



Limited Asbestos and Hazardous Materials Survey Report

**Ralph M. T. Johnson School and
Anna H. Rockwell Elementary School**

**Bethel, Connecticut
May 9, 2017**



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May 9, 2017

Ms. Theresa Yonsky
Director of Fiscal Services
Town of Bethel Schools
1 School Street
Bethel, CT 06801

**RE: Limited Asbestos and Hazardous Materials Survey Report
Ralph M. T. Johnson School and Anna H. Rockwell Elementary School
Bethel, Connecticut
MMI #4494-08-03**

Dear Ms. Yonsky:

Milone & MacBroom, Inc. (MMI) is pleased to present the results of the limited asbestos and hazardous materials surveys conducted at the above-referenced buildings on April 10, 2017, in Bethel, Connecticut. This work was conducted to assist in the planning for potential renovation of the school buildings.

MMI appreciates the opportunity to provide this service to the district. If you have any questions regarding this report, please feel free to contact us.

Very truly yours,

MILONE & MACBROOM, INC.

Ryan D. Rouillard
Senior Project Specialist, Environmental

Daniel J. Kroeber, P.E., Associate
Lead Project Engineer, Civil

Enclosure

4494-08-03-m817-rpt

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Limited Asbestos and Hazardous Materials Survey Report

Bethel, Connecticut
May 9, 2017

Prepared for:
TOWN OF BETHEL SCHOOLS
1 School Street
Bethel, Connecticut 06801

MMI #4494-08-03

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1.0 INTRODUCTION

Milone & MacBroom, Inc. (MMI) conducted a limited asbestos and hazardous materials survey (Survey) at two structures associated with Whittlesey Drive, located in Bethel, Connecticut, (the "Site"). More specifically, the Ralph M. T. Johnson School (500 Whittlesey Drive) and Anna H. Rockwell Elementary School (400 Whittlesey Drive) structures were surveyed. MMI understands this Survey was requested to identify and quantify suspect accessible asbestos containing materials (ACMs) and lead-containing paints (LCPs). Testing results for a limited asbestos survey of flooring materials, pipe fitting insulation, and some other interior finishes were provided by the town through various previous testing documents and were utilized for the purposes of this report. MMI was provided the results of this limited testing for review following authorization of the MMI proposal dated March 31, 2017; this documentation was incorporated into the survey.

The field activities described in this report were performed in general accordance with federal and state regulatory agency requirements. Other Hazardous Materials (OHMs)/Regulated Wastes (i.e., fluorescent lamps, fluorescent lamp ballasts, etc.) and polychlorinated biphenyls (PCB) within substrate building materials and/or electrical/hydraulic oils were visually evaluated as part of these surveys.



2.0 BUILDING DESCRIPTIONS

Ralph M. T. Johnson School (year built 1971 and updated in 1979)		
Location	Interior	Exterior
500 Whittlesey Drive	Metal-framed building with finish materials that include, but are not limited to, carpet, ceramic tile, vinyl floor tile, Terrazzo and poured concrete floor systems, suspended ceiling system, gypsum board/joint compound ceiling systems, and various painted surfaces	Concrete masonry unit (CMU) block/metal-framed structure with a rolled asphalt roof system, metal window systems, and concrete and brick façade
Anna H. Rockwell Elementary School (year built 1980)		
400 Whittlesey Drive	Metal-framed building with finish materials that include, but are not limited to, carpet, ceramic tile, vinyl floor tile, Terrazzo and poured concrete floor systems, suspended ceiling system, gypsum board/joint compound ceiling systems, and various painted surfaces	CMU block/metal-framed structure with a rolled asphalt roof system, aluminum window system with Transite panels, and brick façade

The Johnson school building was constructed in 1971 with updates in 1979. Its primary purpose is for educating fourth and fifth grade students, and it allows for an approximately 725-person occupancy. The school building is a two-story metal-framed building and is reportedly 58,475 square feet of total gross area. As mentioned above, the exterior of the Johnson building consists of mainly concrete, concrete block, and brick construction with metal ceiling/floor decking and beams. The interior construction consists of gypsum board and plaster ceilings/walls, carpeted office and library areas, and finished flooring in the classrooms and hallway areas. The Site building is scheduled for renovation.

The Rockwell school building was constructed in 1980. Its primary purpose is for educating kindergarten through third grade students, and it allows for an approximately 600-person occupancy. The school building is a two-story metal-framed building and is reportedly 51,003 square feet of total gross area. As mentioned above, the exterior of the Rockwell building consists of mainly concrete and brick construction with metal ceiling/floor decking and beams. The interior construction consists of gypsum board and plaster ceilings/walls (painted wallpaper), carpeted office and library areas, and finished flooring in the classrooms and hallway areas. The Site building is scheduled for renovation.



3.0 FIELD ACTIVITIES

Mr. Ryan Rouillard and Mr. Keith Allard, of MMI, conducted walk-throughs of the Site buildings immediately preceding the Survey performed on April 10, 2017. The purpose of the walk-throughs was to become familiar with the layout of each space within the Site buildings to be sampled, determine the homogenous materials, and establish an appropriate sampling plan.

3.1 Asbestos Survey

The asbestos survey was conducted by a team of four inspectors/MMI representatives directed by Mr. Ryan Rouillard, a licensed Connecticut Department of Health (CTDPH) inspector. A copy of Mr. Rouillard's license is provided in Appendix C. The limited asbestos survey was conducted in general accordance with the Asbestos Hazard Emergency Response Act (AHERA; Asbestos Containing Materials in Schools, 40 CFR Part 763, Subpart E) sample collection protocols established in the United States Environmental Protection Agency (USEPA) regulation 40 CFR 763 and CTDPH asbestos regulations. Additionally, "majority-rule" material testing (a material utilized within a building constituting more than 50 percent of the building) was also conducted to augment the AHERA rule to allow for additional information for planning purposes. Additional testing of items present within the Site buildings not categorized as a "majority-rule" item or governed by AHERA may also have been tested at the time of the Site survey if accessible for collection. However, in order to comply with the USEPA renovation/demolition rules, additional representative sampling of all materials to be disturbed during work activities must be performed to comply with 40 CFR Part 61, Subpart M (National Emission Standard for Asbestos) prior to work activities. A summary of the asbestos survey activities is provided below.

In accordance with the federal and state regulations, the materials present in the inaccessible area must be assumed as ACM until access is provided and laboratory analysis from additional sampling of such materials can be proven to be non-ACM. These additional materials are not included within the engineering estimate in Section 8.0 of this report as the material quantities are unknown.

The asbestos survey activities began with interviewing Mr. Robert Germinaro, Supervisor of Facility & Security Operations, who provided limited information and documentation for each of the above-mentioned school buildings. MMI was initially informed by Mr. Germinaro that the client was in possession of all the school buildings' Asbestos Management Plans and 3-year AHERA reinspections. After MMI reviewed the documentation (see below) provided by Mr. Germinaro, it was concluded that a full prerenovation survey would be needed to fulfill the needs of the client. Mr. Germinaro was aware and agreed that MMI would only be able to sample majority-rule suspect ACMs due to budget constraints.

Documentation of previous testing provided by the Town of Bethel includes the following:

- Existing Conditions Report, dated August 16, 2011, (both school buildings) discussing general building conditions, utilities, and Site capabilities surrounding the buildings
- 2014 AHERA Three-Year Re-Inspection, prepared by TRC (Project No. 218736.0010.00001), dated August 2014 (both school buildings) via compliance with AHERA protocols for building asbestos materials

- 1999 AHERA/CTDPH Three-Year Re-Inspection Report for the Bethel Public Schools, prepared by TRC (Project No. 27359-0000-00001), dated December 1999 via compliance with AHERA protocols for building asbestos materials
- Asbestos Hazard Emergency Response Act School Management Plan (hand written - Johnson), prepared by TRC Environmental Consultants (Project No. 6048-J81-00), dated May 1989 for overall compliance with AHERA protocols as the initial inspection document for suspect asbestos materials (Only the Johnson school building AHERA Management Plan and O&M Program were available at the time of the Survey).

Confirmed ACMs from the above-mentioned documentation are as follows:

Ralph M. T. Johnson School

- 12"x12" resilient floor tile and associated mastic

Anna H. Rockwell Elementary School

- Mudded pipe fitting insulation (not previously identified)
- Kitchen exhaust duct flexible cloth connector
- 12"x12" resilient floor tile and associated mastic

These materials are discussed in greater detail in Section 5.1 and included in the engineering cost estimate shown in Section 8.0.

Visual Assessment

MMI conducted a visual observation of the interior and exterior of the Site buildings to identify majority-rule homogeneous areas of suspect ACMs and hazardous materials. A homogeneous area consists of building materials that appear similar in terms of color, texture, and date of application (age).

Physical Assessment

A physical assessment of the suspect materials to be tested was conducted to assess the friability and condition of the materials. A friable material is defined by the USEPA as a material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect ACMs.

Sample Collection

Based on results of the visual observation and the presence and/or absence of previous sampling and abatement (i.e., rolled asphalt roof systems and boilers/associated piping insulations within the boiler rooms) documentation, "majority-rule" bulk samples of suspect asbestos-containing building materials were collected. A minimum of two random samples of suspect ACMs were collected of each majority-rule homogeneous area. Bulk asbestos samples were collected using wet methods as applicable to reduce the potential for fiber release. Asbestos samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

Type of Suspect Material	Minimum Sampling Criteria
Surfacing	Statistically random criteria (3 to 7 samples per each homogeneous material)
Thermal Insulation	3 or more samples per homogeneous area of suspect material
Miscellaneous	2 or more samples per homogeneous area of suspect material

During the Survey of both schools, MMI collected 237 bulk samples of suspect ACM. MMI's drawing illustrating the asbestos sampling locations can be found in Appendix D; a summary of ACM is provided in Table 1 of Section 5.

Suspect ACMs sampled within both school buildings include but were not limited to the following:

Interiors:

- Floor tile/linoleum sheet flooring and associated backing with mastics/adhesives
- Textured and smooth ceiling and wall surfacing materials
- Carpet mastic
- Floor levelers and concrete substrate
- Gypsum board and joint compound materials
- Plaster skim and base coats
- Cove base and associated adhesive
- Ceramic floor/wall tile grouts/adhesives
- Textured floor/wall/ceiling paints
- Pipe fitting insulation
- Paper beneath hardwood floor systems

Exteriors/Roofs:

- Cement panels associated with window systems
- Metal and wood window/door frame caulk/glazing
- Seam sealant and parapet caulk(s)
- Asphalt roofing and associated edge/penetration mastics

Note: Various types, sizes, and colors of the above-mentioned materials were discovered during the Site survey.

Inaccessible Areas

Building areas, systems, structural components, or surfaces that could not be observed because a space was unsafe or impractical/unaffordable to access, disassemble, or remove, or because a person could not physically enter or observe the area or component were not surveyed.

The inaccessible areas include but are not limited to the following:

- Interior of brick/CMU walls
- Window sill caulk
- Boiler insulation
- HVAC system (mainly above ceiling systems and within wall cavities)
- Kitchen cooler/freezer internal materials
- Below-grade damp proofing (if applicable)
- Interior of operable heating equipment (i.e., boilers, switch boxes, etc.)
- Energized electrical panels
- Below-grade pipes (asbestos and/or lead)

In accordance with federal and state regulations, the materials present in the inaccessible area(s) listed above must be assumed as ACM until access is provided, and by additional sampling and laboratory analysis of such materials, they are proven to be non-ACM.

Asbestos Sample Analysis

Suspect asbestos bulk samples were submitted under chain-of-custody (COC) to EMSL Analytical, Inc. (EMSL) in Woburn, Massachusetts, for analysis by polarized light microscopy (PLM) with dispersion staining techniques per USEPA's Method for the Determination of Asbestos in Bulk Building Materials (600/R-93-116). The laboratory analyzed samples from each homogeneous area until the first sample containing asbestos was identified (i.e., stop positive protocol). EMSL is accredited by the State of Connecticut for asbestos bulk sample analysis. The percentage of asbestos, where present, was determined by microscopic visual estimation. EMSL analyzed 229 samples due to the stop-positive protocol. The COC and EMSL report are attached as Appendix A.

3.2 Lead Paint Survey

A LCP screening was completed by Mr. Jeffrey Harris (a certified Lead Risk Assessor) of LBP Solutions, LLC (LBP) on behalf of MMI on April 10, 2017, at the Site buildings. The LCP Survey was performed using an x-ray fluorescence (XRF) analyzer for interior and exterior components, where accessible, associated within the Site school buildings. Results are summarized in Section 5.2 of this report, and the entire XRF screening report provided by LBP is provided in Appendix B. The report summarizes the sampling and analytical methodologies, site description, materials found to contain lead, XRF analyzer results, and qualifications of personnel.

Representative surfaces from selected accessible areas of the buildings were analyzed using XRF. The XRF used was an RMD, LPA-1 Lead Paint XRF Analyzer, Serial Number 2730, which is a complete lead paint analysis system that nondestructively measures the concentration of LCP on surfaces.

The XRF abatement level Detection Limit (DL) was set to 0.4 milligram of lead per square centimeter (mg/cm^2) as per manufacturer's specifications. The XRF unit is designed to take a measurement with a 95 percent confidence down to a level of $0.2 \text{ mg}/\text{cm}^2$. XRF readings below $0.2 \text{ mg}/\text{cm}^2$ cannot be used conclusively to determine the presence/absence of lead in paint. Further laboratory analysis of samples is recommended for clarification of the presence or absence of lead if results are below $0.2 \text{ mg}/\text{cm}^2$. If no lead is detected by laboratory analysis, then the Occupational Safety & Health Administration (OSHA) Lead in Construction Standard does not apply to that particular surface. Surfaces with XRF readings

below 0.2 mg/cm² with no paint chip sampling and laboratory analysis conducted should be assumed to contain lead.

XRF field screening results and locations are included in Section 5.2 of this document; the LBP XRF report also provides additional information as it pertains to the summary of results in this report. The LBP report table contains the type of component tested, the condition of the paint ("Intact," "Fair," or "Poor"), the type of substrate (such as wood, metal, etc.), and the color of the component. The individual tests are listed by location as well as the corresponding lead results in mg/cm² as reported by the XRF. The detailed report represents all XRF readings of coated surfaces tested.

No toxicity characteristic leaching procedure (TCLP) testing was performed at the Site facility during MMI's Survey.

3.3 PCB Visual Evaluation

At the time of the school building Surveys, MMI performed reconnaissance evaluations to visually inspect the buildings for suspect PCB building materials of interior/exterior components (i.e., including paints, oil staining, and caulk/sealant materials, mastics/adhesives, and other nonresilient materials). In our opinion, these limited materials/locations should be tested to provide a sample set that generally represents the buildings overall for confirmation of PCBs prior to renovation/selective demolition activities. This work will allow for the proper characterization of the waste stream for disposal of all hazardous materials to an appropriately licensed landfill. As part of this initial reconnaissance, MMI inspected **accessible** building materials including window and door caulk/glaze, oil-stained floor systems and concrete surfaces (boiler rooms), roof materials, and joint sealants between masonry building sections. Descriptions of the materials to be sampled are presented in Section 5.3 of this report. Additionally, electrical components and hydraulic oils suspect for PCBs are characterized separately as part of the regulated wastes depicted within Section 5.4.

3.4 Other Hazardous Materials

At the time of the Site Survey, MMI visually evaluated and quantified potential regulated universal wastes within the Site buildings. This allowed MMI to obtain information on the potential presence of OHMs that require removal and disposal prior to renovation/demolition. OHMs/regulated universal wastes may include but are not limited to fluorescent lamps, fluorescent lamp ballasts, fire extinguishers, suspect PCB-containing electrical components such as transformers/capacitors/switchgear, miscellaneous equipment oils, mercury switches, emergency exit signs/lights batteries, refrigerants which may contain chlorofluorocarbons (CFCs), and various containerized wastes. For these materials, the only methodology utilized to assess the presence of hazardous materials was visual observation; no laboratory testing was conducted.

A quantification estimate of the OHMs is provided in Section 5.4, Table 2.



4.0 REGULATORY OVERVIEW

4.1 Asbestos

USEPA regulation 40 CFR 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulates asbestos fiber emissions during renovation or demolition activities following the identification and classification of existing building materials as well as asbestos waste disposal practices. Under NESHAP, asbestos-containing building materials are classified as either friable, Category I non-friable, or Category II non-friable ACM. Friable materials are those that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. Category I non-friable ACM includes packings, gaskets, resilient floor coverings, and asphalt roofing products containing more than 1 percent asbestos. Category II non-friable ACM are any materials other than Category I materials that contain more than 1 percent asbestos.

Friable ACM and Category I and Category II non-friable ACM that is in poor condition and has become friable (crushed or pulverized during anticipated renovation or demolition activities) due to drilling, sanding, grinding, cutting, or abrading are considered Regulated Asbestos Containing Materials (RACM). The owner or operator of a facility must provide CTDPH with written notification of planned removal activities at least 10 working days prior to the commencement of asbestos abatement activities.

Connecticut regulations require that any asbestos-related activity conducted be performed by personnel licensed by the CTDPH. Asbestos abatement must be performed by Connecticut-licensed asbestos abatement contractors in accordance with a project design prepared by a CTDPH-licensed project designer. Third-party air monitoring must be conducted at the completion of abatement activities. Management plans developed for the in-place management of ACMs must be developed by a CTDPH-licensed management planner.

RACMs must be removed and properly disposed of prior to demolition activities. The owner or operator of a facility must provide CTDPH with written notification of planned removal activities at least 10 working days prior to the commencement of asbestos abatement activities.

The United States OSHA asbestos standard for construction (29 CFR 1926.1101) regulates work place exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained at or below 0.1 asbestos fibers per cubic centimeter (f/cc) of air as an 8-hour time weighted average (TWA) and not exceed 1.0 f/cc of air over a 30-minute time period known as an excursion limit (EL). The TWA and EL are known as OSHA's permissible exposure limits (PELs). The OSHA standard classifies construction and maintenance activities that could disturb ACM and specifies work practices and precautions that employers must follow when engaging in each class of regulated work. States that administer their own federally approved state OSHA programs may require additional precautions.

4.2 Lead-Containing Paint

Lead is regulated by the USEPA and the OSHA. The USEPA regulates lead use, removal, and disposal, and OSHA regulates worker exposure to lead. The USEPA defines LCP as paint, varnish, stain, or other applied coating that contains lead equal to or greater than 1.0 mg/cm², 5,000 milligrams per kilogram (mg/kg), or 0.5 percent by dry weight as determined by laboratory analysis. For the purpose of the OSHA lead standard, lead includes metallic lead, all inorganic lead compounds, and organic lead soaps. The federal OSHA standard does not define the amount of lead in paint that constitutes LCP.

The OSHA Lead Standard for Construction (29 CFR 1926.62) applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration, or repair (including painting and decorating) is included. The Lead in Construction Standard applies to any detectable concentration of lead in paint as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions. Under this standard, construction includes but is not limited to the following:

- Demolition or salvage of structures where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead
- New construction, alteration, repair, or demolition of structures, substrates, or portions containing lead, or materials containing lead
- Installation of products containing lead
- Lead contamination/emergency cleanup
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed
- Maintenance operations associated with construction activities described above

Employers must assure that no employee will be exposed to lead at concentrations greater than the permissible exposure limit of 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) averaged over an 8-hour period without adequate protection. The OSHA standard also establishes an action level of $30 \mu\text{g}/\text{m}^3$, which if exceeded triggers certain requirements including periodic exposure monitoring and medical monitoring.

Any disturbance of LCP is subject to the OSHA Lead in Construction Standard. Prior to the disposal of materials generated during building renovation or demolition projects, the USEPA Resource Conservation and Recovery Act (RCRA) regulations require that lead testing be conducted by TCLP protocols to evaluate whether the waste streams must be disposed of as a lead hazardous material or as general construction debris. Disposal of materials coated with paint containing lead is subject to the USEPA RCRA regulations (40 CFR 260-270). Presently, federal and state regulations do not necessarily require that materials coated with lead-based paint be removed prior to demolition. However, the Hazardous Waste regulations require that wastes be characterized prior to disposal. The TCLP test, which is the appropriate method for characterizing demolition debris for lead content, involves the collection of samples from representative building materials and the analysis of the materials by an accredited laboratory. If the sample results are less than 5.0 milligrams per liter (mg/L) lead, then the demolition waste can be disposed of as nonhazardous construction debris. If the sample results are greater than or equal to 5.0 mg/L lead, then the demolition waste must be disposed of as a hazardous waste.

4.3 PCBs

The USEPA has issued a number of fact sheets indicating that PCBs may be present in caulk and other sealant materials used in buildings constructed in the period from 1950 through approximately 1980. As mentioned in Section 2.0, the Johnson school building was constructed in 1971 with updates in 1979, and the Rockwell school building was constructed in 1980. Both buildings are suspected to contain PCBs within various interior/exterior building materials. PCBs were a common additive to caulk because of their water and chemical resistance, durability, and elasticity. PCBs were added as a plasticizer in caulk used to seal joints between masonry units and around windows. PCBs were used in building materials such as paints, caulks, adhesives, mastics, sealants, and specialty coatings. PCBs are known to leach into existing building substrate materials (existing brick and concrete) adjacent to suspect PCB materials sampled. If suspect building materials sampled are less than 1 part per million (ppm), substrate sampling is not necessary.

Disposal of substrate materials containing PCBs at concentrations of 1 to 50 ppm will require disposal at an approved solid waste landfill; concentrations above 50 ppm will require disposal at a USEPA Toxic Substances Control Act (TSCA)-approved landfill.

4.4 Other Hazardous Materials

Nearly all ballasts manufactured prior to 1979 contain PCBs. All ballasts manufactured after July 1, 1978, which do not contain PCBs, are required to be clearly marked "No PCBs." Ballasts not possessing a "No PCBs" label are generally assumed to contain PCBs in concentrations greater than 50 ppm. Connecticut solid waste regulations prohibit the disposal of PCB-containing ballasts in landfills. These ballasts must be disposed of at an incineration/recycling facility. Approximately 25 percent of ballasts manufactured after 1979 contain di-ethyl hexyl phthalate (DEHP), a regulated substance under the USEPA Superfund regulations. DEHP-contaminated ballasts must be disposed of in the same manner as PCB-contaminated ballasts. Fluorescent light tubes, which contain mercury, are prohibited from disposal at in-state landfills due to their mercury content. The preferred option is for the removal and recycling of the bulbs at an approved recycling facility.



5.0 FINDINGS AND RECOMMENDATIONS

5.1 Asbestos Survey

The materials listed in the table below have been sampled and determined to contain asbestos in concentrations greater than 1 percent (%).

TABLE 1
Asbestos-Containing Materials

Sample ID	Sample Description	Sample Location	Asbestos Analytical Result
Ralph M. T. Johnson School			
J-022A	Sink undercoat (black)	Classroom 14	4% Chrysotile
J-023A	Sink undercoat (pink)	Interior – Office Kitchenette	2% Chrysotile
Anna H. Rockwell Elementary School			
R-07A	Sink undercoat (black)	Room 107	2% Chrysotile
R-08A	12"x12" Floor tile - mottle orange	Room 106	2% Chrysotile
R-09A	Black mastic associated with 12"x12" floor tile	Room 106	10% Chrysotile
R-10A	12"x12" Tile - tan speckle	Room 107	5% Chrysotile
R-11A	12"x12" Tile - tan/orange speckle	Room 108	5% Chrysotile
R-13B	12"x12" Floor tile - dark brown mottle	Room 110	5% Chrysotile
R-14B	12"x12" Tile - gray/red	Room 204	5% Chrysotile
R-15B	12"x12" Tile - cream/brown stripe	Room 104	5% Chrysotile
R-22A	12"x12" Floor tile - dark tan/brown speckle	Room 101	5% Chrysotile
R-28A	12"x12" Tile - dark gray/white speckle	Custodial Office Floor	5% Chrysotile
R-38A	Plaster (joint compound) – white (patch)	Store Room – at Ceiling Pipe Penetration	2% Chrysotile
R-46A	Sink undercoat (pink)	Teachers Room	2% Chrysotile
R-48A	Felt paper (black)	Stage Floor within Gymnasium	2% Chrysotile
R-53A	Caulk (gray)	Exterior Window Frame	2% Chrysotile
R-56A	Sealant (black/gray)	Exterior Foundation	5% Chrysotile
R-59A	Caulk (off-white)	Exterior Vent	2% Chrysotile
R-61A	Cement board (gray)	Exterior – Boards in Window System	15% Chrysotile

Notes:

- Estimated quantities are based on a cursory field evaluation, and actual quantities may vary significantly, especially if ACMs are present in hidden and/or inaccessible areas not evaluated as part of this Survey.
- Interior/exterior materials collected/analyzed and determined to be nonasbestos containing are found in Appendix A (thus not shown in the table above) and did not involve representative testing at the time of this Site Survey. "Majority-rule" sampling was performed at the school buildings for informational purposes only, meeting the requirements of AHERA. However, in order to comply with the USEPA renovation/demolition rules, additional representative sampling of all materials to be disturbed during work activities must be performed.
- Composite samples of "majority-rule" roof materials of the Rockwell and Johnson school buildings were tested for informational purposes only. Representative testing of roof materials (and separation of roof layers) for the multiple existing roofs and their respective materials is still required to meet the USEPA renovation rules as specified in Section 3.1 to allow for the development of specifications and associated plans for removal/disposal.
- Pipe/fitting insulation materials (various types/sizes) and asbestos-containing joint compound/ other contaminated materials may be discovered within the wall/ceiling/floor chases of the Site building on multiple levels.
- Asbestos containing joint compound/plaster coat (patch) found within the storage room of the Rockwell school building is associated with non-ACM gypsum wallboard; additional areas may also be found within the building. Further exploratory methods may be needed to differentiate the several joint compound materials for more definitive quantification; otherwise, gypsum board surfaces (and associated substrate building materials such as wood studs, beams, and plaster coats as applicable) are assumed to be asbestos contaminated with ACM joint compound.
- Black mastic associated with flooring materials (and associated substrate materials) in hallways, classrooms, bathrooms, and kitchens located on all levels appears to be homogeneous, and thus, quantities within the engineering estimate of Section 8.0 assume the material to be asbestos containing via the sampling performed as part of this Site Survey throughout the school buildings.
- Black felt paper beneath the hardwood floor system of the Rockwell gymnasium stage floor may also be beneath the gymnasium floor. Further exploratory methods are needed to locate and differentiate the different flooring papers for more definitive quantification.

Materials discovered to be asbestos due to previous testing performed by TRC Environmental Corporation as discussed within its reinspection report dated December 1999 are as follows:

Rockwell:

- Resilient floor tile and associated mastic located within the General Building Classroom and Office Areas (approximately 25,200 square feet)
- Hard-packed/mudded pipe fitting insulation on fiberglass insulated pipes within bathroom wall pipe chases and other inaccessible pipe chase areas (quantity unknown)
- Flexible cloth duct connector associated with the kitchen exhaust hood above suspended ceiling tile system (approximately 10 square feet)

Johnson:

- Resilient floor tile and associated mastic located within the General Building Classroom and Office Areas (approximately 38,000 square feet – hatched site plan attached in Appendix D)
- Resilient floor tile and associated mastic located within the Nurses office and Room 16 (approximately 200 square feet)

Suspect materials known to exist within the school buildings (but not considered a "Majority-rule" material) not tested at the time of the Site Survey include but are not limited to the following:

Rockwell:

- Bulletin board mastic
- Fire door interior
- Chalkboard and corkboard adhesives
- Felt paper beneath the stage floor
- Countertop adhesives
- Tan octagon bathroom tile grout and adhesive
- Library curtains
- Acoustic board
- Various items above suspended ceiling tile and smooth plaster/gypsum board systems
- Terrazzo floor system

Johnson:

- Rough Fisher ceiling tiles
- Various caulks (not already sampled)
- Chalkboard and associated adhesives
- Various items above suspended ceiling tile and smooth plaster/gypsum board systems
- Kitchen floor quarry tile system

The Site buildings were supplied with electrical power and heat at the time of the Site Surveys. Due to this, assumed asbestos materials inaccessible for testing during the Site Surveys include the following:

- Electrical (black) equipment boards/distributor control and panel boards (i.e., electrical switchboards, electrical bus bars [if applicable], and interior of transformers and fuse boxes)
- Interior diodes of small and large motors

Additional ACMs may be discovered during renovation/demolition activities. A supplemental Survey should be conducted for suspect ACMs that were not tested in addition to suspect ACMs that might be present in inaccessible areas such as wall cavities.

5.2 Lead Paint Survey

Varying concentrations of lead were detected on painted/coated building components on the interior and exterior of the buildings at the Site. More specifically, LBP Solutions, LLC conducted 74 total XRF readings at the Rockwell school; 12 were calibration readings, and 8 of the remaining 62 were found to have painted surfaces with lead levels > 0.4mg/cm². Seventy-Two total XRF readings were taken at the Johnson school; 12 were calibration readings, and 1) of the remaining 58 were found to have painted

surfaces with lead levels > 0.4mg/cm². Please see Section 5 (Summary and Detailed Report) within LBP's attached report (Appendix B).

In areas where demolition or renovations are to occur and lead is present, the demolition debris waste stream should be further analyzed during segregation for compliance with EPA and Connecticut Department of Energy & Environmental Protection (CTDEEP) regulations to ensure proper disposal. TCLP testing should be performed to characterize all waste prior to disposal. TCLP testing can be performed prior to waste segregation, but results may not be indicative of the actual waste streams produced during demolition.

Demolition workers should be trained and protected in accordance with OSHA regulation 29CFR 1926.62. This section applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard. Construction work is defined as work for construction, alteration, and/or repair, including painting and decorating. It includes but is not limited to the following:

- Demolition or salvage of structures (or sections of the existing structure) where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead
- New construction, alteration, repair, or renovation of structures, substrates, or portions thereof that contain lead, or materials containing lead
- Handlers of salvageable materials and the treatment/disposal facility must be informed of the material's lead content. All personnel involved must be trained in personal protection and proper work practice procedures in accordance with OSHA regulations.
- All waste contaminated with lead paint should be disposed of in accordance with all state, local, and federal regulations.

5.3 PCB Visual Evaluation Inventory

MMI's work within the school buildings included a visual evaluation for suspect accessible "majority-rule" PCB-containing materials present at the time of the Site Surveys. As directed by the client, no PCB testing was conducted as part of these evaluations. Sample analysis is the only definitive method of determining PCB content in building materials. Based on the visual walk-through evaluation, the suspect PCB materials identified throughout the interior and exterior of the school buildings include but may not be limited to the following:

Johnson/Rockwell:

- Door/window/vent frame caulk (various types/colors)
- Cementitious coating on front covered porta-walkway
- Masonry joint caulk/sealant (various types/colors)
- Floor tile mastics/carpet adhesives (various types/colors)
- Wall/ceiling/floor/siding/door/window paints (multiple interior/exterior colors)
- Sink undercoating (two colors)
- Bulletin board/chalkboard glues
- Pavement marking paints/bollard paints
- Asphalt/pavement (two layers)
- Roofing mastics/mop coats/seam sealants/edge flashing cements, penetration caulks

5.4 Other Hazardous Materials Visual Evaluation Inventory

MMI made visual observations for universal wastes within the Site building at the time of the Survey. A quantification estimate of OHMs is provided below.

**TABLE 2
 Other Hazardous Materials**

Material Description	Hazard	Estimated Quantity	
Ralph M. T. Johnson School			
10,000-gallon underground oil tank	Heating oil	1	Tank
Transformer	PCBs	1	Unit
100-pound propane aboveground tanks	Propane	2	Tanks
Elevator motor	PCBs	1	Unit
Water fountain motor/capacitor	CFCs/refrigerant and PCBs/oils	1	Unit
Walk-in freezer	CFCs	1	Unit
Walk-in cooler	CFCs	1	Unit
Kitchen exhaust hood	PCBs/oils	1	Unit
Burnham Model MPO-1Q oil-fired boiler	PCBs/oils	1	Unit
Burnham MPC13C oil-fired hot water boiler	PCBs/oils	2	Units
Roof-mounted exhaust fan motors	PCBs/oils	4	Units
FCI/Silent Knight fire alarm system	Lead acid battery	1	Unit
Emergency light with battery	Lead acid battery	10	Units
Kitchen fire suppression system	Halon	1	Unit
Emergency exit sign	Lead acid battery	15	Units
Hydraulic door closer	Hydraulic oils/PCBs	45	Units
Fire strobe	Americium	10	Units
Smoke detector	Americium	20	Units
Ceiling fan motor/capacitor	PCBs/oils	40	Units
Fluorescent light bulb	Mercury	1,500	Bulbs
Fluorescent light ballasts	PCBs/DEHP	750	Ballasts
Anna H. Rockwell Elementary School			
10,000-gallon underground oil tank	Heating oil	1	Tank
Transformer	PCBs	1	Unit
100-pound propane aboveground tanks	Propane	2	Tanks
Elevator motor	PCBs	1	Unit
Water fountain motor/capacitor	CFCs/refrigerant and PCBs/oils	1	Unit
Walk-in freezer	CFCs	1	Unit
Walk-in cooler	CFCs	1	Unit

Material Description	Hazard	Estimated Quantity	
Kitchen exhaust hood	PCBs/oils	1	Unit
Burnham MPC13C oil-fired hot water boiler	PCBs/oils	2	Units
Anna H. Rockwell Elementary School			
Riello Delta Elite, Model F-47 oil-fired water heater	PCBs/oils	2	Units
Roof-mounted exhaust fan motors	PCBs/oils	4	Units
FCI/Silent Knight fire alarm system	Lead acid battery	1	Unit
Emergency light with battery	Lead acid battery	10	Units
Kitchen fire suppression system	Halon	1	Unit
Emergency exit sign	Lead acid battery	15	Units
Hydraulic door closer	Hydraulic oils/PCBs	45	Units
Fire strobe	Americium	10	Units
Smoke detector	Americium	20	Units
Fluorescent light bulb	Mercury	1,350	Bulbs
Fluorescent light ballasts	PCBs/DEHP	675	Ballasts

CFC = chlorofluorocarbon (a volatile derivative of methane and ethane)

DEHP = di-ethyl hexyl phthalate (colorless viscous liquid with a phthalic acid and the branched-chain 2-ethylhexanol)

No other environmental sampling was conducted during this Survey.

5.5 Conclusions and Recommendations

Based on the results of our visual Survey and the results of the ACM testing and hazardous materials Survey, MMI provides the following conclusions and recommendations:

- Prior to disturbing any of the visually identified suspect hazardous materials, MMI recommends that a comprehensive survey of the Site school buildings be performed in accordance with EPA NESHAP regulations promulgated in 40 CFR, Part 61. OSHA regulations require that building owners communicate asbestos hazards to building occupants. Following a comprehensive building materials inspection, MMI recommends the preparation and the implementation of an Asbestos Operations & Maintenance (O&M) program for any hazardous materials identified within the buildings that will remain.
- Oil-stained surfaces were noted in the boiler room including concrete surfaces holding mechanical equipment. These areas could be impacted with PCBs. Other areas of suspect materials/components (such as caulks/other sealants, mastics, plasticizers, adhesives, etc.) were noted at different locations throughout the Site buildings. Prior to conducting renovation or selective interior demolition activities within the Site buildings, additional testing of suspect building materials (and potentially substrate materials) that were observed throughout the Site buildings should be conducted to be more representative of the overall structures.
- Following a comprehensive supplemental survey for asbestos, lead, PCBs, and universal regulated wastes, a Connecticut-licensed project designer should prepare asbestos, lead, and

hazardous materials abatement technical specifications for obtaining competitive bids for the removal of identified ACMs/LBPs/and OHMs that will be impacted by the proposed renovation/demolition activities.

- Prior to conducting demolition activities that will impact confirmed or assumed ACM at the Site, a Connecticut-licensed asbestos abatement contractor must be retained to remove the ACM anticipated to be impacted by such activities.
- A Connecticut-licensed asbestos project designer will need to prepare a hazardous materials abatement plan prior to any removal activities.
- Building substrate materials and electrical equipment containing PCBs at concentrations of 1 to 50 ppm will require disposal at an approved solid waste landfill; concentrations above 50 ppm will require disposal at a USEPA TSCA-approved landfill. MMI recommends testing the building materials for PCBs prior to building renovation/selective interior demolition.
- Prior to conducting demolition activities that will impact the identified materials above at the Site buildings, a Connecticut-licensed contractor must be retained to remove the identified electrical and mechanical equipment materials above anticipated to be impacted by such activities.



6.0 RELIANCE

This report is for the exclusive use of the Town of Bethel for the project being discussed. Reliance on this report by any other party is prohibited without the written authorization of MMI.



7.0 GENERAL COMMENTS

The limited Survey was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions, and recommendations expressed in this report are based on conditions observed during the Survey. The information contained in this report is relevant to the dates on which the Survey was performed and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by the Town of Bethel for specific application to the project.

This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. MMI does not warrant the work of regulatory agencies, laboratories, or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied, is made.



8.0 HAZARDOUS MATERIALS ABATEMENT ENGINEERING ESTIMATE

Based on the results of MMI's visual walk-throughs of the Site and buildings during the Survey and associated laboratory analytical results for asbestos, MMI estimates that removal and disposal of identified ACMs and other building-related hazardous materials likely to be impacted by the planned demolition activities could range from \$450,000 to \$540,000. This estimate does not include estimated costs for materials not yet tested, project design, monitoring, and management of abatement activities.

The rough order-of-magnitude (ROM) estimates for asbestos and hazardous materials abatement are inclusive of labor, materials, and disposal costs for the abatement of the materials in accordance with applicable federal and state regulations. These estimates were prepared using unit prices from recent projects of similar size and scope. Labor costs, material costs, schedule, multiple phasing, unidentified materials/conditions, etc. are factors that may significantly affect the actual abatement costs for the materials identified at the Site.

TABLE 3
Cost Estimate

MATERIAL DESCRIPTION	MATERIAL LOCATION	ESTIMATED QUANTITY		ESTIMATED UNIT COST		ESTIMATED COST
Ralph M. T. Johnson School						
Sink undercoat (black and pink)	Throughout	12	SF	\$100	Per sink	\$2,000
		20	Sinks			
12"x12" resilient floor tile and associated mastic (various colors)	Throughout	38,200	SF	\$5	Per SF	\$191,000
Subtotal						\$193,000
Anna H. Rockwell Elementary School						
Sink undercoat (black and pink)	Throughout	12	SF	\$100	Per sink	\$2,000
		20	Sinks			
12"x12" floor tile and associated black mastic (various colors)	Throughout	25,200	SF	\$5	Per SF	\$126,000
Plaster (joint compound) - white	Store Room – at ceiling pipe penetration (patch)	3	SF	\$100	Per SF	\$300
Felt paper (black)	Gymnasium floor	1,500	SF	\$10	Per SF	\$15,000
Caulk (gray)	Exterior window frame	22	LF	\$250	Per window	\$24,250
		97	Windows			
Sealant (black/gray)	Exterior foundation	6,000	SF	\$100	Per SF	\$60,000
Caulk (off-white)	Exterior vent	250	LF	\$20	Per LF	\$5,000
Cement board (gray)	Exterior – boards in window system	500	SF	\$20	Per SF	\$10,000
Mudded pipe fitting insulation (not previously identified)	Throughout	500	fittings	\$25	Per fitting	\$12,500
Kitchen exhaust duct flexible cloth connector	Kitchen	10	SF	\$100	Per SF	\$1,000
Subtotal						\$256,050
ESTIMATED CONTRACTOR TOTAL FOR ABATEMENT AND DISPOSAL						\$449,050
CONTINGENCY FOR UNEXPECTED ABATEMENT DIFFICULTIES, ETC. (~20%); ROUNDED TO THE NEAREST TEN THOUSAND						\$90,000
TOTAL COST ESTIMATE (NUMBERS ARE ROUNDED TO THE NEAREST \$10,000)						\$540,000

NOTES: LF = linear foot, SF = square foot, CF=cubic foot, window system = 8'X3'
Unit costs are inclusive of labor and disposal costs associated with abatement of the specified material.



Appendix A

ASBESTOS ANALYTICAL LABORATORY REPORTS AND CHAINS-OF-CUSTODY



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EMSL Order: 131701499

Customer ID: MMAC42

Customer PO:

Project ID:

Attention: Keith Allard
Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410

Phone: (203) 271-1773

Fax:

Received Date: 04/12/2017 9:09 AM

Analysis Date: 04/18/2017

Collected Date: 04/10/2017

Project: 4494-08-03

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
J-001A <small>131701499-0001</small>	Exterior - Front Entry Window - White Caulk (Orig. Layer)	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-001B <small>131701499-0002</small>	Exterior - Front Entry Window - White Caulk (Orig. Layer)	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-002A <small>131701499-0003</small>	Exterior - Front Entry Window - White Caulk (Replacement Layer)	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-002B <small>131701499-0004</small>	Exterior - Front Entry Window - White Caulk (Replacement Layer)	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-003A <small>131701499-0005</small>	Exterior - Front Bldg Brick - White Masonry Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-003B <small>131701499-0006</small>	Exterior - Front Bldg Brick - White Masonry Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-004A <small>131701499-0007</small>	Exterior - Front Bldg Brick (Around Vents) - White Vent Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-004B <small>131701499-0008</small>	Exterior - Front Bldg Brick (Around Vents) - White Vent Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-005A <small>131701499-0009</small>	Exterior - Roof (Field) - (Lower) - Black Built-up System	Black Fibrous Homogeneous	5% Cellulose 15% Glass	80% Non-fibrous (Other)	None Detected
J-005B <small>131701499-0010</small>	Exterior - Roof (Field) - (Lower) - Black Built-up System	Black Fibrous Homogeneous	5% Cellulose 15% Glass	80% Non-fibrous (Other)	None Detected
J-006A <small>131701499-0011</small>	Exterior - Roof Field Insulation - Black Paper	Black Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
J-006B <small>131701499-0012</small>	Exterior - Roof Field Insulation - Black Paper	Black Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
J-007A <small>131701499-0013</small>	Exterior - Roof Field - (Upper) - Black Built-up System	Black Fibrous Homogeneous	5% Cellulose 15% Glass	80% Non-fibrous (Other)	None Detected
J-007B <small>131701499-0014</small>	Exterior - Roof Field - (Upper) - Black Built-up System	Black Fibrous Homogeneous	5% Cellulose 15% Glass	80% Non-fibrous (Other)	None Detected
J-008A <small>131701499-0015</small>	Exterior - Roof Edge - (Upper) - Black Asphalt System	Black Fibrous Homogeneous	5% Synthetic 10% Glass	85% Non-fibrous (Other)	None Detected

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EMSL Order: 131701499
Customer ID: MMAC42
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Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
J-008B <small>131701499-0016</small>	Exterior - Roof Edge - (Upper) - Black Asphalt System	Black Non-Fibrous Homogeneous	5% Synthetic 10% Glass	85% Non-fibrous (Other)	None Detected
J-009A <small>131701499-0017</small>	Exterior - Roof Edge - (Lower) - Black Asphalt System	Black Fibrous Homogeneous	10% Synthetic	90% Non-fibrous (Other)	None Detected
J-009B <small>131701499-0018</small>	Exterior - Roof Edge - (Lower) - Black Asphalt System	Black Fibrous Homogeneous	10% Synthetic	90% Non-fibrous (Other)	None Detected
J-010A <small>131701499-0019</small>	Interior - Office Carpet Floor (Upper) - Felt Paper Adhesive	Gray Fibrous Homogeneous	2% Glass	98% Non-fibrous (Other)	None Detected
J-010B <small>131701499-0020</small>	Interior - Office Carpet Floor (Upper) - Felt Paper Adhesive	Gray Fibrous Homogeneous	2% Glass	98% Non-fibrous (Other)	None Detected
J-011A <small>131701499-0021</small>	Interior - Office Carpet Floor (Lower) - Blue Adhesive	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-011B <small>131701499-0022</small>	Interior - Office Carpet Floor (Lower) - Blue Adhesive	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-012A <small>131701499-0023</small>	Interior - Conference Room Carpet - Green Adhesive	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-012B <small>131701499-0024</small>	Interior - Conference Room Carpet - Green Adhesive	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-013A <small>131701499-0025</small>	Interior - Counselor Area - Residual Brown Mastic Beneath 13-17	Brown Non-Fibrous Homogeneous	<1% Fibrous (Other)	100% Non-fibrous (Other)	None Detected
J-013B <small>131701499-0026</small>	Interior - Office/Classrooms - Residual Brown Mastic Beneath 13-17	Brown Non-Fibrous Homogeneous	<1% Fibrous (Other)	100% Non-fibrous (Other)	None Detected
J-014A <small>131701499-0027</small>	Interior - Office/Classrooms - 4" Black Cove Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-014B <small>131701499-0028</small>	Interior - Office/Classrooms - 4" Black Cove Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-015A <small>131701499-0029</small>	Interior - Office/Classrooms - Clear Adhesive Assoc. w/014A	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-015B <small>131701499-0030</small>	Interior - Office/Classrooms - Clear Adhesive Assoc. w/014B	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-016A <small>131701499-0031</small>	Interior - Conference Room - 4" Lt. Brown Cove Base	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-016B <small>131701499-0032</small>	Interior - Conference Room - 4" Lt. Brown Cove Base	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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EMSL Order: 131701499
Customer ID: MMAC42
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Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
J-017A 131701499-0033	Interior - Conference Room - Lt. Yellow Adhesive Assoc. w/16A	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-017B 131701499-0034	Interior - Conference Room - Lt. Yellow Adhesive Assoc. w/16B	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-018A 131701499-0035	Interior - Classroom 13 - 4" Dark Brown Cove Base	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-018B 131701499-0036	Interior - Classroom 14 - 4" Dark Brown Cove Base	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-019A 131701499-0037	Interior - Main Hallway - 2'x4' Textured Pinhole Ceiling Tile (Brown)	Brown Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
J-019B 131701499-0038	Interior - Office - 2'x4' Textured Pinhole Ceiling Tile (Brown)	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
J-020A 131701499-0039	Interior - Main Hallway - 2'x4' Textured Pinhole Ceiling Tile (Gray)	Gray Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
J-020B 131701499-0040	Interior - Office - 2'x4' Textured Pinhole Ceiling Tile (Gray)	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
J-021A 131701499-0041	Interior - Main Hallway - Terrazzo Floor	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-021B 131701499-0042	Interior - Main Hallway - Terrazzo Floor	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-022A 131701499-0043	Interior - Classroom 14 - Black Sink Undercoat	Black Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
J-022B 131701499-0044	Interior - Classroom 13 - Black Sink Undercoat				Positive Stop (Not Analyzed)
J-023A 131701499-0045	Interior - Office Kitchenette - Pink Sink Undercoat	Pink Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
J-023B 131701499-0046	Interior - Office Kitchenette - Pink Sink Undercoat				Positive Stop (Not Analyzed)
J-024A 131701499-0047	Interior - Boy's Locker Room - 1'x1' Tongue & Groove Ceiling Tile	Gray Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
J-024B 131701499-0048	Interior - Girl's Locker Room - 1'x1' Tongue & Groove Ceiling Tile	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
J-025A 131701499-0049	Interior - Girl's Locker Room - White Masonry Joint Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-025B 131701499-0050	Interior - Girl's Locker Room - White Masonry Joint Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
J-026A <i>131701499-0051</i>	Interior - Girl's Locker Room - Black Insulation Behind 25A	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
J-026B <i>131701499-0052</i>	Interior - Girl's Locker Room - Black Insulation Behind 25B	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
J-027A <i>131701499-0053</i>	Interior - Entry Hall to Gym - HVAC Wall Duct Cement (Tan)	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-027B <i>131701499-0054</i>	Interior - Entry Hall to Gym - HVAC Wall Duct Cement (Tan)	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-028A <i>131701499-0055</i>	Interior - Entry Hall to Gym - CMU Block Wall Mortar	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-028B <i>131701499-0056</i>	Interior - Entry Hall to Gym - CMU Block Wall Mortar	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-029A <i>131701499-0057</i>	Interior - Above Suspended Ceiling Tile - 4" Pipe Insulation Paper	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
J-029B <i>131701499-0058</i>	Interior - Above Suspended Ceiling Tile - 4" Pipe Insulation Paper	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
J-029C <i>131701499-0059</i>	Interior - Above Suspended Ceiling Tile - 4" Pipe Insulation Paper	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
J-030A <i>131701499-0060</i>	Interior - Above Suspended Ceiling Tile - 4" Pipe Insulation Adhesive	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-030B <i>131701499-0061</i>	Interior - Above Suspended Ceiling Tile - 4" Pipe Insulation Adhesive	Yellow Fibrous Homogeneous	50% Glass	50% Non-fibrous (Other)	None Detected
J-030C <i>131701499-0062</i>	Interior - Above Suspended Ceiling Tile - 4" Pipe Insulation Adhesive	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-031A <i>131701499-0063</i>	Interior - Above Suspended Ceiling Tile - 1" Pipe Insulation Adhesive	Yellow Fibrous Homogeneous	50% Glass	50% Non-fibrous (Other)	None Detected
J-031B <i>131701499-0064</i>	Interior - Above Suspended Ceiling Tile - 1" Pipe Insulation Adhesive	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-031C <i>131701499-0065</i>	Interior - Above Suspended Ceiling Tile - 1" Pipe Insulation Adhesive	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-032A <i>131701499-0066</i>	Interior - Above Suspended Ceiling Tile - 1" Pipe Insulation Paper	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected

Initial report from: 04/18/2017 19:10:05



EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com/bostonlab@emsl.com>

EMSL Order: 131701499

Customer ID: MMAC42

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
J-032B 131701499-0067	Interior - Above Suspended Ceiling Tile - 1" Pipe Insulation Paper	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
J-032C 131701499-0068	Interior - Above Suspended Ceiling Tile - 1" Pipe Insulation Paper	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
J-033A 131701499-0069	Interior - Above Suspended Ceiling Tile - 2" Pipe Insulation Paper	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
J-033B 131701499-0070	Interior - Above Suspended Ceiling Tile - 2" Pipe Insulation Paper	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
J-033C 131701499-0071	Interior - Above Suspended Ceiling Tile - 2" Pipe Insulation Paper	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
J-034A 131701499-0072	Interior - Above Suspended Ceiling Tile - 2" Pipe Insulation Adhesive	Yellow Fibrous Homogeneous	50% Glass	50% Non-fibrous (Other)	None Detected
J-034B 131701499-0073	Interior - Above Suspended Ceiling Tile - 2" Pipe Insulation Adhesive	Yellow Fibrous Homogeneous	50% Glass	50% Non-fibrous (Other)	None Detected
J-034C 131701499-0074	Interior - Above Suspended Ceiling Tile - 2" Pipe Insulation Adhesive	Yellow Fibrous Homogeneous	50% Glass	50% Non-fibrous (Other)	None Detected
J-035A 131701499-0075	Exterior - Entry Doorway - Black Door Caulk	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-035B 131701499-0076	Exterior - Entry Doorway - Black Door Caulk	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-037A 131701499-0077	Exterior - North CMU Block Wall - Tan Mortar	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-037B 131701499-0078	Exterior - North CMU Block Wall - Tan Mortar	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-038A 131701499-0079	Exterior - Foundation Wall (Base) - Gray Cementitious Coating	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-038B 131701499-0080	Exterior - Foundation Wall (Base) - Gray Cementitious Coating	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-039A 131701499-0081	Exterior - Foundation Wall (Base) - White Cementitious Coating	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-039B 131701499-0082	Exterior - Foundation Wall (Base) - White Cementitious Coating	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 04/18/2017 19:10:05



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EMSL Order: 131701499

Customer ID: MMAC42

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Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
J-040A 131701499-0083	Exterior - Brick Wall Façade - Gray Masonry Joint Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-040B 131701499-0084	Exterior - Brick Wall Façade - Gray Masonry Joint Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-041A 131701499-0085	Exterior - Foundation Wall (Base) - Textured Tan Paint	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-041B 131701499-0086	Exterior - Foundation Wall (Base) - Textured Tan Paint	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-042A 131701499-0087	Int. - Basement Level Storage Room - Gypsum Ceiling Board	Gray Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
J-042B 131701499-0088	Int. - Basement Level Storage Room - Gypsum Ceiling Board	Gray/Tan Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
J-043A 131701499-0089	Int. - Basement Level Storage Room - Joint Compound Assoc. w/042	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-043B 131701499-0090	Int. - Basement Level Storage Room - Joint Compound Assoc. w/042	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-044A 131701499-0091	Int. - Basement Level Storage Room - Compostie Gyp & J/C	Gray Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
J-044B 131701499-0092	Int. - Basement Level Storage Room - Compostie Gyp & J/C	Gray/Tan/White Fibrous Heterogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
J-045A 131701499-0093	Int. - Janitor's Closet (1st Flr) - Red Floor Paint	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-045B 131701499-0094	Int. - Janitor's Closet (2nd Flr) - Red Floor Paint	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-046A 131701499-0095	Int. - Restrooms - White Ceramic Wall Tile Grout	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-046B 131701499-0096	Int. - Restrooms - White Ceramic Wall Tile Grout	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-047A 131701499-0097	Int. - Restrooms - Gray Ceramic Wall Tile Adhesive	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-047B 131701499-0098	Int. - Restrooms - Gray Ceramic Wall Tile Adhesive	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
J-048A 131701499-0099	Fire Door - Hallway (Double Doors) at Office - White Insulation	White Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected

Initial report from: 04/18/2017 19:10:05



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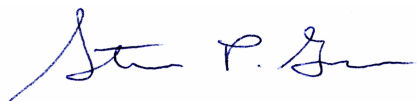
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EMSL Order: 131701499
Customer ID: MMAC42
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
J-048B <small>131701499-0100</small>	Fire Door - Hallway (Double Doors) at Office - White Insulation	White Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
J-049A <small>131701499-0101</small>	Beneath Stage Wood Floor - Cafetorium - Black Paper	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
J-049B <small>131701499-0102</small>	Beneath Stage Wood Floor - Cafetorium - Black Paper	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
J-050A <small>131701499-0103</small>	First Floor Hallway - 2x4 Spline Fissure Ceiling Tile	Gray/White Fibrous Homogeneous	35% Cellulose 35% Min. Wool	30% Non-fibrous (Other)	None Detected
J-050B <small>131701499-0104</small>	First Floor Teacher's Lounge - 2x4 Spline Fissure Ceiling Tile	Gray/White Fibrous Homogeneous	35% Cellulose 35% Min. Wool	30% Non-fibrous (Other)	None Detected

Analyst(s) _____
 Elizabeth Stutts (48)
 Steve Grise (54)



 Steve Grise, Laboratory Manager
 or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3, VT AL998919, Maine Bulk Asbestos BA039

Initial report from: 04/18/2017 19:10:05



EMSL ANALYTICAL, INC.
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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

131701499

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company : Milone and MacBroom, Inc.		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: 99 Realty Drive		Third Party Billing requires written authorization from third party	
City: Cheshire	State/Province: CT	Zip/Postal Code: 06410	Country: US
Report To (Name): Keith Allard		Telephone #: 603 289-1951	
Email Address: keitha@miloneandmacbroom.com		Fax #: 203-439-2307	Purchase Order:
Project Name/Number: 4494-08-03		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
U.S. State Samples Taken: CT		CT Samples: <input checked="" type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

Turnaround Time (TAT) Options* - Please Check

3 Hour 6 Hour 24 Hour 48 Hour 72 Hour 96 Hour 1 Week 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

<p>PLM - Bulk (reporting limit)</p> <p><input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%)</p> <p><input type="checkbox"/> PLM EPA NOB (<1%)</p> <p>Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p>Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p><input type="checkbox"/> NIOSH 9002 (<1%)</p> <p><input type="checkbox"/> NY ELAP Method 198.1 (friable in NY)</p> <p><input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY)</p> <p><input type="checkbox"/> OSHA ID-191 Modified</p> <p><input type="checkbox"/> Standard Addition Method</p>	<p>TEM - Bulk</p> <p><input type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1</p> <p><input type="checkbox"/> NY ELAP Method 198.4 (TEM)</p> <p><input type="checkbox"/> Chatfield Protocol (semi-quantitative)</p> <p><input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2</p> <p><input type="checkbox"/> TEM Qualitative via Filtration Prep Technique</p> <p><input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique</p> <p>Other</p> <p><input type="checkbox"/></p>
---	--

Check For Positive Stop - Clearly Identify Homogenous Group Date Sampled: 4/10/17

Samplers Name: R. Rouillard Samplers Signature: *[Signature]*

Sample #	HA #	Sample Location	Material Description
J-001A		Exterior - Front Entry Window	WHITE CAULK (orig. layer)
B			
-002A			WHITE CAULK (Replacement layer)
B			
-003A		- front BLDG BRICK	WHITE MASONRY CAULK
B			
-004A		(around vents)	WHITE VENT CAULK
B			
-005A		- ROOF (FIELD) (lower)	BLACK built-up system
B			

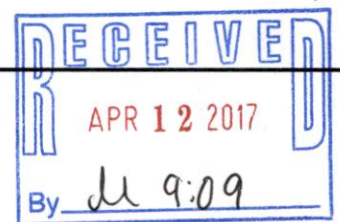
Client Sample # (s): J-001A - J-0508 Total # of Samples: 94

Relinquished (Client): *[Signature]* Date: 4/10/17 Time:

Received (Lab): Date: Time:

Comments/Special Instructions:

EX 778874543485





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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

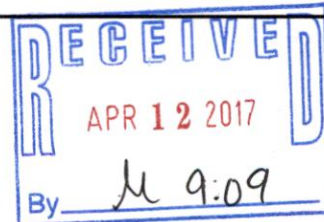
131701499

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
J-006A		Exterior - Roof Field Insulation	BLACK, Paper
B			
007A		- Roof Field - (upper)	BLACK Built-up System
B			
008A		- Roof Edge (upper)	BLACK ASPHALT System
B			
009A		(lower)	
B			
010A		Interior - office ^{Carpet} Floor (upper)	Felt paper Adhesive
B			
011A		(lower)	BLUE Adhesive
B			
012A		- Conference Room ^{Carpet}	Green Adhesive
B			
013A		- Counselor Area	Residual Brown Mastic beneath 13-17
B		- office / classrooms	
014A			4" BLACK Cove base
B			
015A			Clear Adhesive Assoc. w/ 014A/B
B			
016A		- Conference Room	4" Lt. Brown Cove BASE
B			
017A			lt. Yellow Adhesive Assoc. w/ 16A/B
B			

*Comments/Special Instructions:





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Asbestos Bulk Building Material Chain of Custody

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CINNAMINSON, NJ 08077
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Sample #	HA #	Sample Location	Material Description
J-018A		Interior - Classroom 13	4" Dark Brown Core base
B		14	
-019A		- Main Hallway office	2'x4' Textured Pinhole C/T (Brown)
B			
-020A		- Main Hallway office	(Gray)
B			
-021A		- Main Hallway	TERRAZZO, floor
B			
-022A		- Classroom 14	BLACK Sink Undercoat
B		13	
-023A		- office, kitchenette	pink Sink Undercoat
B			
-024A		- Boy's Locker Room	1'x1' tongue + Groove C/T
B		- Girl's	
-025A		- Girl's Locker Room	WHITE Masonry Joint Caulk
B			
-026A			BLACK Insulation behind 025A/B
B			
-027A		- Entry Hall to GYM	HVAC wall DUCT Cement (Tan)
B			
-028A			CMU BLOCK wall Mortar
B			
-029A		- Above Suspended C/T	4" Pipe Insulation Paper
B/C			

*Comments/Special Instructions:

C/T = Ceiling Tile
CMU = Concrete Masonry Unit

Controlled Document - Asbestos COC - R6 - 11/29/2012





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Asbestos Bulk Building Material Chain of Custody

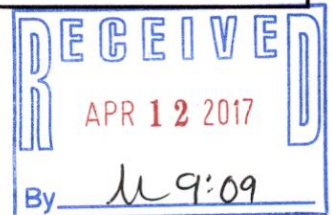
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Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
J-030A		Interior - Above Suspended c/t	4" Pipe Insulation Adhesive
B			
C			
-031A			4"
B			
C			
-032A			1" Pipe Insulation Paper
B			
C			
-033A			2"
B			
C			
-034A			2" Pipe Insulation Adhesive
B			
C			
-035A		Exterior - Entry Doorway	BLACK Door CAULK
B			
-037A		- North CMU Blockwall	TAN Mortar
B			
-038A		- Foundation Wall (Base)	GRAY Cementitious Coating
B			
-039A		-	WHITE Cementitious Coating
B			
*Comments/Special Instructions:			





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**Asbestos Bulk Building Material
Chain of Custody**

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Sample #	HA #	Sample Location	Material Description
J-040A		Exterior - Brick Wall Facade	GRAY Masonry Joint Caulk
B			
-041A		- Foundation Wall (Bas)	Textured, TAN PAINT
B			
-042A		Int. - Basement Level Storage Room	GYPSUM Ceiling BOARD
B			
-043A			Joint Compound Assoc. w/042
B			
-044A			COMPOSITE GYP & J/C
B			
-045A		- Janitor's Closet (1 st flr)	Red Floor PAINT
B		(2 nd flr)	
-046A		- Restrooms	WHITE, CERAMIC w/ Gout
B			
-047A			GRAY Ceramic w/ Adhesive
B			
J-048A		Fire door - Hallway (double doors) at office	white insulation
J-048B		↓	↓
J-049A		Beneath stage wood floor - Cafeterium	Black paper
↓ B		↓	↓
J-050A		First Floor Hallway	2x4 spline Fissure Ceiling tile
↓ B		↓ Teachers Lounge	↓

*Comments/Special Instructions:

w/t = wall tile

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By U 9:09



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Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com/bostonlab@emsl.com>

EMSL Order: 131701500

Customer ID: MMAC42

Customer PO:

Project ID:

Attention: Keith Allard
Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410

Phone: (203) 271-1773

Fax:

Received Date: 04/12/2017 9:09 AM

Analysis Date: 04/18/2017 - 04/19/2017

Collected Date: 04/10/2017

Project: 4494-08-03

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
R-01A <small>131701500-0001</small>	Rm K1 - Perimeter Wall - Cove Base - Dark Brown	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-01B <small>131701500-0002</small>	Rm 109 - Perimeter Wall - Cove Base - Dark Brown	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-02A <small>131701500-0003</small>	Rm K1 - Perimeter Wall - Assoc. Adhesive - Dark Brown	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-02B <small>131701500-0004</small>	Rm 109 - Perimeter Wall - Assoc. Adhesive - Dark Brown	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-03A <small>131701500-0005</small>	Rm K1 - Drop Ceiling - 2x4 Pinhole/Textured Ceiling Tile - White	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-03B <small>131701500-0006</small>	Right Side Stairwell - 2x4 Pinhole/Textured Ceiling Tile - White	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-04A <small>131701500-0007</small>	Rm K1 - Storage - Floor Tile 1x1 White - Assoc. Grout - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-04B <small>131701500-0008</small>	Rm K1 - Storage - Floor Tile 1x1 White - Assoc. Grout - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-05A <small>131701500-0009</small>	Rm K1 - Storage - Floor Tile 1x1 White - Assoc. Adhesive - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-05B <small>131701500-0010</small>	Rm K1 - Storage - Floor Tile 1x1 White - Assoc. Adhesive - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-06A <small>131701500-0011</small>	Rm K1 - Gray 2x2 Carpet Squares - Assoc. Adhesive - Green	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-06B <small>131701500-0012</small>	Rm K1 - Gray 2x2 Carpet Squares - Assoc. Adhesive - Green	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-07A <small>131701500-0013</small>	Rm 107 - Sink - Undercoating - Black	Black Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
R-07B <small>131701500-0014</small>	Rm 108 - Sink - Undercoating - Black				Positive Stop (Not Analyzed)

Initial report from: 04/19/2017 13:50:22



EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com/bostonlab@emsl.com>

EMSL Order: 131701500

Customer ID: MMAC42

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
R-08A 131701500-0015	Rm 106 - Floor (740 Sq. Feet) - 12x12 Floor Tile - Mottle Orange	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
R-08B 131701500-0016	Rm 206 - Floor (740 Sq. Feet) - 12x12 Floor Tile - Mottle Orange				Positive Stop (Not Analyzed)
R-09A 131701500-0017	Rm 106 - 12x12 Floor Tile - Assoc. Mastic - Black	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
R-09B 131701500-0018	K1 - 12x12 Floor Tile - Assoc. Mastic - Black				Positive Stop (Not Analyzed)
R-09C 131701500-0019	Rm 108 - 12x12 Floor Tile - Assoc. Mastic - Black				Positive Stop (Not Analyzed)
R-09D 131701500-0020	Rm 109 - 12x12 Floor Tile - Assoc. Mastic - Black				Positive Stop (Not Analyzed)
R-10A 131701500-0021	Rm 107 - Floor (740 Sq. Feet) - 12x12 Tile - Tan Speckle	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
R-10B 131701500-0022	Rm 103 - Floor (740 Sq. Feet) - 12x12 Tile - Tan Speckle				Positive Stop (Not Analyzed)
R-11A 131701500-0023	Rm 108 - Floor (740 Sq. Feet) - 12x12 Tile - Tan/Orange Speckle	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
R-11B 131701500-0024	Rm 105 - Floor (740 Sq. Feet) - 12x12 Tile - Tan/Orange Speckle				Positive Stop (Not Analyzed)
R-12A 131701500-0025	Rm 108 - Under Tile - Floor Leveler - Brick	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-12B 131701500-0026	Rm 108 - Under Tile - Floor Leveler - Brick				Not Submitted
R-13A 131701500-0027	Rm K1 - Floor (1400 Sq. Feet) - 12x12 Floor Tile - Dark Brown Mottle	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-13B 131701500-0028	Rm 110 - Floor (740 Sq. Feet) - 12x12 Floor Tile - Dark Brown Mottle	Brown Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
R-14A 131701500-0029	Rm 109 - Floor (540 Sq. Feet) - 12x12 Tile - Gray/Red	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-14B 131701500-0030	Rm 204 (400 Sq. Feet) - 12x12 Tile - Gray/Red	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
R-15A 131701500-0031	Rm 109 - Floor (200 Sq. Feet) - 12x12 Tile - Cream/Brown Stripe	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-15B 131701500-0032	Rm 104 - Floor (250 Sq. Feet) - 12x12 Tile - Cream/Brown Stripe	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile

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EMSL Order: 131701500

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
R-16A 131701500-0033	Rm 109 - Wall - Cove Base - Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-16B 131701500-0034	Storage Room 1st Floor Wall - Cove Base - Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-17A 131701500-0035	Custodial Supply Closet - Floor - Paint - Red	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-17B 131701500-0036	1st Floor Boys Lavatory Storage Floor - Paint - Red	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-18A 131701500-0037	1st Floor Girls - Lavatory Wall Teal Tile - Assoc. Adhesive - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-18B 131701500-0038	1st Floor Boys - Lavatory Wall Teal Tile - Assoc. Adhesive - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-19A 131701500-0039	1st Floor Girls - Lavatory Wall Teal Tile - Assoc. Grout Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-19B 131701500-0040	1st Floor Boys - Lavatory Wall Teal Tile - Assoc. Grout Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-20A 131701500-0041	1st Floor Boys Lavatory - Ceiling - Gypsum Board - Off-white	Tan/White Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
R-20B 131701500-0042	1st Floor Store Room - Gypsum Board - Off-white	Tan/White Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
R-21A 131701500-0043	Rm 103 - Interior Window - Caulking - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-21B 131701500-0044	Rm 102 - Interior Window - Caulking - Gray	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-22A 131701500-0045	Rm 101 - Floor (740 Sq. Feet) - 12x12 Floor Tile - Dark Tan/Brown Speckle	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
R-22B 131701500-0046	Rm 113 - Floor (740 Sq. Feet) - 12x12 Floor Tile - Dark Tan/Brown Speckle				Positive Stop (Not Analyzed)
R-23A 131701500-0047	Rm 101 - Drop Ceiling - 2x4 Pinhole Smooth Tile - White	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
R-23B 131701500-0048	Rm 113 - Drop Ceiling - 2x4 Pinhole Smooth Tile - White	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected

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			% Fibrous	% Non-Fibrous	% Type
R-23C 131701500-0049	Conference Room - Drop Ceiling - 2x4 Pinhole Smooth Tile - White	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
R-23D 131701500-0050	Rm 205 - Drop Ceiling - 2x4 Pinhole Smooth Tile - White	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
R-23E 131701500-0051	2nd Floor Hallway - Drop Ceiling - 2x4 Pinhole Smooth Tile - White	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
R-24A 131701500-0052	Conference Room - Carpet Floor - Assoc. Adhesive - Yellow	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-24B 131701500-0053	Conference Room - Carpet Floor - Assoc. Adhesive - Yellow	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-25A 131701500-0054	Conference Room - Wall - Cove Base - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-25B 131701500-0055	Conference Room - Wall - Cove Base - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-26A 131701500-0056	Conference Room - Wall - Assoc. Mastic - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-26B 131701500-0057	Conference Room - Wall - Assoc. Mastic - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-27A 131701500-0058	Conference Room - Wall - Residual Mastic - Dark Brown	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-27B 131701500-0059	Conference Room - Wall - Residual Mastic - Dark Brown	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-28A 131701500-0060	Custodial Office Floor (500 Sq. Feet) - 12x12 Tile - Dark Gray/White Speckle	Gray Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
R-28B 131701500-0061	2nd Floor Storage Room - 12x12 Tile - Dark Gray/White Speckle				Positive Stop (Not Analyzed)
R-29A 131701500-0062	Cafeteria Kitchen Floor 4"x4" Tile - Assoc. Grout - Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-29B 131701500-0063	Cafeteria Kitchen Floor 4"x4" Tile - Assoc. Grout - Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-30A 131701500-0064	Cafeteria Kitchen Floor 4"x4" Tile - Assoc. Adhesive - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-30B 131701500-0065	Cafeteria Kitchen Floor 4"x4" Tile - Assoc. Adhesive - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
R-31A <small>131701500-0066</small>	Cafeteria Kitchen - Drop Ceiling - 2'x4' Tile - Off-white	Gray/White Fibrous Homogeneous	80% Min. Wool	20% Non-fibrous (Other)	None Detected
R-31B <small>131701500-0067</small>	Cafeteria Kitchen - Drop Ceiling - 2'x4' Tile - Off-white	Gray/White Fibrous Homogeneous	80% Min. Wool	20% Non-fibrous (Other)	None Detected
R-32A <small>131701500-0068</small>	Office - Carpet Floor - Assoc. Adhesive - Teal	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-32B <small>131701500-0069</small>	Office - Carpet Floor - Assoc. Adhesive - Teal	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-33A <small>131701500-0070</small>	Office - Carpet Floor - Residual Adhesive - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-33B <small>131701500-0071</small>	Office - Carpet Floor - Residual Adhesive - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-34A <small>131701500-0072</small>	Office - Wall - Cove Base - Green	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-34B <small>131701500-0073</small>	Office - Wall - Cove Base - Green	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-35A <small>131701500-0074</small>	Office - Wall - Assoc. Adhesive - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-35B <small>131701500-0075</small>	Office - Wall - Assoc. Adhesive - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-36A <small>131701500-0076</small>	Office - Wall - Residual Adhesive - Dark Brown	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-36B <small>131701500-0077</small>	Office - Wall - Residual Adhesive - Dark Brown	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-37A <small>131701500-0078</small>	Library - Carpet - Assoc. Adhesive - Tan	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-37B <small>131701500-0079</small>	Library - Carpet - Assoc. Adhesive - Tan	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-38A <small>131701500-0080</small>	Store Room - Ceiling Pipe - Plaster - White	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
R-38B <small>131701500-0081</small>	Store Room - Ceiling Pipe - Plaster - White				Positive Stop (Not Analyzed)
R-39A <small>131701500-0082</small>	Boiler Room - Ceiling - Texture Coat - White	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-39B <small>131701500-0083</small>	Boiler Room - Ceiling - Texture Coat - White	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-40A <small>131701500-0084</small>	Boys Locker Room - 1"x1" Tile - Assoc. Grout - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
R-40B <small>131701500-0085</small>	Girls Locker Room - 1"x1" Tile - Assoc. Grout - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-41A <small>131701500-0086</small>	Boys Locker Room - 1"x1" Tile - Assoc. Adhesive - White	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-41B <small>131701500-0087</small>	Girls Locker Room - 1"x1" Tile - Assoc. Adhesive - White	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-42A <small>131701500-0088</small>	Girls Lavatory 2nd Flr - Ceiling - 1'x1' Tile - White	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
R-42B <small>131701500-0089</small>	Girls Lavatory 2nd Flr - Ceiling - 1'x1' Tile - White	Gray/White Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
R-43A <small>131701500-0090</small>	Main Stairwell - Wall - Caulking - Red	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-43B <small>131701500-0091</small>	Main Stairwell - Wall - Caulking - Red	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-44A <small>131701500-0092</small>	Library Office Wall - Wallpaper - Red	White/Red Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
R-44B <small>131701500-0093</small>	Library Office Wall - Wallpaper - Red	White/Red Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
R-45A <small>131701500-0094</small>	Library Office Wall - Assoc. Adhesive - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-45B <small>131701500-0095</small>	Library Office Wall - Assoc. Adhesive - Tan	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-46A <small>131701500-0096</small>	Rm Teachers Sink - Undercoating - Pink	Purple Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
R-46B <small>131701500-0097</small>	Rm Teachers Sink - Undercoating - Pink				Positive Stop (Not Analyzed)
R-47A <small>131701500-0098</small>	Rm 113 Door Window - Glaze - Off-white	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
R-47B <small>131701500-0099</small>	Library - Glaze - Off-white				Positive Stop (Not Analyzed)
R-48A <small>131701500-0100</small>	Gymnasium Floor - Felt Paper - Black	Black Non-Fibrous Homogeneous	40% Cellulose	58% Non-fibrous (Other)	2% Chrysotile
R-48B <small>131701500-0101</small>	Gymnasium Floor - Felt Paper - Black				Positive Stop (Not Analyzed)
R-49A <small>131701500-0102</small>	Auditorium Stage Floor - Felt Paper - Black	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
R-49B <small>131701500-0103</small>	Auditorium Stage Floor - Felt Paper - Black	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
R-50A <small>131701500-0104</small>	Foundation - Exterior Front - Sealant - Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-50B <small>131701500-0105</small>	Foundation - Exterior Front - Sealant - Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-51A <small>131701500-0106</small>	Exterior - Vents - Fastner Caulk - Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-51B <small>131701500-0107</small>	Exterior - Vents - Fastner Caulk - Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-52A <small>131701500-0108</small>	Exterior - Brick/Window - Masonry Caulk - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-52B <small>131701500-0109</small>	Exterior - Brick/Window - Masonry Caulk - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-53A <small>131701500-0110</small>	Exterior - Window Frame - Caulking - Gray	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
R-53B <small>131701500-0111</small>	Exterior - Window Frame - Caulking - Gray				Positive Stop (Not Analyzed)
R-54A <small>131701500-0112</small>	Exterior - Brick/Window - Masonry Caulk - Charcoal	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-54B <small>131701500-0113</small>	Exterior - Brick/Window - Masonry Caulk - Charcoal	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-55A <small>131701500-0114</small>	Exterior - Window Frame - Caulking - Off-white	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-55B <small>131701500-0115</small>	Exterior - Window Frame - Caulking - Off-white	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-56A <small>131701500-0116</small>	Exterior - Foundation - Sealant - Black/Gray	Black Fibrous Homogeneous	25% Cellulose	70% Non-fibrous (Other)	5% Chrysotile
R-56B <small>131701500-0117</small>	Exterior - Foundation - Sealant - Black/Gray				Positive Stop (Not Analyzed)
R-57A <small>131701500-0118</small>	Exterior - Metal Panel - Caulking - White	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-57B <small>131701500-0119</small>	Exterior - Metal Panel - Caulking - White	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-58A <small>131701500-0120</small>	Exterior - Cement Board - Glaze - White	Gray Fibrous Homogeneous	2% Glass	98% Non-fibrous (Other)	None Detected
R-58B <small>131701500-0121</small>	Exterior - Cement Board - Glaze - White	Gray Fibrous Homogeneous	2% Glass	98% Non-fibrous (Other)	None Detected

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R-59A <small>131701500-0122</small>	Exterior - Vent - Caulking - Off-white	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
R-59B <small>131701500-0123</small>	Exterior - Vent - Caulking - Off-white				Positive Stop (Not Analyzed)
R-60A <small>131701500-0124</small>	Exterior - Brick - Masonry Caulk - White	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-60B <small>131701500-0125</small>	Exterior - Brick - Masonry Caulk - White	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-61A <small>131701500-0126</small>	Exterior - Boards in Window System - Cement Board - Gray	Gray Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
R-61B <small>131701500-0127</small>	Exterior - Boards in Window System - Cement Board - Gray				Positive Stop (Not Analyzed)
R-62A <small>131701500-0128</small>	Exterior - Foundation - Cementitious Coating - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-62B <small>131701500-0129</small>	Exterior - Foundation - Cementitious Coating - Gray	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-63A <small>131701500-0130</small>	Roofs - Center Bldg - Field - Black Built-up System - Rolled	Black Fibrous Homogeneous	20% Cellulose 10% Glass	70% Non-fibrous (Other)	None Detected
R-63B <small>131701500-0131</small>	Roofs - Center Bldg - Field - Black Built-up System - Rolled	Black Fibrous Homogeneous	20% Cellulose 10% Glass	70% Non-fibrous (Other)	None Detected
R-64A <small>131701500-0132</small>	Roofs - South Rear - Field - Black Built-up System - Rolled	Black Fibrous Homogeneous	10% Cellulose 10% Glass	80% Non-fibrous (Other)	None Detected
R-64B <small>131701500-0133</small>	Roofs - South Rear - Field - Black Built-up System - Rolled	Black Fibrous Homogeneous	10% Cellulose 10% Glass	80% Non-fibrous (Other)	None Detected
R-65A <small>131701500-0134</small>	Roofs - South Rear - Edge - Black Asphalt Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-65B <small>131701500-0135</small>	Roofs - South Rear - Edge - Black Asphalt Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-66A <small>131701500-0136</small>	Roofs - East Roof - Chimney - Black Asphalt Mastic	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
R-66B <small>131701500-0137</small>	Roofs - East Roof - Chimney - Black Asphalt Mastic	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
R-67A <small>131701500-0138</small>	Roofs - Center/East Roof - Low Rear (Field) - Black Built-up System - Rolled	Black Fibrous Homogeneous	10% Cellulose 10% Glass	80% Non-fibrous (Other)	None Detected
R-67B <small>131701500-0139</small>	Roofs - Center/East Roof - Low Rear (Field) - Black Built-up System - Rolled	Black Fibrous Homogeneous	10% Cellulose 10% Glass	80% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
R-68A <small>131701500-0140</small>	Roofs - West Addition - Field - Black Built-up System - Rolled	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
R-68B <small>131701500-0141</small>	Roofs - West Addition - Field - Black Built-up System - Rolled	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
R-69A <small>131701500-0142</small>	Roofs - West Addition - Edge - Black Asphalt Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-69B <small>131701500-0143</small>	Roofs - West Addition - Edge - Black Asphalt Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Kevin Pine (125)

Steve Grise, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3, VT AL998919, Maine Bulk Asbestos BA039

Initial report from: 04/19/2017 13:50:22



EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

131701500

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077

PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: Milone and MAcBroom, Inc.		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: 99 Realty Drive		Third Party Billing requires written authorization from third party	
City: Cheshire	State/Province: CT	Zip/Postal Code: 06410	Country: US
Report To (Name): Keith Allard		Telephone #: 603 289-1951	
Email Address: keitha@miloneandmacbroom.com		Fax #: 203-439-2307	Purchase Order:
Project Name/Number: 4494-08-03		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
U.S. State Samples Taken: CT		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

Turnaround Time (TAT) Options* - Please Check

3 Hour
 6 Hour
 24 Hour
 48 Hour
 72 Hour
 96 Hour
 1 Week
 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

<p>PLM - Bulk (reporting limit)</p> <p><input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%)</p> <p><input type="checkbox"/> PLM EPA NOB (<1%)</p> <p>Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p>Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p><input type="checkbox"/> NIOSH 9002 (<1%)</p> <p><input type="checkbox"/> NY ELAP Method 198.1 (friable in NY)</p> <p><input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY)</p> <p><input type="checkbox"/> OSHA ID-191 Modified</p> <p><input type="checkbox"/> Standard Addition Method</p>	<p>TEM - Bulk</p> <p><input type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1</p> <p><input type="checkbox"/> NY ELAP Method 198.4 (TEM)</p> <p><input type="checkbox"/> Chatfield Protocol (semi-quantitative)</p> <p><input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2</p> <p><input type="checkbox"/> TEM Qualitative via Filtration Prep Technique</p> <p><input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique</p> <p style="text-align: center;">Other</p> <p><input type="checkbox"/></p>
---	--

Check For Positive Stop - Clearly Identify Homogenous Group Date Sampled: 4/10/17

Samplers Name: *R. Louis/ARD* Samplers Signature: *[Signature]*

Sample #	HA #	Sample Location	Material Description
01A		Rm. K1 - perimeter wall	covebase - Dark Brown
01B		Rm 109 - perimeter wall	covebase - Dark Brown
02A		Rm. K1 - perimeter wall	assoc. adhesive - Dark Brown
02B		Rm 109 - perimeter wall	↓
03A		Rm K1 - Drop ceiling	ax4 pinhole / tile textured ceiling tile - white
03B		Right side stair well	↓
04A		Rm K1 - storage - Floor tile 1x1 white	assoc. tile Grout - Gray
04B		↓	↓
05A		Rm K1 - storage - Floor tile 1x1 white	assoc. adhesive - Gray
05B		↓	↓

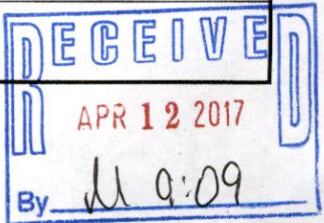
Client Sample # (s): *[Signature]* Total # of Samples: 143

Relinquished (Client): *[Signature]* Date: 4/10/17 Time:

Received (Lab): Date: Time:

Comments/Special Instructions:

EX 778874543485





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LABORATORY PRODUCTS TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

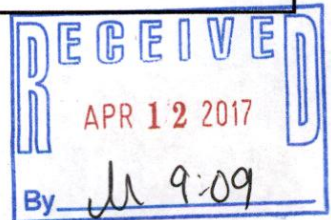
131701500

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
R-06A		Rm K1 - Gray 2x2 Carpet Squares	assoc. adhesive - green
06B		↓ ↓	
07A		Rm 107 - sink	under coating - Black
07B		Rm 108 - sink	↓ ↓
08A		Rm 106 - Floor (740 Sq. feet)	12x12 Floor tile - mottle orange
08B		Rm 206 - ↓	↓ ↓
09A		Rm 106 - 12x12 Floor tile	assoc. mastic - Black
09B		K1 - 12x12 Floor tile	↓ ↓
09C		Rm 108 ↓	↓ ↓
09D		Rm 109 ↓	↓ ↓
10A		Rm 107 - Floor (740 Sq. feet)	12x12 tile - Tan speckle
10B		Rm 103 - Floor (740 Sq. feet)	↓ ↓
11A		Rm 108 - Floor (740 Sq. feet)	12x12 tile - Tan/orange speckle
11B		Rm 105 - Floor (740 sq. feet)	↓ ↓
12A		Rm 108 - under tile	Floor Leveler - Brick.
12B			↓ ↓
13A		Rm K1 - Floor (1400 Sq. feet)	12x12 Floor tile - Dark ^{Brown} tan mottle
13B		Rm 110 - Floor (740 Sq. feet)	↓ ↓
14A		Rm 109 - Floor (740 Sq. feet)	12x12 tile - Gray/Red.
14B		Rm 204 (400 Sq. feet)	↓ ↓
15A		Rm 109 - Floor (200 Sq. feet)	12x12 tile - cream/brown stripe
15B		Rm 104 - Floor (250 Sq. feet)	↓ ↓
16A		Rm 109 - wall (interior)	Cove base - Black
16B		Storage room 1st floor - ↓	↓ ↓

*Comments/Special Instructions:





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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

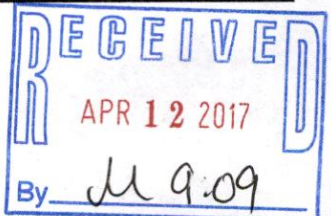
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Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
17A		Custodial Supply closet - Floor	Paint - Red
17B		1st Floor Boys lavatory storage Floor	↓ ↓
18A		1st Floor Girls - Lavatory ^{wall} teal tile	assoc. adhesive - TAN
18B		1st Floor Boys -	↓ ↓
19A		1st Floor Girls -	assoc. Grout Gray
19B		1st Floor Boys -	↓ ↓
20A		1st Floor Boys lavatory - ceiling	Gypsum Board - off white
20B		1st Floor store room	↓ ↓
21A		Rm. 103 - interior window	Caulking - Gray
21B		Rm 102	↓ ↓
22A		Rm 101 - Floor (740 Sq. Feet)	12x12 Floor tile - Dark Tan/Brown
22B		Rm 113 Floor (740 Sq. Feet)	↓ ↓ Speckle
23A		Rm 101 - Drop Ceiling	2x4 pinhole smooth tile - white
23B		Rm 113	↓ ↓
23C		Conference Room	↓ ↓
23D		Rm 205	↓ ↓
23E		2nd Floor Hallway	↓ ↓
24A		Conference Room - carpet floor	assoc. adhesive - yellow
24B		↓ ↓	↓ ↓
25A		Conference Room - wall	Cove base - Gray
25B		↓ ↓	↓ ↓
26A		Conference Room - wall	assoc. mastic - tan
26B		↓ ↓	↓ ↓
27A		Conference room - wall	residual mastic - Dark Brown

*Comments/Special Instructions:





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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

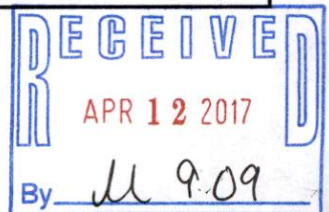
131701500

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CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
27B		Conference Room - wall	residual mastic - Dark Brown
28A		Custodial office Floor (500sq. feet)	12x12 tile - Dark Gray/white speckle
28B		2nd Floor Storage room	↓ ↓
29A		Cafateria Kitchen Floor 4"x4" tile	4"x4" tile assoc. Grout - Black
29B		↓ ↓	↓ ↓
30A		Cafateria Kitchen Floor 4"x4" tile.	assoc. Adhesive - Gray
30B		↓ ↓	↓ ↓
31A		Cafateria Kitchen - Drop Ceiling	2'x4' tile - off white
31B		↓ ↓	
32A		office - carpet Floor	assoc. adhesive - Teal
32B		↓ ↓	↓ ↓
33A		office ↓	residual adhesive - Tan
33B		↓ ↓	↓ ↓
34A		office - wall	Cove base - Green
34B		↓ ↓	↓ ↓
35A		↓ ↓	assoc. adhesive mastic - Tan
35B		↓ ↓	↓ ↓
36A		↓ ↓	residual adhesive - Dark Brown
36B		↓ ↓	↓ ↓
37A		Library - carpet	assoc. adhesive - TAN
37B		↓ ↓	↓ ↓
38A		store room - ceiling pipe.	Plaster - white
38B		↓ ↓	↓ ↓
39A		Boiler room - Ceiling	texture coat - white

*Comments/Special Instructions:





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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

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CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
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Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
R-39B		Boiler Room - ceiling	texture coat - white.
40A		Boys locker room - 1"x1" tile	assoc. grout - gray
40B		Girls' locker room	↓ ↓
41A		Boys locker room	assoc. adhesive - white
41B		Girls locker rooms	↓ ↓
42A		Girls lavatory 2nd flr - ceiling	1'x1' tile - white
42B		↓ ↓	↓ ↓
43A		Main stairwell - well	Red caulking - red
43B		↓ ↓	↓ ↓
44A		Library office wall	wall paper - red
44B		↓ ↓	↓ ↓
45A		↓ ↓	assoc adhesive - tan
45B		↓ ↓	↓ ↓
46A		Rm teachers sink	undercoating - pink
46B		↓ ↓	↓ ↓
47A		Rm 113 Door window	glaze - off white.
47B		Library	↓ ↓
48A		Gymnasium Floor -	Felt paper - Black
48B		↓	↓
49A		Auditorium stage Floor	Felt paper - Black.
49B		↓	↓
50A		Foundation - exterior Front.	Sealant - Black
50B		↓ ↓	↓ ↓

*Comments/Special Instructions:

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APR 12 2017

By ll 9:09



EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

131701500

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077

PHONE: (800) 220-3675

FAX: (856) 786-5974

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
R- S1A		exterior - vents	Fastner caulk - Black
S1B		↓	↓ ↓
S2A		- Brick/window	masonry caulk - Gray
S2B		↓	↓ ↓
S3A		- window Frame	caulking - Gray
S3B		↓	↓ ↓
S4A		- Brick/window	masonry caulk - Charcoal
S4B		↓	↓ ↓
S5A		- window Frame	caulking - off white
S5B		↓	↓ ↓
S6A		- Foundation	Sealant - Black/Gray
S6B		↓	↓ ↓
S7A		- metal panel	caulking - white
S7B		↓	↓ ↓
S8A		- cement board	Glaze - white
S8B		↓	↓ ↓
S9A		- vent	caulking - off white
S9B		↓	↓ ↓
60A		Brick Brick	masonry caulk - white
60B		↓	
61A		boards in window	cement board - Gray
61B		system ↓	↓ ↓
62A		Foundation	cementitious coating - Gray
62B		↓	↓ ↓

*Comments/Special Instructions:

Page 6 of 7 pages





EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

**Asbestos Bulk Building Material
Chain of Custody**

EMSL Order Number (Lab Use Only):

131701500

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
R-063A		ROOFS - Center BLDG-Field	BLACK Built-up System
B		-	
064A		- South Rear-	rolled
B		-	
065A		- Edge	BLACK Asphalt Mastic
B		-	
066A		- East Roof - chimney	
B		-	
067A		- Center/East roof - low roof (Field)	BLACK Built-up System rolled
B		-	
068A		- West Addition - Field	
B		-	
069A		- Edge	BLACK Asphalt Mastic
B		-	

*Comments/Special Instructions:

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APR 12 2017

By U 9:09



EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com> / bostonlab@emsl.com

EMSL Order: 131701674

Customer ID: MMAC42

Customer PO:

Project ID:

Attention: Ryan D. Rouillard
Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410

Phone: (203) 271-1773

Fax:

Received Date: 04/24/2017 8:30 AM

Analysis Date: 04/25/2017

Collected Date: 04/10/2017

Project: 4494-08-03 / Rockwell School - 400 Whittlesey Dr.

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
R-070A 131701674-0001	Center Roof - Black Seam Sealant on Rolled Asphalt Roofing	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
R-070B 131701674-0002	Center Roof - Black Seam Sealant on Rolled Asphalt Roofing	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Michael Mink (2)

Steve Grise, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA

Initial report from: 04/25/2017 09:53:31



131701674

ASBESTOS INSPECTION CHAIN OF CUSTODY

99 Realty Drive, Cheshire, Connecticut 06410
P [203] 271-1773 F [203] 272-9733 C [781] 603-5375 MiloneandMacBroom.com Laboratory Name: EMSC Analytical, Inc.

Client Name: Bermer School Client Phone: _____ Client E-mail: _____ MMINC Project No.: 4494-08-03

Project Name: Rockwell School - 400 Whittier Dr. Project Address: _____ Sampling Date: 4/20/17

Relinquished By: _____ Date/Time: 4/20/17 Inspector Name(s): R. Rouillard

Received By: _____ Date/Time: _____ Project Manager E-mail (results to): RRouillard@MMINC.com
(781) 603-5375

Analysis Type: PLM TEM & Point Count Other: _____ Comments/Special Instructions: Stop First Positive

Turnaround Time: 24 Hours

Field I.D.	Sample Location	Sample Material Description	Homogeneous Area(s) (please separate by ;)
<u>R-0704</u> <u>↓ 15</u>	<u>Under Feet</u> <u>↓</u>	<u>Black Sealant on Red Spilt</u> <u>↓</u>	<u>Aspir</u>

Sampler(s) signature: _____

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APR 24 2017

By: 8:30 RJS
781 5957 7848
FX



Appendix B

LEAD PAINT XRF SCREENING REPORT – LBP SOLUTIONS, LLC



Pre-Renovation/Demolition Lead Based Paint Determination

Project:

**400 and 500 Whittlesey Drive
Bethel, CT 06081**

Date:

April 10, 2017

Prepared For:

**Milone & MacBroom
44 Heather Hill Lane
Goffstown, CT 03045**

Prepared By:

**LBP Solutions, LLC
13 Bird Street, Suite 6
Foxboro, MA 02035**

Table of Contents

1	EXECUTIVE SUMMARY:	4
2	SITE DESCRIPTION:	4
3	SURVEY PERSONNEL	4
4	TESTING METHODOLOGY	4
5	XRF TESTING RESULTS	5
6	CONCLUSIONS AND RECOMMENDATIONS	10
7	APPENDICES	11
	Appendix A - XRF Performance and Characteristics Sheets (PCS) Sheets	12
	Appendix B - Inspector Certifications:	17
	Appendix C - Drawings	21

Certification of Field Activities

Lead Determination

Site Location: 500 Whittlesey DR, Bethel, CT 06081
Bedford, CT 03110

Conducted By: Jeffery W. Harris

Title: Master Lead Inspector, License # M/R 3708

Dates: April 10, 2017

Signature:



Report Preparation

Prepared By: Jeffery W. Harris

Title: Master Lead Inspector, License # M/R 3708

Dates: April 20, 2017

Signature:



1 Executive Summary:

LBP Solutions, LLC was retained by Milone & MacBroom to conduct an OSHA Lead Based Paint Survey of interior components of the Johnson and Rockwell Elementary schools located at 500 Whittlesey DR, Bethel, CT 06081. Mr. Jeffery W. Harris conducted the on-site investigation.

The intent of the lead paint survey was to identify building surfaces in designated areas, coated with lead based paint, utilizing XRF testing technology. The information collected, as a result of testing, can be used to ensure OSHA compliance relative to worker exposure and proper disposal of demolition debris.

Some of the surfaces tested were at or above the abatement level set for this survey. A detailed listing of surfaces tested with the x-ray fluorescence analyzer can be found in **Section 5 XRF Testing Results**. The data in this report is only representative of the surfaces tested on the date of the survey April 10, 2017.

The information contained in this report summarizes the sampling and analytical methodologies, site description, materials found to contain lead based paint, quantities, XRF testing results and qualifications of personnel.

2 Site Description:

The Johnson and Rockwell Elementary schools are buildings similar in construction and age. They are comprised of office spaces, classrooms, lavatories, cafeterias, gyms, libraries, janitorial spaces, utility and boiler rooms. Portions of the building were occupied at the time of the survey by custodial staff only.

3 Survey Personnel

Jeffery W. Harris, Master Lead Inspector/Risk Assessor, license # M-3708 conducted the lead-based paint determination.

4 Testing Methodology

Lead in paint sampling of representative interior building surfaces was conducted to assist with Contractor compliance with the United States Department of Labor (US DOL) Occupational Safety and Health Administration (OSHA) Lead Exposure in Construction Standard (29 CFR 1926.62), EPA Hazardous Waste Disposal Regulations (40 CFR Parts 260 through 271).

Representative surfaces from selected accessible areas of the building were analyzed using an X-Ray Fluorescence Analyzer (XRF). An RMD, LPA-1 Lead Paint XRF Analyzer, Serial Number 2730 was used, which is a complete lead paint analysis system that quickly, accurately, and non-destructively measures the concentration of LBP on surfaces. Please refer to Appendix A for specific sampling methodologies associated with the XRF.

The XRF abatement level was set to 0.4 mg/cm² as per manufacturer's recommendations. The XRF unit is designed to take a measurement with a 95% confidence down to a level of 0.2 mg/cm². XRF readings below 0.2 mg/cm² cannot be used conclusively to determine the presence/absence of lead in paint. Further analysis of these samples via laboratory analysis is recommended for clarification of the presence or absence of lead. If no lead is detected by laboratory analysis, then the OSHA Lead in Construction Standard does not apply to that

particular surface. Surfaces with XRF readings below 0.2 mg/cm², with no paint chip sampling conducted should be assumed to contain lead unless further lab analysis indicates otherwise.

XRF field screening results and locations are noted on the table included within this report under Section 5. The table contains the type of component tested, the condition of the paint (“Intact”, “Fair” or “Poor”), the type of substrate (such as wood, metal, etc.) and the color of the component. The locations of the individual tests are listed by room number as well as the corresponding lead results in (mg/cm²) as reported by the XRF.

The Risk Assessor used an RMD X-ray fluorescence analyzer, Model LPA-1, to perform the lead-based paint determination. In conducting the determination, various representative architectural elements were tested. Not all painted surfaces in each functional space were tested for the presence of lead-based paint. Section 5 contains the XRF Data for this property. The Detailed Report represents all XRF readings of coated surfaces tested.

5 XRF Testing Results

SUMMARY REPORT OF LEAD PAINT INSPECTION FOR: Rockwell, School - Bethel, CT

Inspection Date: 04/10/17
 Report Date: 4/20/2017
 Abatement Level: 0.4
 Report No. 04/10/17 09:20
 Total Readings: 74 Actionable: 8
 Job Started: 04/10/17 09:20

Read No.	Wall	Structure	Location	Member	Paint Cond	Paint Substrate	Paint Color	Lead (mg/cm ²)	Mode
Interior Room 001 Number Only									
009	C	Door	Ctr	Frame	F	Metal	Brown	1.0	QM
Interior Room 002 Hallway									
015	C	Baseboard	Ctr		F	Block	Brown	1.1	QM
Interior Room 004 Number Only									
023	C	Wall	U Ctr		F	Block	Beige	0.5	QM
Interior Room 005 Number Only									
026	A	Door	Ctr	Frame	F	Metal	Brown	0.5	QM
Interior Room 010 Admin									
043	A	Window	Ctr	Frame	F	Metal	Grey	0.7	QM
042	D	Door	Ctr	Frame	F	Metal	Grey	0.6	QM
Interior Room 011 Number Only									
045	C	Wall	U Ctr		I	Block	red	0.6	QM
Interior Room 017 Mechanical									
063	D	Wall	U Ctr		I	Block	red	1.5	QM
		Safety Red							
Calibration Readings									
---- End of Readings ----									

DETAILED REPORT OF LEAD PAINT INSPECTION FOR: Rockwell, School - Bethel, CT

Inspection Date: 04/10/17
 Report Date: 4/20/2017
 Abatement Level: 0.4
 Report No. 04/10/17 09:20
 Total Readings: 74
 Job Started: 04/10/17 09:20

Read No.	Wall	Structure	Location	Member	Paint Cond	Substrate	Paint Color	Lead (mg/cm ²)	Mode
Interior Room 001 Number Only									
007	B	Wall	U Lft		I	Block	White	-0.1	QM
008	B	Wall	U Ctr		I	Block	Yellow	-0.1	QM
018	C	Ceiling	Rgt	Truss	F	Metal	Grey	0.1	QM
019	C	Ceiling	Rgt		F	Metal	Grey	-0.2	QM
009	C	Door	Ctr	Frame	F	Metal	Brown	1.0	QM
010	D	Radiator	Ctr		F	Metal	White	0.2	QM
011	D	Door	Ctr	Frame	F	Metal	Brown	0.3	QM
012	D	Door	Ctr	Door	F	Metal	Brown	0.1	QM
Interior Room 002 Hallway									
014	C	Wall	U Ctr		I	Block	White	-0.2	QM
015	C	Baseboard	Ctr		F	Block	Brown	1.1	QM
016	C	Door	Rgt	Frame	F	Metal	Brown	0.2	QM
017	C	Door	Rgt	Door	F	Wood	Stain	-0.1	QM
013	D	Door	Ctr	Jamb	F	Metal	Yellow	-0.1	QM
Interior Room 003 Number Only									
020	C	Radiator	Ctr		P	Metal	Beige	-0.2	QM
021	C	Radiator	Ctr		P	Metal	Brown	0.2	QM
Interior Room 004 Number Only									
022	C	Radiator	Ctr		P	Metal	Beige	0.2	QM
023	C	Wall	U Ctr		F	Block	Beige	0.5	QM
024	C	Door	Ctr	Frame	F	Metal	Brown	0.1	QM
025	C	Door	Ctr	Door	F	Metal	Brown	0.2	QM
Interior Room 005 Number Only									
026	A	Door	Ctr	Frame	F	Metal	Brown	0.5	QM
028	B	Wall	U Ctr		F	Block	red	-0.1	QM
027	C	Wall	U Ctr		F	Block	Lt. Blue	-0.2	QM
029	D	Wall	U Ctr		F	Block	blue	0.2	QM
Interior Room 006 Closet									
030	-	Floor	Ctr		P	Concrete	red	0.2	QM
Interior Room 007 Bath									
034	B	Partition	Ctr		F	Metal	blue	-0.1	QM
031	B	Wall	U Ctr		P	C-Tiles	Lt. Blue	0.1	QM
033	D	Radiator	Ctr		F	Metal	White	-0.2	QM
032	D	Baseboard	Ctr		P	C-Tiles	Lt. Blue	0.2	QM
Interior Room 008 Lobby									
035	C	Wall	U Ctr		I	Block	blue	-0.1	QM
036	C	Wall	U Rgt		I	Block	red	0.1	QM
037	C	Wall	U Rgt		I	Block	Brown	-0.2	QM
038	C	Wall	U Rgt		I	Block	black	-0.1	QM
039	D	Door	Ctr	Jamb	I	Metal	Yellow	-0.2	QM
Interior Room 009 Bath									
040	B	Wall	U Ctr		F	C-Tiles	Lt Green	-0.2	QM
Interior Room 010 Admin									
043	A	Window	Ctr	Frame	F	Metal	Grey	0.7	QM
041	B	Wall	U Ctr		F	Block	Lt Blue	-0.1	QM
044	C	Window	Ctr	Sash	F	Metal	Dk Green	-0.2	QM
042	D	Door	Ctr	Frame	F	Metal	Grey	0.6	QM
Interior Room 011 Number Only									
046	C	Radiator	Ctr		I	Metal	red	-0.2	QM
045	C	Wall	U Ctr		I	Block	red	0.6	QM

Interior Room 012 Stage									
047	C	Railing	Ctr	Balusters	P	Metal	Grey	0.3	QM
Interior Room 013 Number Only									
048	A	Wall	U Ctr		I	Block	Purple	-0.1	QM
050	B	Wall	U Ctr		I	Block	Lt. Blue	0.1	QM
051	C	Wall	U Ctr		I	Block	green	-0.2	QM
049	D	Wall	U Ctr		I	Block	Yellow	-0.2	QM
Interior Room 014 Gym									
053	B	Support Colu	Ctr		I	Metal	blue	0.2	QM
052	B	Wall	U Ctr		I	Block	blue	-0.1	QM
Interior Room 015 BoysLocker									
055	A	Wall	U Ctr		I	Block	green	-0.2	QM
057	B	Radiator	Ctr		F	Metal	blue	0.3	QM
054	C	Partition	Ctr		I	Metal	blue	0.3	QM
056	C	Wall	U Ctr		I	C-Tiles	Beige	0.1	QM
Interior Room 016 GirlsLocker									
058	C	Wall	U Ctr		F	C-Tiles	Pink	0.1	QM
Interior Room 017 Mechanical									
059	C	Wall	L Ctr		P	Concrete	White	0.2	QM
060	C	Wall	L Ctr		P	Concrete	red	0.2	QM
061	C	Floor	Ctr		P	Concrete	Grey	0.2	QM
062	C	Railing	Ctr	Balusters	P	Metal	Grey	0.1	QM
063	D	Wall	U Ctr		I	Block	red	1.5	QM
		Safety Red							
Interior Room 018 Storage									
064	-	Floor	Ctr		I	Concrete	red	0.1	QM
Interior Room 019 Stairs									
067	-	Stairs	Ctr	Treads	P	Metal	Yellow	-0.1	QM
066	-	Stairs	Ctr	Risers	P	Metal	Brown	0.3	QM
065	-	Stairs	Ctr	Balusters	P	Metal	Brown	0.2	QM
Interior Room 020 MediaCenter									
068	C	Wall	U Ctr		I	Block	Lt Green	0.1	QM
Calibration Readings									
001								1.0	TC
002								1.0	TC
003								1.1	TC
004								0.0	TC
005								0.0	TC
006								0.0	TC
069								1.1	TC
070								1.0	TC
071								1.0	TC
072								0.0	TC
073								0.0	TC
074								0.0	TC
---- End of Readings ----									

SUMMARY REPORT OF LEAD PAINT INSPECTION FOR: Johnson School, Bethel, CT

Inspection Date: 04/10/17
 Report Date: 4/20/2017
 Abatement Level: 0.4
 Report No. 04/10/17 13:30
 Total Readings: 72 Actionable: 14
 Job Started: 04/10/17 13:30

Read No.	Wall	Structure	Location	Member	Paint Cond	Paint Substrate	Paint Color	Lead (mg/cm ²)	Mode
Interior Room 001 Number Only									
007	B	Door	Lft	Frame	F	Metal	Brown	1.6	QM
008	D	Door	Ctr	Frame	F	Metal	Brown	0.5	QM
Interior Room 002 Number Only									

013	D	Door		Ctr	Frame	F	Metal	blue	0.6	QM
Interior Room 003 Orchestra										
017	D	Wall		U Ctr		P	Block	Beige	0.7	QM
015	D	Door		Ctr	Door	F	Metal	Brown	0.4	QM
016	D	Door		Ctr	Frame	F	Metal	Brown	0.6	QM
Interior Room 004 Hallway										
022	B	Baseboard		Ctr		I	Block	Brown	1.2	QM
Interior Room 007 Number Only										
028	B	Door		Ctr	Frame	F	Metal	Brown	0.5	QM
Comment: Boys Room										
Interior Room 009 Number Only										
033	B	Door		Ctr	Frame	P	Metal	Brown	1.0	QM
Interior Room 012 Lobby										
041	B	Door		Ctr	Frame	F	Metal	Beige	0.7	QM
Interior Room 018 MediaCenter										
057	A	Wall		U Ctr		I	Block	blue	0.5	QM
058	A	Door		Ctr	Frame	P	Metal	Purple	0.6	QM
Interior Room 020 Hallway										
064	B	Elevator		Ctr	Door	I	Metal	Lt. Blue	0.7	QM
065	B	Elevator		Ctr	Frame	P	Metal	Brown	0.7	QM
Calibration Readings										
----- End of Readings -----										

DETAILED REPORT OF LEAD PAINT INSPECTION FOR: Johnson School, Bethel, CT

Inspection Date: 04/10/17
 Report Date: 4/20/2017
 Abatement Level: 0.4
 Report No. 04/10/17 13:30
 Total Readings: 72
 Job Started: 04/10/17 13:30

Read No.	Wall	Structure	Location	Member	Paint Cond	Paint Substrate	Paint Color	Lead (mg/cm ²)	Mode
Interior Room 001 Number Only									
007	B	Door	Lft	Frame	F	Metal	Brown	1.6	QM
011	D	Radiator	Ctr		F	Metal	Lt. Blue	0.1	QM
010	D	Wall	U Ctr		F	Block	Lt. Blue	0.2	QM
008	D	Door	Ctr	Frame	F	Metal	Brown	0.5	QM
009	D	Door	Ctr	Door	F	Metal	Brown	0.2	QM
Interior Room 002 Number Only									
014	A	Door	Ctr	Door	F	Metal	blue	0.2	QM
012	B	Radiator	Ctr		F	Metal	White	0.2	QM
013	D	Door	Ctr	Frame	F	Metal	blue	0.6	QM
Interior Room 003 Orchestra									
017	D	Wall	U Ctr		P	Block	Beige	0.7	QM
015	D	Door	Ctr	Door	F	Metal	Brown	0.4	QM
016	D	Door	Ctr	Frame	F	Metal	Brown	0.6	QM
Interior Room 004 Hallway									
022	B	Baseboard	Ctr		I	Block	Brown	1.2	QM
021	B	Closet	Lft	Floor	P	Concrete	red	0.2	QM
020	B	Closet	Lft	Wall	F	C-Tiles	blue	0.3	QM
019	D	Wall	L Ctr		I	Block	blue	0.3	QM
018	D	Wall	U Ctr		I	Block	White	0.2	QM
Interior Room 005 Admin									
023	A	Wall	U Ctr		I	Block	Olive	0.2	QM
024	B	Wall	U Ctr		I	Block	Beige	-0.1	QM

Interior Room 006 Science

026	B	Wall	U Ctr		I	Block	Beige	-0.2	QM
025	D	Wall	U Ctr		I	Block	blue	0.2	QM

Interior Room 007 Number Only

028	B	Door	Ctr	Frame	F	Metal	Brown	0.5	QM
029	D	Radiator	Ctr		F	Metal	blue	0.2	QM
027	D	Wall	U Ctr		I	Block	blue	-0.3	QM

Comment:
Boys Room

Interior Room 008 Bath

030	B	Partition	Ctr		I	Metal	blue	0.2	QM
031	B	Wall	U Ctr		I	Block	Lt. Blue	-0.2	QM

Interior Room 009 Number Only

033	B	Door	Ctr	Frame	P	Metal	Brown	1.0	QM
032	D	Wall	U Ctr		I	Block	green	0.2	QM

Interior Room 010 Number Only

034	B	Radiator	Ctr		F	Metal	White	-0.1	QM
035	B	Wall	U Ctr		I	Block	blue	-0.2	QM
036	C	Wall	U Ctr		I	Block	red	-0.1	QM
037	C	Wall	U Ctr		I	Block	White	0.1	QM

Interior Room 011 Number Only

038	B	Wall	U Ctr		I	Block	blue	0.3	QM
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Interior Room 012 Lobby

041	B	Door	Ctr	Frame	F	Metal	Beige	0.7	QM
042	B	Door	Ctr	Door	F	Wood	Beige	0.2	QM
040	C	Wall	L Ctr		I	Block	Yellow	0.2	QM
039	C	Wall	U Ctr		I	Block	LtYellow	-0.2	QM

Interior Room 013 Music

043	A	Wall	U Ctr		I	Block	blue	-0.1	QM
044	A	Wall	U Ctr		I	Block	green	0.2	QM
045	A	Wall	U Ctr		I	Block	red	0.1	QM
046	A	Wall	U Ctr		I	Block	Orange	0.2	QM
047	A	Wall	U Ctr		I	Block	Yellow	-0.1	QM

Interior Room 014 Cafeteria

048	A	Wall	U Ctr		I	Block	Purple	0.2	QM
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Interior Room 015 Kitchen

050	A	Wall	U Ctr		I	Block	green	0.1	QM
049	B	Wall	U Ctr		I	Block	Yellow	0.2	QM

Interior Room 016 Dock

053	A	Handrail	Ctr		F	Metal	red	0.2	QM
051	A	Floor	Ctr		P	Concrete	red	0.3	QM
052	A	Door	Ctr	Door	P	Metal	Beige	0.2	QM

Overhead

Interior Room 017 Stairs

054	A	Handrail	Ctr		F	Metal	Brown	0.2	QM
055	A	Stairs	Ctr	Risers	P	Metal	Brown	0.3	QM
056	A	Stairs	Ctr	Balusters	P	Metal	Brown	0.2	QM

Interior Room 018 MediaCenter

057	A	Wall	U Ctr		I	Block	blue	0.5	QM
059	A	Window	Ctr	Frame	I	Metal	Olive	0.1	QM
058	A	Door	Ctr	Frame	P	Metal	Purple	0.6	QM

Interior Room 019 Number Only

061	A	Wall	U Ctr		I	Block	Grey	-0.1	QM
060	B	Radiator	Ctr		I	Metal	Grey	0.2	QM

Interior Room 020 Hallway

064	B	Elevator	Ctr	Door	I	Metal	Lt. Blue	0.7	QM
065	B	Elevator	Ctr	Frame	P	Metal	Brown	0.7	QM
063	B	Wall	L Ctr		I	Block	blue	0.2	QM
062	B	Wall	U Ctr		I	Block	White	0.2	QM
066	D	Radiator	Ctr		I	Metal	Brown	0.2	QM

Calibration Readings		
001	1.0	TC
002	1.0	TC
003	1.0	TC
004	0.0	TC
005	0.0	TC
006	0.0	TC
067	1.0	TC
068	1.0	TC
069	1.0	TC
070	0.0	TC
071	0.0	TC
072	0.0	TC
---- End of Readings ----		

6 Conclusions and Recommendations

Seventy-Four (74) total XRF readings were taken at the Rockwell School, **Twelve (12)** were calibration readings and **Eight (8)** of those were found to have painted surfaces with lead levels $\geq 0.4\text{mg}/\text{cm}^2$. **Seventy-Two (72)** total XRF readings were taken at the Johnson School, **Twelve (12)** were calibration readings and **Fourteen (14)** of those were found to have painted surfaces with lead levels $\geq 0.4\text{mg}/\text{cm}^2$. Please see **Section 5, Summary and Detailed Report**.

In areas where demolition or renovations are to occur and lead is present, the demolition debris waste stream should be further analyzed during segregation for compliance with EPA and MA DES regulations to ensure proper disposal. TCLP testing should be performed to characterize all waste prior to disposal. TCLP testing can be performed prior to waste segregation but results may not be indicative of the actual waste streams produced during demolition.

Demolition workers should be trained and protected in accordance with OSHA regulation 29CFR 1926.62 which state in part:

This section applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard. Construction work is defined as work for construction, alteration and/or repair, including painting and decorating. It includes but is not limited to the following:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, repair, or renovation of structures, substrates, or portions thereof that contain lead, or materials containing lead.
- Handlers of salvageable materials and the treatment/disposal facility must be informed of the material's lead content. All personnel involved must be trained in personal protection and proper work practice procedures in accordance with OSHA regulations.
- All waste contaminated with lead paint should be disposed of in accordance with all state, local, and federal regulations.

7 Appendices

Appendix A - XRF Performance and Characteristic Sheets

Appendix B – Inspector Qualifications

Appendix C - Drawings

Appendix A - XRF Performance and Characteristics Sheets (PCS) Sheets

Performance Characteristic Sheet

EFFECTIVE DATE: October 25, 2006

EDITION NO.: 5

MANUFACTURER AND MODEL:

Make: **Radiation Monitoring Devices**Model: **LPA-1**Source: **⁵⁷Co**

Note: This sheet supersedes all previous sheets for the XRF instrument of the make, model, and source shown above for instruments sold or serviced after June 26, 1995. For other instruments, see prior editions.

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Quick mode or 30-second equivalent standard (Time Corrected) mode readings.

XRF CALIBRATION CHECK LIMITS:

0.7 to 1.3 mg/cm² (inclusive)

SUBSTRATE CORRECTION:

For XRF results below 4.0 mg/cm², substrate correction is recommended for:

Metal using 30-second equivalent standard (Time Corrected) mode readings.
None using quick mode readings.

Substrate correction is not needed for:

Brick, Concrete, Drywall, Plaster, and Wood using 30-second equivalent standard (Time Corrected) mode readings
Brick, Concrete, Drywall, Metal, Plaster, and Wood using quick mode readings

THRESHOLDS:

30-SECOND EQUIVALENT STANDARD MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm ²)
Results corrected for substrate bias on metal substrate only	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	0.9
	Plaster	1.0
	Wood	1.0
QUICK MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm ²)
Readings not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted on approximately 150 test locations in July 1995. The instrument that performed testing in September had a new source installed in June 1995 with 12 mCi initial strength.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm² in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm² film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm² for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.02 mg/cm² at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

Using the same XRF instrument, take three readings on a bare substrate area covered with the NIST SRM paint film nearest 1 mg/cm². Repeat this procedure by taking three more readings on a second bare substrate area of the same substrate covered with the NIST SRM.

Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.

For each substrate type (the 1.02 mg/cm² NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):

$$\text{Correction value} = (1^{\text{st}} + 2^{\text{nd}} + 3^{\text{rd}} + 4^{\text{th}} + 5^{\text{th}} + 6^{\text{th}} \text{ Reading}) / 6 - 1.02 \text{ mg/cm}^2$$

Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use either the Quick Mode or 30-second equivalent standard (Time Corrected) Mode readings.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

BIAS AND PRECISION:

Do not use these bias and precision data to correct for substrate bias. These bias and precision data were computed without substrate correction from samples with reported laboratory results less than 4.0 mg/cm² lead. The data which were used to determine the bias and precision estimates given in the table below have the following properties. During the July 1995 testing, there were 15 test locations with a laboratory-reported result equal to or greater than 4.0 mg/cm² lead. Of these, one 30-second standard mode reading was less than 1.0 mg/cm² and none of the quick mode readings were less than 1.0 mg/cm². The instrument that tested in July is representative of instruments sold or serviced after June 26, 1995. These data are for illustrative purposes only. Actual bias must be determined on the site. Results provided above already account for bias and precision. Bias and precision ranges are provided to show the variability found between machines of the same model.

30-SECOND STANDARD MODE READING MEASURED AT	SUBSTRATE	BIAS (mg/cm ²)	PRECISION* (mg/cm ²)
0.0 mg/cm ²	Brick	0.0	0.1
	Concrete	0.0	0.1
	Drywall	0.1	0.1
	Metal	0.3	0.1
	Plaster	0.1	0.1
	Wood	0.0	0.1
0.5 mg/cm ²	Brick	0.0	0.2
	Concrete	0.0	0.2
	Drywall	0.0	0.2
	Metal	0.2	0.2
	Plaster	0.0	0.2
	Wood	0.0	0.2
1.0 mg/cm ²	Brick	0.0	0.3
	Concrete	0.0	0.3
	Drywall	0.0	0.3
	Metal	0.2	0.3
	Plaster	0.0	0.3
	Wood	0.0	0.3
2.0 mg/cm ²	Brick	-0.1	0.4
	Concrete	-0.1	0.4
	Drywall	-0.1	0.4
	Metal	0.1	0.4
	Plaster	-0.1	0.4
	Wood	-0.1	0.4

*Precision at 1 standard deviation.

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than the upper boundary of the inconclusive range, and negative if they are less than the lower boundary of the inconclusive range, or inconclusive if in between. The inconclusive range includes both its upper and lower bounds. Earlier editions of this *XRF Performance Characteristics Sheet* did not include both bounds of the inconclusive range as "inconclusive." While this edition of the Performance Characteristics Sheet uses a different system, the specific XRF readings that are considered positive, negative, or inconclusive for a given XRF model and substrate remain unchanged, so previous inspection results are not affected.

DOCUMENTATION:

An EPA document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD. A HUD document titled *A Nonparametric Method for Estimating the 5th and 95th Percentile Curves of Variable-Time XRF Readings Based on Monotone Regression* provides supplemental information on the methodology for variable-time XRF instruments. A copy of this document can be obtained from the HUD lead web site, www.hud.gov/offices/lead.

This XRF Performance Characteristic Sheet was developed by QuanTech, Inc., under a contract from the U.S. Department of Housing and Urban Development (HUD). HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.

Appendix B - Inspector Certifications:

Certificate of Achievement

This is to certify that

Jeffery W. Harris

on the 18th day of November 2003 successfully completed the factory training for
RMD's LPA-1 Lead Paint Inspection System
including, but not limited to, the topics of Radiation Safety and the Proper Use of the Instrument.



Jacob Paster, Vice President, RMD
44 Hunt St., Watertown, Massachusetts





General License Distribution Notification

7 April 2017

Jeffrey Harris
13 Bird Street Suite 6
Foxboro, MA 02035
Jeffrey Harris
P: (844)-527-5323

LPA Serial Number: 1629L

Re: General license distribution, LPA-1B XRF analyzer, SSD# MA-0573-D-103-B,

Dear Customer:

Please note that the above serial number LPA-1B XRF analyzer is being transferred to you under General License provisions in your State. Your State regulatory agency has been notified of this transfer. If your State or Territory is under the NRC Jurisdiction, the NRC has been notified of this transfer.

All labels including the General License label affixed to your LPA-1B XRF analyzer must be kept and maintained in a good condition at all times.

Even though you are receiving a device under General License provision, you are still obligated to follow all the applicable rules and regulations concerning the possession, use, and transfer of a device containing a radioactive source. You must maintain and follow a radiation safety program that is recommended by the NRC or State's regulatory agency. You should read the provided documents and also obtain a copy of the State's rules and regulations pertaining to this type of equipment specific to your State. Your Instruction manual as well as the attached General license documentation contains the telephone number and the website of the regulatory agency in your State or you may contact us for further information.

Furthermore, you should be aware that the use of this device under General License provisions is limited to your State or NRC Region, where the device is transferred, and you may not transfer this device to any other State without prior authorization and adhering to all the applicable reciprocity requirements.

Please contact Protec Instrument Corporation for any question regarding this transfer at 671-318-5050 or email us at info@ProtecInstrument.com.

Sincerely,
Protec Instrument Corporation

38 Edge Hill Road, Waltham MA 02451 • (617) 318-5050 • www.ProtecInstrument.com

Leak Test Certificate



38 Edge Hill Road
Waltham, MA 02451

Leak Test
Number: 1629L-2017

Customer: Jeffrey Harris

System:	LPA-1B	Instrument Serial Number:	1629L
Source Manufacturer:	Isotope Products	Source Model:	A3901-2
Active Material:	Co57	Source Activity:	444MBq (12mCi)
Source Serial Number:	N7-332	Assay Date	14 Sep 16
Source Enclosure:	Stainless Steel in Tungsten Holder		

Description of Area Wiped:	Front and Sides of Bezel
Comments	

Leak Test Results: <0.005 µCi

Justin Noel

Individual Performing Test (please print)

Signature of Individual Performing Test

7 April 2017

Date

Appendix C – Drawings:

EXISTING SCHOOL

Rockwell Elementary (K-3)

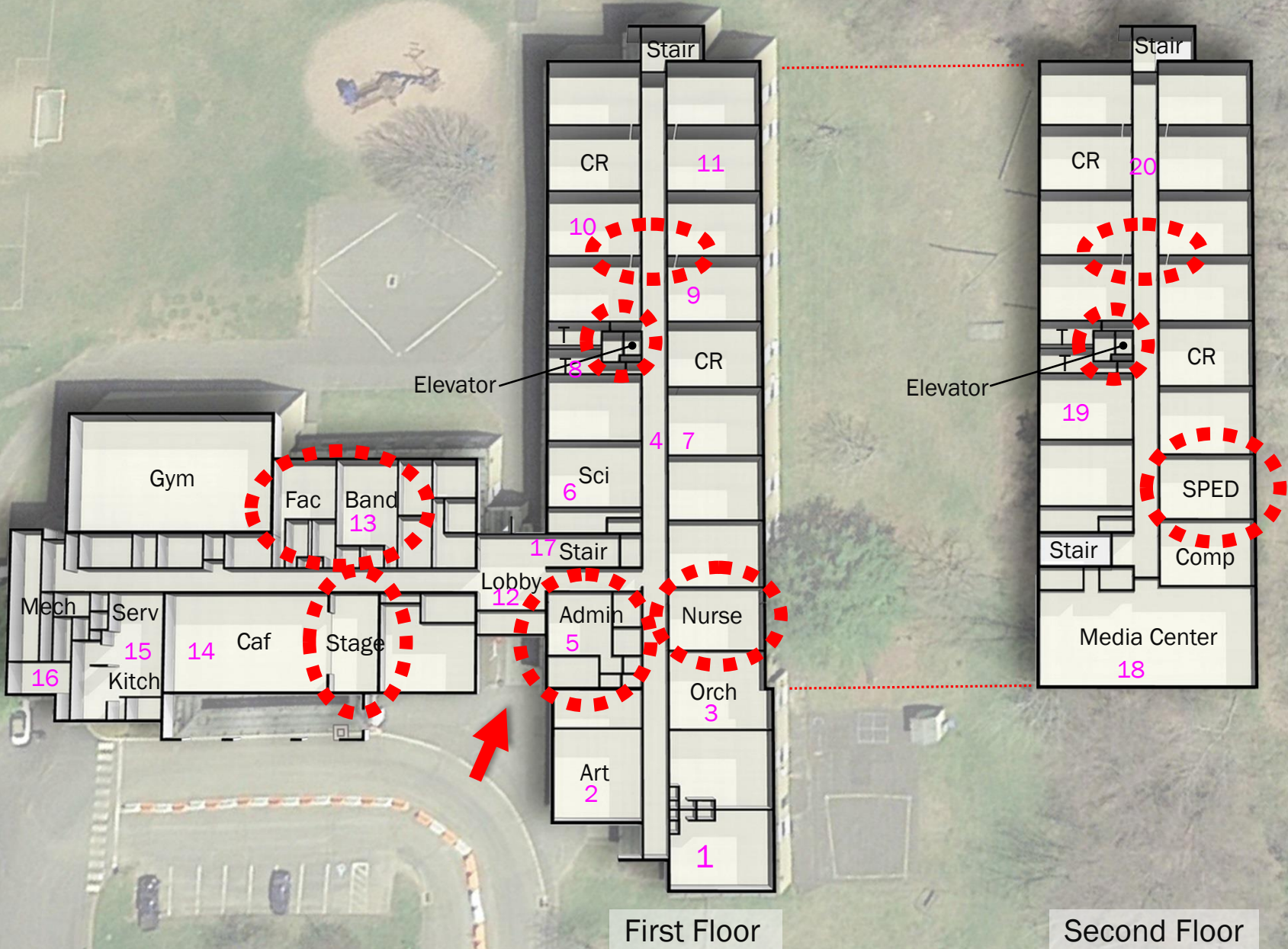


Second Floor

First Floor



EXISTING SCHOOL





Appendix C

LICENSES



This is to certify that
Ryan D. Rouillard

EMPLOYER'S COPY
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
RYAN D. ROUILLARD
VALIDATION NO 03-578987 CERTIFICATE NO 000641 CURRENT THROUGH 02/28/18
PROFESSION
ASBESTOS CONSULTANT-INSPECTOR
SIGNATURE _____
COMMISSIONER _____

*has completed the requisite training, and has passed an examination for
reaccreditation as:*

Asbestos Inspector Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

*For course participants seeking New York State certification or New York State training reciprocity, the official record of successful completion is the DOH 2832
Certificate of Completion of Asbestos Safety Training.*

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

November 29, 2016

Course Dates

16-0264-106-226296

Certificate Number

November 29, 2016

Examination Date

November 29, 2017

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887



Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Ryan D. Rouillard

WALLET CARD
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
RYAN D ROUILLARD
VALIDATION NO. 03-573082
CERTIFICATE NO. 000307
CURRENT THROUGH 02/28/18
PROFESSION
ASBESTOS CONSULTANT-PROJECT DESIGNER

SIGNATURE

COMMISSIONER

*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Designer Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

October 31, 2016

Course Dates

16-0018-128-226296

Certificate Number

October 31, 2016

Examination Date

October 31, 2017

Expiration Date


Training Director

16 Upton Drive, Wilmington, MA 01887

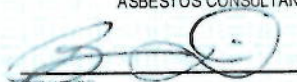

Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Ryan D. Rouillard

WALLET CARD
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME:
RYAN D ROUILLARD
VALIDATION NO. 03-573083 CERTIFICATE NO. 000312 CURRENT THROUGH 02/28/18
PROFESSION
ASBESTOS CONSULTANT-INSP/MGMT PLANNER
SIGNATURE:  
COMMISSIONER

*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Management Planner Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

November 29, 2016

Course Dates

16-0277-136-226296

Certificate Number

November 29, 2016

Examination Date

November 29, 2017

Expiration Date



Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Ryan D. Rouillard

WALLET CARD
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
RYAN D. ROUILLARD
VALIDATION NO. 03-573081
CERTIFICATE NO. 000554
CURRENT THROUGH 02/28/18
PROFESSION
ASBESTOS CONSULTANT-PROJECT MONITOR
SIGNATURE [Signature] COMMISSIONER [Signature]

*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

For course participants seeking New York State certification or New York State training reciprocity, the official record of successful completion is the DOH 2832 Certificate of Completion of Asbestos Safety Training.

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

December 21, 2016

Course Dates

16-0380-174-226296

Certificate Number

December 21, 2016

Examination Date

December 21, 2017

Expiration Date

[Signature]

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



Appendix D

FIGURES

Johnson Elementary grades 4-5

Existing Plan

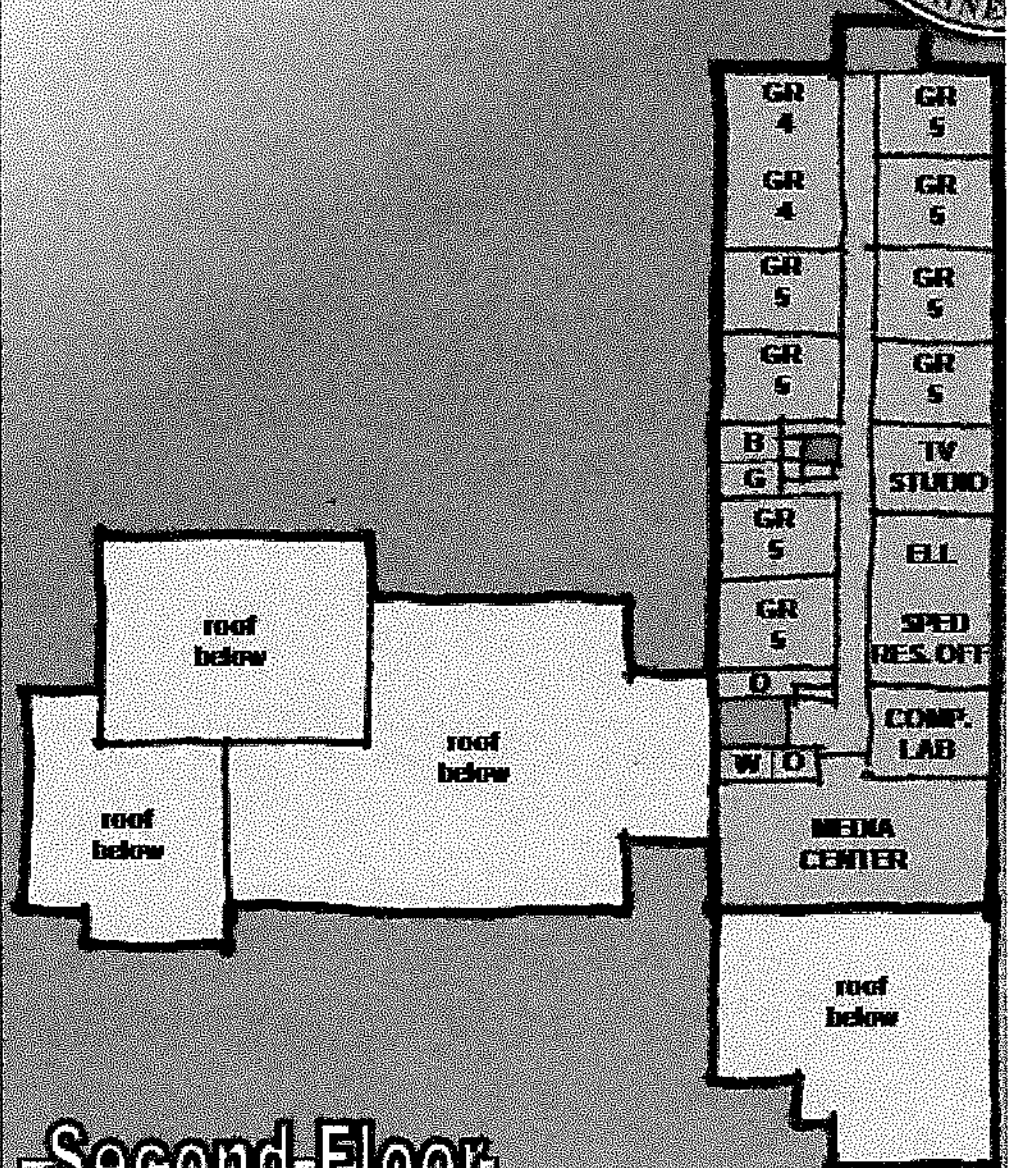
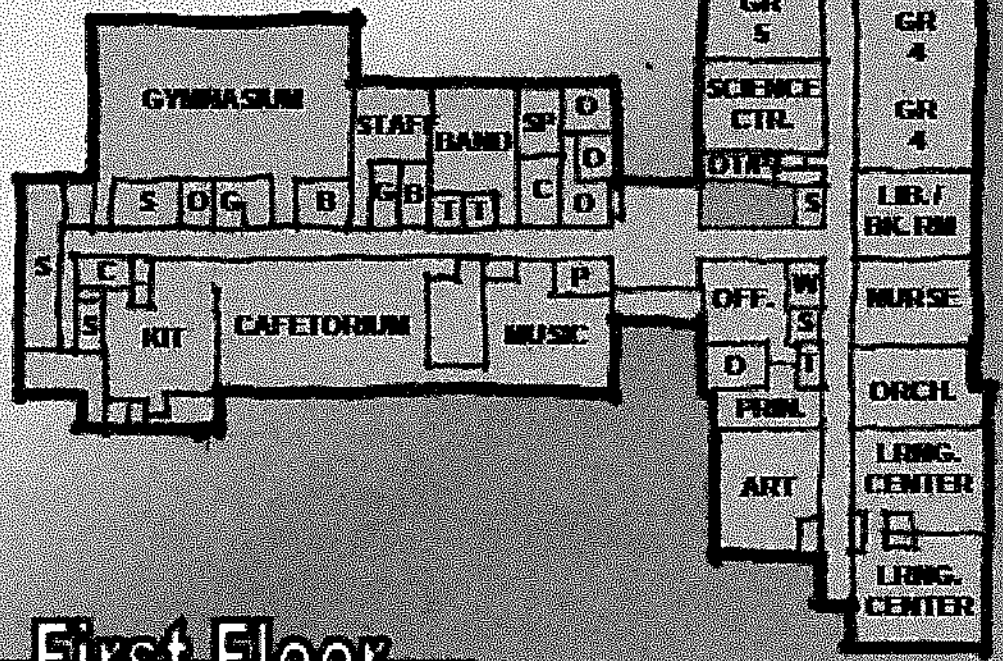


(Options A & B)

C = CONFERENCE ROOMS
 T = TOILET/BATHROOMS
 O = OFFICES
 S = STORAGE
 GR = CLASSROOMS VIA
 GRADIENT
 W = WHEEL CHAIR CLOSET/SANITARY
 G = GIRL'S BATH
 B = BOY'S BATH

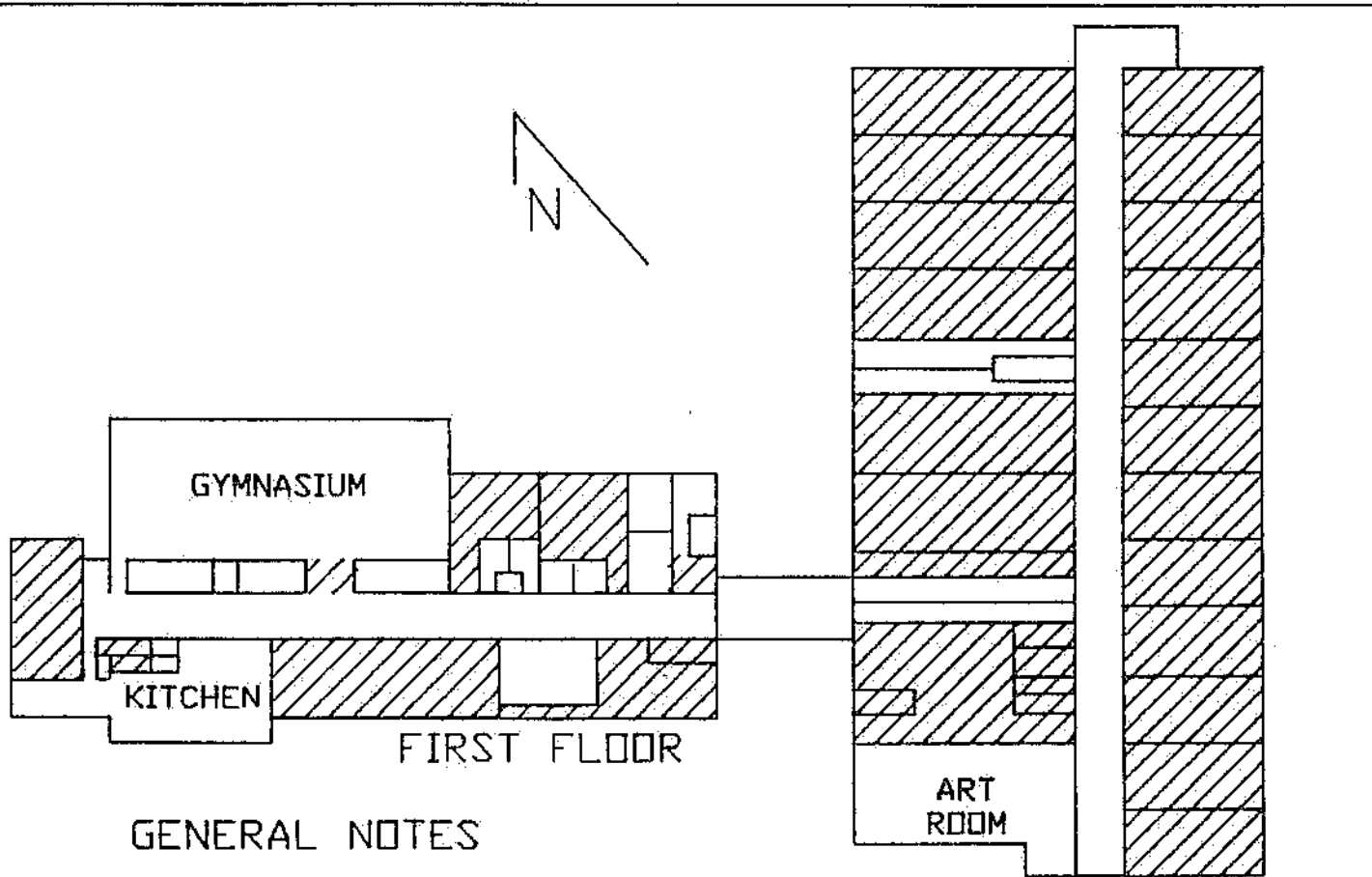
LEGEND

- circulation
- stair
- elevator
- min. renovation
- renovation
- new construction
- roof area



First Floor

Second Floor

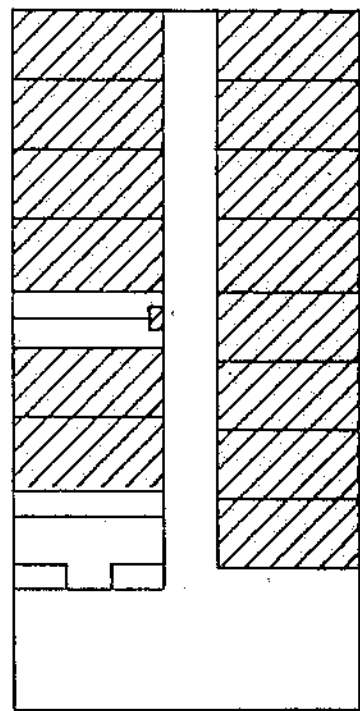


GENERAL NOTES

THE ONLY ASBESTOS-CONTAINING MATERIAL FOUND ON THIS FLOOR OF THE SCHOOL IS IN THE FORM OF NONFRIABLE FLOOR TILE (HATCHED AREA). THIS MATERIAL WAS NOT SAMPLED BECAUSE THE STATE OF CT CONSIDERS ALL RESILIENT FLOORING TO BE "NONFRIABLE ACM".

TRC Environmental Consultants, Inc. <small>200 North Main Street Bristol, CT 06010</small>			
ASBESTOS BULK SAMPLING			
FIRST FLOOR JOHNSON SCHOOL BETHEL, CT			
DATE:	SCALE:	PROJECT NO.:	
11/19/98	1/4" = 1'-0"	98-001	
BY:	DATE:	BY:	DATE:
TRC	6/98	TRC	6/98
APPROVED:			1

101

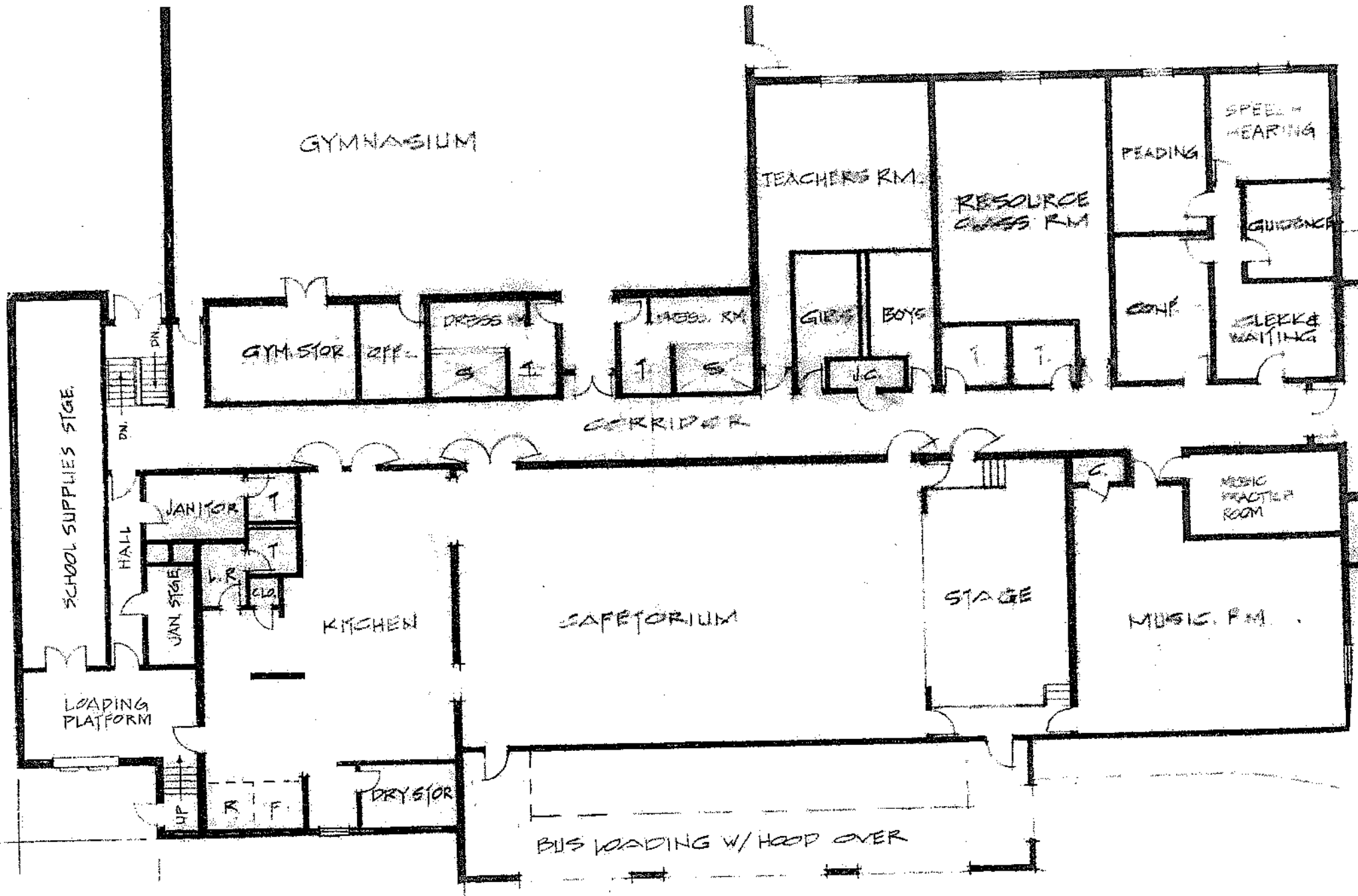


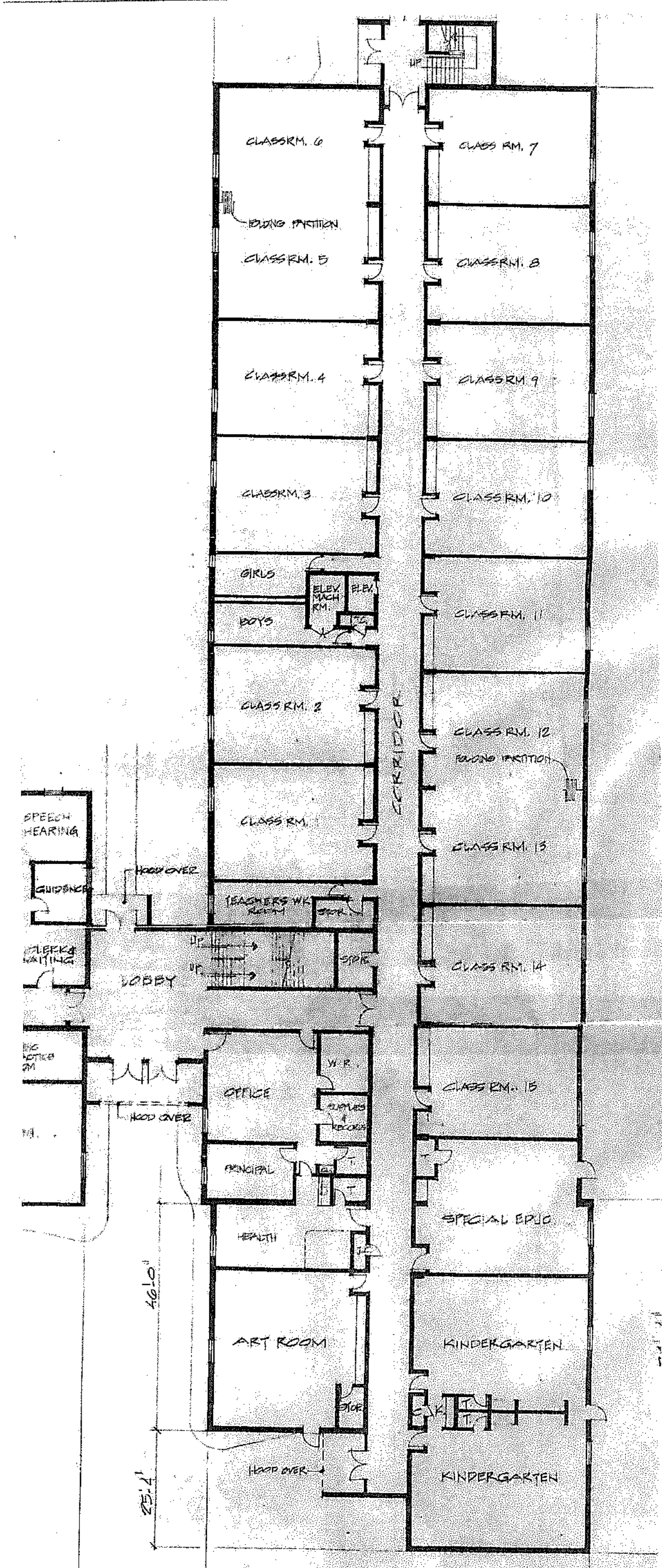
SECOND FLOOR

GENERAL NOTES

THE ONLY ASBESTOS-CONTAINING MATERIAL FOUND ON THIS FLOOR IS IN THE FORM OF NONFRIABLE FLOOR TILE (HATCHED AREA). THIS MATERIAL WAS NOT SAMPLED BECAUSE THE STATE OF CT CONSIDERS ALL RESILIENT FLOORING TO BE "NONFRIABLE ACM".

TRC		Environmental Consultants, Inc.		<small>60 Broad Street New Haven, Connecticut 06510</small>	
ASBESTOS BULK SAMPLING					
SECOND FLOOR JOHNSON SCHOOL BETHEL, CT					
DEVELOPER		DATE	4/20	PROJECT NO.	000000
DRAWN	RLH	DATE	4/20	DRAWING NO.	0
APPROVED					



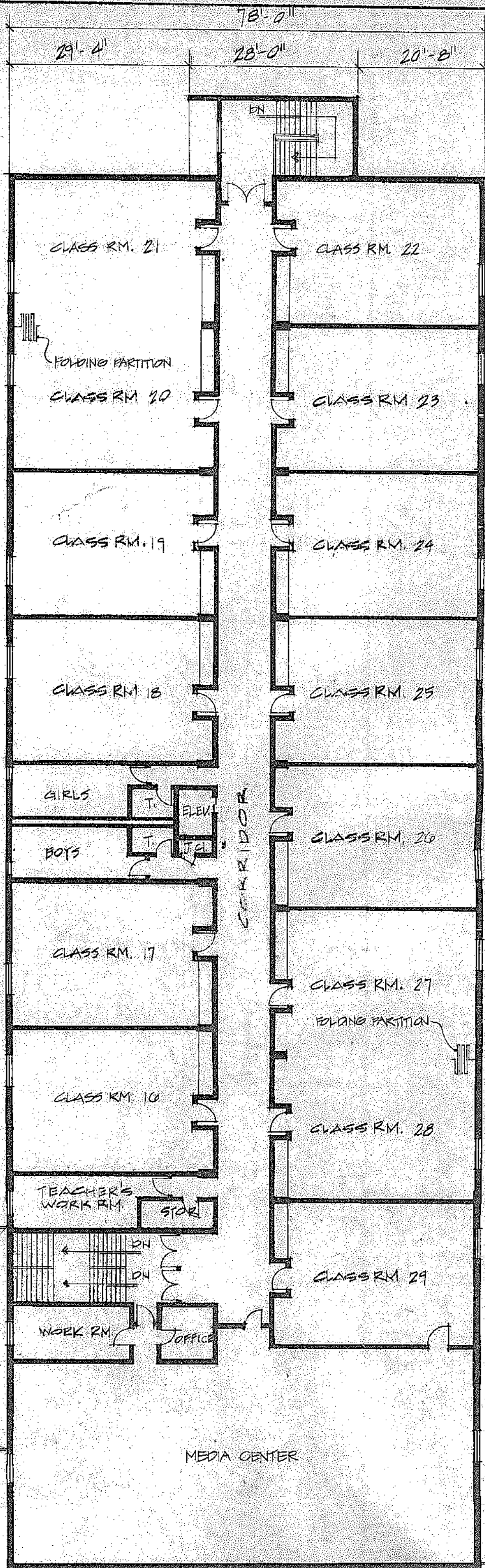
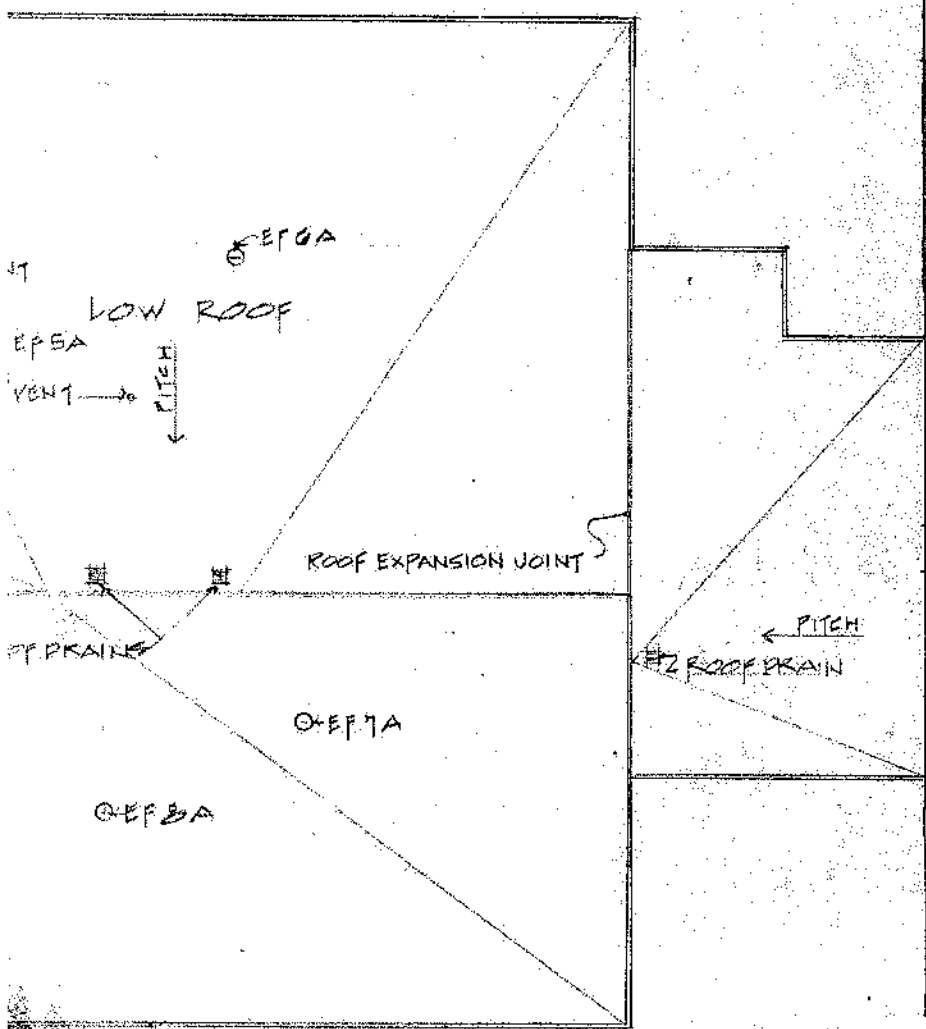


ALLOW TYPE EXP. FLASHING
BER. CANJ.

2" RIGID INSULATION
1" METAL DECK
SOLVED TO ROOF DECK

JOINT

1/2 1/4
1/4 1/8

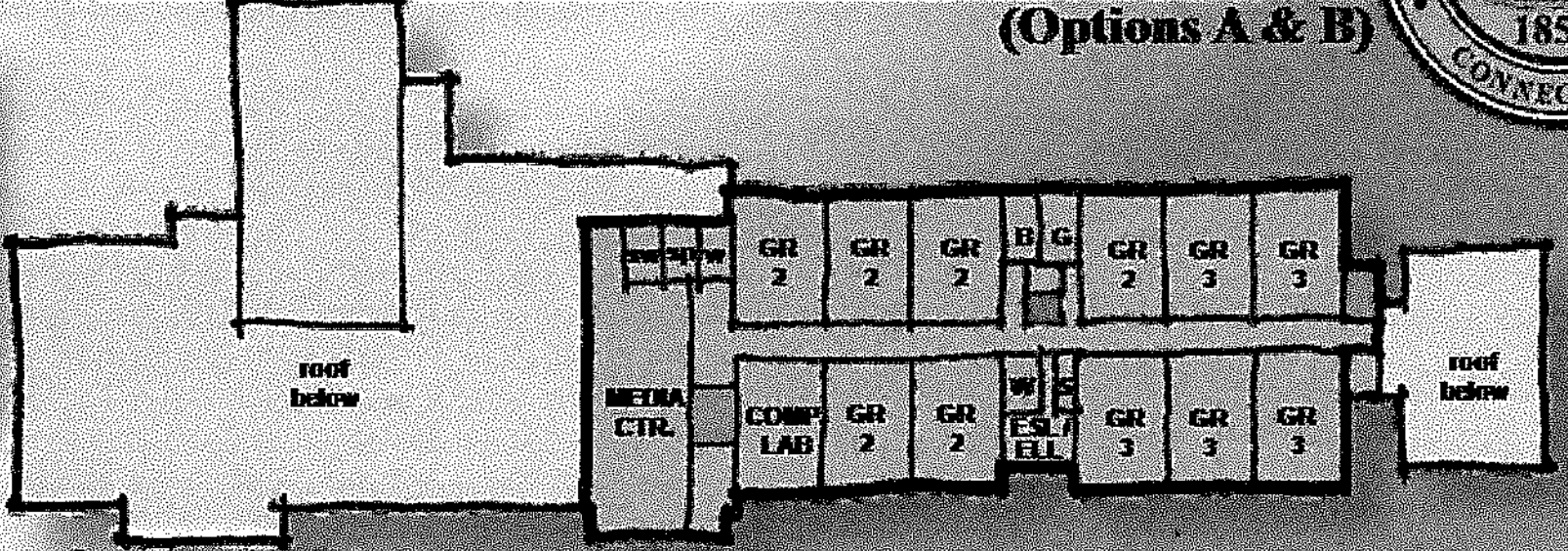




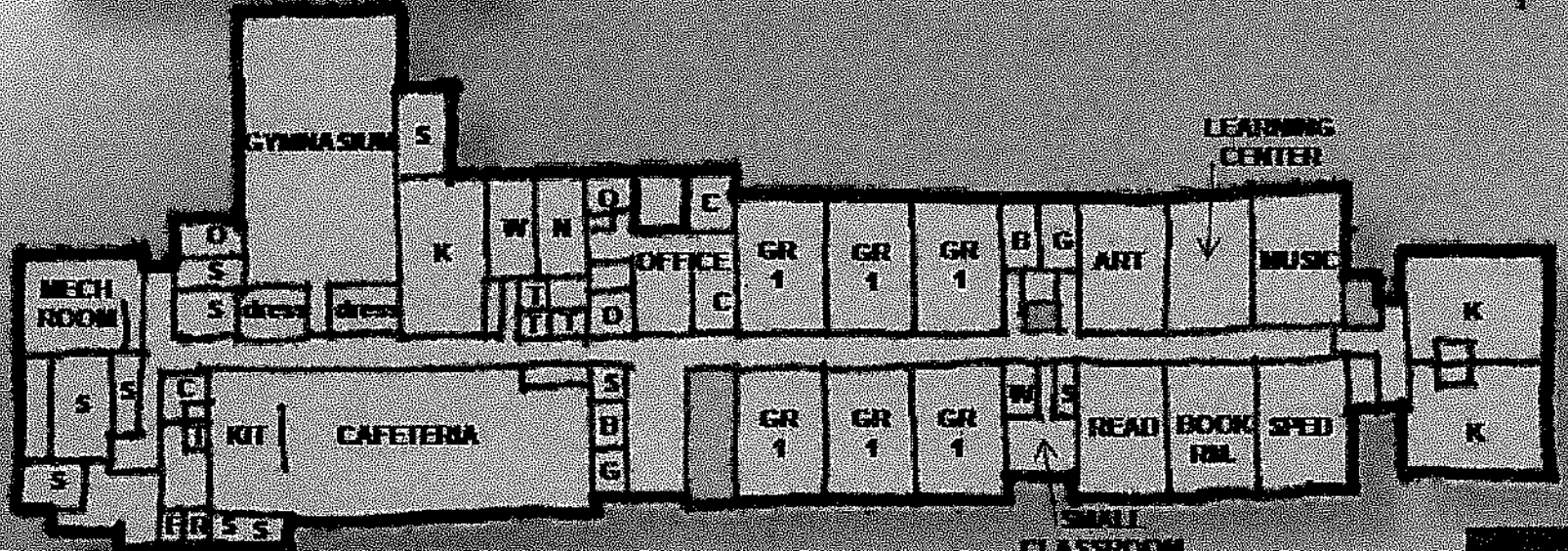
Rockwell Elementary grades K-3 Existing Plan

(Options A & B)

- LEGEND**
- circulation
 - stair
 - elevator
 - min. renovation
 - renovation
 - new construction
 - roof area



Second Floor



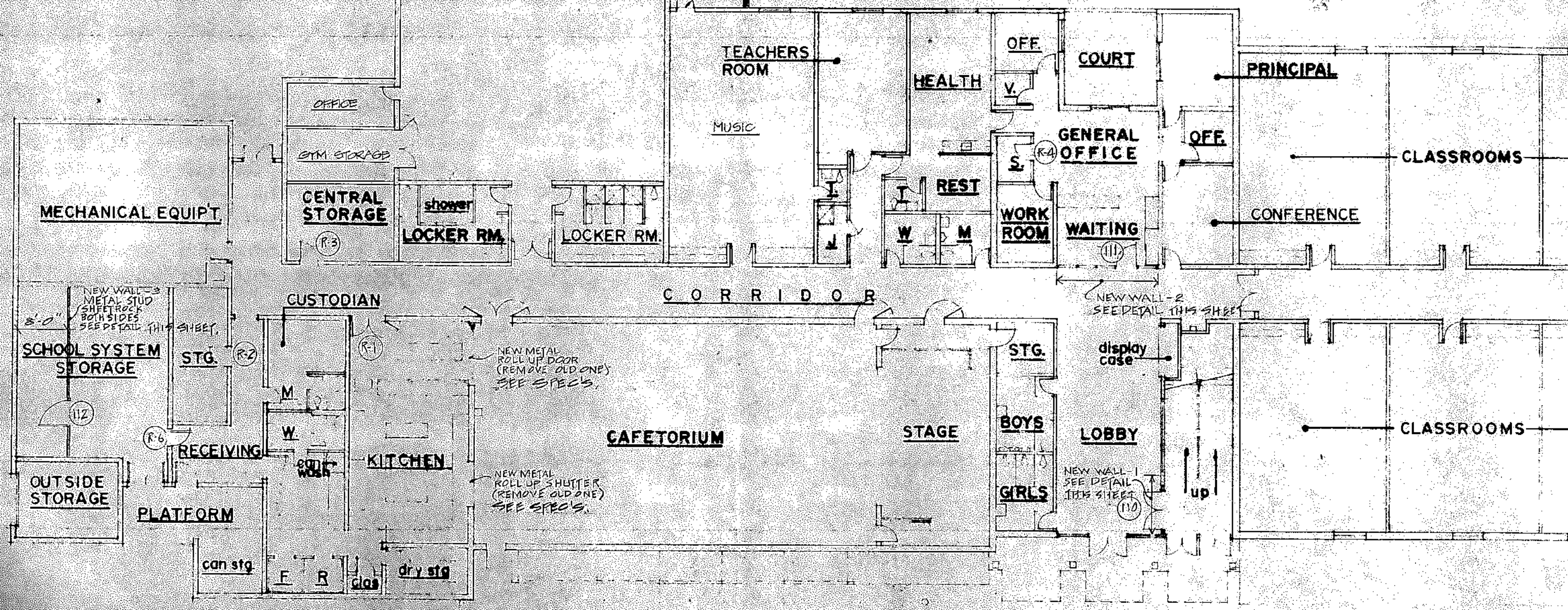
First Floor

PAVED PLAY AREA

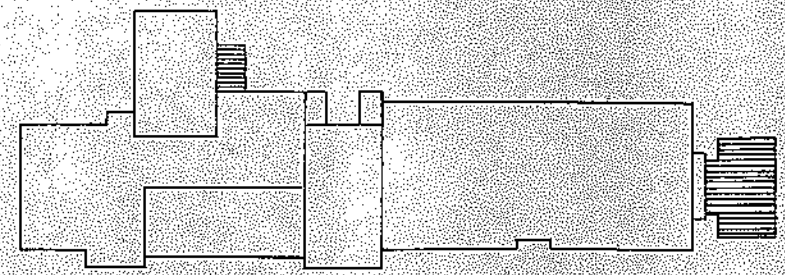
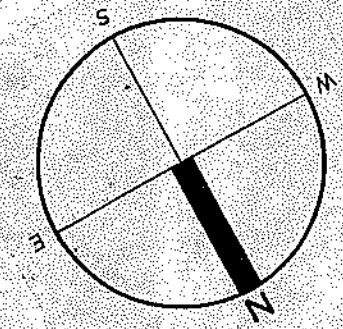
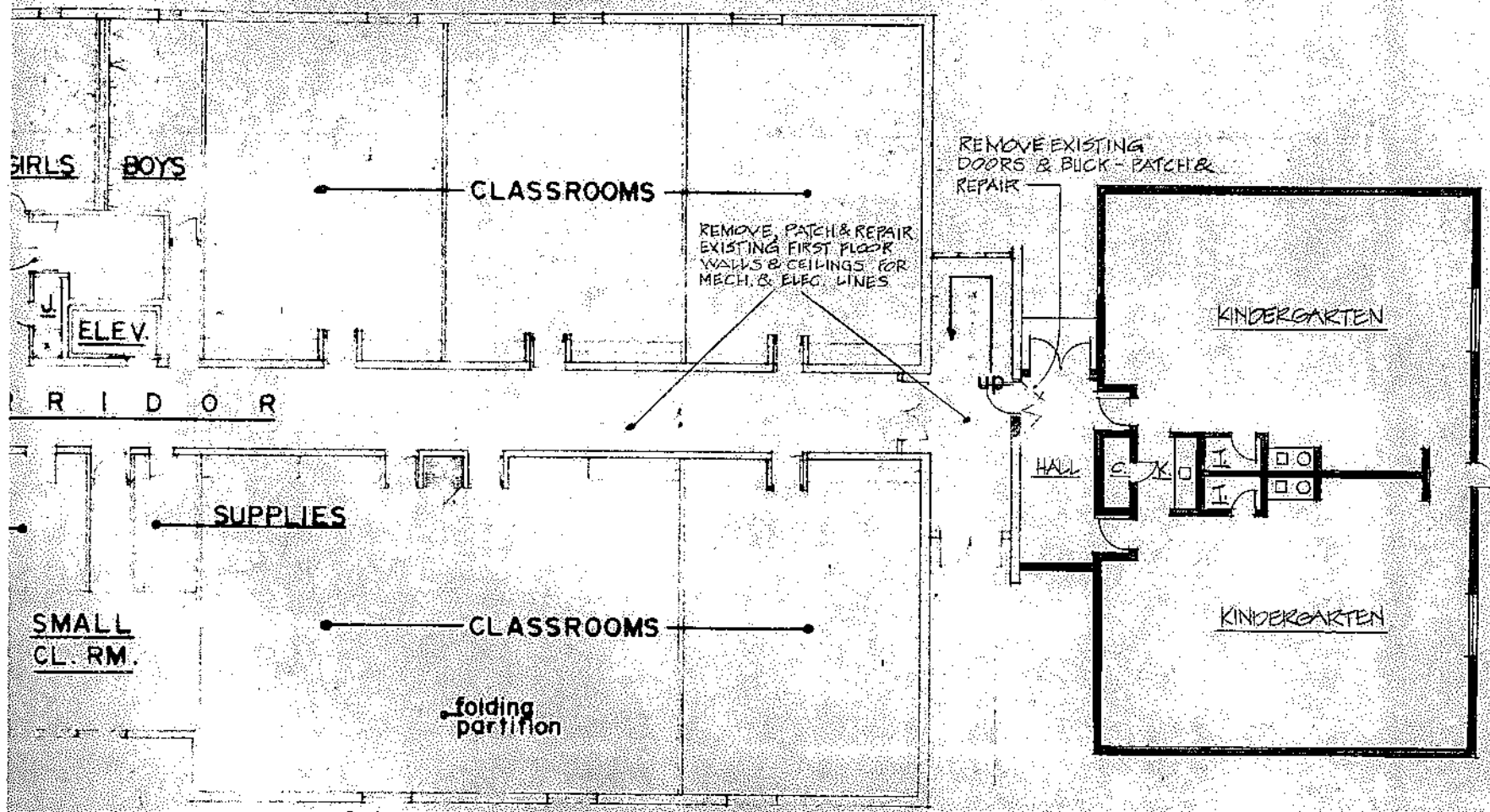
GYMNASIUM

PLAY AREA

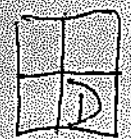
IN SCHOOL SYSTEM
SCALE 1/4" = 1'-0"



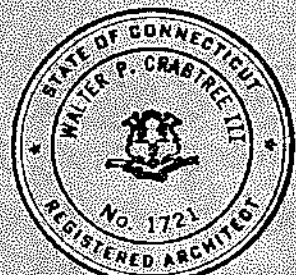
FIRST FLOOR PLAN
SCALE - 1/16" = 1'-0"



KEY PLAN



WALTER P.
 CRABTREE
 ARCHITECT



1/16" SCALE FLOOR PLAN

ADDITIONS TO
 ANNA H. ROCKWELL SCHOOL

DATE
 25 APRIL '18
 SHEET NO.

A-2