



# Hazardous Materials Survey Report

Holland Hill  
Elementary School

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## EXECUTIVE SUMMARY

This report presents the results of a survey for hazardous materials conducted at the Holland Hill Elementary School located at 105 Meadowcroft Road in Fairfield, Connecticut. Woodard & Curran performed this survey on February 17 and February 20, 2017 to evaluate the type, location and quantity of asbestos-containing building materials (ACBM), lead-based paint (LBP), suspect polychlorinated biphenyl (PCB) containing building materials, or other hazardous building materials that may be present within or on the building components scheduled for renovations.

The original Holland Hill Elementary School was constructed in 1956 and in 1978, the existing gymnasium and media center were reportedly added to the building and the kitchen was expanded. In the mid-2000's, the majority of building perimeter windows were replaced with new windows and a small portion of the gymnasium storage room was added in 2001.

Current state and federal regulations require that the Owner/Operator remove ACBMs from any facility prior to renovation of the facility, if the renovation process will disturb the ACBM. Federal regulations also require that employers protect employees from exposure to airborne lead during construction activities, including building renovation activities. Similarly, the United States Environmental Protection Agency (EPA) and the Connecticut Department of Energy and Environmental Protection (CTDEEP) regulate disposal methods for certain concentrations of PCB's in building materials.

The results of the survey indicated that the following materials contain regulated concentrations of asbestos:

- Asbestos-containing black asphaltic paper vapor barrier and associated adhesive were identified within the perimeter cavity walls of the gym, of the bathrooms located to the southwest of the gym, and within the walls of the original building;
- Asbestos-containing black asphaltic paper vapor barrier was identified beneath the wood floor of the multi-purpose room;
- Pipe insulation containing asbestos was identified beneath the stage in the multi-purpose room, above the stage in the multi-purpose room, and within a bathroom pipe chase (presumed present in all bathroom pipe chases);
- Sealants containing asbestos associated with single paned building perimeter window assemblies were identified including window frame caulking sealants as well as the glazing compound between the glass panels and the metal window stops;
- Asbestos-containing floor tiles and / or floor tile adhesives were identified in various areas of the school including storage spaces, classrooms, etc.;
- Asbestos-containing coatings beneath sinks in classrooms and other areas of the school were identified;
- Asbestos has been identified in the adhesive used to secure stick pins to the air ducts located above the stage in the multi-purpose room; and
- Asbestos was identified in the vibration isolation connectors located between sections of metal air ducts located above the stage.

The results of testing for lead in paint and other finishes indicated that concentrations of lead on painted surfaces tested in the subject building areas were generally low (less than 1.0 milligrams of lead per square centimeter of tested surface area).

Materials suspect for PCBs were observed in some of the areas anticipated to be disturbed during the renovations including caulking and glazing sealants associated with the original single-pane windows (kitchen, boiler room, all purpose room, office, and west end restrooms), caulking and glazing sealants on building perimeter doors, exterior masonry joint caulking on the gymnasium, miscellaneous interior caulking sealants, roofing sealants, and black asphaltic paper vapor barrier materials in the void space of the gymnasium and building walls. As requested by the project team, samples of suspect PCB materials were not submitted for laboratory analysis pending finalization of the project scope and regulatory approach to be selected for removal and disposal of PCB containing materials.

Miscellaneous electronics, bulbs, ballasts, pressure vessels, potential radiation sources, and other materials that may require special handling, packaging and / or disposal considerations were also observed and inventoried throughout the building.

## 1. INTRODUCTION

On February 17 and 20, 2017, Woodard & Curran conducted a survey to evaluate the type, location and approximate quantity of ACBM, LBP, suspect PCB-containing building materials, and other miscellaneous hazardous materials that may be disturbed during the upcoming renovation at the Holland Hill Elementary School located at 105 Meadowcroft Road in Fairfield, Connecticut. Woodard & Curran conducted the survey with assistance from Reliance Environmental of Woodbridge, Connecticut serving as a sub-consultant to Woodard & Curran.

It is our understanding that the current scope of the planned renovations includes select interior and exterior demolition and renovation activities as depicted on Drawing AX2.01 provided to Woodard & Curran on February 6, 2017 and included as Appendix A.

The Holland Hill Elementary School was reportedly constructed in 1956 with renovations conducted in 1978 and 2001. A Site Locus Map is provided as Figure 1-1 below.

**Figure 1-1: Site Locus Map**



Woodard & Curran conducted the hazardous building materials survey in support of the proposed project to renovate the elementary school. Various federal and state regulations require the Owner or Operator of facilities which are scheduled to be renovated to identify existing hazardous materials prior to renovation. These regulations are intended to ensure that existing hazardous materials are properly removed, handled, packaged and disposed of prior to, or as part of the renovation process.

Based on the original construction date (1956), products containing certain hazardous materials such as ACBM, LBP, PCBs, or other hazardous materials may have been used as part of the standard construction practices, or during repair or renovation activities throughout the lifespan of the building. Information provided by the project team during telephone conversations and project meetings, as well as a review of building plans provided by the project team, indicate that in 1978 the existing gymnasium and media center were added to the building and that the kitchen was expanded. In the mid-2000's the majority of building perimeter windows were replaced with new windows and a small portion of the gymnasium storage room was added in 2001.

Woodard & Curran conducted the hazardous building material survey described in this report in support of the proposed renovation project. As part of the survey, representative samples of building materials were collected and submitted for analysis. Intrusive techniques were used to identify existing hazardous materials that may be located behind existing finishes, within perimeter walls of the building, beneath newer roofing materials, or otherwise hidden from view in those

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areas identified as to be impacted during the planned renovations and as approved by the project team prior to mobilization.

This report includes a description of the hazardous materials survey findings, sample results, limitations, and regulatory considerations of these findings.

## **2. BUILDING SURVEY**

### **2.1 SURVEY SCOPE**

The objective of the hazardous building materials survey was to visually inspect and document the different types of suspect hazardous building materials subject to potential disturbance during renovation of Holland Hill Elementary School. Woodard & Curran conducted the survey on February 17 and 20, 2017. The survey included a field survey / walk through of:

- Interior and exterior spaces of the school;
- Roof top areas on the restrooms located on the west side of the gymnasium; and
- Limited destructive testing to access suspect materials within portions of the envelope walls, interior walls, beneath floor finishes, pipe chases, etc.

### **2.2 BUILDING FEATURES**

A summary of the building construction features relevant to the hazardous materials survey is presented below.

The original building and the additions appear to be constructed on concrete floor slabs at grade. The perimeter walls are CMU on the interior side of the walls with brick veneer finishes on the exterior. A cavity is present between the CMU and the brick veneer with a vapor barrier system identified within this wall cavity. Structural components appear to include bar joists located above ceilings supported by the perimeter walls and possibly by interior CMU walls as well. Heat is provided by two boilers located within a boiler room which is constructed partially below grade. Steam for radiant heat and domestic water are distributed throughout the school from the boiler room via crawlspaces located beneath the concrete slab floors of the building. A separate air handler serving the multi-purpose room is located on an elevated concrete structure located at the west side of the stage.

Interior finishes include suspended acoustical ceiling tiles, gypsum board wall finishes, CMU wall finishes, ceramic tile wall and floor finishes in bathrooms and vinyl floor finishes with area carpet applications in classrooms and other areas of the school. Specialty spaces within the school include the gym with associated equipment storage area, the media center / library, the multi-purpose room including stage, the kitchen, the boiler room, the transformer vault, and the main office area. The remainder of the interior spaces include classrooms as well as bathrooms and various storage spaces / closets.



### **3. ASBESTOS-CONTAINING MATERIALS**

#### **3.1 INSPECTION PROCEDURES AND SAMPLING METHODOLOGY**

The asbestos inspection was performed using guidelines established by the EPA Guidance for Controlling Asbestos-Containing Materials in Buildings (EPA 5605-85/024), EPA AHERA: 40 CFR 763, OSHA: 1926.1101. Woodard & Curran conducted visual inspections of accessible areas to identify homogeneous areas of suspect ACM in building areas scheduled for renovation activities. Woodard & Curran assessed suspect materials as potential ACM, where they were observed. Locations and types of suspect ACM were noted. Limited invasive investigations were conducted behind or beneath existing finishes in areas where such activities would be anticipated as part of the renovation project. The locations of the samples collected are depicted on Figure 3-1.

Materials are grouped into homogeneous areas for the purpose of sampling to evaluate asbestos content. Homogeneous areas are those that contain suspect ACM that is uniform in application, texture, and color, and which visually appear identical in every other respect. Materials installed at different times are treated as different homogeneous sampling areas (if this information is known). Bulk samples of observed suspect ACM were collected from randomly chosen representative locations in a manner to minimize damage to building finishes.

Mr. Robert Pelletier (CT DPH certified asbestos inspector / management planner, 000296) of Woodard & Curran and Mr. Vidya Trivedi of Reliance Environmental, LLC (CT DPH certified asbestos inspector / management planner, 000255) collected samples on February 17 and 20, 2017.

#### **3.2 ANALYTICAL METHODS**

Samples collected as part of the inspection were transported to Optimum Analytical and Consulting, LLC (Optimum) of Salem, New Hampshire for analysis (CT DPH approved environmental laboratory, PH-0212). Optimum is also a NVLAP accredited laboratory. Samples were analyzed via Polarized Light Microscopy with Dispersion Staining (PLM/DS) in accordance with the United States Environmental Protection Agency (EPA) Methods 600/R-93/116 and 600/M4-82-020. The analytical results are presented in Appendix B.

#### **3.3 INSPECTION SUMMARY**

Woodard & Curran visually inspected and sampled representative suspect ACM throughout the school. Materials observed and considered suspect for asbestos included pipe insulation, caulking sealants on windows, doors, and masonry joints, grout and mortar for tiles, stick pin adhesives, joint compound and gypsum wall board materials, roofing materials, coatings, cove base, glues and mastics, floor tiles and mastics, ceiling tiles, and vapor barrier, asphalt paper and associated adhesives beneath flooring and within envelope walls. Specific building systems and components included in the proposed renovation areas were surveyed to evaluate the potential for ACM in the following materials:

- Heating, ventilation and air conditioning (HVAC) systems were inspected for the presence of insulation, sealants and adhesives.
- Interior walls and ceilings were inspected for the presence of tape compounds on gypsum board walls, gypsum board, asbestos-cement panels, fireproofing, plasters, and various construction adhesives.
- Floor finishes were inspected for the presence of vinyl-asbestos floorings and / or adhesives.
- Building envelope walls were inspected for the presence of caulking materials, waterproofing materials and construction adhesives.
- Window and door assemblies were inspected for the presence of sealants including caulking and window glazing compound. Doors were also inspected for the presence of insulation.

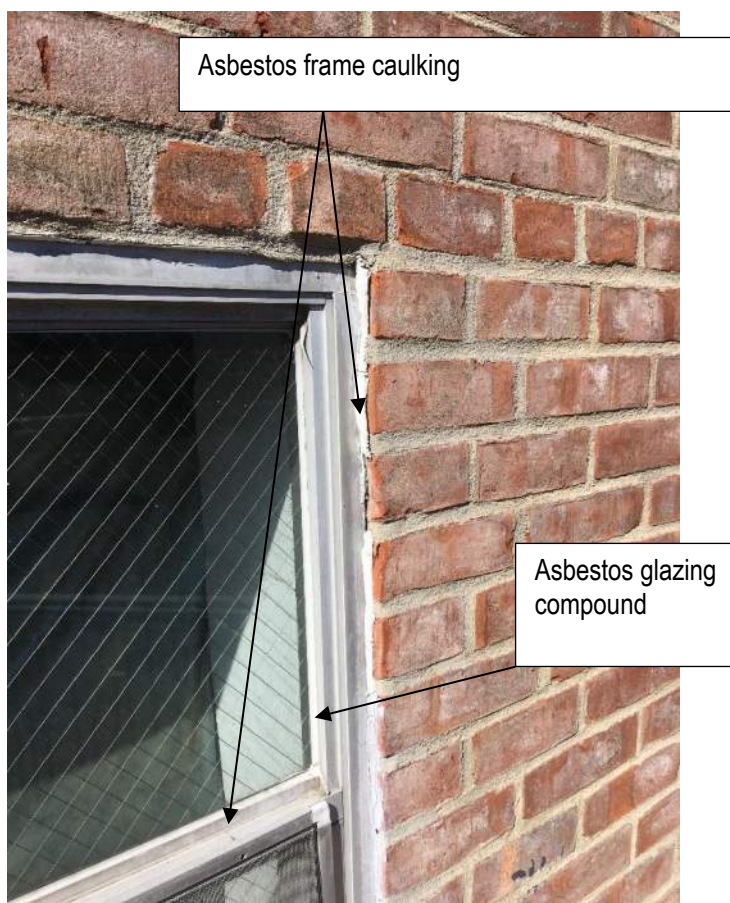
- Bathroom floors were inspected for the presence of flashing materials or water barriers around floor drains.
- The roof on the bathrooms located southwest of the gym was inspected for asbestos roofing materials and flashing compounds.
- Materials beneath the wood floor in the multi-purpose room were inspected for adhesives and vapor barriers

A total of 180 samples were collected and submitted for asbestos analysis. EPA, OSHA and State of Connecticut regulations define an ACBM as any building material containing greater than 1% asbestos by an appropriate analytical method. A summary of each of the samples collected is provided on Table 3-1 by sample ID number. Asbestos was detected in 44 of the samples submitted for analysis. A summary of the materials identified as ACBM and approximate quantities is provided on Table 3-2 and in the section below.

### 3.4 SAMPLING RESULTS

**Window Sealants** – The window glazing compound, and the window frame caulking associated with the single paned building perimeter windows were identified as an ACBM. In addition, glazing sealants associated with the two double doors on the south side of the building were identified as ACBM (caulking sealants on those doors were not).

The sealants appeared to be in good to fair condition and are not friable. Based on the renovation scope of work, the single paned windows at the office/administrative area and the restrooms in the east wing of the 1956 portion of the building are scheduled to be replaced. The same sealants were also observed on the kitchen windows and the clerestory windows in the all-purpose room and stage area which are not currently scheduled for removal but may be addressed through re-caulking. Finally, the two double doors on the south side of the building are to be replaced according to the existing renovation scope.



**Vapor Barrier Within Envelope Walls** – An asphaltic vapor barrier system comprised of asphaltic paper and associated asphaltic mastic / adhesive is present within all building envelope walls where inspection was conducted. These materials, including the paper and the mastic / adhesive, have been identified as ACBMs. These materials are in good condition where observed and are not friable. Approximately 800 square feet of this material would likely be disturbed by demolition of the bathrooms next to the gymnasium. Approximately 50 square feet may be disturbed by the installation of a new doorway in the gymnasium envelope wall. It is not clear how much, if any of this material would be disturbed by the replacement of windows.



Asbestos vapor barrier within envelope wall behind brick veneer.

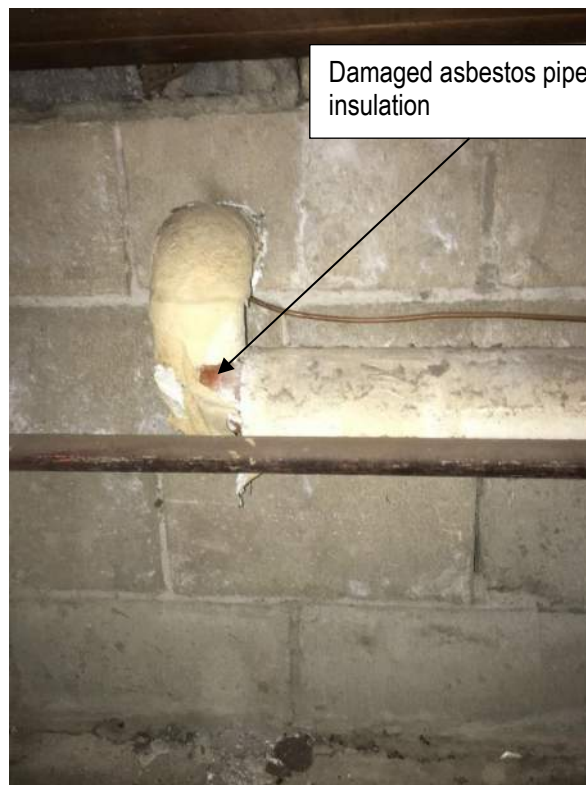
**Vapor Barrier Beneath Wood Flooring** – A black asphaltic vapor barrier system including asphaltic mastic and asphaltic paper that is present beneath the wood floor in the multi-purpose room was identified as an ACBM. This vapor barrier system is applied to the concrete floor of the room and is present beneath wood finish flooring and cork sub-flooring. The vapor barrier is non-friable and appeared to be in good condition where observed. Approximately 3,000 square feet of this material is estimated to be present beneath the finish floor in the multi-purpose room.



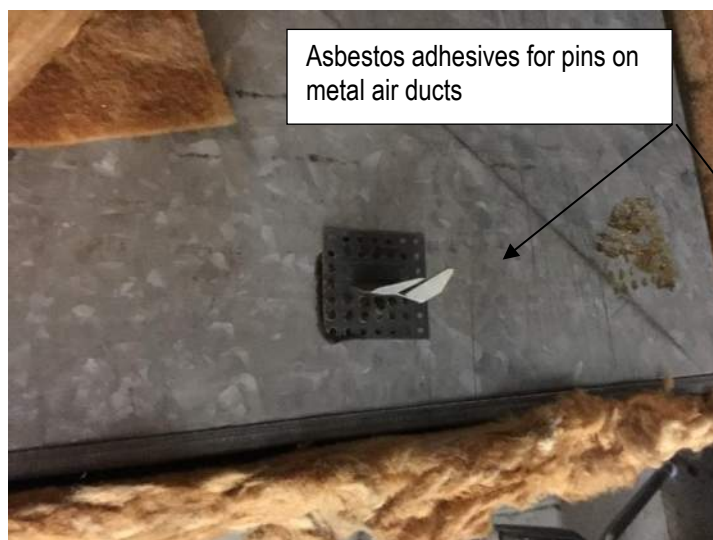
Asbestos vapor barrier system beneath wood floor in multi-purpose room



**Pipe Insulation** – The insulation on heat and domestic water pipes observed in various areas of the building scheduled for renovations has been identified as ACM. The asbestos pipe insulation was observed beneath the stage in the multi-purpose room, above the stage at the existing air handling unit (AHU) and within a pipe chase located within the wall between two bathrooms. Approximately 20 linear feet of asbestos pipe insulation was observed beneath the stage, approximately 25 linear feet was observed at the AHU above the stage and approximately 10 linear feet was observed within the bathroom pipe chase. Asbestos pipe insulation may also be present in other areas of the school including within the crawlspaces that are present beneath the concrete floor slabs. These crawlspaces were not investigated as part of this inspection due to unsafe conditions within the spaces such as confined space conditions and excessive heat. The observed pipe insulation beneath the stage and within the bathroom pipe chase was significantly damaged with debris noted on the floor beneath the pipe insulation under the stage.



**Stick Pin Adhesive on Air Ducts** – The fibrous-glass thermal insulation on air ducts located above the stage is secured to the metal ducts with stick pins. The adhesive used to glue the pins to the metal ducts contains asbestos. This material is non-friable and appeared to be in good condition. Approximately 600 square feet of this duct is present above the stage.



**Vibration Isolation Connectors** – The cloth connections between sections of metal air duct located above the stage in the multi-purpose room have been identified as an ACM. This material is friable and in contact with the pressurized airstream created by the AHU that supplies conditioned air through these ducts. Approximately 50 square feet of this material was observed.



**Coatings Beneath Sinks** – The sinks located in various classrooms and other spaces within the school have a coating applied to the underside of the sink basin. This coating has been identified as an ACM. This material is non-friable and appeared to be in good condition. It is unclear how many (if any) of these sinks will be removed or disturbed as part of the proposed renovation project.



Stock photo

#### Floor Tiles and / or Associated Adhesives –

There are various areas of vinyl floor tiles and / or associated adhesives that have been identified as ACBM in various areas within the school. The floor tiles and associated adhesives appeared to be in good condition and are not friable. These tiles / adhesives are in several classrooms as well as in storage spaces. It is not clear if any of these tiles / adhesives will be disturbed by the proposed renovation activities.



Floor tile outside gym area restrooms (adhesives in this area were identified as ACBM)

### 3.5 POTENTIAL DATA GAPS

As described above, the survey activities were limited to accessible areas of the building that were identified as within the planned renovation areas and to limited intrusive sampling activities within inaccessible areas planned to be included in the renovations (e.g., wall cavities, pipe chases). Areas that were identified on the renovation plans that were not accessible included materials under the gymnasium flooring (email communications indicated that this material may not be impacted by the renovation) and the transformer vault (maintenance personnel did not have a key to access this space). If other areas are included in subsequent renovation scopes, additional survey activities may be required to evaluate the presence of ACBMs. Such areas may include but not be limited to materials present under the gymnasium floor, materials within classrooms in the east wing of the 1956 addition, and in the library/media center.

## **4. LEAD-BASED PAINT**

Reliance Environmental, LLC (Reliance), as a sub-consultant to Woodard & Curran, conducted a limited inspection for lead-based paints at the site. The inspection included those paints that appeared to be most prevalent. The lead paint inspection was conducted using an x-ray fluorescent (XRF) analyzer (RMD Model LPA-1). The XRF analyzer uses a radioactive source to excite the electrons of lead atoms (if present) in the sampled paints. When the radiation is halted, the lead atom electrons return to their normal state of activity by releasing x-rays of a characteristic frequency. This x-ray activity is detected and measured by the XRF analyzer. The results are converted to milligrams lead per square centimeter of sampled surface area (mg/cm<sup>2</sup>). The XRF testing results indicate that levels of lead on painted surfaces tested were less than 1.0 mg/cm<sup>2</sup>. A figure depicting the locations tested using the XRF and a summary table of the results are included in Appendix C. Note that many of the readings displayed by the XRF analyzer indicate negative values. The existence of negative values is expected and interpolated as zero lead content detected due to statistical nature of the XRF measurement.

Renovation activities that disturb lead-based paints (including hand demolition) must be performed in accordance with OSHA regulation 29 CFR 1926.62 (Lead in Construction), which contains requirements for protecting workers from lead exposure. The standard requires an initial exposure assessment be conducted whenever employee exposure to lead is possible. The standard also requires specified steps to ensure that employees are not exposed to elevated concentrations of lead until the exposure assessments have been completed. For the purposes of OSHA compliance, any measurable lead in paint could pose a health hazard to workers involved in removal of lead painted components where dust is generated, regardless of the measured lead concentrations in the paints. In some cases, OSHA would require personal air monitoring to evaluate the level of respiratory protection and medical monitoring for workers involved in such work.

The EPA also regulates the disturbance of paints that contain lead in buildings where children under the age of six years are occupants. Contractors who conduct renovation, repair or painting (RRP) activities in such buildings must have training regarding the EPA's requirements for inspections, work practices, engineering controls, occupant notifications, etc. related to activities that disturb paints containing lead.

The Connecticut Department of Environmental Protection has determined that, when results of a comprehensive evaluation for lead in paint is conducted using an XRF analyzer, and all results indicate lead concentrations below 1.0 mg/cm<sup>2</sup>, then the waste from such painted building components is not a hazardous waste due to leachable lead and no further waste characterization for leachable lead is required.

## 5. POLYCHLORINATED BIPHENYLS

Woodard & Curran's survey included the collection of samples from accessible caulking, sealants, and other suspect building materials observed in the areas anticipated to be disturbed as part of the renovation and considered to be suspect PCB-containing materials. In addition, the presence and distribution of painted masonry building materials in and around the renovation areas were documented.

Based on observations made during the survey and project team discussions suspect PCB-containing materials were grouped into the following categories.

- Single-Paned Window Sealants: Based on information provided by the project team, single paned building perimeter windows at the office/administrative area, the kitchen, the all-purpose room, and the restrooms on the west end of the building are original to the building (i.e., 1956 construction). The renovation scope includes the removal and replacement of the window outside the office/administrative area and the re-caulking of perimeter frame caulking on the other original windows. The following suspect materials were observed and sampled as part of the survey:
  - Exterior Frame to Brick Caulking (Type A and Type B) – Two types of exterior frame caulking were observed along the exterior frame to brick joints of the single paned windows. A light gray/white brittle caulking was observed (Type B). This caulking appears to be original construction caulking based on the presence of a soft gray caulking (Type A) on the perimeter joints of the office/administrative windows and the kitchen windows. This Type A caulking was visually similar to the exterior window frame caulking observed on the double paned windows reported to have been installed in the mid-2000's.
  - Exterior Frame to Frame Caulking (Type C) – A white, hard, brittle caulking was observed on the metal to metal frame joints of the single paned windows at the office/administrative windows, the kitchen windows, and portions of the clerestory windows in the all-purpose room and stage area.
  - Glazing Sealants (Type D and Type E) – The predominant type of glazing sealant associated with the single paned windows (Type E) was a gray/white brittle caulking observed on the majority of the windows. A second type of glazing sealant (Type D, a silver/gray soft sealant) was observed on the bathroom windows at the west end of the building.
  - As noted in Section 3, exterior sealants have been classified as ACBM.
- Building Perimeter Doors: Based on the renovation scope of work provided by the project team, building perimeter doors (including the window surround) on the south side of the building near the gymnasium and the library/media center are to be removed as part of the addition being planned on the south side of the building. Caulking and glazing sealants were observed on these doors as follows:
  - Exterior Frame Caulking (Type G and Type H) – Two types of caulking were observed along the frame to brick joints. At both doors, a brown caulking (Type G) was present and at the door near the gymnasium, a second gray caulking (Type H) was present over the underlying brown caulking.





- Interior Frame Caulking (Type J) – A hard, white caulking was observed on the interior frame to CMU joints on the door outside the library/media center. This same type of caulking was also observed on the frame to CMU joints of certain interior partition doors as described below.
- Glazing Sealant (Type I) – A soft, dark gray, tacky sealant was observed on the frame to glass joints of both sets of double doors.
- Of these materials, the glazing sealants have been identified as ACBM.
- Interior Partition Doors: Select doors between interior spaces are scheduled to be removed as part of the renovation. A white, hard caulking was observed on the frame to CMU block joints of these doors (Type J). As noted previously, this caulking was also observed on the interior frame to CMU joints of the doors outside the library/media center.
- Exterior Masonry Joints: Two types of masonry joints were observed within the project renovation scope:
  - Vertical Brick to Brick Expansion Joints (Type K and Type L) - Based on the renovation scope of work provided, four of the eight exterior brick to brick vertical expansion joints on the gymnasium walls are anticipated to be disturbed along the south and west elevations of the gymnasium (approximately 80 l.f.). Within these joints, two layers of caulking were observed. The outer layer was a moderately hard, gray caulking (Type K) and the inner layer of caulking was a red caulking (Type L).
  - Plaster Ceiling to Brick Joints (Type M) – A dark gray, soft caulking along the textured plaster ceiling to brick wall joints on the overhang area outside of the double doors on the south side of the building (two locations approximately 40 l.f.).
- Interior Sealants (Type L): White caulking was observed along the sink backsplash joints in several of the restrooms scheduled to be included in the renovation scope of work. This caulking was observed in the restroom near the library/media center, the faculty area sink, and in Classroom 17.
- Waterproofing/Vapor Barriers: Waterproofing vapor barriers were observed during the selective intrusive sampling activities in the wall cavities of the gymnasium, the gymnasium restrooms scheduled to be demolished, and the original 1956 portion of the building next to the restroom windows scheduled to be removed as part of the renovation. The waterproofing material was located on the interior CMU block portion of the wall and separated from the exterior brick façade materials by a void space. Adhesive was observed on the back of the barrier at locations associated with the restroom and the original portion of the building but not on the gymnasium wall areas inspected. These materials were classified as ACBM during the survey.



Door outside the library/media center



Black Vapor Barrier on CMU Block Wall  
(Gymnasium South Wall)

- Roofing Sealants: The renovation scope includes the demolition of the restrooms adjacent to the gym. Suspect roofing sealants observed on the restrooms near the gymnasium included flashing materials along the roof edge and at penetration points (e.g., ventilation piping).
- Painted CMU Surfaces: CMU block walls associated with the classroom restroom renovation activities, gymnasium wall, and gymnasium restroom area demolition (i.e., those that will be removed) were noted to be painted with similar colors as other CMU block walls. These paints are considered to be suspect PCB-containing materials.

A summary of the suspect materials observed and the samples collected is provided in Table 5-1 and the locations of the samples collected are depicted on Figure 5-1.

## 6. OTHER HAZARDOUS MATERIALS

Woodard & Curran inventoried other observed materials or items at the site that may require special handling, packaging and/or disposal considerations. The following table presents the types and approximate quantities of these observed materials:

**Table 6-1: Miscellaneous Hazardous Materials**

<b>Item and Contaminate of Concern</b>	<b>Approximate Quantity</b>
Fluorescent light tubes – 2 foot (mercury)	150
Fluorescent light tubes - 4 foot (mercury)	1500
Smoke detectors (radioactive source potential)	40
Fire extinguishers (pressure vessels)	1
Fluorescent light ballasts/transformers <sup>1</sup>	880
Exit signs (radioactive source potential)	13
Refrigeration devices (refrigerants / CFCs)	5
Emergency lights (batteries)	15
ANSUL fire suppression in kitchen	1 each
Various cleanser, sanitizers etc.	Unknown
Compact Fluorescent Lightbulbs	3

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<sup>1</sup> Labels on accessible, observed ballasts appeared to be new, however, the wording “No PCB”; was not printed on the ballast label. The generally accepted practice is to assume that the dielectric fluid within the ballast contains regulated concentrations of PCBs unless the label on the ballast contains the wording “No PCBs”. Access to the transformer vault was not available during the survey activities. A label on the door of the vault indicated that the transformer fluids were classified as non-PCB.

## **7. REGULATORY CONSIDERATIONS**

### **7.1 ASBESTOS**

ACBMs were identified during this survey. The identified ACBMs include vapor barrier systems within envelope walls and beneath the wood floor in the multi-purpose room, floor tiles and associated adhesives in various areas of the school, window sealants, pipe insulation and coatings beneath sinks, adhesives at stick pins for insulation on air ducts and vibration isolation connections on air ducts. Asbestos is regulated by state and federal authorities having jurisdiction including but not limited to OSHA, EPA, and CT DPH. Based on our survey findings, the following potential next steps are proposed for consideration:

- A CT DPH certified Asbestos Abatement Project Designer must prepare technical specifications for removal of any ACBM that may be disturbed by any renovation activities at the site as required by EPA 40 CFR Part 763 (AHERA).
- A certified asbestos contractor should remove any identified ACBM from the facility prior to the start of renovation activities that may disturb the materials in accordance with federal, state and local regulations.
- The owner/operator should review this report as plans are developed to confirm which identified hazardous materials are likely to be disturbed as part of the project. The design team should evaluate if any additional inspection is necessary, as additional ACBM may be present in previously inaccessible areas such as within mechanical and electrical components, buried areas, chases, shafts, etc. If additional suspect materials are encountered during facility renovation or demolition activities, then precautions should be taken to prevent the disturbance of the suspect material(s) until appropriate bulk sampling and laboratory analysis is performed to evaluate the material's asbestos content.
- The Fairfield Public School system should update the applicable asbestos management plans required by the EPA AHERA regulations (40 CFR Part 763) to reflect the additional ACBMs that have been identified as a result of this inspection including interior window glazing, vibration isolation connectors, pipe insulation, adhesives associated with insulation on air ducts, etc.

### **7.2 LEAD-BASED PAINT**

Renovation activities that disturb paints which contain lead must be performed in accordance with OSHA regulation 29 CFR 1926.62 (Lead in Construction), which contains requirements for protecting workers from lead exposure. The standard does not establish a "safe" or "acceptable" concentration of lead in paint, below which an initial exposure assessment is not required. For the purposes of OSHA compliance, any measurable amount of lead could pose a health hazard to workers involved in removal of lead painted components where dust is generated. In some cases, OSHA would require personal air monitoring to evaluate the level of respiratory protection and medical monitoring for workers involved in such work. The US EPA also regulates renovations involving the disturbance of paints containing lead in buildings occupied by children under the age of six years in their regulation of renovations, repair and painting (RRP) at 40 CFR Part 745.

### **7.3 PCBS**

Materials suspect for PCBs were identified during the survey including caulking and glazing sealants on building perimeter windows and doors, interior partition doors, exterior masonry joints, miscellaneous interior sealants, roofing flashing compounds, and waterproofing/vapor barrier materials in the building perimeter wall cavities as well as interior painted CMU block surfaces.

As discussed during our previous project team meetings, samples of suspect PCB-containing building materials are being held in a sample freezer and have not been submitted for laboratory analysis at this time. A discussion on the regulatory implications and potential next steps is presented below.

Suspect PCB-containing building materials can be grouped into three major categories as follows:

- PCBs  $\geq$  50 ppm – As per 40 CFR Part 761, the continued use of materials containing PCBs at concentrations greater than 50 ppm is prohibited. If materials containing PCBs  $\geq$  50 ppm are turned into waste (e.g. removed during a renovation project), then they would be defined as PCB bulk product waste and disposal would be required as per 40 CFR 761.62. In addition, if PCBs were released to other building materials from  $\geq$  50 ppm materials, then these materials could be regulated under 40 CFR 761.62 or 40 CFR 761.61, depending on removal methods and timing.
- PCBs  $> 1$  and  $< 50$  ppm – If determined to be present, materials containing PCBs  $> 1$  ppm and  $< 50$  ppm would be regulated for removal and disposal by the CTDEEP and/or EPA and may fall into one of two categories with regard to the federal regulations:
  - The materials may meet the definition of *Excluded PCB Products* per 40 CFR 761.3 and are not subject to the use requirements of 40 CFR 761; or
  - The PCBs may have been “released” to the material from a previous source material containing PCBs  $\geq$  50 ppm and would be considered a PCB Remediation Waste subject to the requirements of 40 CFR 761.61.
  - Regardless of the federal classification of these materials, the State of Connecticut regulates these materials for removal and off-site disposal based on the presence of PCBs  $> 1$  ppm and requires that surrounding substrates be evaluated following removal to verify that residual PCBs do not remain.
- Non-PCB Containing Materials – Suspect materials determined to be non-detect for PCBs are not subject to PCB waste management and disposal requirements under 40 CFR 761.

Following finalization of the renovation scope, the project team will need to decide whether to submit representative samples of suspect materials for laboratory analysis or to assume the materials contain PCBs  $\geq$  50 ppm (materials cannot be assumed to contain PCBs  $< 50$  ppm or be non-PCB containing for the purposes of remediation or disposal). Alternatively, additional screening assessments can be performed to evaluate the probability that the materials may contain PCBs above the regulatory thresholds.

## 7.4 OTHER HAZARDOUS MATERIALS

Materials identified in Section 7 typically require special handling and / or disposal requirements. All fluorescent light tubes, other universal waste and materials requiring special disposal requirements should be handled, packaged and disposed of in accordance with Regulations of Connecticut State Agencies (RCSA) Section 22a – 449 (c) - 113 as well as other applicable federal, state and local requirements. Refrigerants should be reclaimed by contractors appropriately trained and certified to conduct such activities. Petroleum products such as generator fuel, elevator hydraulic fluid, equipment lubricants, etc. should be recycled or disposed of in accordance with applicable regulatory requirements.

## 8. LIMITATIONS

The services provided were conducted in a manner consistent with standard industry practices for hazardous materials surveys, recognizing that even the most comprehensive inspection may not detect all suspect materials in the building. Observations documented in this report were made under the conditions existing at the time of the surveys. Limiting factors include accessibility, visibility, scope of work, and safety. Sampling was not performed on building components that would impact structural, mechanical, life safety, or electrical systems. Inaccessible areas included crawl spaces located beneath concrete floor slabs as these areas were determined to be unsafe for entry due to confined space and elevated heat conditions. Note subsurface investigations were not included in the scope of this survey. ACBM, PCBs or other hazardous materials may be present associated with underground utilities at the site, or may be present in fill materials at the site.

The sampled materials are considered representative of accessible suspect hazardous building materials observed at the facility. Reasonable measures were undertaken to detect the presence of suspect hazardous materials within the survey areas. The evaluations, assessments, and findings presented herein are based solely on the observations made during the surveys. While the samples collected are considered representative of the suspect hazardous building materials observed during the survey activities, undetected variations in chemical concentrations may occur in the media at un-sampled locations, and other suspect hazardous materials may be present at locations that may not become accessible until such time that additional building material removal activities are performed. In the event that any conditions differing from those described herein are identified at a later time, Woodard & Curran requests the opportunity to review such differences and modify, as appropriate, the assessments and conclusions given in this report.

## TABLES

**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

<b>Material Description</b>	<b>Analytical Result</b>	<b>Sample Location(s)</b>	<b>Approximate Quantity</b>	<b>Field ID</b>
Vapor barrier under wood & cork floor, black	2% - 3% Chrysotile asbestos	Multipurpose room	3,000 SF	WC-1
Mastic on asphalt paper behind brick veneer, black	15% Chrysotile asbestos	Perimeter Wall Bathroom near gym	800 SF	WC-2
Asphalt paper behind brick veneer, black	40% - 45% Chrysotile asbestos	Perimeter Wall Bathroom near gym	Included above	WC-3
Vapor barrier under wood & cork floor, black	2% - 3% Chrysotile asbestos	Multipurpose room	Included above	WC-4
Vapor barrier under wood & cork floor, black	2% - 3% Chrysotile asbestos	Multipurpose room	Included above	WC-5
Mastic on asphalt paper behind brick veneer, black	15% Chrysotile asbestos	Perimeter Wall Bathroom near gym	Included above	WC-6
Asphalt paper behind brick veneer, black	40% - 45% Chrysotile asbestos	Perimeter Wall Bathroom near gym	Included above	WC-7
Pipe insulation, white	25% Amosite asbestos 2% Crocidolite asbestos	Under stage	20 LF	WC-8
Exterior window glazing compound metal/glass, gray	No asbestos detected - 2% Chrysotile asbestos	Older perimeter windows	2,000 LF	WC-9
Exterior window caulking at frame metal/metal, white	3% - 8% Chrysotile asbestos	Older perimeter windows	200 LF	WC-10
Window frame caulk exterior metal/brick, beige	4% - 8% Chrysotile asbestos	Older perimeter windows	300 LF	WC-11
Interior window glazing compound, beige	2% - 3% Chrysotile asbestos	Older perimeter windows	Included above under exterior glazing compound	WC-12
Pipe insulation, gray	40% Chrysotile asbestos	Bathroom chases	10 LF/chase	WC-13
Asphalt paper under hardwood, black	None detected	Stage floor	N/A	WC-14
Asphalt paper under hardwood, black	None detected	Stage floor	N/A	WC-15



**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
105 Meadowcroft Road  
Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
Vapor barrier within cavity wall, black	40% Chrysotile asbestos	Boy's bathroom near boiler room	Unknown – assumed present within all perimeter walls	WC-16
Mortar bed for ceramic tile floor, beige	None detected	Bathroom in classroom	N/A	WC-17
Ceramic tile grout floor, gray	None detected	Bathroom in classroom	N/A	WC-18
Interior window glazing compound, beige	2% - 3% Chrysotile asbestos	Older perimeter windows	Included above under exterior glazing compound	WC-19
Stick pin adhesive, brown	3% Chrysotile asbestos	Above stage	600 SF	WC-20
Stick pin adhesive, brown	3% Chrysotile asbestos	Above stage	600 SF	WC-21
Stick pin adhesive, brown	3% Chrysotile asbestos	Above stage	600 SF	WC-22
Joint compound, white	None detected	Short stage walls	N/A	WC-23
Gypsum board, gray	None detected	Short stage walls	N/A	WC-24
Joint compound, white	None detected	Short stage walls	N/A	WC-25
Gypsum board, gray	None detected	Short stage walls	N/A	WC-26
Vibration dampener cloth, white	40% Chrysotile asbestos	AHU above stage	50 LF	WC-27
Pipe insulation, white	30% Chrysotile asbestos	AHU above stage	25 LF	WC-28
Built up roof, black	None detected	Above bathroom southwest of gym	N/A	WC-29
Built up roof, black	None detected	Above bathroom southwest of gym	N/A	WC-30
Built up roof, black	None detected	Above bathroom southwest of gym	N/A	WC-31
Roof flashing compound, silver/black	None detected	Roof of bathrooms southwest of gym	N/A	WC-32
Roof flashing compound, silver/black	None detected	Roof of bathrooms southwest of gym	N/A	WC-33
Roof flashing, black	None detected	Roof of bathrooms southwest of gym	N/A	WC-34

**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
Roofing paper at roof edge, black	None detected	Roof of bathrooms southwest of gym	N/A	WC-35
Insulation under asphalt roofing, brown	None detected	Roof of bathrooms southwest of gym	N/A	WC-36
Insulation under asphalt roofing, brown	None detected	Roof of bathrooms southwest of gym	N/A	WC-37
Window frame caulk exterior metal/brick, beige	4% - 8% Chrysotile asbestos	Older perimeter windows	300 LF	WC-38
Exterior window caulking at frame metal/metal, white	3% - 8% Chrysotile asbestos	Older perimeter windows	200 LF	WC-39
Exterior window glazing glass/metal, white	None detected	East Clerestory Kitchen	N/A	WC-40
Exterior are intake louver caulk, gray	None detected	West of stage clerestory	N/A	WC-41
Exterior flashing compound at lower right of intake, black	None detected	West of stage clerestory	N/A	WC-42
Asphaltic paper vapor barrier, black	35% Chrysotile asbestos	Within perimeter cavity wall of gym	5,700 SF	WC-43
Asphaltic paper vapor barrier, black	35% Chrysotile asbestos	Within perimeter cavity wall of gym	5,700 SF	WC-44
Textured coating on exterior soffit, white	None detected	Southwest exit door near gym	N/A	WC-45
Textured coating on exterior soffit, white	None detected	Southwest exit door near gym	N/A	WC-46
Textured coating on exterior soffit, white	None detected	Southwest exit door near gym	N/A	WC-47
Exterior caulking plaster/brick, gray	None detected	Southwest exit door near gym	N/A	WC-48
Exterior caulking plaster/brick, gray	None detected	Southwest exit door near gym	N/A	WC-49
Exterior wall caulking, gray	None detected – Layer 1	Gymnasium rear wall	N/A	1
Exterior wall caulking, pink	None detected – Layer 2	Gymnasium rear wall	N/A	1
Exterior wall caulking, gray	None detected – Layer 1	Gymnasium rear wall	N/A	2
Exterior wall caulking, pink	None detected – Layer 2	Gymnasium rear wall	N/A	2

**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
Exterior wall caulking, gray	None detected – Layer 1	Gymnasium rear wall	N/A	3
Exterior wall caulking, pink	None detected – Layer 2	Gymnasium rear wall	N/A	3
Mortar, gray	None detected	Gymnasium rear wall	N/A	4
Mortar, gray	None detected	Gymnasium rear wall	N/A	5
Mortar, gray	None detected	Gymnasium rear wall	N/A	6
Door glazing, gray	None detected	Main door next to conference room	N/A	7
Door glazing, gray	2% Chrysotile asbestos	Main door next to conference room	80 LF	8
Door glazing, gray	Positive stop	Main door next to conference room	N/A	9
Door frame caulking, white	None detected	Main door next to conference room	N/A	10
Door frame caulking, white	None detected	Main door next to conference room	N/A	11
Door frame caulking, white	None detected	Main door next to conference room	N/A	12
Interior window glazing compound, beige	2% - 3% Chrysotile asbestos	Older perimeter windows	Included above under exterior glazing compound	13
Door caulking, brown	None detected – Layer 1	Exterior rear door gymnasium	N/A	13A
Door caulking, pink	None detected – Layer 2			
Door frame caulking, gray	Positive stop	Main door next to conference room	N/A	14
Door caulking, brown	None detected – Layer 1	Exterior rear door gymnasium	N/A	14A
Door caulking, pink	None detected – Layer 2	Exterior rear door gymnasium	N/A	14A
Door frame caulking, gray	Positive stop	Main door next to conference room	N/A	15
Door caulking, brown	None detected – Layer 1	Exterior rear door gymnasium	N/A	15A

**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
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 Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
Door caulking, pink	None detected – Layer 2	Exterior rear door gymnasium	N/A	15A
Cove base, brown	None detected	Gymnasium	N/A	16
Cove base, brown	None detected	Gymnasium	N/A	17
Cove base, brown	None detected	Gymnasium	N/A	18
Cove base glue, brown	None detected – Layer 1	Gymnasium	N/A	19
Cove base glue, tan	None detected – Layer 2			
Cove base glue, brown	None detected – Layer 1	Gymnasium	N/A	20
Cove base glue, tan	None detected – Layer 2			
Cove base glue, brown	None detected – Layer 1	Gymnasium	N/A	21
Cove base glue, tan	None detected – Layer 2			
Door caulking, white	None detected	Interior rear door gymnasium	N/A	22
Door caulking, white	None detected	Interior rear door gymnasium	N/A	23
Door caulking, white	None detected	Interior rear door gymnasium	N/A	24
Cove base, brown	None detected	Gymnasium storage room/office	N/A	25
Cove base, brown	None detected	Gymnasium storage room/office	N/A	26
Cove base glue, brown	None detected	Gymnasium storage room/office	N/A	27
Cove base glue, brown	None detected	Gymnasium storage room/office	N/A	28
1'X1' floor tile, white	2% Chrysotile asbestos	Gymnasium storage room/office	300 SF	29
1'X1' floor tile, white	2% Chrysotile asbestos	Gymnasium storage room/office	300 SF	30
Floor tile glue, tan	None detected	Gymnasium storage room/office	N/A	31

**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
Floor tile glue, tan	None detected	Gymnasium storage room/office	N/A	32
Mastic, black	None detected	Gymnasium storage room/office	N/A	33
Mastic, black	None detected	Gymnasium storage room/office	N/A	34
Ceramic pattern cove base glue, tan	None detected	Boy's/girl's bathroom next to gymnasium	N/A	35
Ceramic pattern cove base glue, tan	None detected	Boy's/girl's bathroom next to gymnasium	N/A	36
Floor ceramic tile, white	None detected	Boy's/girl's bathroom next to gymnasium	N/A	37
Floor ceramic tile, white	None detected	Boy's/girl's bathroom next to gymnasium	N/A	38
Floor ceramic tile, white	None detected	Boy's/girl's bathroom next to gymnasium	N/A	39
Ceramic tile glue, white	None detected	Boy's/girl's bathroom next to gymnasium	N/A	40
Ceramic tile glue, white	None detected	Boy's/girl's bathroom next to gymnasium	N/A	41
Ceramic tile glue, white	None detected	Boy's/girl's bathroom next to gymnasium	N/A	42
Ceramic tile grout, gray	None detected	Boy's/girl's bathroom next to gymnasium	N/A	43
Ceramic tile grout, gray	None detected	Boy's/girl's bathroom next to gymnasium	N/A	44
Ceramic tile grout, gray	None detected	Boy's/girl's bathroom next to gymnasium	N/A	45
Door caulking (exterior), brown)	None detected – Layer 1	Door #12	N/A	46
Door caulking (exterior), gray	None detected – Layer 2			
Door caulking (exterior), brown)	None detected – Layer 1	Door #12	N/A	47
Door caulking (exterior), gray	None detected – Layer 2			
Door caulking (exterior), brown)	None detected – Layer 1	Door #12	N/A	48
Door caulking (exterior), gray	None detected – Layer 2			

**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
2'X4' ceiling tile (type 1), beige	None detected	Classroom #18	N/A	49
Sink undercoating, black	2% Chrysotile asbestos	Classroom sinks	2 SF/sink	50
Sink undercoating, black	2% Chrysotile asbestos	Classroom sinks	2 SF/sink	51
Cove base, black	None detected	Classroom 18	N/A	52
Cove base glue, tan	None detected	Classroom 18	N/A	53
1'X1' floor tile, white	2% - 3% Chrysotile asbestos	Classroom #18	1,300 SF	54
1'X1' floor tile, white	2% - 3% Chrysotile asbestos	Classroom #18	1,300 SF	55
Floor tile glue, black/tan	None detected – Layer 1	Classroom 18	N/A	56
Floor tile glue, tan	None detected – Layer 2			
Floor tile glue, black/tan	None detected	Classroom 18	N/A	57
1'X1' floor tile, white	None detected	Hallway outside bathrooms next to gym	N/A	58
1'X1' floor tile, white	None detected	Hallway outside bathrooms next to gym	N/A	59
Floor tile glue, black	2% Chrysotile asbestos	Hallway outside bathrooms next to gym	N/A	60
Floor tile glue, black	2% Chrysotile asbestos	Hallway outside bathrooms next to gym	N/A	61
Cove base, black	None detected	Hallway outside bathrooms next to gym	N/A	62
Cove base glue, tan	None detected	Hallway outside bathrooms next to gym	N/A	63
1'X1' floor tile, white	None detected	Hallway outside resource room/library	N/A	64
1'X1' floor tile, white	None detected	Hallway outside resource room/library	N/A	65
Floor tile glue, black	None detected	Hallway outside resource room/library	N/A	66
Floor tile glue, black	None detected	Hallway outside resource room/library	N/A	67

**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
2'X4' ceiling tile, beige	None detected	Hallway outside resource room/library	N/A	68
Sink undercoating, purple	2% Chrysotile asbestos	Resource room/library	2 SF	69
Sink undercoating, purple	2% Chrysotile asbestos	Resource room/library	2 SF	70
Sink undercoating, purple	2% Chrysotile asbestos	Resource room/library	2 SF	71
Wallboard, white/brown	None detected	Resource room/library	N/A	72
Wallboard, white/brown	None detected	Resource room/library	N/A	73
Joint compound, white	None detected	Resource room/library	N/A	74
Joint compound, white	None detected	Resource room/library	N/A	75
Composite, white	None detected	Resource room/library	N/A	76
Composite, white	None detected	Resource room/library	N/A	77
Wall paper glue, white	None detected	Resource room/library	N/A	78
Wall paper glue, white	None detected	Resource room/library	N/A	79
Cover base, brown	None detected	Resource room/library	N/A	80
Cover base, brown	None detected	Resource room/library	N/A	81
Glue, brown	None detected	Resource room/library	N/A	82
Glue, brown	None detected	Resource room/library	N/A	83
1'X1' floor tile, white	None detected	Resource room/library	N/A	84
1'X1' floor tile, white	None detected	Resource room/library	N/A	85
Mastic, black	None detected	Resource room/library	N/A	86
Mastic, black	None detected	Resource room/library	N/A	87
2'x4' ceiling tiles (Type-2), gray	None detected	Resource room/library	N/A	88
2'x4' ceiling tiles (Type-2), gray	None detected	Boy's/girl's bathroom next to gymnasium	N/A	88A
12"x24" ceiling tiles (Type-3), gray	None detected	S3 storage room	N/A	89
12"x24" ceiling tiles (Type-3), gray	None detected	S3 storage room	N/A	90

**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
Cover base, brown	None detected	S3 storage room	N/A	91
Cover base, brown	None detected	S3 storage room	N/A	92
Glue, brown	None detected	S3 storage room	N/A	93
Glue, brown	None detected	S3 storage room	N/A	94
9"X9" floor tile, red and associated adhesive	8% Chrysotile asbestos	S3 storage room	150 SF	95
9"X9" floor tile, red and associated adhesive	8% Chrysotile asbestos	S3 storage room	150 SF	96
Floor tile glue, black	2% Chrysotile asbestos	S3 storage room	150 SF	97
Floor tile glue, black	2% Chrysotile asbestos	S3 storage room	150 SF	98
Ceramic tiles, green	None detected	Men's bathroom opposite S3 storage	N/A	99
Ceramic tiles, green	None detected	Men's bathroom opposite S3 storage	N/A	100
Glue, gray (appears to be mortar)	None detected	Men's bathroom opposite S3 storage	N/A	101
Glue, gray (appears to be mortar)	None detected	Men's bathroom opposite S3 storage	N/A	102
1'X1' floor tile, sky blue	None detected	Hallway by main office	N/A	103
1'X1' floor tile, sky blue	None detected	Hallway by main office	N/A	104
Glue, tan	None detected	Hallway outside classroom 11	N/A	105
Glue, tan  Leveler, gray	None detected – Layer 1  None detected – Layer 2	Hallway outside classroom 11	N/A	106
Sink undercoating, black	2% Chrysotile asbestos	Classroom sinks	2 SF/sink	107
Sink undercoating, black	2% Chrysotile asbestos	Classroom sinks	2 SF/sink	108
1'X1' floor tiles, blue	None detected	Classroom #10	N/A	109
1'X1' floor tiles, blue	None detected	Classroom #10	N/A	110



**Table 3-1: Results of Sampling for Asbestos**

Holland Hill Elementary School  
105 Meadowcroft Road  
Fairfield, Connecticut

<b>Material Description</b>	<b>Analytical Result</b>	<b>Sample Location(s)</b>	<b>Approximate Quantity</b>	<b>Field ID</b>
Glue, tan  Leveler, gray	None detected – Layer 1  None detected – Layer 2	Classroom #10	N/A	111
Glue, tan  Leveler, gray	None detected – Layer 1  None detected – Layer 2	Classroom #10	N/A	112
Cove base, blue	None detected	Classroom #10	N/A	113
Cove base, blue	None detected	Classroom #10	N/A	114
Glue, tan	None detected	Classroom #10	N/A	115
Glue, tan	None detected	Classroom #10	N/A	116
Ceramic floor tiles glue, gray	None detected	Classroom #4	N/A	117
Ceramic floor tiles glue, gray	None detected	Classroom #4	N/A	118
Fiber glass pipe cement, white/yellow	None detected	Boiler #2 - basement	N/A	119
Fiber glass pipe cement, white/yellow	None detected	Boiler #2 - basement	N/A	120
Fiber glass pipe cement, white/yellow	None detected	Boiler #2 - basement	N/A	121
Interior window glazing compound, beige	2% - 3% Chrysotile asbestos	Older perimeter windows	Included above under exterior glazing compound	122

**Table 3-2: Identified Asbestos Containing Building Materials**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
<b>Window Sealants – Single Paned Windows and Double Doors on South Side of Building</b>				
Exterior window caulking at frame metal/metal, white	3% - 8% Chrysotile asbestos	Older perimeter windows	200 LF	WC-10
Window frame caulk exterior metal/brick, beige	4% - 8% Chrysotile asbestos	Older perimeter windows	300 LF	WC-11
Window frame caulk exterior metal/brick, beige	4% - 8% Chrysotile asbestos	Older perimeter windows	300 LF	WC-38
Exterior window caulking at frame metal/metal, white	3% - 8% Chrysotile asbestos	Older perimeter windows	200 LF	WC-39
Door glazing, gray	2% Chrysotile asbestos	Main door next to conference room	80 LF	8
Exterior window glazing compound metal/glass, gray	No asbestos detected - 2% Chrysotile asbestos	Older perimeter windows	2,000 LF	WC-9
Interior window glazing compound, beige	2% - 3% Chrysotile asbestos	Older perimeter windows	Included above under exterior glazing compound	WC-12
Interior window glazing compound, beige	2% - 3% Chrysotile asbestos	Older perimeter windows	Included above under exterior glazing compound	WC-19
Interior window glazing compound, beige	2% - 3% Chrysotile asbestos	Older perimeter windows	Included above under exterior glazing compound	13
Interior window glazing compound, beige	2% - 3% Chrysotile asbestos	Older perimeter windows	Included above under exterior glazing compound	122
<b>Vapor Barrier Within Envelope Walls</b>				
Mastic on asphalt paper behind brick veneer, black	15% Chrysotile asbestos	Perimeter Wall Bathroom near gym	800 SF	WC-2
Asphalt paper behind brick veneer, black	40% - 45% Chrysotile asbestos	Perimeter Wall Bathroom near gym	Included Above	WC-3

**Table 3-2: Identified Asbestos Containing Building Materials**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

<b>Material Description</b>	<b>Analytical Result</b>	<b>Sample Location(s)</b>	<b>Approximate Quantity</b>	<b>Field ID</b>
Mastic on asphalt paper behind brick veneer, black	15% Chrysotile asbestos	Perimeter Wall Bathroom near gym	Included Above	WC-6
Asphalt paper behind brick veneer, black	40% - 45% Chrysotile asbestos	Perimeter Wall Bathroom near gym	Included Above	WC-7
Vapor barrier within cavity wall, black	40% Chrysotile asbestos	Boy's bathroom near boiler room	Unknown – assumed present within all perimeter walls	WC-16
Asphaltic paper vapor barrier, black	35% Chrysotile asbestos	Within perimeter cavity wall of gym	5,700 SF	WC-43
Asphaltic paper vapor barrier, black	35% Chrysotile asbestos	Within perimeter cavity wall of gym	Included Above	WC-44
<b>Vapor Barrier Beneath Wood Flooring – All-Purpose Room</b>				
Vapor barrier under wood & cork floor, black	2% - 3% Chrysotile asbestos	Multipurpose room	3,000 SF	WC-1
Vapor barrier under wood & cork floor, black	2% - 3% Chrysotile asbestos	Multipurpose room	Included above	WC-4
Vapor barrier under wood & cork floor, black	2% - 3% Chrysotile asbestos	Multipurpose room	Included above	WC-5
<b>Pipe Insulation</b>				
Pipe insulation, white	25% Amosite asbestos 2% Crocidolite asbestos	Under stage	20 LF	WC-8
Pipe insulation, gray	40% Chrysotile asbestos	Bathroom chases	10 LF/chase	WC-13
Pipe insulation, white	30% Chrysotile asbestos	AHU above stage	25 LF	WC-28
<b>Stick Pin Adhesive and Vibration Isolation Connectors on Air Ducts</b>				
Stick pin adhesive, brown	3% Chrysotile asbestos	Above stage	600 SF	WC-20
Stick pin adhesive, brown	3% Chrysotile asbestos	Above stage	Included Above	WC-21

**Table 3-2: Identified Asbestos Containing Building Materials**

Holland Hill Elementary School  
 105 Meadowcroft Road  
 Fairfield, Connecticut

Material Description	Analytical Result	Sample Location(s)	Approximate Quantity	Field ID
Stick pin adhesive, brown	3% Chrysotile asbestos	Above stage	Included Above	WC-22
Vibration dampener cloth, white	40% Chrysotile asbestos	AHU above stage	50 LF	WC-27
<b>Coatings Beneath Sinks</b>				
Sink undercoating, black	2% Chrysotile asbestos	Classroom sinks	2 SF/sink	50
Sink undercoating, black	2% Chrysotile asbestos	Classroom sinks	2 SF/sink	51
Sink undercoating, black	2% Chrysotile asbestos	Classroom sinks	2 SF/sink	107
Sink undercoating, black	2% Chrysotile asbestos	Classroom sinks	2 SF/sink	108
Sink undercoating, purple	2% Chrysotile asbestos	Resource room/library	2 SF	69
Sink undercoating, purple	2% Chrysotile asbestos	Resource room/library	Included Above	70
Sink undercoating, purple	2% Chrysotile asbestos	Resource room/library	Included Above	71
<b>Floor Tiles and/or Associated Adhesives</b>				
1'X1' floor tile, white	2% Chrysotile asbestos	Gymnasium storage room/office	300 SF	29
1'X1' floor tile, white	2% Chrysotile asbestos	Gymnasium storage room/office	300 SF	30
1'X1' floor tile, white	2% - 3% Chrysotile asbestos	Classroom #18	1,300 SF	54
1'X1' floor tile, white	2% - 3% Chrysotile asbestos	Classroom #18	1,300 SF	55
Floor tile glue, black	2% Chrysotile asbestos	Hallway outside bathrooms next to gym	N/A	60
Floor tile glue, black	2% Chrysotile asbestos	Hallway outside bathrooms next to gym	N/A	61
9"X9" floor tile, red and associated adhesive	8% Chrysotile asbestos	S3 storage room	150 SF	95

**Table 3-2: Identified Asbestos Containing Building Materials**

Holland Hill Elementary School  
105 Meadowcroft Road  
Fairfield, Connecticut

<b>Material Description</b>	<b>Analytical Result</b>	<b>Sample Location(s)</b>	<b>Approximate Quantity</b>	<b>Field ID</b>
9"X9" floor tile, red and associated adhesive	8% Chrysotile asbestos	S3 storage room	150 SF	96
Floor tile glue, black	2% Chrysotile asbestos	S3 storage room	150 SF	97
Floor tile glue, black	2% Chrysotile asbestos	S3 storage room	150 SF	98

Table 5-1  
Summary of Suspect PCB-Containing Caulking Sealants - Planned Renovation Areas  
Holland Hill Elementary School

Material	Joint Type	Type	Sample Description	Adjacent Materials	Approximate Quantity/Location	Sample ID	Sample Date	Location	ACM (Y/N)
Windows									
Exterior Frame Caulking	Frame to brick	A	Gray soft caulk	exterior frame to brick	Observed on office/admin and kitchen single paned windows; visually similar material observed on replacement double paned windows	HH-CCS-118	2/17/2017	office admin window	Not tested; co-located with ACM caulking
						HH-CCS-119	2/17/2017	office admin window	
						HH-CCS-120	2/17/2017	kitchen window	
		B	Light gray/white brittle caulk	exterior frame to brick	Observed on single paned windows; co-located with Type A at select locations.	HH-CCS-121	2/17/2017	west end bathroom window	Yes
						WC-11	2/20/2017	office admin window	
						WC-38	2/20/2017	clerestory above stage	
	Frame to Frame	C	White, hard, brittle	exterior metal to metal	Observed on single paned windows	WC-10	2/20/2017	office admin window	Yes
						WC-39	2/20/2017	kitchen window	
Glazing Sealants	Frame to Glass Joint	D	Silver/gray, soft	exterior glass to metal joints	West end bathroom window	HH-CCS-122	2/17/2017	west end bathroom window - ext.	Yes
		E	Gray/White brittle	exterior glass to metal joints	Observed on single paned windows	WC-40	2/20/2017	kitchen window	Yes
						WC-9	2/20/2017	office admin window - exterior side	
				interior glass to metal joints	Observed on single paned windows	HH-CCS-115	2/17/2017	office admin window - interior side	Yes
						HH-CCS-116	2/17/2017	kitchen window	
						HH-CCS-117	2/17/2017	boiler room window	
						WC-19	2/20/2017	clerestory above stage - interior side	
		Doors							
Exterior Frame Caulking	Frame to Brick Joint	G	Brown caulk	Metal frame : Brick	Both double doors on backside of building; visually similar caulking observed on some kindergarten exterior doors (not in scope)	HH-CCS-123	2/17/2017	Exterior door across from Media Center	No
		H	Gray over brown	Metal frame : Brick	Gray only on gym side door; brown at both double doors; visually similar caulking observed on north side gym hallway exit door (not in scope)	HH-CCS-124	2/17/2017	Exterior door at gym	No
Exterior Glazing	Frame to Glass Joint	I	Dark gray soft sticky glazing	Glass: metal frame	Both double doors on backside of building; similar caulking observed on double door at north side near gym (not in scope)	HH-CCS-109	2/17/2017	Exterior door across from Media Center	Yes
						HH-CCS-110	2/17/2017	Exterior door at gym	
Interior Frame Caulking	Frame to CMU Joint	J	White, hard, caulking	Metal door frame : White painted CMU	Interior partition doors; visually similar caulking observed on interior side of southern gym door (not in scope)	HH-CCS-113	2/17/2017	Door between kitchen and APR	No
						HH-CCS-114	2/17/2017	Gym storage/office door	

Table 5-1  
Summary of Suspect PCB-Containing Caulking Sealants - Planned Renovation Areas  
Holland Hill Elementary School

Material	Joint Type	Type	Sample Description	Adjacent Materials	Approximate Quantity/Location	Sample ID	Sample Date	Location	ACM (Y/N)
Miscellaneous Joints									
Joint Caulking	Brick to Brick Expansion Joint	K and L	Gray over red caulk	Brick to Brick Expansion Joint	8 joints on gym - 20 l.f. each Also observed on 3 joints on library - 16 l.f. each	HH-CCS-125	2/17/2017	South gym elevation; West side joint	No
						HH-CCS-126	2/17/2017	South gym elevation; East side joint	
Interior Joint Caulking	Interior Joints	M	White caulk	Restroom sink backsplash	10 l.f.	HH-CCS-104	2/17/2017	Library/media center restroom	Not Tested
			Hard white caulk	Sink Backsplash	10 l.f. Also observed in Classroom 17	HH-CCS-105	2/17/2017	Faculty Area	
Plaster to Brick	Exterior Overhead Joints	N	Gray, soft, flexible	Plaster to brick joints above exterior door at gym are restrooms	Plaster ceiling to brick joints	WC-48	2/20/2017	Outside gym door	No
						WC-49	2/20/2017	Outside gym door	
Other Suspect Materials									
Waterproofing Vapor Barriers	Inside Perimeter Walls	N/A	Black, asphaltic vapor barrier	On void space side of CMU block walls	Observed at intrusive sampling locations associated with the gymnasium walls, gym restroom walls, and 1956 era restroom walls	WC-2, WC-3, WC-7, WC-7, WC-43, WC-44	2/20/2017	South gym wall, gym area restroom walls, restroom walls on east wing of original building	Yes
Roofing Sealants	Roof penetration points	N/A	Silver and black flashing compound	Roof perimeter joints and penetration points	T.B.D.	WC-16, WC-32, WC-33, WC-34	2/220/17	Perimeter flashing joints and penetration points on gym restroom roof.	No

Notes:  
Material type based on physical appearance and characteristics observed during the survey.  
Quantities are approximate based on field observations and measurements taken during the hazardous building materials survey.  
Samples of suspect materials are stored in the Woodard & Curran PCB sample freezer pending project team discussion.

## FIGURES



FIGURE 3-1: SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS SAMPLE LOCATIONS

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NO.	DATE	REVISION
1	06/05/2016	ISSUED FOR REVIEW

PROJECT NAME  
PROPOSED ADDITIONS & ALTERATIONS TO HOLLAND HILL SCHOOL  
SCHEMATIC DESIGN

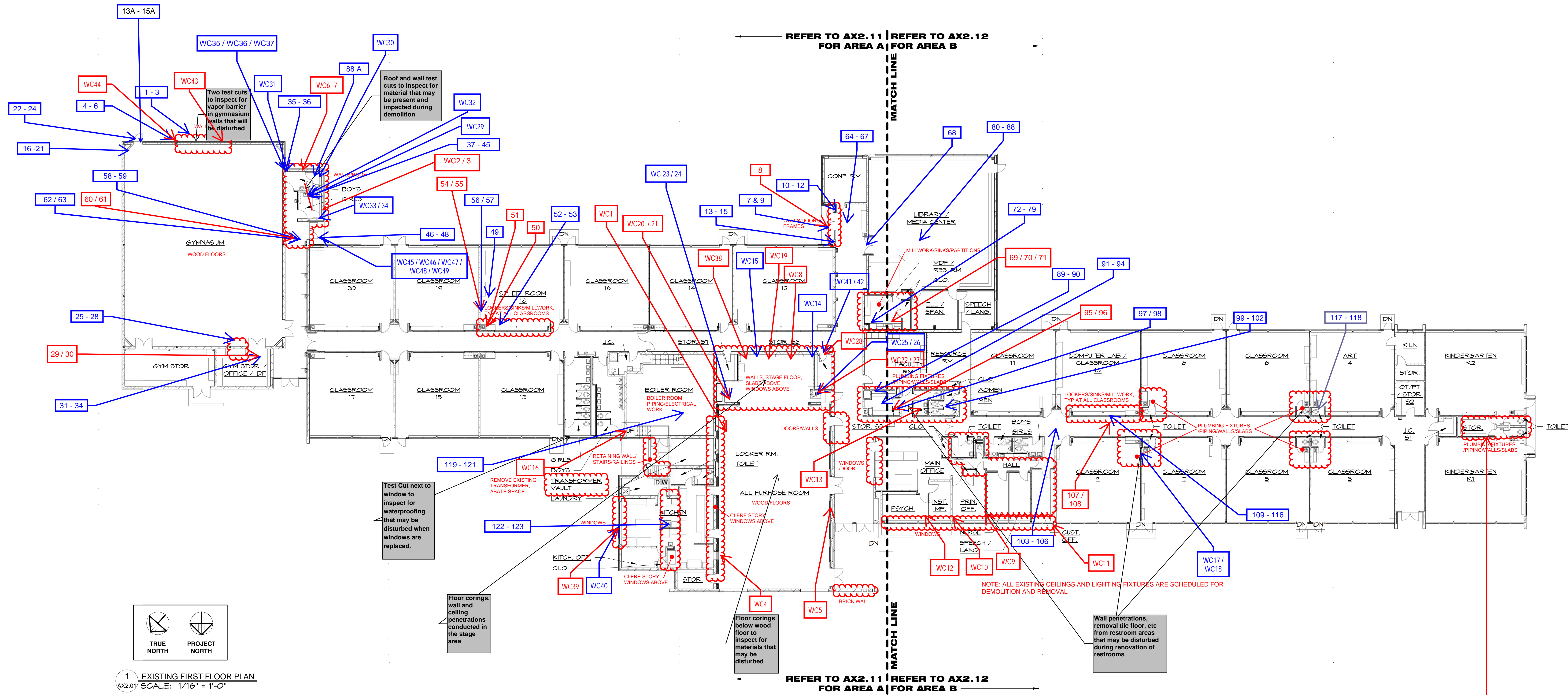
BUILDING NAME & ADDRESS  
HOLLAND HILL SCHOOL  
105 HEDDINGBURY ROAD  
FAIRFIELD, CT 06424

PROJECT NUMBER  
2016.007

DRAWING TITLE  
EXISTING FIRST FLOOR PLAN

SCALE As Indicated	DRAWN BY BMS
FILENAME SD MODEL	DATE OCT. 12, 2016
DRAWING NUMBER AX2.01	

AX2.01



- 9" X 9" FLOOR TILES PRESUMED ASBESTOS
- CLASS NO: 5, FLOOR TILES SIMILAR TO S3 STORAGE
- CLASS NO: 4, BATHROOM CEILING NOT ACCESSIBLE (NOT CHECKED)
- ROOM NO: 8, 6, 4, 9, 7, 3, K1, K2 HAVE HOMOGENEOUS MATERIALS

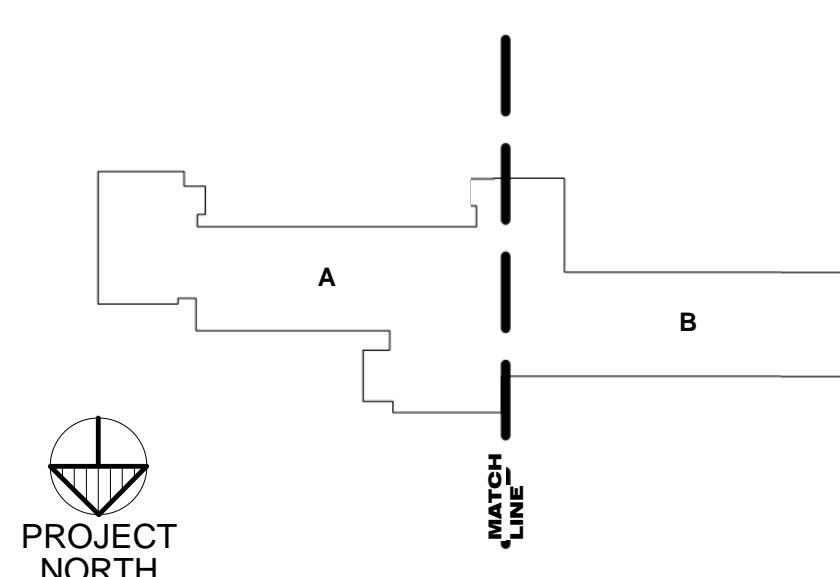
HOMOGENEOUS MATERIAL AS S3 STORAGE

Principle areas of demolition

Asbestos detected in sample

No asbestos detected in sample

KEY PLAN



SCHEMATIC DESIGN SUBMISSION - NOT FOR CONSTRUCTION



FIGURE 5-1: SUSPECT PCB CONTAINING BUILDING MATERIALS SAMPLE LOCATIONS

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NO. DATE REVISION

ISSUE/REVISION

PROJECT NAME  
PROPOSED ADDITIONS &  
ALTERATIONS TO HOLLAND HILL  
SCHOOL

SCHEMATIC DESIGN

BUILDING NAME & ADDRESS  
HOLLAND HILL SCHOOL  
105 HEDDINGHOP ROAD  
FAIRFIELD, CT 06424

PROJECT NUMBER  
2016.007

DATE  
PENDING

DRAWING TITLE  
EXISTING FIRST FLOOR PLAN

SCALE  
As Indicated

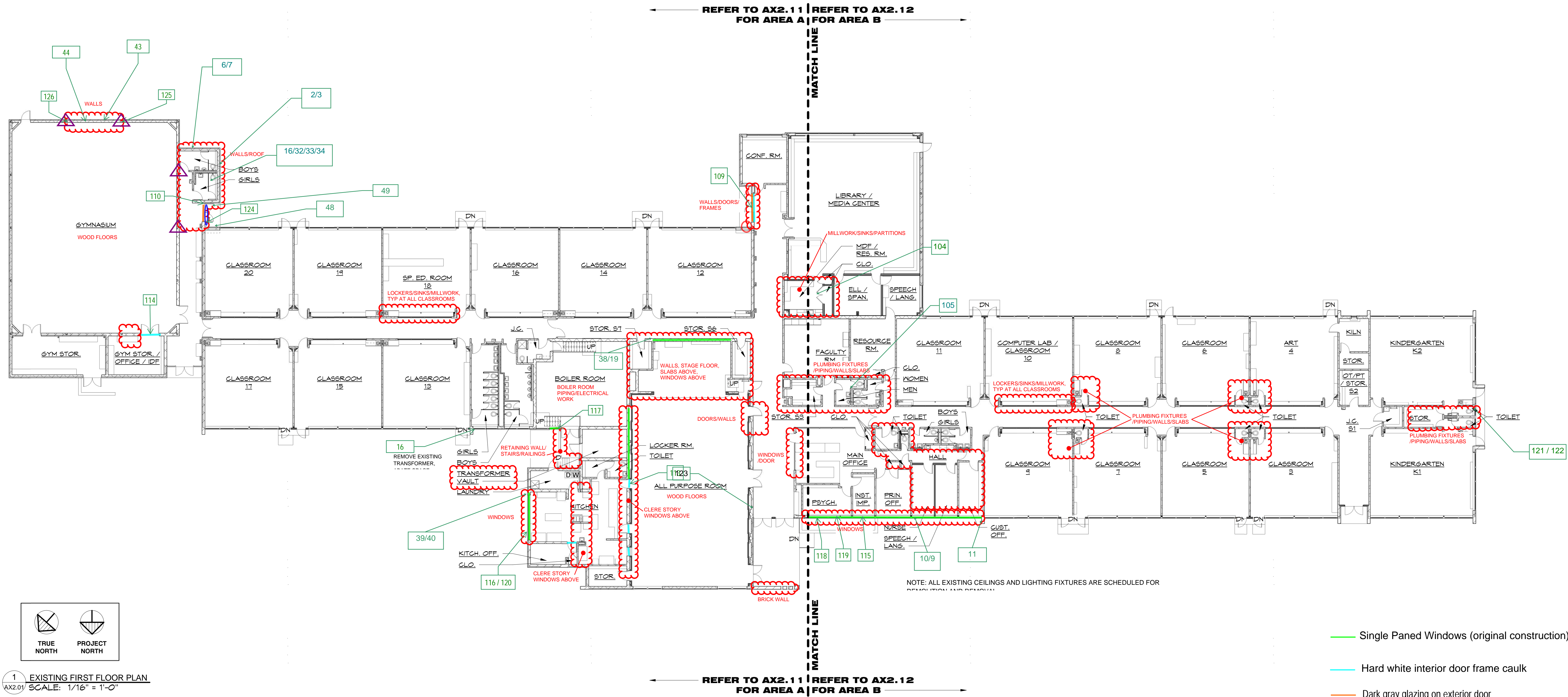
DRAWN BY  
BMS

FILENAME  
SD MODEL

DATE  
OCT. 12, 2016

DRAWING NUMBER

AX2.01

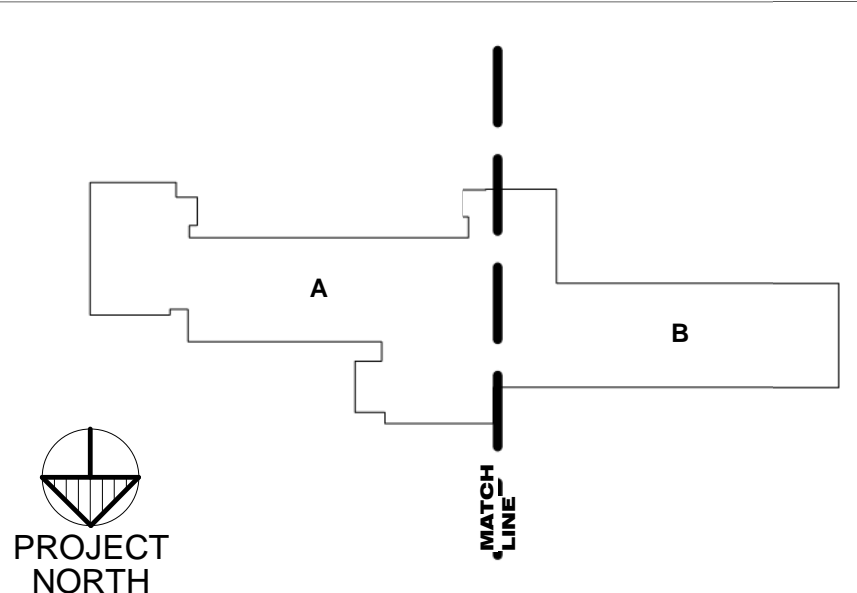


1 EXISTING FIRST FLOOR PLAN  
AX2.01 SCALE: 1/16" = 1'-0"

NOTE: EXISTING CONDITIONS DRAWING PROVIDED FOR REFERENCE ONLY - CONTRACTOR TO VERIFY ALL PERTINENT EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK OR ORDERING ANY MATERIALS.

- Single Paned Windows (original construction)
- Hard white interior door frame caulk
- Dark gray glazing on exterior door
- Brown exterior door frame caulk
- Light gray over dark gray exterior door frame caulk
- Gray over red expansion joint caulk
- Principle areas of demolition

KEY PLAN



SCHEMATIC DESIGN SUBMISSION - NOT FOR CONSTRUCTION

**APPENDIX A: EXISTING PLAN WITH PRINCIPAL AREAS OF  
DEMOLITION (FEBRUARY 6, 2017)**



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NO.	DATE	REVISION
ISSUED/REVISION		

PROJECT NAME  
PROPOSED ADDITIONS & ALTERATIONS TO HOLLAND HILL SCHOOL  
SCHEMATIC DESIGN

BUILDING NAME & ADDRESS  
HOLLAND HILL SCHOOL  
105 HEDDINGHOP ROAD  
FAIRFIELD, CT 06424

PROJECT NUMBER  
2016.007

SHEET NUMBER  
PENDING

DRAWING TITLE  
EXISTING FIRST FLOOR PLAN

SCALE As Indicated	DRAWN BY BMS
FILENAME SD MODEL	DATE OCT. 12, 2016
DRAWING NUMBER	

AX2.01

EXISTING PLAN WITH PRINCIPAL AREAS OF DEMOLITION

NOTE: EXISTING CONDITIONS DRAWING PROVIDED FOR REFERENCE ONLY - CONTRACTOR TO VERIFY ALL PERTINENT EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK OR ORDERING ANY MATERIALS.

SCHEMATIC DESIGN SUBMISSION - NOT FOR CONSTRUCTION

**APPENDIX B: OPTIMUM ANALYTICAL AND CONSULTING, LLC  
REPORTS BY POLARIZED LIGHT MICROSCOPY**



Jeff Hamel  
Woodard & Curran  
40 Shattuck Road Suite 110  
Andover MA 01810

Project Reference: 230299  
Laboratory Batch #: 1719723  
Date Samples Received: 02/21/2017  
Date Samples Analyzed: 02/21/2017  
Date of Final Report: 02/23/2017

**SAMPLE IDENTIFICATION:**

Forty Nine (49) samples from Holland Hill Elementary; Fairfield, CT project were submitted by Pelletier on 02/21/2017

This bulk sample(s) was delivered to Optimum Analytical Consulting, LLC (Optimum) located in Salem, New Hampshire for asbestos content determination.

**ANALYTICAL METHOD:**

Analytical procedures were performed in accordance with the U.S. Environmental Protection Agency (EPA) Recommended Method for the Determination of Asbestos in Bulk Samples by Polarized Light Microscopy and Dispersion Staining (PLM/DS)(EPA-600/M4-82-020, EPA-600/ R-93-116). This report relates only to those samples analyzed, and may not be indicative of other similar appearing materials existing at this, or other sites. Quantification of asbestos content was determined by Calibrated Visual Estimation. Optimum is not responsible for sample collection activities or analytical method limitations. The laboratory is not responsible for the accuracy of results when requested to physically separate and analyze layered samples.

In any given material, fibers with a small diameter ( $<0.25\mu\text{m}$ ) may not be detected by the PLM method. Floor tile and other resinously bound material may yield a false negative if the asbestos fibers are too small to be resolved using PLM. Additional analytical methods may be required. Optimum recommends using Transmission Electron Microscopy (TEM) for a more definitive analysis.

Optimum will retain all samples for a minimum of three months. Further analysis or return of samples must be requested within this three month period to guarantee their availability. This report may not be reproduced except in full, without the written approval of Optimum Analytical and Consulting, LLC.

Use of the NVLAP and AIHA Logo in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology or the American Industrial Hygiene Association.

Detection Limit  $<1\%$ , Reporting Limits: CVES =  $1\%$ , 400 Point Count =  $.25\%$ , 1000 Point Count =  $0.1\%$ ; Present or Absent are observations made during a qualitative analysis.

This report is considered preliminary until signed by both the Laboratory Analyst and Laboratory Director or Supervisor. If you have any questions regarding this report, please do not hesitate to contact us.

Jamie L. Noel  
Laboratory Director

Kristina Scaviola  
Laboratory Supervisor



# OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**CLIENT:** Woodard & Curran  
**ADDRESS:** 40 Shattuck Road Suite 110  
**CITY / STATE / ZIP:** Andover MA 01810  
**CONTACT:** Jeff Hamel  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Holland Hill Elementary; Fairfield, CT

**ORDER #:** 1719723  
**PROJECT #:** 230299  
**DATE COLLECTED:** 02/21/2017  
**COLLECTED BY:** Pelletier  
**DATE RECEIVED:** 02/21/2017  
**ANALYSIS DATE:** 02/21/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jason Chomor

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719723-001 WC-1	Multipurpose Room Vapor Barrier Under Wood & Cork Floor, Black	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Non-Fibrous Material	80% 18%
<b>Total % Asbestos:</b>				2.0%	<b>Total % Non-Asbestos:</b> 98.0%	
1719723-002 WC-2	Perimeter Wall Bathroom Mastic on Asphalt Paper Behind Brick Veneer, Black	LAYER 1 100%	Chrysotile	15%	Cellulose Fiber Non-Fibrous Material	5% 80%
<b>Total % Asbestos:</b>				15.0%	<b>Total % Non-Asbestos:</b> 85.0%	
1719723-003 WC-3	Perimeter Wall of Bathroom Asphaltic Paper behind Bulk Veneer, Black	LAYER 1 100%	Chrysotile	45%	Cellulose Fiber Non-Fibrous Material	20% 35%
<b>Total % Asbestos:</b>				45.0%	<b>Total % Non-Asbestos:</b> 55.0%	
1719723-004 WC-4	Multipurpose Room Vapor Barrier Under Wood & Cork Flooring, Black	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Non-Fibrous Material	10% 88%
<b>Total % Asbestos:</b>				2.0%	<b>Total % Non-Asbestos:</b> 98.0%	
1719723-005 WC-5	Multipurpose Room Vapor Barrier Under Wood & Cork Flooring, Black	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Binder/Filler	3% 94%
<b>Total % Asbestos:</b>				3.0%	<b>Total % Non-Asbestos:</b> 97.0%	
1719723-006 WC-6	At Bathroom Structure Mastic on Asphaltic Paper Behind Brick Veneer, Mastic Cannot be Separated from Paper	LAYER 1 100%				
1719723-007 WC-7	At Bathroom Structure Asphaltic Paper behind Brick Exterior Veneer, Black	LAYER 1 100%	Chrysotile	40%	Cellulose Fiber Non-Fibrous Material	30% 30%
<b>Total % Asbestos:</b>				40.0%	<b>Total % Non-Asbestos:</b> 60.0%	
1719723-008 WC-8	Under Stage Pipe Insulation, White	LAYER 1 100%	Amosite Crocidolite	25% 2%	Cellulose Fiber Fibrous Glass Non-Fibrous Material	30% 15% 28%
<b>Total % Asbestos:</b>				27.0%	<b>Total % Non-Asbestos:</b> 73.0%	



# OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**CLIENT:** Woodard & Curran  
**ADDRESS:** 40 Shattuck Road Suite 110  
**CITY / STATE / ZIP:** Andover MA 01810  
**CONTACT:** Jeff Hamel  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Holland Hill Elementary; Fairfield, CT

**ORDER #:** 1719723  
**PROJECT #:** 230299  
**DATE COLLECTED:** 02/21/2017  
**COLLECTED BY:** Pelletier  
**DATE RECEIVED:** 02/21/2017  
**ANALYSIS DATE:** 02/21/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jason Chomor

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719723-009 WC-9	Principal Office Area Exterior Window Glazing Metal/Glass, Gray	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Non-Fibrous Material	1% 97%
<b>Total % Asbestos:</b>				2.0%	<b>Total % Non-Asbestos:</b> 98.0%	
1719723-010 WC-10	Principal Office Area Exterior Window Caulking @ Frame Metal/Metal, White	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Non-Fibrous Material	1% 96%
<b>Total % Asbestos:</b>				3.0%	<b>Total % Non-Asbestos:</b> 97.0%	
1719723-011 WC-11	Principal Office Area Window Frame Caulk Exterior Metal/Brick, Beige	LAYER 1 100%	Chrysotile	4%	Cellulose Fiber Non-Fibrous Material	1% 95%
<b>Total % Asbestos:</b>				4.0%	<b>Total % Non-Asbestos:</b> 96.0%	
1719723-012 WC-12	Principal Office Interior Window Glazing, Beige	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Non-Fibrous Material	1% 96%
<b>Total % Asbestos:</b>				3.0%	<b>Total % Non-Asbestos:</b> 97.0%	
1719723-013 WC-13	Bathroom Chase Pipe Insulation, Gray	LAYER 1 100%	Chrysotile	40%	Cellulose Fiber Non-Fibrous Material	40% 20%
<b>Total % Asbestos:</b>				40.0%	<b>Total % Non-Asbestos:</b> 60.0%	
1719723-014 WC-14	Stage Floor Asphalt Paper Under Hardwood, Black	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	80% 20%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-015 WC-15	Stage Floor Asphalt Paper Under Hardwood, Black	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	80% 20%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-016 WC-16	Boy's Bathroom near Boiler Room Vapor Barrier Within Cavity Wall, Black	LAYER 1 100%	Chrysotile	40%	Cellulose Fiber Non-Fibrous Material	35% 25%
<b>Total % Asbestos:</b>				40.0%	<b>Total % Non-Asbestos:</b> 60.0%	





# OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**CLIENT:** Woodard & Curran  
**ADDRESS:** 40 Shattuck Road Suite 110  
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**DATE RECEIVED:** 02/21/2017  
**ANALYSIS DATE:** 02/21/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jason Chomor

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719723-017 WC-17	Bathroom in Classroom Mortar Bed for Ceramic Tile Floor, Beige	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-018 WC-18	Bathroom in Classroom Ceramic Tile Grout Floor, Gray	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-019 WC-19	Clerestory above Stage Interior Window Glazing Metal/Glass, Beige	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Non-Fibrous Material	2% 96%
<b>Total % Asbestos:</b>				2.0%	<b>Total % Non-Asbestos:</b> 98.0%	
1719723-020 WC-20	Above Stage Stick Pin Adhesive, Brown	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Non-Fibrous Material	2% 95%
<b>Total % Asbestos:</b>				3.0%	<b>Total % Non-Asbestos:</b> 97.0%	
1719723-021 WC-21	Above Stage Stick Pin Adhesive, Brown	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Non-Fibrous Material	2% 95%
<b>Total % Asbestos:</b>				3.0%	<b>Total % Non-Asbestos:</b> 97.0%	
1719723-022 WC-22	Above Stage Stick Pin Adhesive, Brown	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Non-Fibrous Material	2% 95%
<b>Total % Asbestos:</b>				3.0%	<b>Total % Non-Asbestos:</b> 97.0%	
1719723-023 WC-23	Short Stage Walls Joint Compound, White	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-024 WC-24	Short Stage Walls Gypsum Board, Gray	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	10% 1% 89%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	



# OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**CLIENT:** Woodard & Curran  
**ADDRESS:** 40 Shattuck Road Suite 110  
**CITY / STATE / ZIP:** Andover MA 01810  
**CONTACT:** Jeff Hamel  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Holland Hill Elementary; Fairfield, CT

**ORDER #:** 1719723  
**PROJECT #:** 230299  
**DATE COLLECTED:** 02/21/2017  
**COLLECTED BY:** Pelletier  
**DATE RECEIVED:** 02/21/2017  
**ANALYSIS DATE:** 02/21/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jason Chomor

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719723-025 WC-25	Short Stage Walls Joint Compound, White	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-026 WC-26	Short Stage Walls Gypsum Board, Gray	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	10% 1% 89%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-027 WC-27	AHU Above Stage Vibration Dampener Cloth, White	LAYER 1 100%	Chrysotile	40%	Cellulose Fiber Non-Fibrous Material	50% 10%
<b>Total % Asbestos:</b>				40.0%	<b>Total % Non-Asbestos:</b> 60.0%	
1719723-028 WC-28	AHU Above Stage Pipe Insulation, White	LAYER 1 100%	Chrysotile Amosite	30% 5%	Cellulose Fiber Fibrous Glass Non-Fibrous Material	15% 15% 35%
<b>Total % Asbestos:</b>				35.0%	<b>Total % Non-Asbestos:</b> 65.0%	
1719723-029 WC-29	Above Bathrooms Southwest of Gym Built Up Roof, Black	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	10% 10% 80%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-030 WC-30	Above Bathrooms Southwest of Gym Built Up Roof, Black	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	10% 25% 65%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-031 WC-31	Above Bathrooms Southwest of Gym Built Up Roof, Black	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	10% 25% 65%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	



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PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

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**REPORT DATE:** 02/23/2017  
**ANALYST:** Jason Chomor

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719723-032 WC-32	Roof of Bathrooms Southwest of Gym Roof Flashing Compound, Silver/Black	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	10% 90%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-033 WC-33	Roof of Bathrooms Southwest of Gym Roof Flashing Compound, Silver/Black	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	10% 90%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-034 WC-34	Roof of Bathrooms Southwest of Gym Roof Flashing, Black	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	30% 70%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-035 WC-35	Roof of Bathrooms Southwest of Gym Roofing Paper @ Roof Edge, Black	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	5% 50% 45%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-036 WC-36	Bathrooms Southwest of Gym Insulation Under Asphalt Roofing, Brown	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	85% 10% 5%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-037 WC-37	Bathrooms Southwest of Gym Insulation Under Asphalt Roofing, Brown	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	85% 10% 5%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719723-038 WC-38	Clerestory above Stage Exterior Window Frame Caulking Metal/Brick, White	LAYER 1 100%	Chrysotile	8%	Cellulose Fiber Non-Fibrous Material	2% 90%
<b>Total % Asbestos:</b>			8.0%		<b>Total % Non-Asbestos:</b> 92.0%	



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PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

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**LOCATION:** Holland Hill Elementary; Fairfield, CT

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**ANALYSIS DATE:** 02/21/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jason Chomor

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719723-039 WC-39	East Clerestory Kitchen Exterior Window Glazing Metal/Brick, White	LAYER 1 100%	Chrysotile	8%	Cellulose Fiber Non-Fibrous Material	2% 90%
<b>Total % Asbestos:</b>				8.0%	<b>Total % Non-Asbestos:</b>	92.0%
1719723-040 WC-40	East Clerestory Kitchen Exterior Window Glazing Glass/Metal, White	LAYER 1 100%	None Detected		Cellulose Fiber Wollastonite Binder/Filler	1% 2% 97%
<b>Total % Asbestos:</b>				No Asbestos Detected	<b>Total % Non-Asbestos:</b>	100.0%
1719723-041 WC-41	West of Stage Clerestory Exterior Air Intake loover caulk, Grey	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	2% 98%
<b>Total % Asbestos:</b>				No Asbestos Detected	<b>Total % Non-Asbestos:</b>	100.0%
1719723-042 WC-42	West of Stage Clerestory Exterior Flashing Compound @ Lower Right of Intake, Black	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	6% 94%
<b>Total % Asbestos:</b>				No Asbestos Detected	<b>Total % Non-Asbestos:</b>	100.0%
1719723-043 WC-43	Perimeter Wall of Gym Asphaltic Paper Vapor Barrier, Black	LAYER 1 100%	Chrysotile	35%	Cellulose Fiber Binder/Filler	35% 30%
<b>Total % Asbestos:</b>				35.0%	<b>Total % Non-Asbestos:</b>	65.0%
1719723-044 WC-44	Perimeter Wall of Gym Asphaltic Paper Vapor Barrier, Black	LAYER 1 100%	Chrysotile	35%	Cellulose Fiber Binder/Filler	35% 30%
<b>Total % Asbestos:</b>				35.0%	<b>Total % Non-Asbestos:</b>	65.0%
1719723-045 WC-45	Southwest Exit Door near Gym Textured Coating on Exterior Soffit, White	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>				No Asbestos Detected	<b>Total % Non-Asbestos:</b>	100.0%
1719723-046 WC-46	Southwest Exit Door near Gym Textured Coating on Ext. Soffit, White	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>				No Asbestos Detected	<b>Total % Non-Asbestos:</b>	100.0%



# OPTIMUM

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## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**CLIENT:** Woodard & Curran  
**ADDRESS:** 40 Shattuck Road Suite 110  
**CITY / STATE / ZIP:** Andover MA 01810  
**CONTACT:** Jeff Hamel  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Holland Hill Elementary; Fairfield, CT

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**DATE COLLECTED:** 02/21/2017  
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**ANALYSIS DATE:** 02/21/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jason Chomor

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719723-047 WC-47	Southwest Exit Door near Gym Textured Coating on Ext Soffit, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719723-048 WC-48	Southwest Exit Door near Gym Ext. Caulking Plaster/Brick, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719723-049 WC-49	Southwest Exit Door near Gym Ext. Caulking Plaster/Brick, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%

**Analyst  
Signatory:**

Jason Chomor

**NVLAP**  
Lab Code: 101433-0



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## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

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**REPORT DATE:** 02/23/2017  
**ANALYST:** Jason Chomor



### CHAIN OF CUSTODY

85 Stiles Road, Suite 201  
Salem, NH 03079  
603-458-5247

1719723

Analysis & TAT:	4-6 Hour	24 Hour	48 Hour	Standard (3-5)	Standard (6-10)	Comments
PLM						(please indicate other test-specific information here)
PCM						
Mold	N/A					
Lead	N/A					
Other: (TEM, PCB, etc.)	N/A					
Sampler:	Email:			Positive Stop Analysis	Yes	No
Project Manager:	Sample Location:			Phone Number:		
Project Information:	Company Name and Address:					
Sample Number	Description and Location					Time and Temperature at Collection:
WC-1	Black vapor barrier under wood deck					
WC-2	Floor in Multi-Purpose Room					
WC-3	Mastic on asphalt paper behind brick veneer					
WC-4	asphaltic paper behind brick veneer in basement wall of bathroom					
WC-5	Black vapor barrier under wood deck					
WC-6	Flooring in Multi-Purpose Room					
WC-7	Mastic on asphaltic paper behind brick veneer @ bathroom structure					
WC-8	asphaltic paper behind brick veneer @ bathroom structure					
WC-9	Pipe insulation under slope					
WC-10	exterior window glazing metal/glass					
	Principal office area					
	exterior window caulking to frame					
	metal/metal Principal office area					

Requested by: WJL Date: 2/1/17 Time: 0800  
Received by: Chomor Date: 2/21/17 Time: 8:00





# OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

**CLIENT:** Woodard & Curran  
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**CONTACT:** Jeff Hamel  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Holland Hill Elementary; Fairfield, CT

## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**ORDER #:** 1719723  
**PROJECT #:** 230299  
**DATE COLLECTED:** 02/21/2017  
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**DATE RECEIVED:** 02/21/2017  
**ANALYSIS DATE:** 02/21/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jason Chomor

85 Stiles Road, Suite 201  
Salem, NH 03079

OPTIMUM ANALYTICAL AND CONSULTING, LLC

WFC # 230299 1719723 603-458-5

Sample Number	Description and location	Time and Temperature at collect
WC-11	Window frame caulk exterior metal/back principal office area	
WC-12	Interior window glazing principal office	
WC-13	Pipe insulation in bathroom chase	
WC-14	asphalt paper under hardwood stage floor	
WC-15	asphalt paper under hardwood stage floor	
WC-16	upen barrier within toilet room @ boys bathroom near boiler room	
WC-17	mortar bed for ceramic tile floor @ bathroom in class room	
WC-18	ceramic tile grout floor of bathroom in class room	
WC-19	interior window glazing metal/glass classroom windows above stage	
WC-20	stick pin adhesive for duct insulation above stage	
WC-21	stick pin adhesive for duct insulation above stage	
WC-22	stick pin adhesive for duct insulation above stage	
WC-23	joint compound on gypsum wall over stage walls	
WC-24	gypsum board over stage walls	
WC-25	joint compound on gypsum wall over stage walls	
WC-26	gypsum board walls over stage walls	
WC-27	vibration dampener cloth for AHU above stage	
WC-28	pipe insulation for AHU above stage	
WC-29	built-up asphalt roofing above bathroom SW of gym	
WC-30	built-up asphalt roofing above bathroom SW of gym	
WC-31	built-up asphalt roofing above bathroom SW of gym	

The EPA Requires that layered samples be separated. Please indicate if a sample is to be analyzed as a composite. NY State requires positive friable sampl to be point counted. Negative NOB samples require additional TEM analysis to be confirmed Negative.

11/1/17 4/21/17 0200

mbm 2/21/17 8:00



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85 Stiles Road, Suite 201  
Salem, NH 03079  
603-458-5247

### CHAIN OF CUSTODY

1719723

Analysis & TAT:	4-6 Hour	24 Hour	48 Hour	Standard (3-5)	Standard (6-10)	Comments (please indicate other test-specific information here)
PLM						
PCM						
Mold	N/A					
Lead	N/A					
Other: (TEM, PCB, etc.)	N/A					
Sampler:	Email:				Positive Stop Analysis	Yes No
Project Manager:		Sample Location:			Phone Number:	
Project Information: Project 230299 Woodard & Curran Holland Hill elementary Fairfield, CT						Company Name and Address:
Sample Number	Description and Location					Time and Temperature at Collection:
WC-32	roof flashing compound on roof of bathroom SW of gym					
WC-33	roof flashing compound on roof of bathroom SW of gym					
WC-34	roof flashing compound on roof of bathroom SW of gym					
WC-35	roofing paper on roof edge roof of bathroom SW of gym					
WC-36	insulation under asphalt roofing @ bathroom S.W. of gym					
WC-37	insulation under asphalt roofing @ bathroom SW of gym					
WC-38	exterior window frame caulking material batch classroom windows above stage					
WC-39	exterior window frame caulking material batch east classroom fenelon windows					
WC-40	exterior window glazing glass/panel east classroom kitchen windows					
WC-41	exterior air intake louvers south west of stage classroom windows					

Relinquished by hahett Date 2/21/17 Time 0800 Received by msmny Date 2/21/17 Time 8:00





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### CHAIN OF CUSTODY

1719723

Analysis & TAT:	4-8 Hour	24 Hour	48 Hour	Standard (3-5)	Standard (6-10)	Comments (please indicate other test-specific information here):
PLM						
PCM						
Mold	N/A					
Lead	N/A					
Other: (TEM, PCB, etc.)	N/A					
Sampler:	Email:				Positive Stop Analysis	Yes No
Project Manager:		Sample Location:			Phone Number:	
Project Information: <i>WFC # 230299</i>					Company Name and Address:	
Sample Number	Description and Location					Time and Temperature at Collection:
<i>WC-42</i>	<i>Plumbing compound to blower right of air intake hood in W. wall of 2nd floor classroom windows</i>					
<i>WC-43</i>	<i>asphotic paper vapor barrier within perimeter wall of gym behind brick window</i>					
<i>WC-44</i>	<i>asphotic paper vapor barrier within perimeter wall of gym behind brick window</i>					
<i>WC-45</i>	<i>exterior caulking on exterior soffit</i>					
<i>WC-46</i>	<i>exterior caulking on exterior soffit</i>					
<i>WC-47</i>	<i>exterior caulking on exterior soffit</i>					
<i>WC-48</i>	<i>exterior caulking on exterior soffit</i>					
<i>WC-49</i>	<i>exterior caulking on exterior soffit</i>					

Relinquished by *[Signature]* Date *2/21/17* Time *0800* Received by *[Signature]* Date *2/21/17* Time *8:00*



Robert Pelletier  
Woodard & Curran  
40 Shattuck Road, Suite 110  
Andover MA 01810

Project Reference:  
Laboratory Batch #: 1719734  
Date Samples Received: 02/22/2017  
Date Samples Analyzed: 02/23/2017  
Date of Final Report: 02/23/2017

**SAMPLE IDENTIFICATION:**

One Hundred Twenty Seven (127) samples from Fairfield, CT project were submitted by Client on 02/22/2017

This bulk sample(s) was delivered to Optimum Analytical Consulting, LLC (Optimum) located in Salem, New Hampshire for asbestos content determination.

**ANALYTICAL METHOD:**

Analytical procedures were performed in accordance with the U.S. Environmental Protection Agency (EPA) Recommended Method for the Determination of Asbestos in Bulk Samples by Polarized Light Microscopy and Dispersion Staining (PLM/DS)(EPA-600/M4-82-020, EPA-600/ R-93-116). This report relates only to those samples analyzed, and may not be indicative of other similar appearing materials existing at this, or other sites. Quantification of asbestos content was determined by Calibrated Visual Estimation. Optimum is not responsible for sample collection activities or analytical method limitations. The laboratory is not responsible for the accuracy of results when requested to physically separate and analyze layered samples.

In any given material, fibers with a small diameter ( $<0.25\mu\text{m}$ ) may not be detected by the PLM method. Floor tile and other resinously bound material may yield a false negative if the asbestos fibers are too small to be resolved using PLM. Additional analytical methods may be required. Optimum recommends using Transmission Electron Microscopy (TEM) for a more definitive analysis.

Optimum will retain all samples for a minimum of three months. Further analysis or return of samples must be requested within this three month period to guarantee their availability. This report may not be reproduced except in full, without the written approval of Optimum Analytical and Consulting, LLC.

Use of the NVLAP and AIHA Logo in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology or the American Industrial Hygiene Association.

Detection Limit  $<1\%$ , Reporting Limits: CVES =  $1\%$ , 400 Point Count =  $.25\%$ , 1000 Point Count =  $0.1\%$ ; Present or Absent are observations made during a qualitative analysis.

This report is considered preliminary until signed by both the Laboratory Analyst and Laboratory Director or Supervisor. If you have any questions regarding this report, please do not hesitate to contact us.

Jamie L. Noel  
Laboratory Director

Kristina Scaviola  
Laboratory Supervisor



# OPTIMUM

Analytical and Consulting, LLC

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## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

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**CONTACT:** Robert Pelletier  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Fairfield, CT

**ORDER #:** 1719734  
**PROJECT #:**  
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**ANALYSIS DATE:** 02/23/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jamie Noel

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719734-001 1	Gymnasium Rear Wall LAYER 1 Exterior Wall Caulking, Gray LAYER 2 Exterior Wall Caulking, Pink	LAYER 1 100% LAYER 2 100%	None Detected  None Detected	Cellulose Fiber 2% Non-Fibrous Material 98% Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-002 2	Gymnasium Rear Wall LAYER 1 Exterior Wall Caulking, Gray LAYER 2 Exterior Wall Caulking, Pink	LAYER 1 100% LAYER 2 100%	None Detected  None Detected	Cellulose Fiber 2% Non-Fibrous Material 98% Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-003 3	Gymnasium Rear Wall LAYER 1 Exterior Wall Caulking, Gray LAYER 2 Exterior Wall Caulking, Pink	LAYER 1 100% LAYER 2 100%	None Detected  None Detected	Cellulose Fiber 2% Non-Fibrous Material 98% Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-004 4	Gymnasium Rear Wall Mortar, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-005 5	Gymnasium Rear Wall Mortar, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-006 6	Gymnasium Rear Wall Mortar, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-007 7	Main Door Next to Conference Room Door Glazing, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%



# OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**CLIENT:** Woodard & Curran  
**ADDRESS:** 40 Shattuck Road, Suite 110  
**CITY / STATE / ZIP:** Andover MA 01810  
**CONTACT:** Robert Pelletier  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Fairfield, CT

**ORDER #:** 1719734  
**PROJECT #:**  
**DATE COLLECTED:** 02/22/2017  
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**ANALYST:** Jamie Noel

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719734-008 8	Main Door Next to Conference Room Door Glazing, Gray	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Non-Fibrous Material	2% 96%
<b>Total % Asbestos:</b>				2.0%	<b>Total % Non-Asbestos:</b> 98.0%	
1719734-009 9	Main Door Next to Conference Room Door Glazing, Gray Note: Positive Stop	LAYER 1 100%				
1719734-010 10	Main Door Next to Conference Room Door Frame Caulking, White	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>				No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%	
1719734-011 11	Main Door Next to Conference Room Door Frame Caulking, White	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>				No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%	
1719734-012 12	Main Door Next to Conference Room Door Frame Caulking, White	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>				No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%	
1719734-013 13	Main Door Next to Conference Room Window Glazing, Gray	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Non-Fibrous Material	2% 96%
<b>Total % Asbestos:</b>				2.0%	<b>Total % Non-Asbestos:</b> 98.0%	
1719734-014 14	Main Door Next to Conference Room Door Frame Caulking, Gray Note: Positive Stop	LAYER 1 100%				
1719734-015 15	Main Door Next to Conference Room Door Frame Caulking, Gray Note: Positive Stop	LAYER 1 100%				



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### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719734-016 13A	Exterior Rear Door Gymnasium			
	LAYER 1	LAYER 1	None Detected	Cellulose Fiber 2%
	Door Caulking, Brown	100%		Non-Fibrous Material 98%
	LAYER 2	LAYER 2	None Detected	Cellulose Fiber 2%
	Door Caulking, Pink	100%		Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-017 14A	Exterior Rear Door Gymnasium			
	LAYER 1	LAYER 1	None Detected	Cellulose Fiber 2%
	Door Caulking, Brown	100%		Non-Fibrous Material 98%
	LAYER 2	LAYER 2	None Detected	Cellulose Fiber 2%
	Door Caulking, Pink	100%		Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-018 15A	Exterior Rear Door Gymnasium			
	LAYER 1	LAYER 1	None Detected	Cellulose Fiber 2%
	Door Caulking, Brown	100%		Non-Fibrous Material 98%
	LAYER 2	LAYER 2	None Detected	Cellulose Fiber 2%
	Door Caulking, Pink	100%		Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-019 16	Gymnasium Cove Base, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-020 17	Gymnasium Cove Base, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-021 18	Gymnasium Cove Base, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%



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### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719734-022				
19	LAYER 1 Glue, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
	LAYER 2 Glue, Tan	LAYER 2 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-023				
20	LAYER 1 Glue, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
	LAYER 2 Glue, Tan	LAYER 2 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-024				
21	LAYER 1 Glue, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
	LAYER 2 Glue, Tan	LAYER 2 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-025	Interior Rear Door Gymnasium Door Caulking, White	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-026	Interior Rear Door Gymnasium Door Caulking, White	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-027	Interior Rear Door Gymnasium Door Caulking, White	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-028	Gymnasium Storage Room/Office Cove Base, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%





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### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719734-029 26	Gymnasium Storage Room/Office Cove Base, Brown	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-030 27	Glue, Brown	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-031 28	Glue, Brown	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-032 29	Gymnasium Storage Room/Office 1'x1' Floor Tile, White	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Non-Fibrous Material	2% 96%
<b>Total % Asbestos:</b>			2.0%		<b>Total % Non-Asbestos:</b> 98.0%	
1719734-033 30	Gymnasium Storage Room/Office 1'x1' Floor Tile, White Note: Positive Stop	LAYER 1 100%				
1719734-034 31	Glue, Tan	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-035 32	Glue, Tan	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-036 33	Mastic, Black	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	3% 97%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	



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### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719734-037 34	Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 3% Non-Fibrous Material 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-038 35	Boy's/Girl's Bathroom Next to Gymnasium Ceramic Pattern Cove Base Clue, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-039 36	Boy's/Girl's Bathroom Next to Gymnasium Ceramic Pattern Cove Base Clue, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-040 37	Boy's/Girl's Bathroom Next to Gymnasium Floor Ceramic Tile, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-041 38	Boy's/Girl's Bathroom Next to Gymnasium Floor Ceramic Tile, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-042 39	Boy's/Girl's Bathroom Next to Gymnasium Floor Ceramic Tile, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-043 40	Glue, White Note: Appears to be Paper	LAYER 1 100%	None Detected	Cellulose Fiber 90% Non-Fibrous Material 10%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%





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### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719734-044 41	Glue, White Note: Appears to be Paper	LAYER 1 100%	None Detected	Cellulose Fiber 90% Non-Fibrous Material 10%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-045 42	Glue, White Note: Appears to be Paper	LAYER 1 100%	None Detected	Cellulose Fiber 90% Non-Fibrous Material 10%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-046 43	Grout, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-047 44	Grout, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-048 45	Grout, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Non-Fibrous Material 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-049 46	Door #12 LAYER 1 Door Caulking (Exterior), Brown LAYER 2 Door Caulking (Exterior), Gray	LAYER 1 100% LAYER 2 100%	None Detected None Detected	Cellulose Fiber 1% Non-Fibrous Material 99% Cellulose Fiber 1% Non-Fibrous Material 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-050 47	Door #12 LAYER 1 Door Caulking (Exterior), Brown LAYER 2 Door Caulking (Exterior), Gray	LAYER 1 100% LAYER 2 100%	None Detected None Detected	Cellulose Fiber 1% Non-Fibrous Material 99% Cellulose Fiber 1% Non-Fibrous Material 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%



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1719734-051 48	Door #12					
	LAYER 1	LAYER 1	None Detected		Cellulose Fiber	1%
	Door Caulking (Exterior), Brown	100%			Non-Fibrous Material	99%
	LAYER 2	LAYER 2	None Detected		Cellulose Fiber	1%
	Door Caulking (Exterior), Gray	100%			Non-Fibrous Material	99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-052 49	Classroom #18					
	2'x4' Ceiling Tile (Type 1), Beige	LAYER 1	None Detected		Cellulose Fiber	65%
		100%			Fibrous Glass	20%
					Non-Fibrous Material	15%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-053 50	Classroom #18					
	Sink Undercoating, Black	LAYER 1	Chrysotile	2%	Cellulose Fiber	2%
		100%			Non-Fibrous Material	96%
<b>Total % Asbestos:</b>			2.0%		<b>Total % Non-Asbestos:</b> 98.0%	
1719734-054 51	Classroom #18					
	Sink Undercoating, Positive Stop	LAYER 1				
		100%				
1719734-055 52	Cove Base, Black	LAYER 1	None Detected		Cellulose Fiber	1%
		100%			Non-Fibrous Material	99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-056 53	Glue, Tan	LAYER 1	None Detected		Cellulose Fiber	2%
		100%			Non-Fibrous Material	98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-057 54	Classroom #18					
	1x1 Floor Tile, White	LAYER 1	Chrysotile	2%	Cellulose Fiber	2%
		100%			Non-Fibrous Material	96%
<b>Total % Asbestos:</b>			2.0%		<b>Total % Non-Asbestos:</b> 98.0%	
1719734-058 55	Classroom #18					
	1'x1' Floor Tile, White	LAYER 1				
	Note: Positive Stop	100%				



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1719734-059						
56	LAYER 1	LAYER 1	None Detected		Cellulose Fiber	2%
	Glue, Black/Tan	100%			Non-Fibrous Material	98%
	LAYER 2	LAYER 2	None Detected		Cellulose Fiber	3%
	Glue, Tan	100%			Non-Fibrous Material	97%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-060						
57	Glue, Black/Tan	LAYER 1	None Detected		Cellulose Fiber	2%
		100%			Non-Fibrous Material	98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-061						
58	From Door #12	LAYER 1	None Detected		Cellulose Fiber	1%
	1'x1' Floor Tile, White	100%			Non-Fibrous Material	99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-062						
59	From Door #12	LAYER 1	None Detected		Cellulose Fiber	1%
	1'x1' Floor Tile, White	100%			Non-Fibrous Material	99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-063						
60	Glue, Black	LAYER 1	Chrysotile	2%	Cellulose Fiber	2%
		100%			Non-Fibrous Material	96%
<b>Total % Asbestos:</b>			2.0%		<b>Total % Non-Asbestos:</b> 98.0%	
1719734-064						
61	Glue, Black	LAYER 1				
	Note: Positive Stop	100%				
1719734-065						
62	Next to Door #12	LAYER 1	None Detected		Cellulose Fiber	1%
	Cove Base, Black	100%			Non-Fibrous Material	99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-066						
63	Glue, Tan	LAYER 1	None Detected		Cellulose Fiber	1%
		100%			Non-Fibrous Material	99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	



# OPTIMUM

Analytical and Consulting, LLC

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## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**CLIENT:** Woodard & Curran  
**ADDRESS:** 40 Shattuck Road, Suite 110  
**CITY / STATE / ZIP:** Andover MA 01810  
**CONTACT:** Robert Pelletier  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Fairfield, CT

**ORDER #:** 1719734  
**PROJECT #:**  
**DATE COLLECTED:** 02/22/2017  
**COLLECTED BY:** Client  
**DATE RECEIVED:** 02/22/2017  
**ANALYSIS DATE:** 02/23/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jamie Noel

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719734-067 64	From Door #19 1'x1' Floor Tile, White	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-068 65	From Door #19 1'x1' Floor Tile, White	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-069 66	Glue, Black	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-070 67	Glue, Black	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-071 68	From Library Door 2'x4' Ceiling Tile, Beige	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	65% 15% 20%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-072 69	Resource Room/Library Sink Undercoating, Purple	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Non-Fibrous Material	30% 68%
<b>Total % Asbestos:</b>			2.0%		<b>Total % Non-Asbestos:</b> 98.0%	
1719734-073 70	Resource Room/Library Sink Undercoating, Positive Stop	LAYER 1 100%				
1719734-074 71	Resource Room/Library Sink Undercoating, Positive Stop	LAYER 1 100%				



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PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

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### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719734-075 72	Resource Room/Library Wallboard, White/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 10% Binder/Filler 90%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-076 73	Resource Room/Library Wallboard, White/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 10% Binder/Filler 90%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-077 74	Resource Room/Library Joint Compound, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-078 75	Resource Room/Library Joint Compound, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-079 76	Resource Room/Library Composite, White	LAYER 1 100%	None Detected	Cellulose Fiber 3% Binder/Filler 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-080 77	Resource Room/Library Composite, White	LAYER 1 100%	None Detected	Cellulose Fiber 3% Binder/Filler 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-081 78	Resource Room/Library Wall Paper Glue, White	LAYER 1 100%	None Detected	Cellulose Fiber 3% Binder/Filler 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-082 79	Resource Room/Library Wall Paper Glue, White	LAYER 1 100%	None Detected	Cellulose Fiber 3% Binder/Filler 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%



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PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

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**ANALYST:** Jamie Noel

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719734-083 80	Resource Room/Library Cove Base, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-084 81	Resource Room/Library Cove Base, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-085 82	Resource Room/Library Glue, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-086 83	Resource Room/Library Glue, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-087 84	Resource Room/Library 1'x1' Floor Tiles, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-088 85	Resource Room/Library 1'x1' Floor Tiles, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-089 86	Resource Room/Library Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-090 87	Resource Room/Library Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%



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**ANALYST:** Jamie Noel

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719734-091 88	Resource Room/Library 2'x4' Ceiling Tiles (Type-2), Gray	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-092 88A	Boy's/Girl's Bathroom Next to Gymnasium 2'x4' Ceiling Tiles (Type-2), Gray	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-093 89	S3 Storage Room 12"x24" Ceiling Tiles (Type-3), Gray	LAYER 1 100%	None Detected	Cellulose Fiber 3% Fibrous Glass 55% Mineral Wool 30% Binder/Filler 12%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-094 90	S3 Storage Room 12"x24" Ceiling Tiles (Type-3), Gray	LAYER 1 100%	None Detected	Cellulose Fiber 3% Fibrous Glass 55% Mineral Wool 30% Binder/Filler 12%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-095 91	S3 Storage Room Cove Base, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-096 92	S3 Storage Room Cove Base, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-097 93	S3 Storage Room Glue, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%





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PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

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### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719734-098 94	S3 Storage Room Glue, Brown	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-099 95	S3 Storage Room 9"x9" Floor Tile, Red	LAYER 1 100%	Chrysotile	8%	Cellulose Fiber Binder/Filler	1% 91%
<b>Total % Asbestos:</b>			8.0%		<b>Total % Non-Asbestos:</b> 92.0%	
1719734-100 96	S3 Storage Room 9"x9" Floor Tile, Red Note: Positive Stop	LAYER 1 100%				
1719734-101 97	S3 Storage Room Mastic, Black Note: Contaminated by Floor Tile	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Binder/Filler	1% 97%
<b>Total % Asbestos:</b>			2.0%		<b>Total % Non-Asbestos:</b> 98.0%	
1719734-102 98	Mastic, Black Note: Contaminated by Floor Tile Positive Stop	LAYER 1 100%				
1719734-103 99	Men's Bathroom Opposite S3 Storage Room Ceramic Tiles, Green	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-104 100	Men's Bathroom Opposite S3 Storage Room Ceramic Tiles, Green	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-105 101	Men's Bathroom Opposite S3 Storage Room Glue, Gray Note: Appears to be Mortar	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	





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### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719734-106	Men's Bathroom Opposite S3 Storage Room					
102	Glue, Gray Note: Appears to be Mortar	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-107	Hallway by Main Office					
103	1'x1' Floor Tile, Sky Blue	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-108	Hallway by Main Office					
104	1'x1' Floor Tile, Sky Blue	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-109						
105	Glue, Tan	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	3% 97%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-110						
106	LAYER 1 Glue, Tan	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	3% 97%
	LAYER 2 Leveler, Gray	LAYER 2 100%	None Detected		Cellulose Fiber Binder/Filler	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-111	Classroom #10					
107	Sink Under Coating, Black	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Binder/Filler	2% 95%
<b>Total % Asbestos:</b>			3.0%		<b>Total % Non-Asbestos:</b> 97.0%	
1719734-112	Classroom #10					
108	Sink Under Coating, Black Note: Positive Stop	LAYER 1 100%				



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### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1719734-113 109	Classroom #10 1'x1' Floor Tiles, Blue	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-114 110	Classroom #10 1'x1' Floor Tiles, Blue	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-115 111	Classroom #10 LAYER 1 Glue, Tan LAYER 2 Leveler, Gray	LAYER 1 100% LAYER 2 100%	None Detected None Detected	Cellulose Fiber 3% Binder/Filler 97% Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-116 112	LAYER 1 Glue, Tan LAYER 2 Leveler, Gray	LAYER 1 100% LAYER 2 100%	None Detected None Detected	Cellulose Fiber 3% Binder/Filler 97% Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-117 113	Classroom #10 Cove Base, Blue	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-118 114	Classroom #10 Cove Base, Blue	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1719734-119 115	Classroom #10 Glue, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%



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Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1719734-120 116	Classroom #10 Glue, Tan	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-121 117	Classroom #4 Ceramic Floor Tiles Glue, Gray	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-122 118	Classroom #4 Ceramic Floor Tiles Glue, Gray	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-123 119	Boiler #2-Basement Fiber Glass Pipe Cement, White/Yellow	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Binder/Filler	3% 85% 12%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-124 120	Boiler #2-Basement Fiber Glass Pipe Cement, White/Yellow	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Binder/Filler	3% 85% 12%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-125 121	Boiler #2-Basement Fiber Glass Pipe Cement, White/Yellow	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Binder/Filler	3% 85% 12%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1719734-126 122	Windows Above Clerestory-Kitchen Window Glazing, Gray	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Binder/Filler	1% 97%
<b>Total % Asbestos:</b>			2.0%		<b>Total % Non-Asbestos:</b> 98.0%	
1719734-127 123	Windows Above Clerestory-Kitchen Window Glazing, Gray Note: Positive Stop	LAYER 1 100%				



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**ANALYST:** Jamie Noel

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
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**Analyst  
Signatory:**

Jamie Noel





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**DATE RECEIVED:** 02/22/2017  
**ANALYSIS DATE:** 02/23/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jamie Noel



85 Stiles Road, Suite 201  
Salem, NH 03079  
603-458-5247

### CHAIN OF CUSTODY

1719734

Analysis & TAT:	4-6 Hour	24 Hour	48 Hour	Standard (3-5)	Standard (6-10)	Comments
PLM				X		(please indicate other test-specific information here)
PCM						3 day turn results by Friday February 24 <sup>th</sup> .
Mold	N/A					
Lead	N/A					
Other: (TEM, PCB, etc.)	N/A					
Sampler:	Email:				Positive Stop Analysis	<input checked="checked" type="radio"/> Yes <input type="radio"/> No
Project Manager: Robert Pelletier		Sample Location: Fairfield, CT		Phone Number: (978) 409-0405		
Project Information: Reports and invoices sent to Robert Pelletier of Woodard & Curran via email: r.pelletier@woodardcurran.com				Company Name and Address: Woodard & Curran 40 Shattuck Road Andover, NH 01810		
Sample Number	Description and Location					Time and Temperature at Collection:
1-3	EXTERIOR WALL CAULKING (GYMNASIUM REAR WALL)					
4-6	MORTAR (GYMNASIUM REAR WALL)					
7-9	DOOR GLAZING (MAIN DOOR NEXT TO CONFERENCE ROOM)					
10-12	DOOR FRAME CAULKING (MAIN DOOR NEXT TO CONFERENCE ROOM)					
13-15	WINDOW GLAZING (MAIN DOOR NEXT TO CONFERENCE ROOM)					
13A-15A	DOOR CAULKING (EXTERIOR REAR DOOR GYMNASIUM)					
16-18	COVE BASE (GYMNASIUM) (DARK BROWN)					
19-21	GLUE					
22-24	DOOR CAULKING (INTERIOR REAR DOOR GYMNASIUM)					
25-26	COVE BASE (GYMNASIUM STORAGE RM./OFC.)					

Requisitioned by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: JUBIN Date: 2/23/17 Time: 9:45



# OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

**CLIENT:** Woodard & Curran  
**ADDRESS:** 40 Shattuck Road, Suite 110  
**CITY / STATE / ZIP:** Andover MA 01810  
**CONTACT:** Robert Pelletier  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Fairfield, CT

## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**ORDER #:** 1719734  
**PROJECT #:**  
**DATE COLLECTED:** 02/22/2017  
**COLLECTED BY:** Client  
**DATE RECEIVED:** 02/22/2017  
**ANALYSIS DATE:** 02/23/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jamie Noel



**1719734**

85 Stiles Road, Suite 201  
Salem, NH 03079  
603-458-5247

Sample Number	Description and Location	Time and Temperature at Collection
27-28	GLUE	
29-30	1'x1' FLOOR TILES (GYMNASIUM STORAGE RM./OFC.)	2200SF
31-32	GLUE	2200SF
33-34	MASTIC	2200SF
35-36	CERAMIC PATTERN COVE BASE GLUE (BOYS/GIRLS BATH RM. NEXT TO GYM.)	
37-39	FLOOR CERAMIC TILES (BOYS/GIRLS BATH RM. NEXT TO GYM.)	2300SF
40-42	GLUE	2300SF
43-45	GROUT	2300SF
46-48	DOOR CAULKING (EXTERIOR) DOOR #12	
49	2'x4' CEILING TILES (TYPE-1) CLASS RM. #18	
50-51	SINK UNDER COATING (BLACK) CLASS RM. #18	
52	COVE BASE (BLACK)	250LF
53	GLUE	
54-55	1'x1' FLOOR TILES (CLASS RM. #18)	21000SF
56-57	GLUE	21000SF
58-59	1'x1' FLOOR TILES (FROM DOOR #12)	
60-61	GLUE	
62	COVE BASE (NEXT TO DOOR #12) (BLACK)	
63	GLUE	
64-65	1'x1' FLOOR TILES (FROM DOOR #19)	

Retinquished by \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Received by JUBM Date 2/23/17 Time 9:45





# OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

**CLIENT:** Woodard & Curran  
**ADDRESS:** 40 Shattuck Road, Suite 110  
**CITY / STATE / ZIP:** Andover MA 01810  
**CONTACT:** Robert Pelletier  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Fairfield, CT

## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**ORDER #:** 1719734  
**PROJECT #:**  
**DATE COLLECTED:** 02/22/2017  
**COLLECTED BY:** Client  
**DATE RECEIVED:** 02/22/2017  
**ANALYSIS DATE:** 02/23/2017  
**REPORT DATE:** 02/23/2017  
**ANALYST:** Jamie Noel



**1719734**

85 Stiles Road, Suite 201  
Salem, NH 03079  
603-458-5247

Sample Number	Description and Location	Time and Temperature at Collection
66-67	GLUE	
68	2'x4' CEILING TILES (FROM LIBRARY DOOR)	
69-71	SINK UNDER COATING (RESOURCE ROOM / LIBRARY)	
72-73	WALLBOARD (RESOURCE RM. / LIBRARY)	
74-75	JOINT COMPOUND (RESOURCE RM. / LIBRARY)	
76-77	COMPOSITE (RESOURCE RM. / LIBRARY)	
78-79	WALL PAPER GLUE (RESOURCE RM. / LIBRARY)	2300°F
80-81	COVE BASE (RESOURCE RM. / LIBRARY) (BROWN)	
82-83	GLUE	
84-85	1'x1' FLOOR TILES (RESOURCE RM. / LIBRARY)	
86-87	MASTIC	
88	2'x4' CEILING TILES (TYPE-2) (RESOURCE RM. / LIBRARY)	
88A	2'x4' CEILING TILES (BOYS/GIRLS)-(TYPE-2) BATH RM. NEXT TO GYM)	
89-90	12"x24" CEILING TILES (TYPE-3) (S3 STORAGE ROOM)	
91-92	COVE BASE (S3 STORAGE ROOM) (BLACK)	
93-94	GLUE	
95-96	9"x9" FLOOR TILES (RED) (S3 STORAGE ROOM)	
97-98	MASTIC	
99-100	CERAMIC TILES (GRN.) (MEN BATH RM. OPP. S3 STORAGE RM.)	
101-102	GLUE	

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: JAMIE NOEL Date: 3/30/17 Time: 9:45





## **APPENDIX C: RELIANCE ENVIRONMENTAL LEAD TESTING SURVEY DOCUMENTATION**

Location	Component	XRF Reading	Side
Gymnasium	Rear Wall	-0.1	C
Gymnasium by Entrance	Wall	-0.2	A
Gymnasium by Entrance	Wall (inside)	-0.2	C
Boy's Rm	Wall	-0.3	A
SP ED RM 18	METAL LOCKERS	-0.4	A
ADJACENT CONFERENCE RM	DOOR	-0.2	B
ADJACENT CONFERENCE RM	DOOR FRAME	-0.3	B
LIBRARY MEDIA CENTER MDF RES RM	WALL	-0.3	A
LIBRARY MEDIA CENTER MDF RES RM	WALL	-0.2	B
LIBRARY MEDIA CENTER MDF RES RM	WALL	0.1	C
LIBRARY MEDIA CENTER MDF RES RM	WALL	-0.1	D
CLASSROOM 10	LOCKERS	-0.3	A
CLASSROOM 8	CREAM WALL OVER SINK	-0.1	A
CLASSROOM 8 BATH	LIGHT GRAY	-0.3	A
CLASSROOM 6	WALL LIGHT GRAY	-0.3	D
CLASSROOM 6	WALL CREAM	-0.5	B
CLASSROOM 3	WALL GRAY	-0.4	A
CLASSROOM 3	WALL CREAM	-0.3	B
CLASSROOM 5	GRAY	-0.5	A
CLASSROOM 5	CREAM	-0.5	B
CLASSROOM 7	WALL GRAY	-0.1	A
CLASSROOM 7	WALL CREAM	-0.3	B
CLASSROOM 9	WALL	-0.1	C
OFFICES BY MAIN OFFICE	WALL CREAM (SAME COLOR)	-0.2	A
MAIN OFFICE	VARNISH/WOOD COLOR	-0.2	B
ALL PURPOSE ROOM	WALL GRAY	-0.4	B
STAGE OF AUDITORIUM	WALL GRAY	-0.3	C
ALL PURPOSE RM	WALL	-0.5	B
KITCHEN	WALL VANILLA	-0.4	C
KITCHEN	WALL VANILLA	-0.5	A
STORAGE S3 OPPOSITE MAIN OFFICE	WALL LIGHT BLUE	-0.3	C
STORAGE S3 OPPOSITE MAIN OFFICE	WALL LIGHT BLUE	-0.4	D
STORAGE BETWEEN KINDERGARTEN K1 & K2	WALL-LIGHT BLUE	-0.4	-0.3
STORAGE BETWEEN KINDERGARTEN K1 & K2	WALL-WHITE	-0.4	D

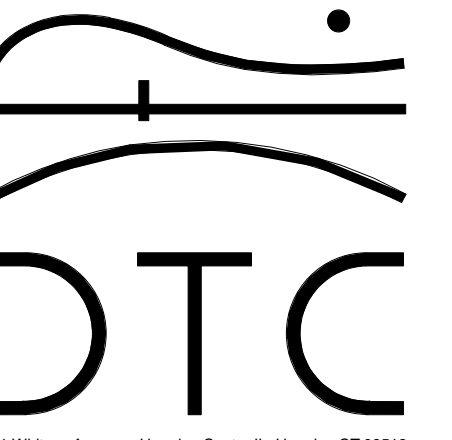
**105 MEADOW CRAFT ROAD  
FAIRFIELD, CT**

KENNETH  
BOROSON  

---

ARCHITECTS

15 Peck Street • New Haven, CT  
203.624.0662 • f. 203.562.1732  
WWW.KBARCT.COM



2321 Whitney Avenue - Hamden Center II - Hamden CT 06518  
Ph: 203 239 4250 Fax: 203 234 7576  
[www.teamcto.com](http://www.teamcto.com)



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NO.	DATE	REVISION
ISSUE/REVISION		

PROJECT NAME  
PROPOSED ADDITIONS &  
ALTERATIONS TO HOLLAND HILL  
SCHOOL  
SCHEMATIC DESIGN

BUILDING NAME & ADDRESS  
DOLLAND HILL SCHOOL  
105 MEADOWCROFT ROAD  
FAIRFIELD, CT 06824

PROJECT NUMBER	SPE NUMBER
016.007	PENDING

DRAWING TITLE

EXISTING FIRST FLOOR PLAN

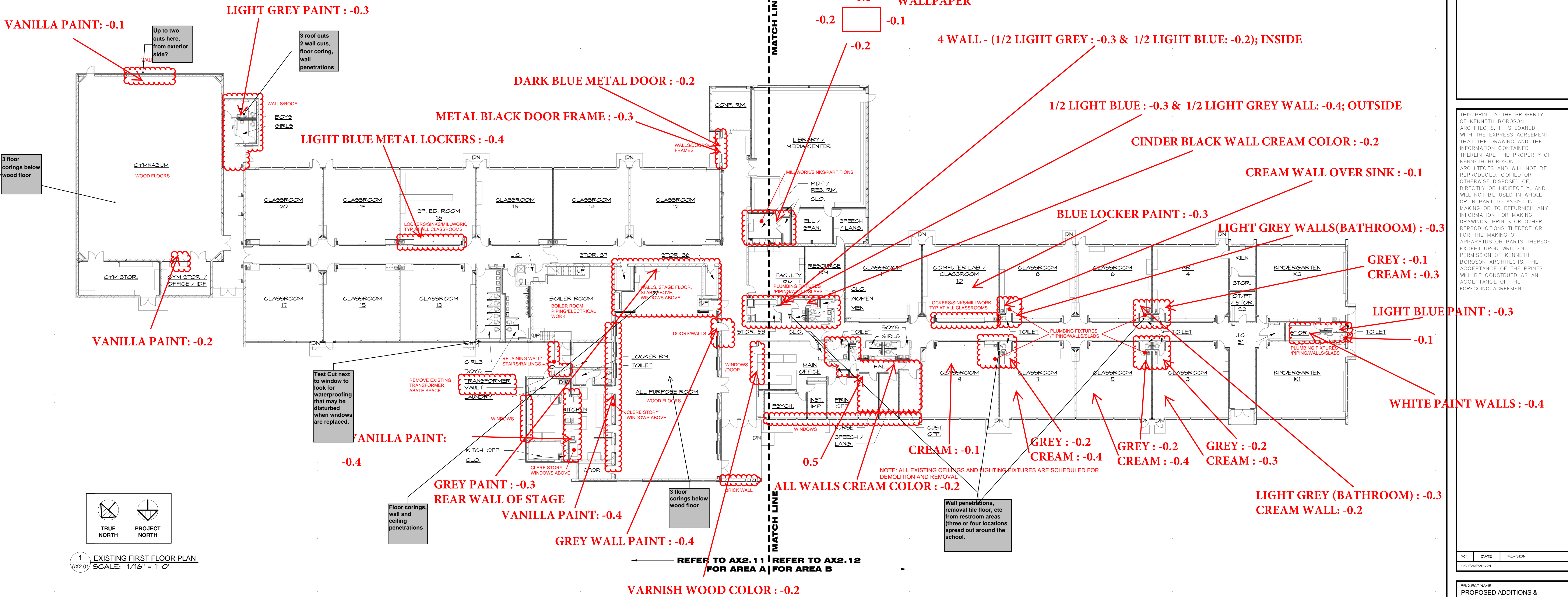
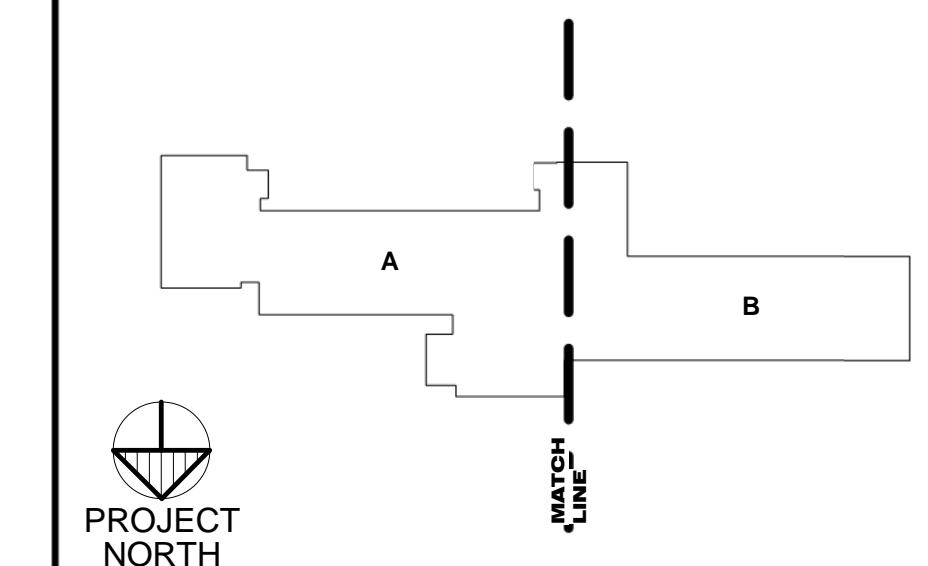
SALE	DRAWN BY
As indicated	BMS

LENAME	DATE
R MOREL	OCT 12 2016

RAKING NUMBER	
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AX2.01

## KEY PLAN



**GENERAL NOTE :** The renovation waste is exempted from TCLP evaluation per CT DEEP and be disposed of as regular C & D waste subsequent to removal of any asbestos containing materials.

NOTE: EXISTING CONDITIONS DRAWING PROVIDED FOR REFERENCE ONLY - CONTRACTOR TO VERIFY ALL PERTINENT EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK OR ORDERING ANY MATERIALS

**SCHEMATIC DESIGN SUBMISSION - NOT FOR CONSTRUCTION**

