classroom 107	Fiberglass Pipe Insulation	---	Non Suspect ACM	24	LF	--	---	
1	1	Classroom 107 Restroom	Plaster Ceiling	---	NAD	36	SF	--	---	
1	1	Classroom 107 Restroom	Plaster Walls	---	NAD	288	SF	--	---	
1	1	Classroom 107 Restroom	Cement Floor	---	Non Suspect ACM	36	SF	--	---	
1	1	Classroom 107 Restroom	Fiberglass Pipe Insulation	---	Non Suspect ACM	7	LF	--	---	
1	1	Classroom 107 Coat Closet	Plaster Ceiling	---	NAD	36	SF	--	---	
1	1	Classroom 107 Coat Closet	Plaster Walls	---	NAD	288	SF	--	---	
1	1	Classroom 107 Coat Closet	Floor Tile VAT 12" x 12"	---	NAD	36	SF	--	---	
1	1	Classroom 108	Ceiling Tile 2' x 4'	---	Non Suspect ACM	920	SF	--	---	
1	1	Classroom 108	Plaster Walls	---	NAD	1512	SF	--	---	
1	1	Classroom 108	Floor Tile VAT 12" x 12"	---	NAD	920	SF	--	---	
1	1	Classroom 108	Black Mastic a/w Floor Tile VAT 12" x 12"	---	NAD	920	SF	--	---	
1	1	Classroom 108	Blackboard Glue Dots	NF1	Assumed	250	SF	ND	NRN	
1	1	Classroom 108	Fiberglass Pipe Insulation	---	Non Suspect ACM	48	LF	--	---	
1	1	Classroom 108 Coat Closet	Plaster Ceiling	---	NAD	36	SF	--	---	
1	1	Classroom 108 Coat Closet	Plaster Walls	---	NAD	288	SF	--	---	
1	1	Classroom 108 Coat Closet	Floor Tile VAT 12" x 12"	---	NAD	36	SF	--	---	
1	1	Classroom 108 Restroom	Plaster Ceiling	---	NAD	36	SF	--	---	
1	1	Classroom 108 Restroom	Plaster Walls	---	NAD	288	SF	--	---	
1	1	Classroom 108 Restroom	Cement Floor	---	Non Suspect ACM	36	SF	--	---	
1	1	Classroom 109	Ceiling Tile 2' x 4'	---	Non Suspect ACM	870	SF	--	---	
1	1	Classroom 109	Plaster Walls	---	NAD	1416	SF	--	---	
1	1	Classroom 109	Floor Tile VAT 12" x 12"	---	NAD	870	SF	--	---	

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		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	1	Classroom 109	Yellow Mastic a/w Floor Tile VAT 12" x 12"	---	NAD	870	SF	--	---	
1	1	Classroom 109	Blackboard Glue Dots	NF1	Assumed	100	SF	ND	NRN	
1	1	Classroom 109	Fiberglass Pipe Insulation	---	Non Suspect ACM	36	LF	--	---	
1	1	Classroom 109 Closet on windows side	Plaster Ceiling	---	NAD	36	SF	--	---	
1	1	Classroom 109 Closet on windows side	Plaster Walls	---	NAD	288	SF	--	---	
1	1	Classroom 109 Closet on windows side	Floor Tile VAT 12" x 12"	---	NAD	36	SF	--	---	
1	1	Classroom 109 Closet on windows side	Fiberglass Pipe Insulation	---	Non Suspect ACM	12	LF	--	---	
1	1	Classroom 109 Closet on windows side	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	5	EA	--	---	
1	1	Classroom 109 Closet adjacent to Classroom 108	Ceiling Tile 2' x 4'	---	Non Suspect ACM	30	SF	--	---	
1	1	Classroom 109 Closet adjacent to Classroom 108	Plaster Walls	---	NAD	264	SF	--	---	
1	1	Classroom 109 Closet adjacent to Classroom 108	Floor Tile VAT 12" x 12"	---	NAD	30	SF	--	---	
1	BS	Stairwell between Boy's and Girl's Restrooms	Plaster Ceiling	---	NAD	230	SF	--	---	
1	BS	Stairwell between Boy's and Girl's Restrooms	Plaster Walls	---	NAD	792	SF	--	---	
1	BS	Stairwell between Boy's and Girl's Restrooms	Cement Floor	---	Non Suspect ACM	230	SF	--	---	
1	BS	Boy's Restroom	Concrete Ceiling	---	Non Suspect ACM	805	SF	--	---	
1	BS	Boy's Restroom	Concrete Block Wall	---	Non Suspect ACM	1624	SF	--	---	
1	BS	Boy's Restroom	Ceramic Tile Floors	---	Non Suspect ACM	805	SF	--	---	
1	BS	Boy's Restroom	Fiberglass Pipe Insulation	---	Non Suspect ACM	85	LF	--	---	
1	BS	Boy's Restroom	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	7	EA	--	---	
1	BS	Boy's Restroom	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	NRN	
1	BS	Boy's Restroom	Pipe Fitting Insulation	FRI	Confirmed	11	EA	ND	NRN	
1	BS	Boy's Restroom Custodial Closet	Concrete Ceiling	---	Non Suspect ACM	48	SF	--	---	
1	BS	Boy's Restroom Custodial Closet	Concrete Block Wall	---	Non Suspect ACM	392	SF	--	---	
1	BS	Boy's Restroom Custodial Closet	Ceramic Tile Floors	---	Non Suspect ACM	48	SF	--	---	
1	BS	Boy's Restroom Custodial Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	15	LF	--	---	
1	BS	Boy's Restroom Custodial Closet	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	8	EA	--	---	
1	BS	Hallway Closet adjacent to Cafeteria on Restroom side	Plaster Ceiling	---	NAD	198	SF	--	---	
1	BS	Hallway Closet adjacent to Cafeteria on Restroom side	Plaster Walls	---	NAD	812	SF	--	---	
1	BS	Hallway Closet adjacent to Cafeteria on Restroom side	Cement Floor	---	Non Suspect ACM	198	SF	--	---	
1	BS	Hallway Closet adjacent to Cafeteria on Restroom side	Fiberglass Pipe Insulation	---	Non Suspect ACM	18	LF	--	---	
1	BS	Hallway Closet adjacent to Cafeteria on Restroom side	Pipe Fitting Insulation	FRI	Confirmed	3	EA	ND	NRN	
1	BS	Hallway from Kitchen to Boy's Restroom	Concrete Ceiling	---	Non Suspect ACM	423	SF	--	---	
1	BS	Hallway from Kitchen to Boy's Restroom	Brick Wall	---	Non Suspect ACM	1128	SF	--	---	
1	BS	Hallway from Kitchen to Boy's Restroom	Cement Floor	---	Non Suspect ACM	423	SF	--	---	
1	BS	Hallway from Kitchen to Boy's Restroom	Fiberglass Pipe Insulation	---	Non Suspect ACM	80	LF	--	---	
1	BS	Hallway from Kitchen to Boy's Restroom	Pipe Fitting Insulation	FRI	Confirmed	7	EA	ND	NRN	
1	BS	Girl's Restroom	Concrete Ceiling	---	Non Suspect ACM	805	SF	--	---	
1	BS	Girl's Restroom	Concrete Block Wall	---	Non Suspect ACM	1624	SF	--	---	
1	BS	Girl's Restroom	Ceramic Tile Floors	---	Non Suspect ACM	805	SF	--	---	
1	BS	Girl's Restroom	Fiberglass Pipe Insulation	---	Non Suspect ACM	55	LF	--	---	
1	BS	Girl's Restroom	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	12	EA	--	---	
1	BS	Girl's Restroom	Pipe Insulation 2-6 inch	FRI	Confirmed	12	LF	ND	NRN	
1	BS	Girl's Restroom	Pipe Fitting Insulation	FRI	Confirmed	9	EA	ND	NRN	
1	BS	Girl's Restroom Custodial Closet	Concrete Ceiling	---	Non Suspect ACM	28	SF	--	---	
1	BS	Girl's Restroom Custodial Closet	Concrete Block Wall	---	Non Suspect ACM	308	SF	--	---	
1	BS	Girl's Restroom Custodial Closet	Ceramic Tile Floors	---	Non Suspect ACM	28	SF	--	---	
1	BS	Girl's Restroom Custodial Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	35	LF	--	---	
1	BS	Girl's Restroom Custodial Closet	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	8	EA	--	---	

		James R. Ludlow School	School District of Philadelphia							
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		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	*Floor*	*On Site Room Name*	*Material Description*	*Type (Code 1)*	*Confirmed, Assumed, NAD, Non Suspect ACM*	*Amount of Material*	*SF LF EA*	*Condition (Code 2)*	*Action (Code 3)*	*Comments/Description/Notes*
1	BS	Kitchen	Ceiling Tile 2' x 4'	---	Non Suspect ACM	1368	SF	--	---	
1	BS	Kitchen	Plaster Ceiling	---	NAD	180	SF	--	---	
1	BS	Kitchen	Brick Wall	---	Non Suspect ACM	1944	SF	--	---	
1	BS	Kitchen	Floor Tile VAT 12" x 12"	---	NAD	1368	SF	--	---	
1	BS	Kitchen	Vibration Damper Cloth	NF1	Confirmed	7	SF	ND	NRN	
1	BS	Kitchen	Pipe Insulation 2-6 inch	FRI	Confirmed	15	LF	ND	NRN	
1	BS	Kitchen	Pipe Fitting Insulation	FRI	Confirmed	10	EA	ND	NRN	
1	BS	Kitchen	Fiberglass Pipe Insulation	---	Non Suspect ACM	250	LF	--	---	
1	BS	Kitchen	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	35	EA	--	---	
1	BS	Kitchen Closet	Concrete Ceiling	---	Non Suspect ACM	40	SF	--	---	
1	BS	Kitchen Closet	Brick Wall	---	Non Suspect ACM	336	SF	--	---	
1	BS	Kitchen Closet	Cement Floor	---	Non Suspect ACM	40	SF	--	---	
1	BS	Kitchen Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	13	LF	--	---	
1	BS	Kitchen Closet	Pipe Fitting Insulation	FRI	Confirmed	2	EA	ND	NRN	
1	BS	Cafeteria	Plaster Walls	---	NAD	30	SF	--	---	
1	BS	Cafeteria	Plaster Ceiling	---	NAD	3640	SF	--	---	
1	BS	Cafeteria	Ceiling Tile 2' x 4'	---	Non Suspect ACM	3640	SF	--	---	
1	BS	Cafeteria	Brick Wall	---	Non Suspect ACM	4192	SF	--	---	
1	BS	Cafeteria	Floor Tile VAT 12" x 12"	---	NAD	3640	SF	--	---	
1	BS	Cafeteria	Fiberglass Pipe Insulation	---	Non Suspect ACM	575	LF	--	---	
1	BS	Cafeteria	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	75	EA	--	---	
1	BS	Cafeteria	Pipe Fitting Insulation	FRI	Confirmed	16	EA	ND	NRN	
1	BS	Cafeteria	Pipe Fitting Insulation	FRI	Confirmed	3	EA	ND	NRN	Above drop ceiling
1	BS	Cafeteria Small Closet opposite Stage	Plaster Ceiling	---	NAD	135	SF	--	---	
1	BS	Cafeteria Small Closet opposite Stage	Brick Wall	---	Non Suspect ACM	720	SF	--	---	
1	BS	Cafeteria Small Closet opposite Stage	Cement Floor	---	Non Suspect ACM	135	SF	--	---	
1	BS	Cafeteria Small Closet opposite Stage	Fiberglass Pipe Insulation	---	Non Suspect ACM	7	LF	--	---	
1	BS	Cafeteria Small Closet opposite Stage	Pipe Fitting Insulation	FRI	Confirmed	2	EA	ND	NRN	
1	BS	Cafeteria Large Closet behind Stage	Concrete Ceiling	---	Non Suspect ACM	196	SF	--	---	
1	BS	Cafeteria Large Closet behind Stage	Brick Wall	---	Non Suspect ACM	1050	SF	--	---	
1	BS	Cafeteria Large Closet behind Stage	Floor Tile VAT 9" x 9"	NF1	Confirmed	196	SF	ND	NRN	
1	BS	Cafeteria Large Closet behind Stage	Fiberglass Pipe Insulation	---	Non Suspect ACM	60	LF	--	---	
1	BS	Cafeteria Large Closet behind Stage	Pipe Insulation 2-6 inch	FRI	Confirmed	15	LF	ND	NRN	
1	BS	Cafeteria Large Closet behind Stage	Pipe Fitting Insulation	FRI	Confirmed	17	EA	ND	NRN	
1	BS	Cafeteria Large Closet by Stage	Concrete Ceiling	---	Non Suspect ACM	340	SF	--	---	
1	BS	Cafeteria Large Closet by Stage	Brick Wall	---	Non Suspect ACM	1320	SF	--	---	
1	BS	Cafeteria Large Closet by Stage	Cement Floor	---	Non Suspect ACM	340	SF	--	---	
1	BS	Cafeteria Large Closet by Stage	Fiberglass Pipe Insulation	---	Non Suspect ACM	40	LF	--	---	
1	BS	Cafeteria Large Closet by Stage	Pipe Insulation 2-6 inch	FRI	Confirmed	20	LF	ND	NRN	
1	BS	Cafeteria Large Closet by Stage	Pipe Fitting Insulation	FRI	Confirmed	7	EA	ND	NRN	
1	BS	Cafeteria Large Closet by Stage	Pipe Insulation > 6 inch	FRI	Confirmed	20	LF	ND	NRN	
1	BS	Hallway from Cafeteria to Custodial Storage Room	Plaster Ceiling	---	NAD	585	SF	--	---	
1	BS	Hallway from Cafeteria to Custodial Storage Room	Brick Wall	---	Non Suspect ACM	1560	SF	--	---	
1	BS	Hallway from Cafeteria to Custodial Storage Room	Cement Floor	---	Non Suspect ACM	585	SF	--	---	
1	BS	Hallway from Cafeteria to Custodial Storage Room	Fiberglass Pipe Insulation	---	Non Suspect ACM	130	LF	--	---	
1	BS	Hallway from Cafeteria to Custodial Storage Room	Pipe Fitting Insulation	FRI	Confirmed	15	EA	ND	NRN	
1	BS	Classroom 003	Fiberglass Ceiling Tile 2' x 4'	---	Non Suspect ACM	750	SF	--	---	
1	BS	Classroom 003	Plaster Walls	---	NAD	1210	SF	--	---	

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		Prepared by: Kelly Mayberry								
		Certification Number: AIC-0532	Date: September 11, 2020							
Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	BS	Classroom 003	Floor Tile VAT 12" x 12"	---	NAD	750	SF	--	---	
1	BS	Classroom 003	Fiberglass Pipe Insulation	---	Non Suspect ACM	60	LF	--	---	
1	BS	Classroom 003	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	3	LF	--	---	
1	BS	Classroom 003	Pipe Fitting Insulation	FRI	Confirmed	2	EA	ND	NRN	Above drop ceiling
1	BS	Classroom 003 Closet opposite entrance door	Plaster Ceiling	---	NAD	60	SF	--	---	
1	BS	Classroom 003 Closet opposite entrance door	Plaster Walls	---	NAD	408	SF	--	---	
1	BS	Classroom 003 Closet opposite entrance door	Floor Tile VAT 12" x 12"	---	NAD	60	SF	--	---	
1	BS	Classroom 003 Closet opposite entrance door	Fiberglass Pipe Insulation	---	Non Suspect ACM	18	LF	--	---	
1	BS	Classroom 003 Closet opposite entrance door	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	3	EA	--	---	
1	BS	Classroom 003 Closet on exterior wall	Plaster Ceiling	---	NAD	60	SF	--	---	
1	BS	Classroom 003 Closet on exterior wall	Plaster Walls	---	NAD	408	SF	--	---	
1	BS	Classroom 003 Closet on exterior wall	Floor Tile VAT 12" x 12"	---	NAD	60	SF	--	---	
1	BS	Classroom 003 Closet on exterior wall	Fiberglass Pipe Insulation	---	Non Suspect ACM	18	LF	--	---	
1	BS	Classroom 003 Closet on exterior wall	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	5	EA	--	---	
1	BS	Stairwell adjacent to Classroom 003	Plaster Ceiling	---	NAD	230	SF	--	---	
1	BS	Stairwell adjacent to Classroom 003	Plaster Walls	---	NAD	792	SF	--	---	
1	BS	Stairwell adjacent to Classroom 003	Cement Floor	---	Non Suspect ACM	230	SF	--	---	
1	BS	Stairwell adjacent to Classroom 003	Pipe Fitting Insulation	FRI	Confirmed	1	EA	ND	NRN	
1	BS	BMT Office	Ceiling Tile 2' x 4'	---	Non Suspect ACM	780	SF	--	---	
1	BS	BMT Office	Brick Wall	---	Non Suspect ACM	1120	SF	--	---	
1	BS	BMT Office	Cement Floor	---	Non Suspect ACM	780	SF	--	---	
1	BS	BMT Office	Fiberglass Pipe Insulation	---	Non Suspect ACM	48	LF	--	---	
1	BS	BMT Office	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	4	EA	--	---	
1	BS	BMT Office	Pipe Insulation 2-6 inch	FRI	Confirmed	5	LF	ND	NRN	
1	BS	BMT Office	Pipe Fitting Insulation	FRI	Confirmed	1	EA	ND	NRN	
1	BS	BMT Office	Pipe Insulation 2-6 inch	FRI	Confirmed	20	LF	ND	NRN	Above drop ceiling
1	BS	BMT Office	Pipe Fitting Insulation	FRI	Confirmed	5	EA	ND	NRN	Above drop ceiling
1	BS	BMT Office	Sink Undercoat Mastic	NF2	Confirmed	6	SF	ND	NRN	
1	BS	BMT Office Closet	Concrete Ceiling	---	Non Suspect ACM	150	SF	--	---	
1	BS	BMT Office Closet	Brick Wall	---	Non Suspect ACM	744	SF	--	---	
1	BS	BMT Office Closet	Cement Floor	---	Non Suspect ACM	150	SF	--	---	
1	BS	BMT Office Closet	Fiberglass Pipe Insulation	---	Non Suspect ACM	86	LF	--	---	
1	BS	BMT Office Closet	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	3	EA	--	---	
1	BS	BMT Office Closet	Pipe Fitting Insulation	FRI	Confirmed	9	EA	ND	NRN	
1	BS	Custodial Storage Room 001	Ceiling Tile 2' x 4'	---	Non Suspect ACM	550	SF	--	---	
1	BS	Custodial Storage Room 001	Brick Wall	---	Non Suspect ACM	940	SF	--	---	
1	BS	Custodial Storage Room 001	Floor Tile VAT 12" x 12"	---	NAD	550	SF	--	---	
1	BS	Custodial Storage Room 001	Blackboard Glue Dots	NF1	Assumed	64	SF	ND	NRN	
1	BS	Custodial Storage Room 001	Fiberglass Pipe Insulation	---	Non Suspect ACM	36	LF	--	---	
1	BS	Custodial Storage Room 001	Pipe Insulation 2-6 inch	FRI	Confirmed	36	LF	ND	NRN	
1	BS	Custodial Storage Room 001	Pipe Insulation 2-6 inch	FRI	Confirmed	20	LF	ND	NRN	Above drop ceiling
1	BS	Custodial Storage Room 001	Pipe Fitting Insulation	FRI	Confirmed	19	EA	ND	NRN	Above drop ceiling
1	BS	Hallway Closet across from Custodial Storage Room	Concrete Ceiling	---	Non Suspect ACM	140	SF	--	---	
1	BS	Hallway Closet across from Custodial Storage Room	Brick Wall	---	Non Suspect ACM	648	SF	--	---	
1	BS	Hallway Closet across from Custodial Storage Room	Cement Floor	---	Non Suspect ACM	140	SF	--	---	
1	BS	Hallway Closet across from Custodial Storage Room	Pipe Insulation 2-6 inch	FRI	Confirmed	20	LF	ND	NRN	
1	BS	Hallway Closet across from Custodial Storage Room	Pipe Fitting Insulation	FRI	Confirmed	1	EA	ND	NRN	
1	BS	Boiler Room	Concrete Ceiling	---	Non Suspect ACM	1848	SF	--	---	

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Element	***Floor***	***On Site Room Name***	***Material Description***	***Type (Code 1)***	***Confirmed, Assumed, NAD, Non Suspect ACM***	***Amount of Material***	***SF LF EA***	***Condition (Code 2)***	***Action (Code 3)***	***Comments/Description/Notes***
1	BS	Boiler Room	Brick Wall	---	Non Suspect ACM	3096	SF	--	---	
1	BS	Boiler Room	Cement Floor	---	Non Suspect ACM	1848	SF	--	---	
1	BS	Boiler Room	Fiberglass Pipe Insulation	---	Non Suspect ACM	400	LF	--	---	
1	BS	Boiler Room	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	60	EA	--	---	
1	BS	Boiler Room	Pipe Fitting Insulation	FRI	Confirmed	23	EA	ND	REM	
1	BS	Boiler Room Restroom	Concrete Ceiling	---	Non Suspect ACM	80	SF	--	---	
1	BS	Boiler Room Restroom	Brick Wall	---	Non Suspect ACM	288	SF	--	---	
1	BS	Boiler Room Restroom	Cement Floor	---	Non Suspect ACM	80	SF	--	---	
1	BS	Boiler Room Restroom	Pipe Fitting Insulation	FRI	Confirmed	9	EA	ND	NRN	
1	BS	Boiler Room Restroom	Fiberglass Pipe Insulation	---	Non Suspect ACM	44	LF	--	---	
1	BS	Fan Room	Concrete Ceiling	---	Non Suspect ACM	1664	SF	--	---	
1	BS	Fan Room	Brick Wall	---	Non Suspect ACM	2880	SF	--	---	
1	BS	Fan Room	Cement Floor	---	Non Suspect ACM	1664	SF	--	---	
1	BS	Fan Room	Vibration Damper Cloth	FRI	Confirmed	24	SF	ND	NRN	
1	BS	Fan Room	Fiberglass Pipe Insulation	---	Non Suspect ACM	125	LF	--	---	
1	BS	Fan Room	Fiberglass Pipe Fitting Insulation	---	Non Suspect ACM	25	EA	--	---	
1	A	Main Attic	Pipe Insulation 2-6 inch	FRI	Confirmed	1125	LF	DD	REM	
1	A	Main Attic	Pipe Insulation > 6 inch	FRI	Confirmed	75	LF	DD	REM	
1	A	Main Attic	Pipe Fitting Insulation	FRI	Confirmed	80	EA	DD	REM	
1	R	Tank Room	Pipe Fitting Insulation	FRI	Confirmed	8	EA	DD	REM	
1	R	Tank Room	Pipe Gasket	NF1	Assumed	2	LF	ND	REM	
1	R	Tank Room Exterior	Window Caulk	NF1	Assumed	15	LF	ND	REM	
1	R	Tank Room Exterior	Building Caulk	NF1	Assumed	65	LF	ND	REM	
1	R	Tank Room Exterior	Roof Flashing	NF1	Assumed	100	SF	ND	REM	Extends from Main Roof
1	R	Tank Room Roof	Roofing Material	NF1	Assumed	265	SF	ND	REM	
1	R	Main Roof	Roofing Material	NF1	Assumed	4790	SF	ND	REM	
1	R	Upper Canopy Roof - East Side	Roofing Material	NF1	Assumed	1380	SF	ND	REM	
1	R	Upper Canopy Walls - East Side	Roof Flashing	NF1	Assumed	200	SF	ND	REM	Extends from Main Roof
1	R	Upper Canopy Walls - East Side	Building Caulk	NF1	Assumed	285	LF	ND	REM	
1	R	Upper Canopy Roof - West Side	Roofing Material	NF1	Assumed	1360	SF	ND	REM	
1	R	Upper Canopy Walls - West Side	Roof Flashing	NF1	Assumed	225	SF	ND	REM	Extends from Main Roof
1	R	Upper Canopy Walls - West Side	Building Caulk	NF1	Assumed	200	LF	ND	REM	
1	R	Roof @ Chimney	Building Caulk	NF1	Assumed	8	LF	ND	REM	
1	R	Cafeteria Roof	Roofing Material	NF1	Assumed	100	SF	ND	REM	in Plaza area
1	EXT	Exterior - Plaza slab & base of walls	Building Caulk	NF1	Assumed	235	LF	ND	REM	
1	C	Crawl Space - None	X	---	X	X	X	--	---	None

APPENDIX C

REINSULATION SPECIFICATION

RE-INSULATION OF PIPES

1. Re-insulate all piping from which abatement occurred with pre-molded fiberglass insulation with a factory applied all service jacket (ASJ SSL). Work shall be in accordance with the manufacturer's recommendations.

   NOTE: Re-insulation of pipework shall be sub-contracted out to a qualified insulating company. If the Asbestos Abatement Contractor elects to perform pipe re-insulation, then they must demonstrate they have the necessary personnel, equipment, materials, and experience to complete the project in a satisfactory manner.

2. Re-insulate all elbows, valves, and related joints with pre-molded PVC fitting covers with fiberglass inserts of equal thickness to the adjacent pipe insulation.

3. Install PVC jacketing on all pipe sections that cross over attic catwalks. The PVC jacketing shall be a thickness of 0.020", white gloss finish, and secured by PVC adhesive. The use of stainless-steel tacks to secure the pipe jacketing is prohibited.

4. All piping shall be insulated to a thickness as listed below:

Pipe System	Diameter	Insulation Thickness
cold water	1" and below	½"
cold water	1¼" and above	1"
hot water	1" and below	½"
hot water	1¼" and above	1"
condensate or returns	1" and below	1"
condensate or returns	1¼" to 2"	1½"
condensate or returns	2¼" and above	2"
steam	1" and below	1"
steam	1¼" to 2"	1½"
steam	2¼" to 8"	2"
steam	8" and above	3½"