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EFI Global
Engineering, Fire & Environmental Services

September 19, 2017

Ms. Mary DeLai
Assistant Superintendent
Finance & Operations
Town of Watertown
149 Main Street
Watertown, Massachusetts 02472

RE: **3 Year Re-Inspection & AHERA Asbestos Management Plan Update**
Phillips School
31 Marshall Street
Watertown, Massachusetts
EFI Project No. 98350-06416

Dear Ms. DeLai:

EFI Global Inc. (EFI) is pleased to present this 3-Year Re-Inspection and Asbestos Management Plan Update prepared for the Phillips School located at 31 Marshall Street in Watertown, Massachusetts (Site). This report was completed in accordance with the guidelines outlined in United States Environmental Protection Agency (USEPA) Asbestos Hazard Emergency Response Act (AHERA) regulations (40 CFR 763).

EFI is pleased to provide environmental consulting services to Watertown Public Schools. If you have any questions regarding the contents of this report, or are in need of additional information, please do not hesitate to contact Sean Cassidy at 978-886-3712. Thank you for the opportunity to serve your environmental needs.

Sincerely,
EFI Global, Inc.

John Vaz
Project Manager
MA Asbestos Inspector # AI 000270

Sean Cassidy, CIEC
District Manager
MA Asbestos Inspector # AI 410059
MA Asbestos Management Planner #AP 410060

Attachments:

Attachment A – Asbestos Survey Report
Attachment B – ACBM Inventory & Locations
Attachment C – Designated Person True and Correct Statement
Attachment D – Annual Notification
Attachment E – 6 Month Surveillance Documentation
Attachment F – Asbestos O&M Plan
Attachment G - Training Documentation

A. INTRODUCTION

EFI Global, Inc. (EFI) was retained by Watertown Public Schools to conduct a 3 year re-inspection and prepare an Asbestos Management Plan update in accordance with United States Environmental Protection (USEPA) Asbestos Hazard Emergency Response Act (AHERA) asbestos regulations (40 CFR 763). This regulation, commonly known as the "Asbestos in Schools Rule," requires that secondary schools (K-12) be inspected initially for the presence of asbestos-containing building materials (ACBMs) and re-inspected every three years for any changes in the condition of assumed and confirmed ACBM.

EFI conducted an asbestos survey of the Phillips School that involved collecting samples of suspect ACBMs throughout the school. The asbestos survey/inspection was conducted on August 29, 2017 by Mr. Derrick Calvario and Mr. John Vaz, both Massachusetts licensed asbestos inspectors.

The 3 year re-inspection and Management Plan update for the Phillips School was prepared with the following objectives:

1. Prevent and/or control fiber release and reduce potential for fiber release;

2. Maintain and monitor ACBMs that are present;

3. Inform and educate students, parents, school employees, and outside contractors;

4. Document and retain records for any asbestos-related activities;

5. Ensure that accredited personnel are or will be used to inspect buildings, develop management plans, and design or carry out response actions;

6. Ensure that accredited or approved laboratories with accredited analysts are used to analyze bulk samples; and,

7. Comply with federal and state asbestos regulations.

The asbestos survey report for the Phillips School is presented in Attachment A. An ACBM inventory and drawings depicting the locations of ACBM are presented in Attachment B.

B. DESIGNATED PERSON RESPONSIBILITIES

The AHERA regulation 763.84[g](1) states that "the general LEA shall designate a person to ensure that requirements under this section are properly implemented". Section 763.84[g](2) further states that "the LEA shall ensure that the designated person receives adequate training to perform duties assigned under this section".

The Designated Person for Phillips School is Ms. Mary DeLai.

A copy of the "True and Correct" statement signed by Ms. DeLai is presented in Attachment C.

The AHERA regulation maintains that the overall responsibility for the Asbestos Management Plan shall be the Designated Person, whose duties are as follows:

1. Oversees activities of Asbestos Coordinators, Consultants, Contractors, and approves asbestos removal and replacement projects, including planning and scheduling the scope of work.

2. Direct supervision and implementation of the Asbestos Management Plan including:

   · Yearly notification of Management Plan review to building staff and legal guardians of the students

     "The designated person must ensure that workers and building occupants, or their legal guardians, are informed at least once each school year about inspections, response actions, and post-response action activities, including periodic re-inspection and surveillance activities that are planned or in progress", as per the AHERA regulation section 763.84(c).

     [A copy of the annual notification is presented in Attachment D.]

   · Six-month periodic surveillance and three-year re-inspection recordkeeping

     The LEA shall conduct six-month periodic surveillance of all known ACBM present in each school in accordance with the AHERA Regulation. A 2 hour trained staff member may conduct the six-month surveillance. The inspection is performed to document any changes in condition in the ACBMs.

     [Copies of future 6-month periodic surveillance documentation will be presented in Attachment E.]

   · Managing ACBMs within the building in accordance with an Asbestos Operations and Maintenance (O&M) Plan

     [A copy of the Asbestos O&M Plan is presented in Attachment F.]

   · Training of custodial staff

     Custodial and maintenance personnel hired are required to receive a minimum of 2 hours "asbestos awareness training." Training should be provided within 60 days of employment.

     [Copies of maintenance and custodial training records are presented in Attachment G.]

   · Labeling of ACBMs

     As per the AHERA regulation section 763.95[a], "the LEA shall attach a warning label immediately adjacent to any friable and non-friable ACBM and suspected ACBM assumed to be asbestos-containing material (ACM) located in routine maintenance areas (such as boiler rooms) at each school building". Unlabeled materials that should be labeled are located in some custodial spaces.

   · Direct responsibility for recordkeeping system regarding training, response actions, abatement projects, air monitoring, renovations that will impact the ACBMs.

     Historical documentation regarding response actions, air sampling, and historical 3-year re-inspections are maintained by the Town of Watertown under separate cover.

C. ACBM APPLICATION TYPES

ACBMs are divided into the following application types:

Thermal system insulation (TSI): Insulation applied to mechanical, heating, and cooling systems such as pipes, boilers, flue breechings, ducts, tanks and fittings.

Surfacing Materials: Material that is spray-applied or trowel-applied to walls, ceilings or structural components (i.e. plasters, acoustical finishes and fireproofing).

Miscellaneous Materials: All other asbestos materials, including floor tiles & mastic, ceiling tiles, vinyl cove base and mastic, and asbestos-cement board.

D. ACBM ASSESSMENT CRITERIA

The assessment is divided into two categories - the physical assessment and the hazard potential assessment.

Physical Assessment

The physical assessment is divided into the following seven categories and describes the material condition at the time of the inspection:

Physical Condition #1 - Damaged or significantly damaged thermal insulation.
Physical Condition #2 - Damaged friable surfacing ACM.
Physical Condition #3 - Significantly damaged friable surfacing ACM.
Physical Condition #4 - Damaged or significantly damaged friable miscellaneous ACM.
Physical Condition #5 - ACBM with potential for damage.
Physical Condition #6 - ACBM with potential for significant damage.
Physical Condition #7 - Any remaining friable ACBM or friable suspected ACBM.

Hazard Assessment

The hazard assessment is a combination of the physical assessment combined with the potential for disturbance (i.e. physical contact, vibration air movement) as follows:

Hazard Rank #1 – Good condition/Low potential for disturbance
Hazard Rank #2 – Good condition/ Moderate potential for disturbance
Hazard Rank #3 – Good condition/ High potential for disturbance
Hazard Rank #4 – Damaged condition/Low potential for disturbance
Hazard Rank #5 – Damaged condition/Moderate potential for disturbance
Hazard Rank #6 – Damaged condition/High potential for disturbance
Hazard Rank #7 – Significantly damaged condition

The following is the Assessment Criteria used during the 3-Year Re-Inspection:

1. Homogeneous materials (materials with similar texture, style and application) were quantified by location and assessed by condition. Materials are listed as friable or non-friable. Note: friable materials are materials that can be crushed and pulverized to dust by hand pressure. A general condition description for suspect materials used in this inspection is as follows:

a. Damaged ACBM: That material which has deterioration, delamination, water damage, lacks cohesion, is blistered, crumbling, gouged, marred heavily, abraded, or in any way has lost its structural integrity over more than 1% but less than 10 % of the total surface area if the damage is evenly distributed or less than 25%, if the damage is localized in one area of the homogeneous area.

b. Significantly Damaged ACBM: That material which has deterioration, delamination, water damage, lacks cohesion, is blistered, crumbling, gouged, marred heavily, abraded, or in any way has lost its structural integrity over at least 10% of the surface area if the damage is evenly distributed or at least 25% if the damaged is localized.

c. Good Condition ACBM: ACBM with no visible damage or deterioration in less than one percent of the material and/or coverings.

d. ACBM with potential for damage: Pertains to circumstances in which:

   i. Friable ACBM is in an area regularly used by building occupants, including maintenance workers, currently in intact (good) condition.

   ii. There are indications that there is a reasonable likelihood that the material or its covering will become damaged, deteriorated or delaminated due to factors such as changes in building use, changes in O&M practices, changes in occupancy or recurrent damage.

Note: All ACBM in good condition is considered to have a potential for damage.

e. ACBM with potential for significant damage: Pertains to circumstances in which:

   i. Friable ACBM is in an area regularly used by building occupants, including maintenance personnel.

   ii. Indications show that there is a reasonable likelihood that the material or its covering will become damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in O&M practices, changes in occupancy or re-occurring damage.

   iii. The material is subject to major or continuing disturbance, due to factors including, but not limited to, accessibility or under certain circumstances, vibration or air erosion.

E. RESPONSE ACTIONS – GENERAL RECOMMENDATIONS

Specific response actions for each ACBM located at the Phillips School are located in Section H below. The following are general recommendations for response actions associated with managing ACBMs at any school facility.

1. Damaged materials in the school should be removed or repaired in order to maintain compliance with the AHERA regulations. Damaged ACBMs with over three linear or three square feet listed in the reports should be repaired or removed by a Massachusetts licensed asbestos abatement contractor and final clearance air testing performed in accordance with the AHERA regulations.

2. AHERA regulations state that the response actions chosen for other than small scale/short duration repairs (less than 3 square or linear feet), must be designed and conducted by persons accredited to design and conduct response actions. Massachusetts Division of Labor Standards (DLS) Regulation 453 CMR 6.07 requires the services of certified Abatement Project Designers who meet the requirements set forth in 453 CMR 6.07.

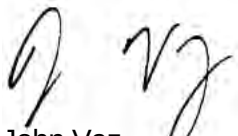
4. Damaged ACBMs that involve small scale/short duration repairs can only be conducted by 16-hour asbestos-trained personnel or by a licensed asbestos abatement contractor.

5. Each ACBM should be monitored for any changes in condition during the six-month periodic surveillance.

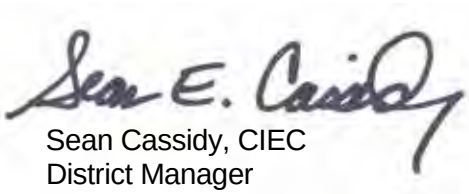
6. If known or suspect ACBMs are to be impacted by planned renovation or demolition activities, the ACBM must be removed by a Massachusetts licensed asbestos abatement contractor.

F. AHERA LICENSING & TRAINING DOCUMENTATION

The AHERA re-inspection and Management Plan update report for the Watertown High School was conducted by the following USEPA trained and Massachusetts licensed personnel:



John Vaz
Project Manager
MA Asbestos Inspector # Al 000270



Sean Cassidy, CIEC
District Manager
MA Asbestos Inspector # AL 410059
MA Asbestos Management Planner #AP 410060

G. ASBESTOS BULK SAMPLING

As stated previously, a copy the asbestos survey report and laboratory analytical documentation for the Phillips School are presented in Attachment A. An inventory of ACBM and floor plans depicting ACBM locations are presented in Attachment B.

H. ACBM HAZARD ASSESSMENT & RECOMMENDED RESPONSE ACTIONS

Accessible locations with friable and non-friable ACBM were inspected and assessed to determine the condition of the ACBM. The following is a listing of known and assumed ACBMs present at the facility, the physical and hazard assessments of the ACBM, and the recommended response action for each ACBM. It should be noted that EFI did not conduct destructive evaluations of the school building to identify ACBM. Per USEPA and Massachusetts Department of Environmental Protection (DEP) asbestos regulations, a path of construction survey should be conducted prior to any renovation or repair activities that may impact suspect ACBM, regardless of the date of installation. A detailed inventory of the types, quantities, and locations of ACBM is presented in Attachment B.

Homogeneous Area No. 1 – Joint Compound and Associated Sheetrock

The asbestos containing joint compound and associated sheetrock walls/ceilings, located throughout the site building, was observed to be in good condition at the time of the re-inspection survey.

Physical Assessment: 6

Hazard Rank: 3

Recommended Response Action: The asbestos-containing joint compound that is in good condition should be managed in place in accordance with the Asbestos O&M Program.

Homogeneous Area No. 2 – Pipe Fittings

The asbestos-containing pipe fittings, located in Rooms 106 and 106A, were observed to be in good condition at the time of this re-inspection survey.

Physical Assessment: 5

Hazard Rank: 2

Recommended Response Action: The asbestos-containing pipe fittings that are in good condition should be managed in place in accordance with the Asbestos O&M Program.

Homogeneous Area No. 3 – Pipe Insulation

The asbestos containing pipe insulation, located in Room 106A, was observed to be in good condition at the time of the re-inspection survey. The asbestos containing pipe insulation, located in Room 106, was observed to be in damaged condition at the time of this re-inspection survey.

Physical Assessment: 6 (1 for Room 106)

Hazard Rank: 3 (6 for Room 106)

Recommended Response Action: The asbestos-containing pipe insulation that is in good condition should be managed in place in accordance with the Asbestos O&M Program. The

asbestos containing pipe insulation in damaged condition should be repaired and/or abated by a Massachusetts-licensed asbestos abatement contractor.

Homogeneous Area No. 4 – Boiler Exhaust Insulation

The asbestos containing boiler exhaust insulation, located in the Basement in Room 106, was observed to be in good condition at the time of the re-inspection survey.

Physical Assessment: 5

Hazard Rank: 2

Recommended Response Action: The asbestos-containing boiler exhaust insulation that is in good condition should be managed in place in accordance with the Asbestos O&M Program.

Homogeneous Area No. 5 – Tank Insulation

The asbestos-containing tank insulation, located in Room 106, was observed to be in good condition at the time of the re-inspection survey.

Physical Assessment: 5

Hazard Rank: 2

Recommended Response Action: The asbestos-containing tank insulation that is in good condition should be managed in place in accordance with the Asbestos O&M Program.

I. Cost Estimate For Recommended Response Actions

Approximately 20 linear feet of asbestos containing pipe/fitting insulation in Room 106A, was observed to be in damaged condition at the time of survey. EFI recommends that the damaged areas of pipe/fitting insulation repaired by a Massachusetts licensed asbestos abatement contractor by sealing with wettable fiberglass wrap. This response action should be conducted within a timeframe of 30 days. It is estimated that pipe/fitting insulation repairs will cost between $2,500 and $4,000.

Although the remaining confirmed and ACBMs outlined above were in good condition at the time of the assessment, there are costs associated with managing ACBMs in place. Under AHERA, the LEA must conduct 6-month surveillance and 3-year re-inspections and reports must be prepared outlining the findings of these activities. It is estimated that the total cost to maintain the ACBMs in place over the next three years is approximately $4,000 for this school.

ATTACHMENT A

ASBESTOS SURVEY REPORT

155 West Street
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Wilmington, MA 01887
T: 978-688-3736
T**F:** 800-659-1202
F: 978-688-5494
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EFI Global
Engineering, Fire & Environmental Services

September 19, 2017

Ms. Mary DeLai
Assistant Superintendent
Finance & Operations
Town of Watertown
149 Main Street
Watertown, Massachusetts 02472

RE: **Limited AHERA Asbestos Survey Report**
Phillips School
31 Marshall Street
Watertown, Massachusetts
EFI Project No. 98350-06416

Dear Ms. DeLai:

At to your request, EFI Global, Inc. (EFI) performed a limited asbestos survey at the Phillips School, located at 31 Marshall Street in Watertown, Massachusetts (Site). The Phillips School is a three-story structure constructed in 1937, and is constructed on a poured concrete foundation with brick exterior walls, with an area of approximately 35,000 square feet. At the time of this survey, the building was being utilized for school administration activities associated with Watertown Public Schools, as well as, special education activities. The limited asbestos survey was conducted of the interior of the school building to update the Asbestos Hazard Emergency Response Act (AHERA) Asbestos Management Plan for the school.

SURVEY PROCEDURES

EFI asbestos inspectors, Mr. Derrick Calvario and Mr. John Vaz, conducted the site visit and asbestos testing on August 29, 2017. Samples of suspect ACMs identified during the survey were collected and submitted under chain of custody protocol to EMSL Analytical, Inc. (EMSL) of Woburn, Massachusetts, a Massachusetts-licensed laboratory. EMSL is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos fiber analysis which is administered by the National Institute of Standards and Testing (NIST). The samples were analyzed using polarized light microscopy (PLM) with dispersion staining via EPA's "Method for the Determination of Asbestos in Bulk Building Materials" (EPA/600/R-93/116). Asbestos concentrations for the samples were determined by visual area estimation. Commonwealth of Massachusetts asbestos regulations define an ACM as any material containing greater than or equal to one percent asbestos.

SURVEY RESULTS

The following suspect ACMs sampled by EFI were reported by EMSL as containing no detectable concentration of asbestos:

- 12”x12” white mottled floor tile
- 12”x12” red mottled inlay floor tile
- Mastic associated with 12”x12” white and red mottled floor tiles
- Sheetrock*
- Skim coat plaster
- Coarse coat plaster
- 2’x2’ rough finish ceiling tile
- Floor tile grout
- Wall tile grout
- Brown floor tread and associated yellow mastic
- Grey cove base and associated yellow mastic
- Black cove base and associated mastic
- White sink undercoat
- Green carpet mastic
- Residual black floor tile mastic
- 12”x12” off-white floor tile and associated yellow mastic
- Grey leveler under carpet
- White pipe penetration sealant
- Mud on fiberglass line end
- 2’x4’ crow feet ceiling tile
- 12”x12” peach mottled floor tile and associated yellow mastic
- Tan cove base and associated mastic
- 1’x1’ pin-dot spline ceiling tile and associated brown glue daubs
- Terrazzo floor
- 12”x12” beige mottled floor tile
- 12”x12” blue mottled inlay floor tile
- Mastic associated with 12”x12” blue and beige mottled floor tiles
- Blue cove base and associated mastic
- Black lab benchtop

*Sheetrock to be managed as ACM due to ACM joint compound contamination

The following suspect ACMs sampled by EFI were reported by EMSL as containing greater than or equal to one percent asbestos, the Massachusetts limit for classification as ACM:

- Boiler exhaust insulation
- Tank insulation
- Pipe insulation
- Pipe fittings
- Joint compound and associated sheetrock walls/ceilings

Several materials were assumed asbestos-containing. These materials were not sampled due to inaccessibility or because sampling the material would have caused damage in areas visible to building occupants. The materials assumed asbestos containing are as follows: fibrous ceiling panels in the Gym, and on fume hood in Room 201.

The locations and quantities of all asbestos-containing materials identified during the survey are presented in Table 1.

A copy of the laboratory report prepared by EMSL is presented in Attachment A. Representative photographs are presented in Attachment B. A floor plan depicting the asbestos sample locations is presented in Attachment C.

CONCLUSIONS AND RECOMMENDATIONS

The asbestos-containing joint compound observed throughout the site building were observed to be in good condition at the time of this survey. Asbestos containing boiler insulation and boiler insulation in Room 106 were also found to be in good condition at the time of site inspection. Pipe fittings found in Room 106 and 106A, and pipe insulation found in Room 106A were observed to be in good condition. Pipe insulation found in Room 106 was observed to be in damaged condition at the time of site inspection.

EFI recommends that the damaged pipe insulation observed in Room 106 be either repaired or abated by a licensed asbestos abatement contractor in accordance with Massachusetts Department of Environmental Protection and Massachusetts Department of Labor Standards asbestos regulations, as well as, local and federal regulations.

All confirmed and assumed ACMs within the school must be managed under an AHERA Asbestos Management Plan. The AHERA Asbestos Management Plan is presented under separate cover. If these materials are to be impacted in future renovation activities, EFI recommends that these materials be abated prior to the beginning of renovation activities. Asbestos abatement activities must be conducted by a Massachusetts licensed asbestos abatement contractor in accordance with Massachusetts Department of Environmental Protection and Massachusetts Department of Labor Standards asbestos regulations, as well as, local and federal regulations.

EFI is available to assist with abatement contractor oversight and air monitoring as required by applicable Massachusetts and federal asbestos regulations.

If suspect ACMs other than the above-referenced materials are identified during future renovation or demolition activities, EFI recommends that they be sampled by a Massachusetts-licensed asbestos inspector and analyzed by a Massachusetts-licensed asbestos analytical laboratory.

LIMITATIONS

EFI's survey was limited to those portions of the interior of the Site building accessible by reasonable and ordinary means. EFI did not perform destructive testing and investigations to identify suspect ACMs within the building. EFI's inspection did not include an evaluation of underground foundation damp-proofing, transite water/sewer piping, and materials that may be present behind solid walls/ceilings and within mechanical and electrical equipment.

EFI is pleased to provide environmental consulting services to Watertown Public Schools. If you have any questions regarding the contents of this report, or are in need of additional information, please do not hesitate to contact either of the undersigned at 800-659-1202. Thank you for the opportunity to serve your environmental needs.

Sincerely,
EFI Global, Inc.

John Vaz
Project Manager

Sean E. Cassidy, CIEC
District Manager

Table1 – Asbestos-Containing Materials Inventory
Attachment A – Asbestos Laboratory Report
Attachment B – Photographs
Attachment C – Sample Location Drawings

ATTACHMENT A

ASBESTOS LABORATORY REPORT

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

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

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

EMSL Order: 131703930
Customer ID: EAFI66
Customer PO:
Project ID:

Attention: John Vaz
EFI Global, Inc.
155 West Street, Suite 6
Wilmington, MA 01887

Phone: (978) 688-3736
Fax: (978) 688-5494
Received Date: 08/30/2017 8:30 AM
Analysis Date: 09/06/2017 - 09/07/2017
Collected Date: 08/29/2017

Project: 98350-06416 / Philips School - Watertown, MA

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
001A *131703930-0001*	3rd Fl Hall - 12x12 White Mottled Floor Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
001B *131703930-0002*	3rd Fl Hall - 12x12 White Mottled Floor Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
002A *131703930-0003*	3rd Fl Hall - 12x12 Red Mottled Inlay Floor Tile	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
002B *131703930-0004*	3rd Fl Hall - 12x12 Red Mottled Inlay Floor Tile	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
003A *131703930-0005*	3rd Fl Hall - Mastic Assoc. w/ Red/White Floor Tile	Tan/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
003B *131703930-0006*	3rd Fl Hall - Mastic Assoc. w/ Red/White Floor Tile	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
004A *131703930-0007*	3rd Fl Hall - Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
004B *131703930-0008*	Main Office Suite 3rd Fl - Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
005A *131703930-0009*	3rd Fl Hall - Sheetrock	Gray Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
005B *131703930-0010*	2nd Fl Hall - Sheetrock	Gray Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
006A *131703930-0011*	3rd Fl Hall - Skim Coat Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
006B *131703930-0012*	Rm 301 - Skim Coat Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
006C *131703930-0013*	2nd Fl Hall - Skim Coat Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
006D *131703930-0014*	Rm 212 - Skim Coat Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
007A *131703930-0015*	3rd Fl Hall - Coarse Coat Plaster	Gray Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
007B *131703930-0016*	Rm 301 - Coarse Coat Plaster	Gray Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected

Initial report from: 09/07/2017 10:06:28

EMSL Analytical, Inc.
5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 131703930
Customer ID: EAFI66
Customer PO:
Project ID:

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
007C *131703930-0017*	2nd Fl Hall - Coarse Coat Plaster	Gray Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
007D *131703930-0018*	Rm 212 - Coarse Coat Plaster	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
008A *131703930-0019*	Room 303 - 2x2 Rough Finish Ceiling Tile	Tan/White Fibrous Homogeneous	35% Cellulose 35% Min. Wool	30% Non-fibrous (Other)	None Detected
008B *131703930-0020*	2nd Fl Hall - 2x2 Rough Finish Ceiling Tile	Tan/White Fibrous Homogeneous	35% Cellulose 35% Min. Wool	30% Non-fibrous (Other)	None Detected
009A *131703930-0021*	3rd Fl Mens - Floor Tile Grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
009B *131703930-0022*	3rd Fl Womens - Floor Tile Grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
010A *131703930-0023*	3rd Fl Mens - Wall Tile Grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
010B *131703930-0024*	3rd Fl Womens - Wall Tile Grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
011A *131703930-0025*	East Stairwell - Brown Floor Tread	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
011B *131703930-0026*	West Stairwell - Brown Floor Tread	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
012A *131703930-0027*	East Stairwell - Associated Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
012B *131703930-0028*	West Stairwell - Associated Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
013A *131703930-0029*	Main Office Suite 3rd Fl - Grey Cove Base	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
013B *131703930-0030*	Main Office Suite 3rd Fl - Grey Cove Base	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
014A *131703930-0031*	Main Office 3rd Fl - Associated Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
014B *131703930-0032*	Main Office 3rd Fl - Associated Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
015A *131703930-0033*	Main Office 3rd Fl - Black Cove Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
015B *131703930-0034*	Rm 301 - Black Cove Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
016A *131703930-0035*	Main Office 3rd Fl - Associated Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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EMSL Order: 131703930
Customer ID: EAFI66
Customer PO:
Project ID:

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
016B *131703930-0036*	Rm 301 - Associated Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
017A *131703930-0037*	Rm 303 - White Sink Undercoat	White Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
017B *131703930-0038*	Rm 303 - White Sink Undercoat	White Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
018A *131703930-0039*	Rm 306 Suite - Green Carpet Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
018B *131703930-0040*	Rm 207 - Green Carpet Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
019A *131703930-0041*	Rm 212 - Residual Black Floor Tile Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
019B *131703930-0042*	Rm 212 - Residual Black Floor Tile Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
004C *131703930-0043*	2nd Fl Hall - Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
004D *131703930-0044*	Rm 111 - Joint Compound	Tan/White Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
004E *131703930-0045*	Rm 127 - Joint Compound				Positive Stop (Not Analyzed)
004F *131703930-0046*	Rm 209 - Joint Compound				Positive Stop (Not Analyzed)
004G *131703930-0047*	Rm 306 - Joint Compound				Positive Stop (Not Analyzed)
020A *131703930-0048*	2nd Fl Hall - 12x12 Off-White Mottled Floor Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
020B *131703930-0049*	2nd Fl Hall - 12x12 Off-White Mottled Floor Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
021A *131703930-0050*	2nd Fl Hall - Associated Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
021B *131703930-0051*	2nd Fl Hall - Associated Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
022A *131703930-0052*	Rm 207 - Grey Leveler Under Carpet	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
022B *131703930-0053*	Rm 207 - Grey Leveler Under Carpet	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
023A *131703930-0054*	2nd Fl Hall - White Pipe Penetration Sealant	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
023B *131703930-0055*	2nd Fl Hall - White Pipe Penetration Sealant	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
006E *131703930-0056*	Rm 208 - Skim Coat Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
006F *131703930-0057*	Rm 115 - Skim Coat Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
006G *131703930-0058*	Rm 124 - Skim Coat Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
007E *131703930-0059*	Rm 208 - Coarse Coat Plaster	Gray Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
007F *131703930-0060*	Rm 115 - Coarse Coat Plaster	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
007G *131703930-0061*	Rm 124 - Coarse Coat Plaster	Gray Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
024A *131703930-0062*	Rm 201 - Lab Benchtop	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
024B *131703930-0063*	Rm 201 - Lab Benchtop	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
025A *131703930-0064*	106A, 106 - Pipe Insulation	White Fibrous Homogeneous		58% Non-fibrous (Other)	2% Amosite 40% Chrysotile <1% Crocidolite
025B *131703930-0065*	106A, 106 - Pipe Insulation				Positive Stop (Not Analyzed)
025C *131703930-0066*	106A, 106 - Pipe Insulation				Positive Stop (Not Analyzed)
026A *131703930-0067*	106A, 106 - Pipe Fitting	Gray Fibrous Homogeneous	30% Min. Wool	50% Non-fibrous (Other)	20% Chrysotile
026B *131703930-0068*	106A, 106 - Pipe Fitting				Positive Stop (Not Analyzed)
026C *131703930-0069*	106A, 106 - Pipe Fitting				Positive Stop (Not Analyzed)
027A *131703930-0070*	Rm 106 - Boiler Exhaust Insulation	Gray/White Fibrous Homogeneous	40% Glass	50% Non-fibrous (Other)	<1% Amosite 10% Chrysotile
027B *131703930-0071*	Rm 106 - Boiler Exhaust Insulation				Positive Stop (Not Analyzed)
027C *131703930-0072*	Rm 106 - Boiler Exhaust Insulation				Positive Stop (Not Analyzed)
028A *131703930-0073*	Rm 106 - Tank Insulation	White Fibrous Homogeneous	30% Glass	50% Non-fibrous (Other)	20% Chrysotile

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EMSL Order: 131703930
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Customer PO:
Project ID:

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

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
028B *131703930-0074*	Rm 106 - Tank Insulation				Positive Stop (Not Analyzed)
028C *131703930-0075*	Rm 106 - Tank Insulation				Positive Stop (Not Analyzed)
029A *131703930-0076*	Rm 106 - Mud on Fiberglass Line End	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
029B *131703930-0077*	Rm 106 - Mud on Fiberglass Line End	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
030A *131703930-0078*	Rm 101 - 2x4 Crow Feet Ceiling Tile	Tan/White Fibrous Homogeneous	35% Cellulose 35% Min. Wool	30% Non-fibrous (Other)	None Detected
030B *131703930-0079*	Maintenance Office - 2x4 Crow Feet Ceiling Tile	Tan/White Fibrous Homogeneous	35% Cellulose 35% Min. Wool	30% Non-fibrous (Other)	None Detected
031A *131703930-0080*	1st Floor Hall - 12x12 Perch Mottled Floor Tile	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
031B *131703930-0081*	1st Floor Hall - 12x12 Perch Mottled Floor Tile	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
032A *131703930-0082*	1st Floor Hall - Associated Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
032B *131703930-0083*	1st Floor Hall - Associated Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
033A *131703930-0084*	115 Suite - Tan Cove Base	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
033B *131703930-0085*	115 Suite - Tan Cove Base	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
034A *131703930-0086*	115 Suite - Associated Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
034B *131703930-0087*	115 Suite - Associated Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
035A *131703930-0088*	1st Fl Hall - 1x1 Pindot Spline Ceiling Tile	Tan/White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
035B *131703930-0089*	1st Fl Hall - 1x1 Pindot Spline Ceiling Tile	Tan/White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
036A *131703930-0090*	1st Fl Hall - Associated Brown Glue Daubs	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
036B *131703930-0091*	1st Fl Hall - Associated Brown Glue Daubs	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
037A *131703930-0092*	1st Fl Mens Rm - Terrazzo Floor	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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EMSL Order: 131703930
Customer ID: EAFI66
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Project ID:

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
037B *131703930-0093*	127 Suite Bathroom - Terrazzo Floor	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
038A *131703930-0094*	12x12 Blue Mottled Floor Tile	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
038B *131703930-0095*	12x12 Blue Mottled Floor Tile	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
039A *131703930-0096*	127 Suite - 12x12 Beige Mottled Floor Tile	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
039B *131703930-0097*	127 Suite - 12x12 Beige Mottled Floor Tile	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
040A *131703930-0098*	127 Suite - Mastic Associated w/ Blue/Beige Floor Tile	Gray/Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
040B *131703930-0099*	127 Suite - Mastic Associated w/ Blue/Beige Floor Tile	Gray/Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
041A *131703930-0100*	127 Suite - Blue Cove Base	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
041B *131703930-0101*	127 Suite - Blue Cove Base	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
042A *131703930-0102*	127 Suite - Associated Adhesive	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
042B *131703930-0103*	127 Suite - Associated Adhesive	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Elizabeth Stutts (92)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 09/07/2017 10:06:28

OrderID: 131703930

131703930

155 West Street, Suite 6
Wilmington, MA 01887
T: 978-688-3736
TF: 800-659-1202
F: 978-688-5494
www.efiglobal.com

EFI Global
Engineering, Fire & Environmental Services

BULK SAMPLE CHAIN OF CUSTODY FORM

Report to (Name):	John Vaz	Bill To:	Accounts Payable
Company:	EFI Global, Inc.	Address:	Same
Address:	155 West Street	City, State, Zip:	Same
	Suite 6	Telephone:	800-659-1202
City, State, Zip:	Wilmington, MA 01887	Fax:	978-688-5494

Project Information

Project No./ Description:	98350- 06416 Philips School- Watertown MA
Email Report to:	Lynda_McDermott@efiglobal.com
Alternate:	John_Vaz @ " " Sean_Cassidy " "

Requested Turnaround Time:

☐ RUSH	☐ 1 day	☐ 2 day	☐ 3 day	☑ 5 day

Media and Methodology

Type of Analysis:	ACM- PLM.	Check for Positive Stop:	☒
Notes:	Analyze all plaster and joint compound samples	Date Collected:	8/29/17

Sample ID	Type of Material	Location	Friable Y/N	Condition G/D/SD
001 A,B	12x12 White Mottled Floor Tile	3RD FL Hall		
002A,B	12x12 Red Mottled Inlay Floor Tile	" " "		
003A,B	Mastic Assoc. w/Red/White Floor Tile	" " "		
004A,B	Joint Compound	3RD FL Hall, Main Office Suite 3RD FL		
005A,B	Sheetrock	" " ", 2ND FL Hall.		
006A,B,C,D	Skim Coat Plaster,	" " ", Rm 301, 2ND FL Hall, Rm 212		
007A,B,C,D	Coarse Coat Plaster	" " ", Rm 301, 2ND FL Hall, Rm 212		
008A,B	2x2 Rough Finish Ceiling Tile.	Room 303, 2ND FL Hall.		
009A,B	Floor Tile Grout	3RD FL Mens, 3RD FL Womens		
010A,B	Wall Tile Grout	" " " " " "		
011A,B	Brown Floor Trend	East Stairwell, West Stairwell		

Total Number of Samples Submitted: _____

Samplers Name: John Vaz Samplers Signature _____

Relinquished By (Client): _____ Date: 8/30/17 Time: _____

Received By (Lab): _____ Date: _____ Time: _____

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By 8:30

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OrderID: 131703930

131703930

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*):

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

Sample #	Sample Description (Material Description and Room/Location)	Friable Y/N	Condition G/D/SD	Date/Time Sampled
012A,B.	Associated Yellow Mastic - East Stairwell, West Stairwell.			
013A,B	Grey Cove Base - Main Office Suite 3RD FL			
014A,B	Associated Yellow Mastic - Main Office 3RD FL			
015A,B.	Black Cove Base - Main Office 3RD FL, Rm 301			
016A,B	Associated Mastic - " " " " , Rm 301.			
017A,B	White Sink Undercoat - Rm 303.			
018A,B	Green Carpet Mastic - Rm 306 Suite, Rm 307.			
019A,B	Residual Black Floor Tile Mastic - Rm 212			
004C,D,E,F,G	Joint Compound - 2ND FL Hall; Rm 111, Rm 127, Rm 209, Rm 306			
020A,B	12x12 Off White Mottled Floor Tile - 2ND FL Hall			
021A,B	Associated Yellow Mastic - " " "			
022A,B.	Grey Leveler under Carpet, Rm 207.			
003A,B	White Pipe Penetration Sealant - 2ND FL Hall.			
006E,F,G	Skim Coat Plaster - Rm 208, 115, 124			
007E,F,G	Coarse Coat Plaster - Rm 208, 115, 124			
024A,B	Lab Benchtop - Rm 201			
025A,B,C	Pipe Insulation - 106A, 106			
026A,B,C	Pipe Fitting - 106A, 106			
027A,B,C	Boiler Exhaust Insulation - Rm 106			
028A,B,C	Tank Insulation - Rm 106.			
029A,B	Mud on Fiberglass Line End - Rm 106.			
030A,B	2x4 Crow Foot Ceiling Tile - Room 101, Maintenance Office			
031A,B.	12x12 Peach Mottled Floor Tile - 1ST Floor Hall.			
032A,B	Associated Yellow Mastic - 1ST FL Hall.			

***Comments/Special Instructions:**

Page _____ of _____ pages

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OrderID: 131703930

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*):

131703930

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

Sample #	Sample Description (Material Description and Room/Location)	Friable Y/N	Condition G/D/SD	Date/Time Sampled
033A,B	Tan Cove Base - 115 Suite			
034A,B	Associated Mastic - 115 Suite.			
035A,B	1x1 Pindot Spline Ceiling Tile - 1ST FL Hall			
036A,B	Associated Brown Glue Daubs - " " "			
037A,B	Terrazzo Floor, 1ST FL Mens Rm, 127 Suite Bathroom			
038A,B	12x12 Blue Mottled Floor Tile.			
039A,B	12x12 Beige Mottled Floor Tile - 127 Suite			
040A,B	Mastic Associated w/ Blue/Beige Floor Tile -	127 Suite		
041A,B	Blue Cove Base - 127 Suite			
042A,B	Associated Adhesive - 127 Suite.			

***Comments/Special Instructions:**

Page _____ of _____ pages

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ATTACHMENT B

PHOTOGRAPHS

Photographs

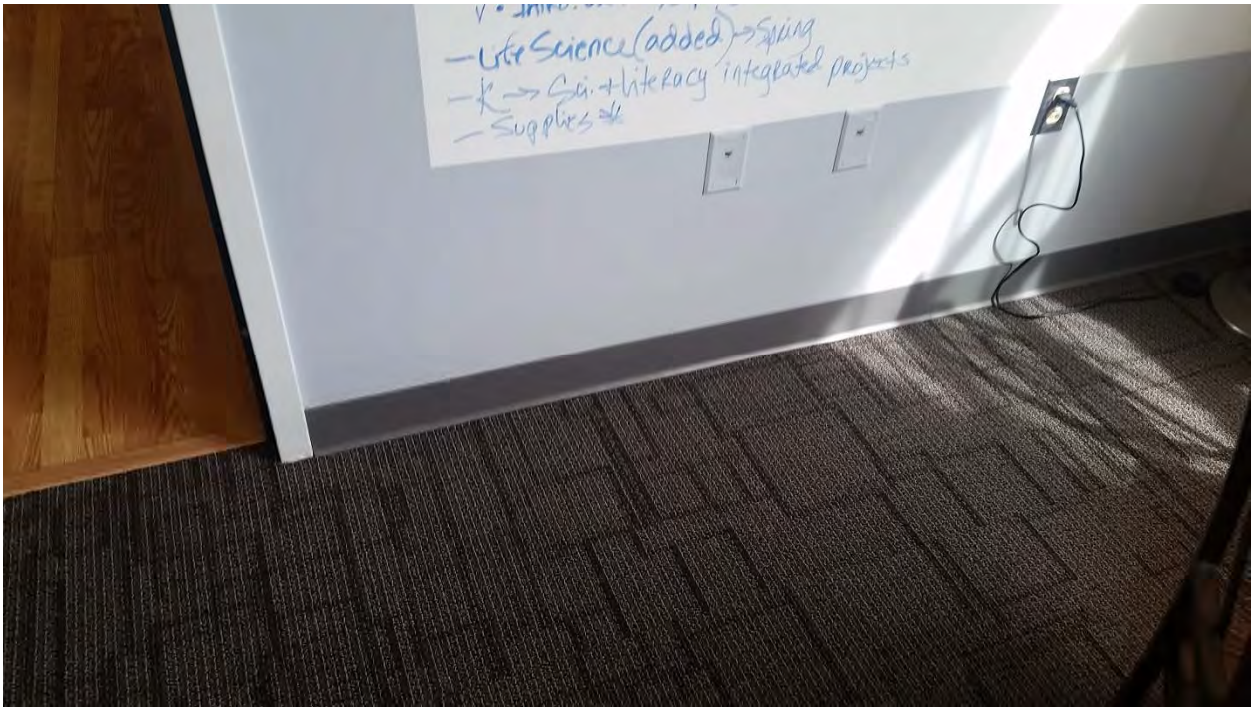
12”x12” white mottled floor tile, 12”x12” red inlay floor tile, and associated mastic

2’x2’ rough finish ceiling tile

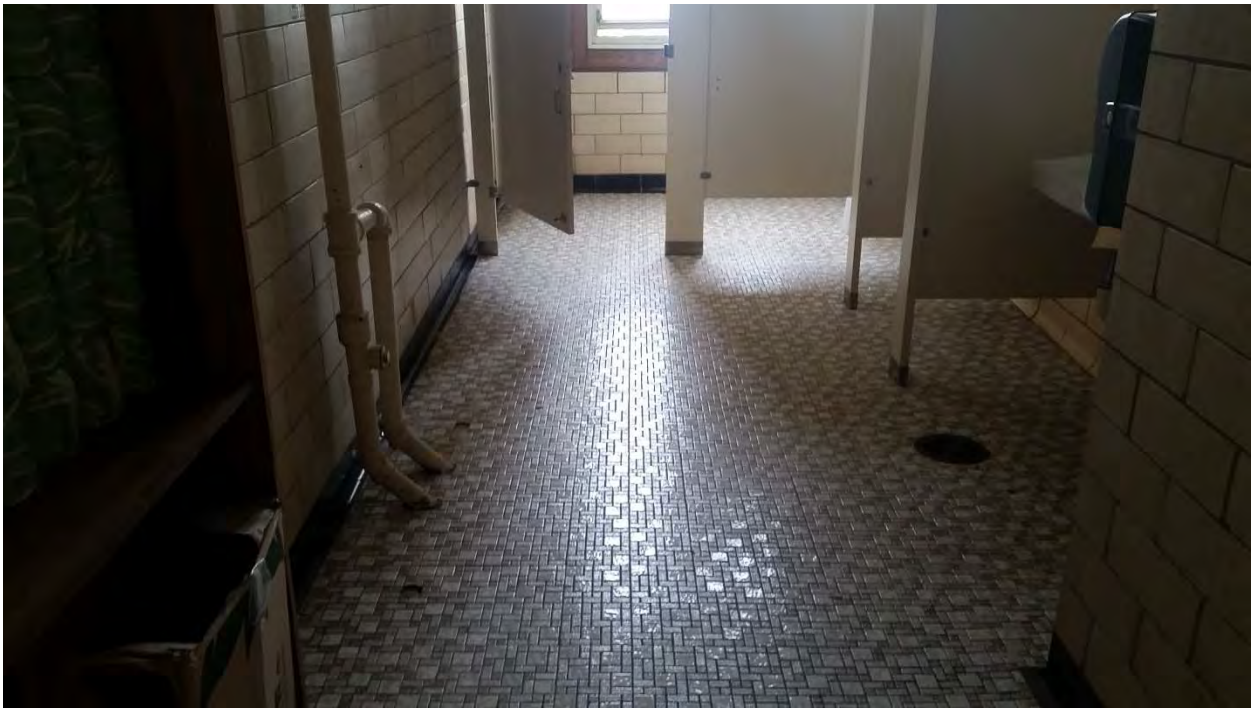
Plaster ceiling above drop ceiling in hall

White sink undercoat

Sheetrock/joint compound walls, and black cove base and associated mastic



Carpet mastic, and grey cove base and associated mastic



Ceramic floor tile grout and ceramic wall tile grout

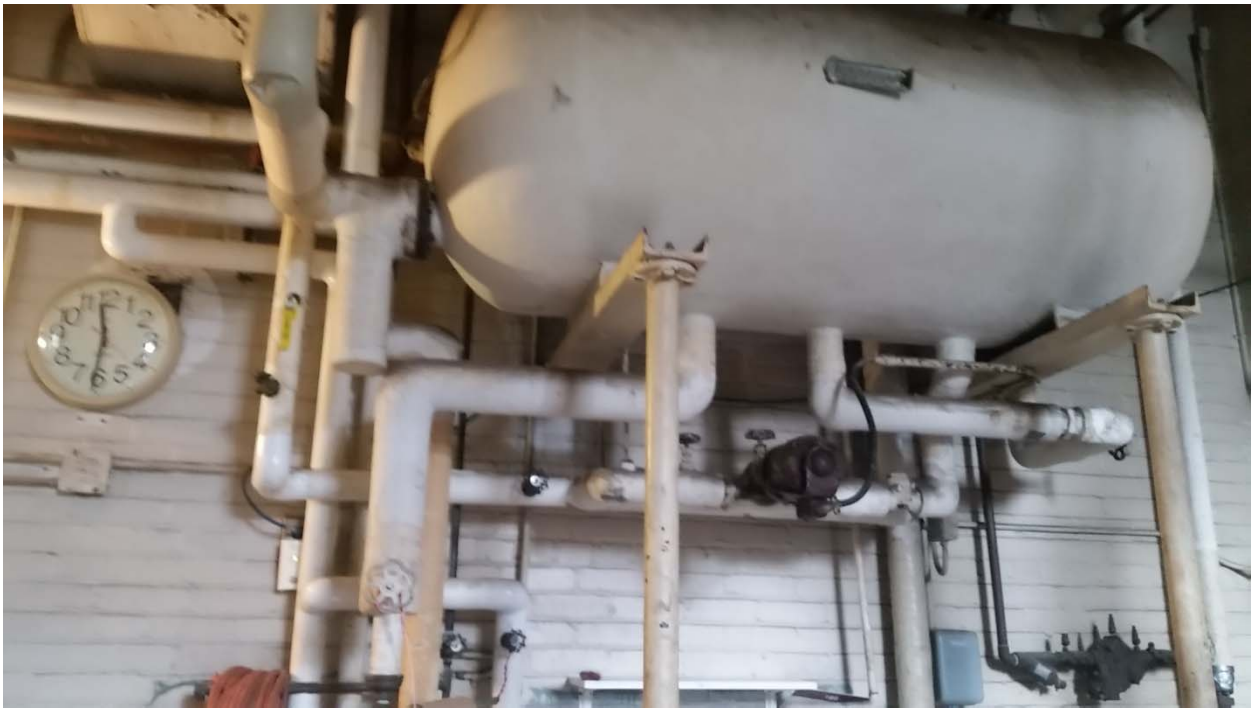
White penetration sealant

Green carpte mastic, grey leveler, and residual black flooring mastic beneath carpet

Lab benchtop

Fume hood in room 201 (assumed ACM)

12”x12” white mottled floor tile (right), and 12”x12” off-white mottled floor tile (left)



Pipe insulation, pipe fittings, and tank insulation

Boiler exhaust insulation

Blue fibrous ceiling panels in gym (assumed ACM)

Tan cove base and associated mastic

Mud on fiberglass line end

1’x1’ spline ceiling tile and associated brown glue daubs

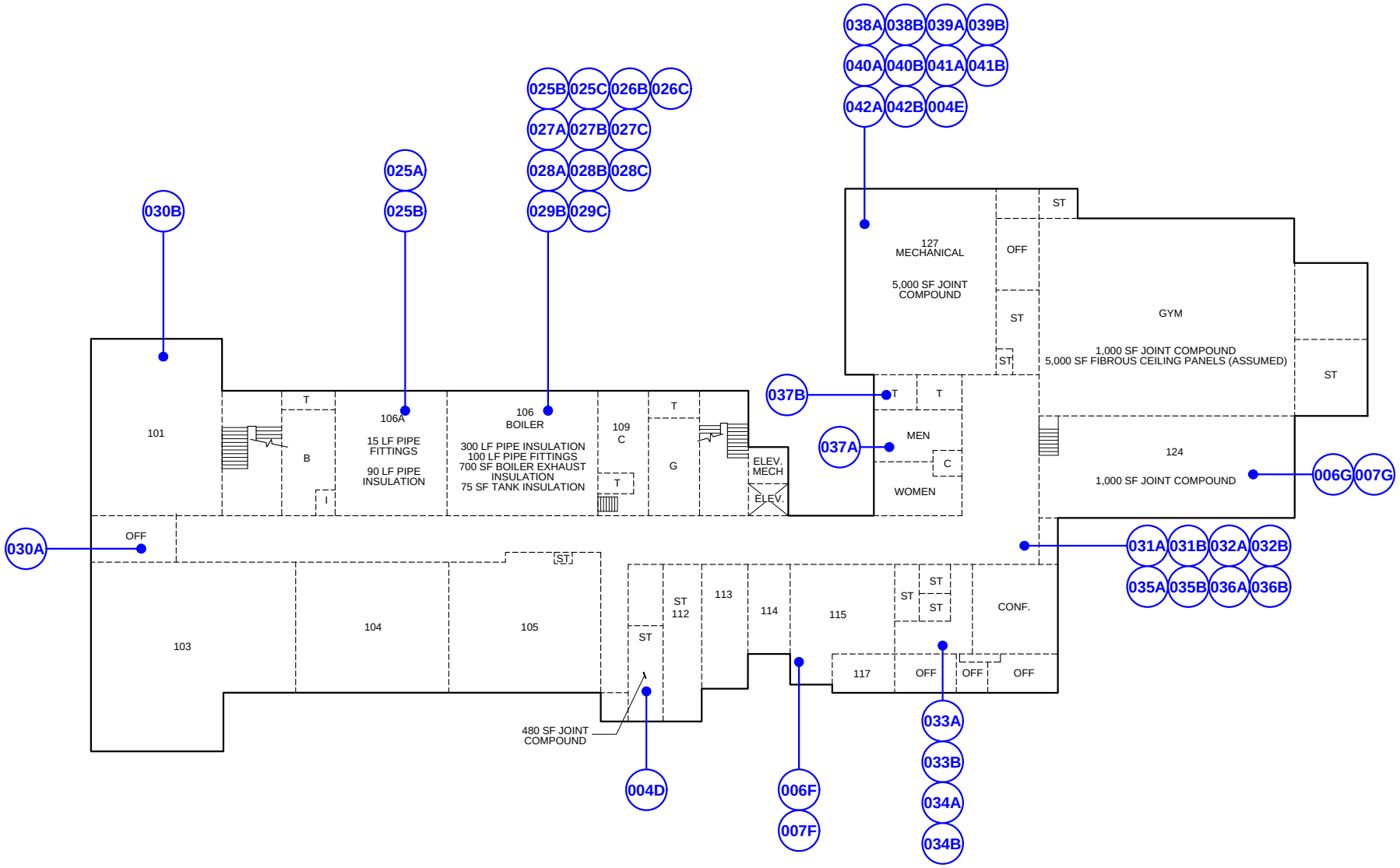
12”x12” peach mottled floor tile and associated yellow mastic

Terrazzo floor

12”x12” blue mottled floor tile, 12”x12” beige mottled floor tile and associated mastic; and blue cove base and associated mastic

ATTACHMENT C

SAMPLE LOCATION DRAWINGS



NOT TO SCALE

LEGEND

01A SAMPLING LOCATION

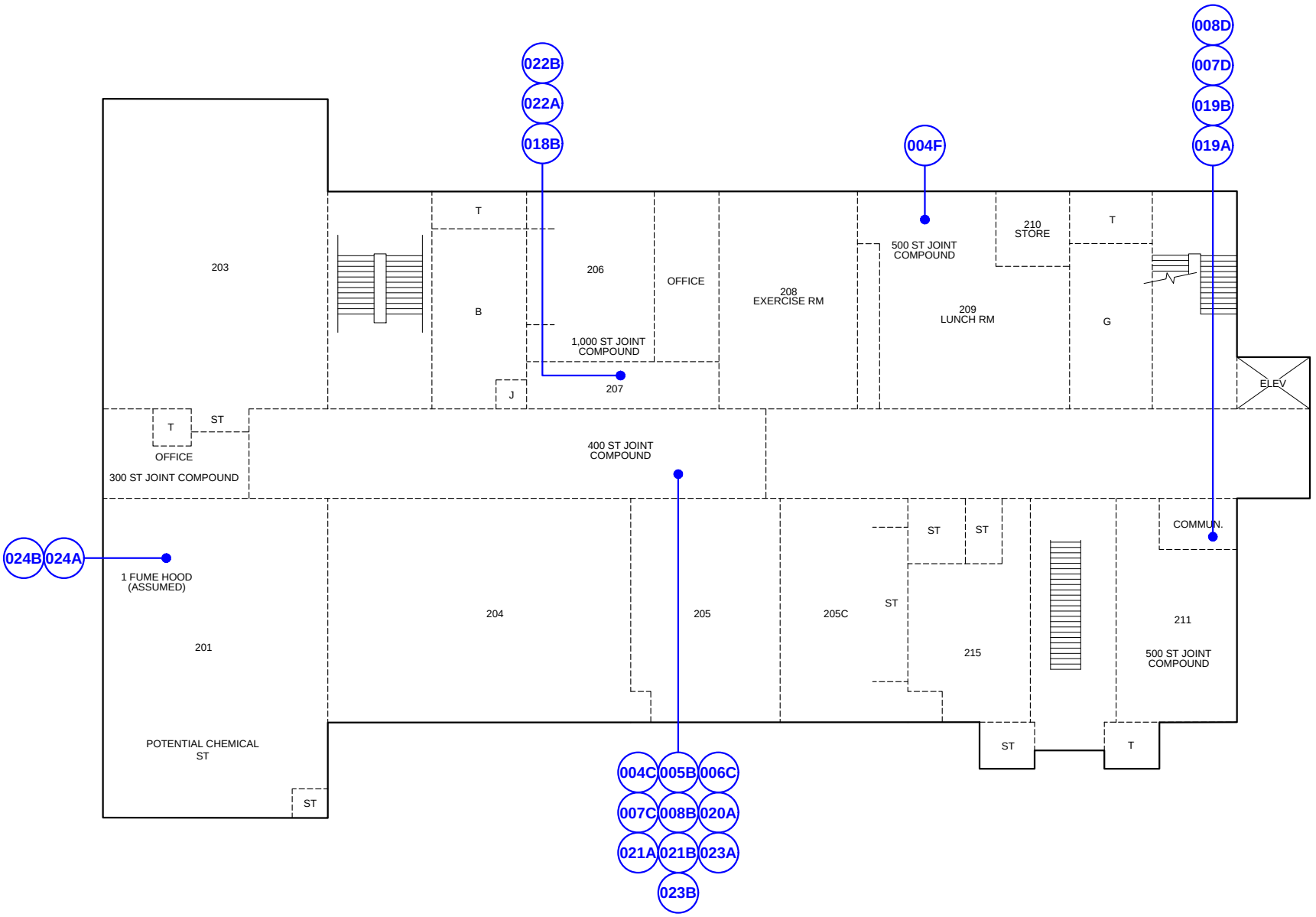
1ST FLOOR SAMPLING

WATERTOWN ALTERNATIVE (PHILLIPS) SCHOOL

EFI Global
Engineering, Fire & Environmental Services

PN: 9835006416	FIGURE 1
DT: 9/19/2017	
DB: JE	CB: CE

\\laefs02\current\AE 2017\Projects 2017\Other EFI Branch Projects\98350-06416_1 Concord Rd, Watertown, MA 02472\98350-06416_Figures-Phillips



NOT TO SCALE

LEGEND

01A SAMPLING LOCATION

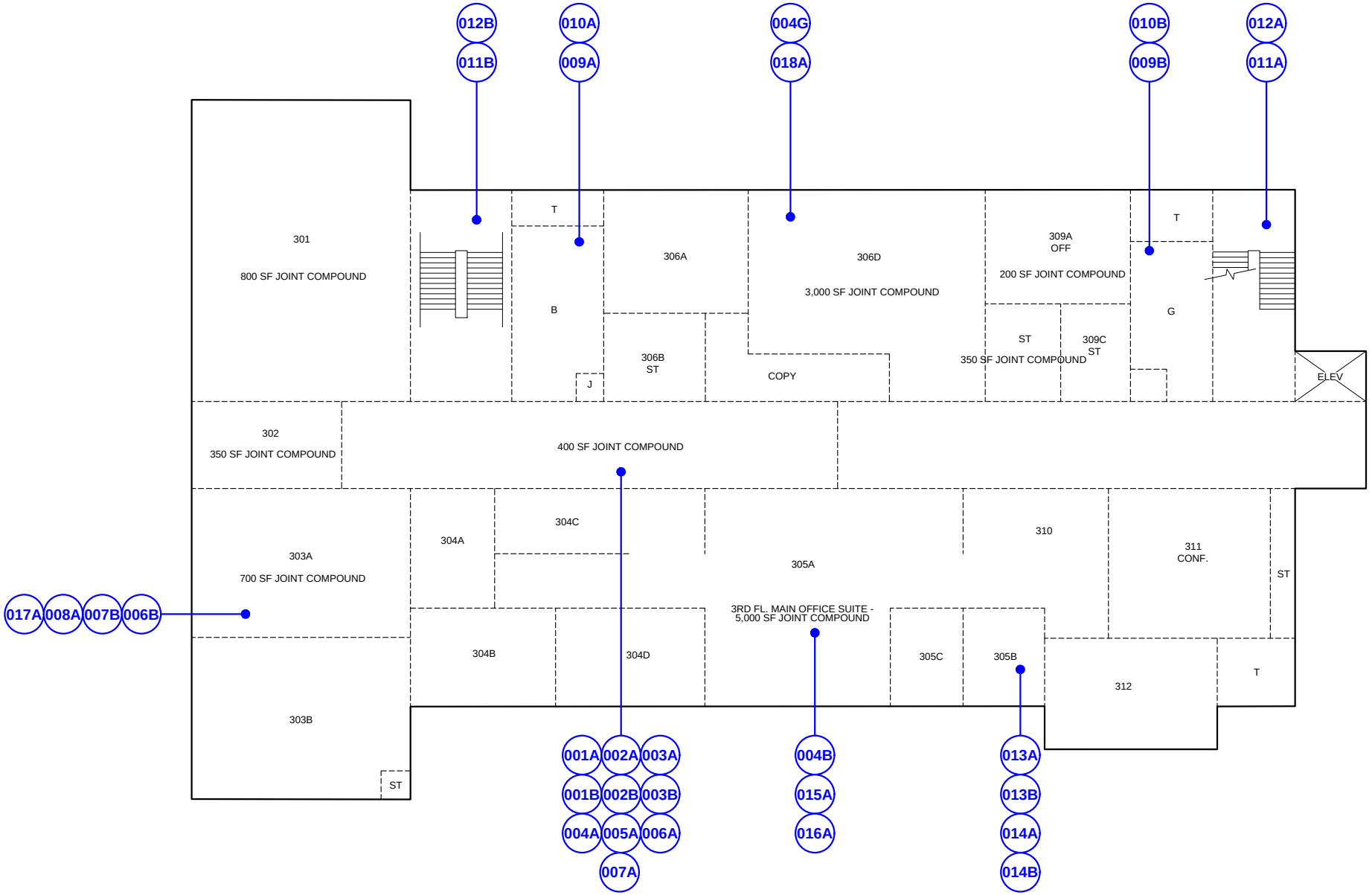
2ND FLOOR SAMPLING

WATERTOWN ALTERNATIVE (PHILLIPS) SCHOOL

EFI Global
Engineering, Fire & Environmental Services

PN: 9835006416	FIGURE 2
DT: 9/19/2017	
DB: JE CB: CE	

\\laefs02\current\AE 2017\Projects 2017\Other EFI Branch Projects\98350-06416_1 Concord Rd, Watertown, MA 02472\98350-06416_Figures-Phillips



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LEGEND

01A SAMPLING LOCATION

3RD FLOOR SAMPLING

WATERTOWN ALTERNATIVE (PHILLIPS) SCHOOL

EFI Global
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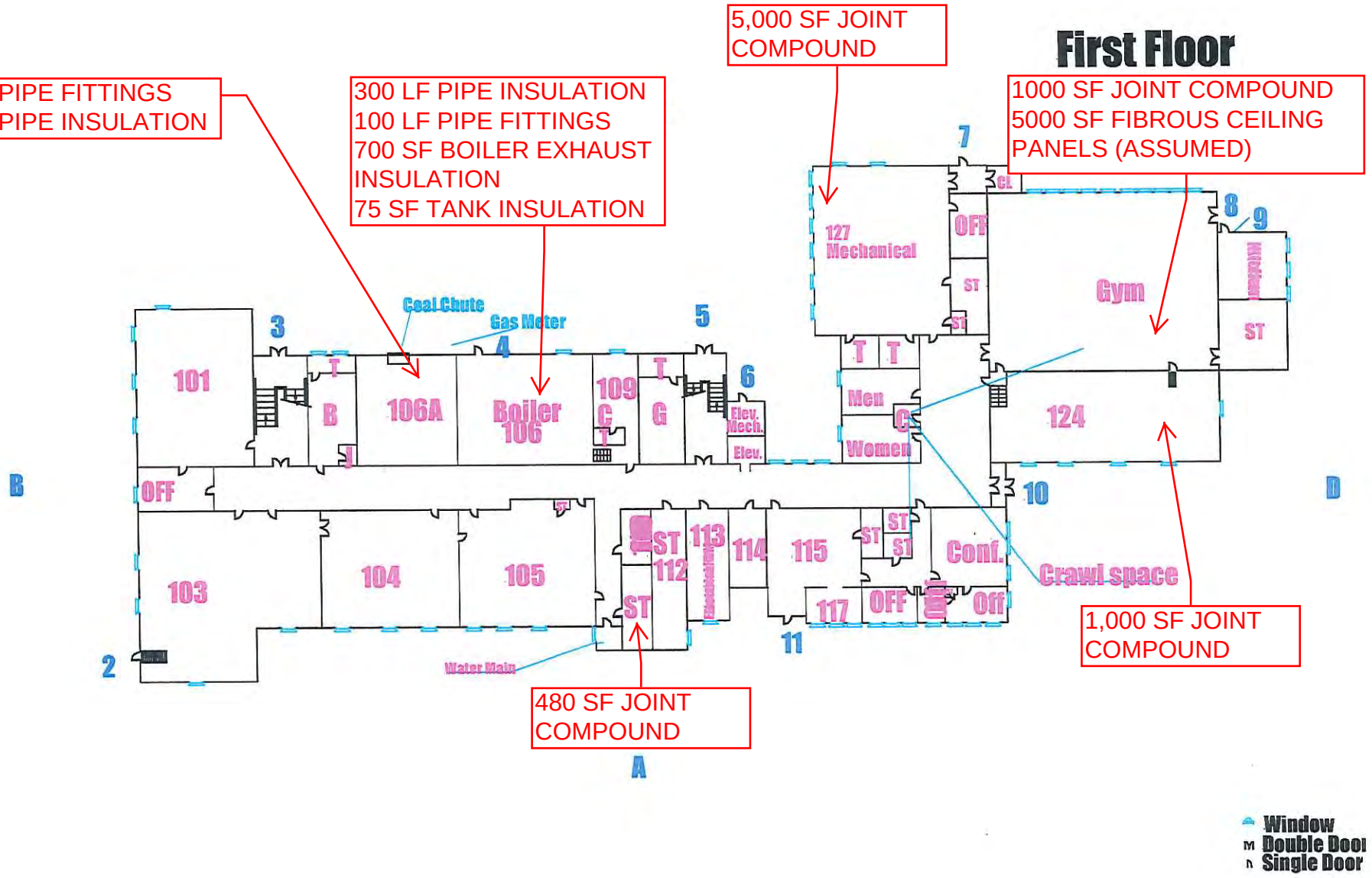
PN: 9835006416	FIGURE 3
DT: 9/19/2017	
DB: JE	CB: CE

\\aefs02\current\AE 2017\Projects 2017\Other EFI Branch Projects\98350-06416_1 Concord Rd, Watertown, MA 02472\98350-06416_Figures-Phillips

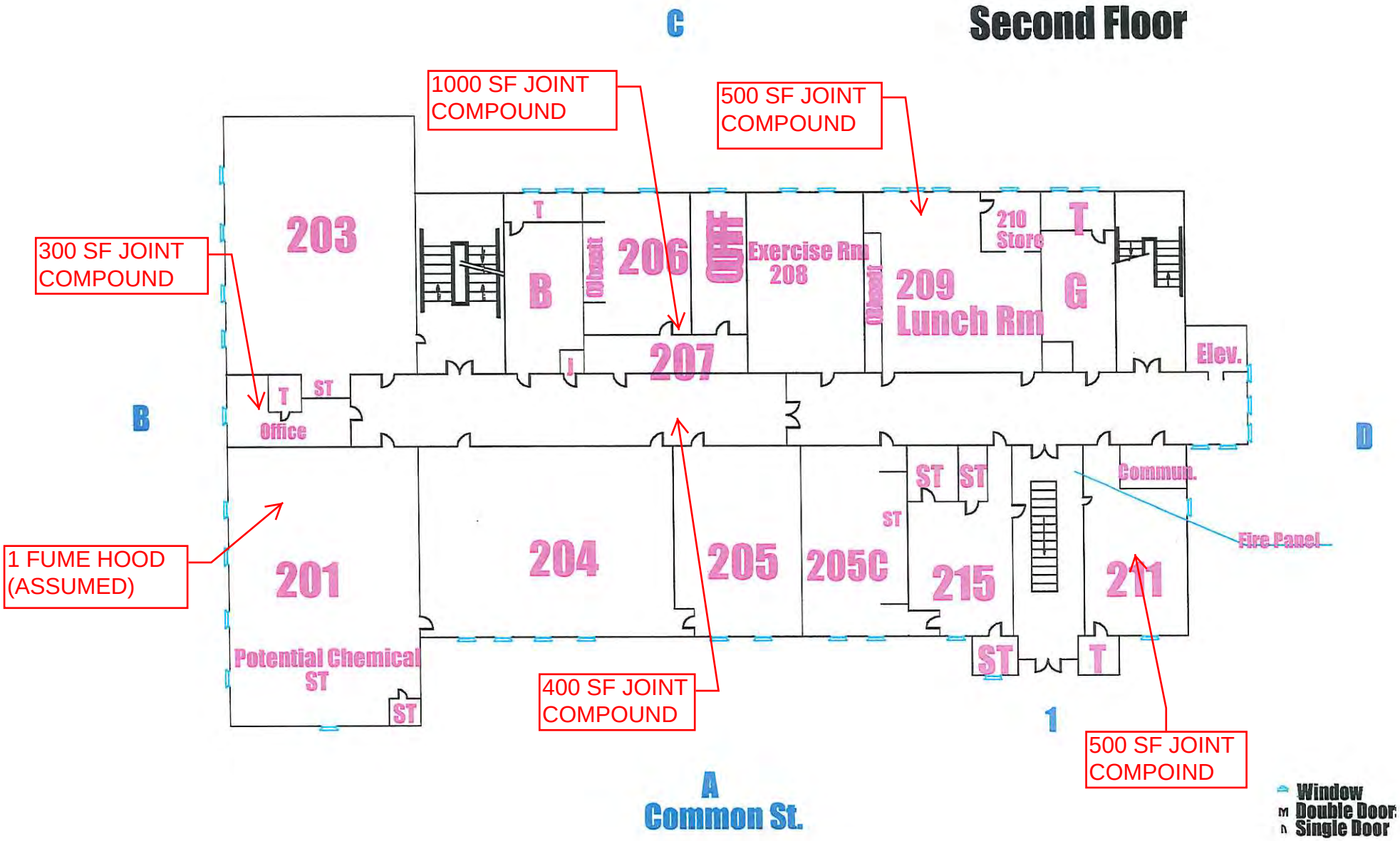
ATTACHMENT D

ACM LOCATION DRAWINGS

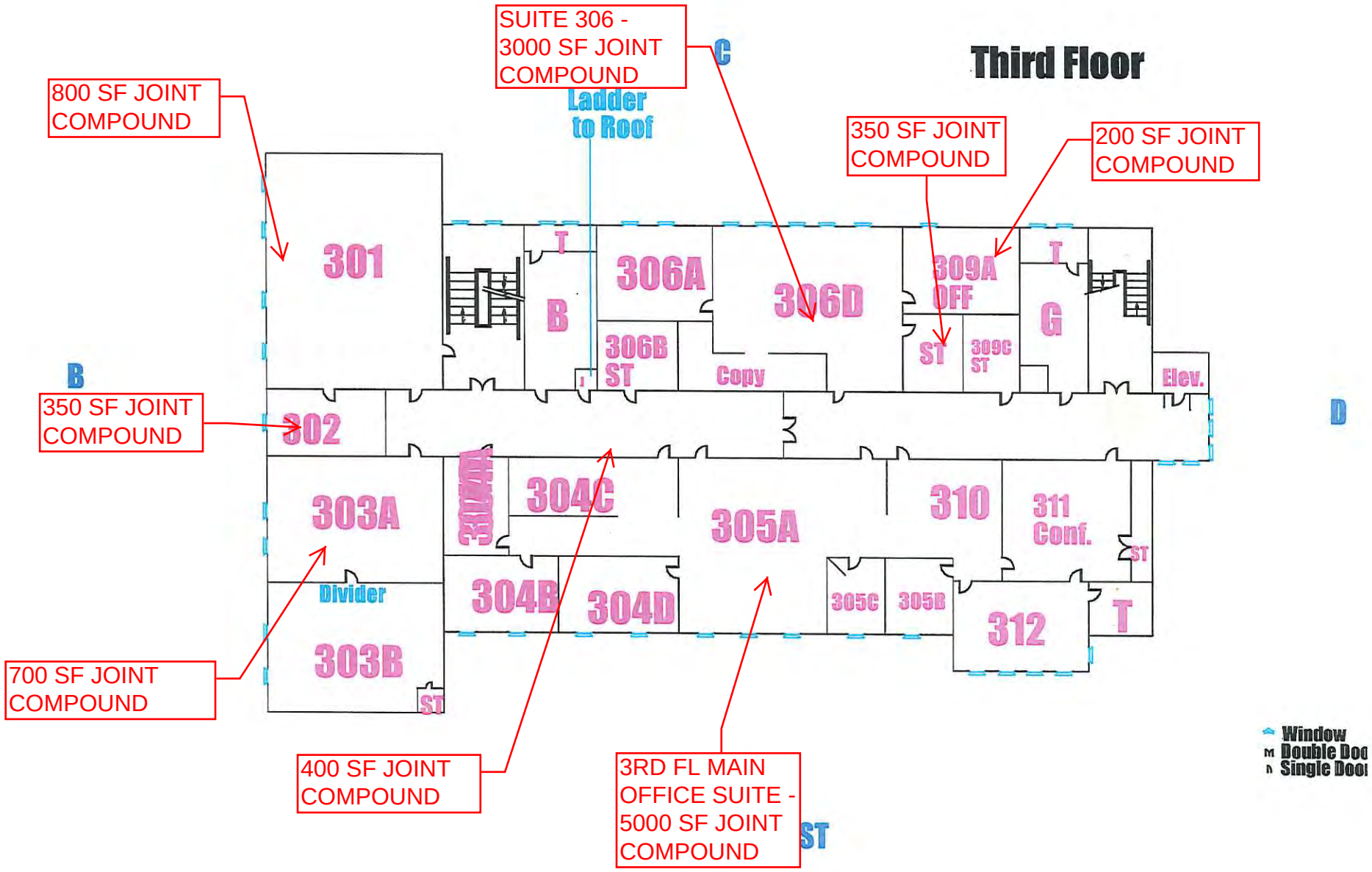
Watertown Alternative (Phillips) School



Watertown Alternative (Phillips) School



Watertown Alternative (Phillips) School



ATTACHMENT B

ACBM INVENTORY & LOCATIONS

Table 1

Asbestos-Containing Materials Inventory

Material Description	Material Location	Estimated Quantity
Joint Compound and Associated Sheetrock*	3rd Floor Hall	400 SF
Joint Compound and Associated Sheetrock and Associated Sheetrock*	Room 303A	700 SF
Joint Compound and Associated Sheetrock*	3rd Floor Main Office Suite	5,000 SF
Joint Compound and Associated Sheetrock*	Room 309	200 SF
Joint Compound and Associated Sheetrock*	Room 301	800 SF
Joint Compound and Associated Sheetrock*	Room 302	350 SF
Joint Compound and Associated Sheetrock*	Suite 306	3,000 SF
Joint Compound and Associated Sheetrock*	3rd Floor Storage	350 SF
Joint Compound and Associated Sheetrock*	2nd Floor Hall	400 SF
Joint Compound and Associated Sheetrock*	Room 207	1,000 SF
Joint Compound and Associated Sheetrock*	Room 211	500 SF
Joint Compound and Associated Sheetrock*	Room 209	500 SF
Joint Compound and Associated Sheetrock*	Room 202	300 SF
Joint Compound and Associated Sheetrock*	Room 111	480 SF
Joint Compound and Associated Sheetrock*	Room 124	1,000 SF
Joint Compound and Associated Sheetrock*	Gymnasium	1,000 SF
Joint Compound and Associated Sheetrock*	127 Suite	5,000 SF
Pipe Insulation	Room 106A	90 LF
Pipe Fittings	Room 106A	15 LF
Damaged Pipe/Fitting Insulation	Room 106A	20 LF
Pipe Insulation	Room 106	300 LF
Pipe Fittings	Room 106	100 LF
Boiler Exhaust Insulation	Room 106	700 SF
Tank Insulation	Room 106	75 SF

Materials Assumed To Be Asbestos-Containing

Material Description	Material Location	Estimated Quantity
Fibrous ceiling panels	Gym Ceiling	5,000 SF
Fume hoods	Room 201	1 Units

Notes:

SF – square feet

LF – linear feet

ATTACHMENT C

DESIGNATED PERSON TRUE AND CORRECT STATEMENT

I, Mary C. DeLai, the Designated Person for the Local Education Authority (LEA), hearby state that the information presented in this Asbestos Management Plan is true and correct to the best of my knowledge, and that the general responsibilities of the LEA have been or will be met.

Signed,

Mary C. DeLai

Designated Person – Watertown Public Schools

September 18, 2017

Date

ATTACHMENT D

ANNUAL NOTIFICATION

Watertown Public Schools

30 Common Street
Watertown, Massachusetts 02472-3492
Phone: (617) 926-7700
Fax: (617) 923-1234

Mary C. DeLai
Assistant Superintendent
Finance & Operations

Dede Galdston, Ed.D.
Superintendent of Schools

Theresa B. McGuinness, Ed.D.
Assistant Superintendent
Teaching, Learning, & Assessment

Kathleen Desmarais, M.Ed.
Director of Student Services

Craig Hardimon, M.Ed.
Director of Human Resources

ANNUAL ASBESTOS NOTIFICATION LETTER

For School Year 2017-18

September 2017

Dear Staff, Parents, Guardians, and Students:

A copy of our district's Asbestos Management Plan is available in each school and at the main administrative office during regular school hours.

The district continues to update and improve the AHERA Asbestos Management Plans. Any inquiries regarding the management of asbestos-containing materials in our schools should be directed to our district's AHERA Designated Person, Mary DeLai, Assistant Superintendent for Finance & Operations, Watertown Public Schools, 30 Common Street, Watertown, MA, 02472 at mary.delai@watertown.k12.ma.us or at 617-926-7700.

Sincerely,

Dede Galdston, Ed.D.
Superintendent of Schools

ATTACHMENT E

6 MONTH SURVEILLANCE DOCUMENTATION

ATTACHMENT F

ASBESTOS O&M PLAN

ASBESTOS OPERATIONS AND MAINTENANCE PLAN

FOR:

PHILLIPS SCHOOL
31 MARSHALL STREET
WATERTOWN, MASSACHUSETTS

PREPARED BY:

EFI Global
Engineering, Fire & Environmental Services

155 WEST STREET, SUITE 6
WILMINGTON, MASSACHUSETTS 01887

EFI PROJECT NUMBER 98350-06416

SEPTEMBER 2017

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

This Operations and Maintenance (O&M) Plan outlines procedures for managing asbestos-containing building materials (ACBM) present in the Phillips School facility. An ACBM is a material that contains greater than or equal to one percent (1%) asbestos, in accordance with Massachusetts Department of Environmental Protection (MA DEP) regulations.

The specific intent of this program is to protect the health of property occupants, visitors, contractors, custodial and maintenance personnel while they are on the property. This plan is designed to: (1) ensure that asbestos fibers are not released into occupied areas by minimizing disturbance and damage to known and suspect asbestos-containing materials; (2) repair or remove any ACBM which is identified as damaged; and (3) monitor the condition of all ACBM on the property. This plan will remain in effect until all asbestos-containing materials have been removed.

This O&M plan is based on the assumption that custodial employees with 2-Hour Asbestos Awareness Training will not disturb ACBM and will not perform response actions. If at some time in the future, employees become 16-Hour Trained, “spot repairs” of damaged ACBM may be conducted on an as-needed or emergency basis. Otherwise, “spot repairs” and asbestos abatement must be conducted by a Massachusetts licensed asbestos abatement contractor.

This plan shall go into effect immediately.

The presence of asbestos within the school does not necessarily mean that the health of building occupants is endangered. Asbestos fibers present a serious health hazard only when they become airborne after being released from the material in which they are bound. Therefore, both facilities personnel, management, and each employee share the responsibility for not only protecting their own health, but also the health of other persons on the property by not allowing ACBMs to be disturbed while performing their normal work activities. ACBMs are most likely to be disturbed during maintenance, repair, or renovation activities. By complying with all provisions of the O&M Plan, management and employees alike will be ensuring a safe environment.

The types and locations of ACBMs within the facility are identified in the attachment to the Asbestos Management Plan. All inspections were conducted by EFI’s Massachusetts licensed asbestos inspectors. It should be noted that additional asbestos-containing materials may be present within the facility that could not be identified due to inaccessibility. Materials suspected of containing asbestos on the property should either be assumed to contain asbestos or should be sampled by a Massachusetts licensed asbestos inspector and analyzed using polarized light microscopy (PLM) or transmission electron microscopy (TEM), to confirm or refute the presence of asbestos.

2.0 ASBESTOS CHARACTERISTICS AND HEALTH EFFECTS

2.1 Background

Asbestos is the general term for a group of naturally occurring minerals that separate into fibers when crushed or processed. Since the turn of the century, asbestos has been used in a wide variety of construction materials and other building products. Its popularity stems from the fact that it has high resistance to heat, chemical resistance, and its fibers have a high tensile strength, which can help to reinforce otherwise brittle or weak materials.

There are two general types of asbestos rock: serpentine and amphibole. Chrysotile asbestos is derived from serpentine rock. Chrysotile, sometimes called white asbestos, has very thin fibers that are soft and flexible. Approximately 95 percent of the asbestos used in the United States is the chrysotile type, and its primary applications are in construction products, textile, high-strength cement products, and insulating materials.

Amphibole asbestos, which has thicker and harder fibers than chrysotile asbestos, includes several subcategories: amosite, crocidolite, anthophyllite, actinolite, and tremolite. Amosite asbestos, sometimes called brown asbestos, is used mainly in high heat insulating materials such as boiler insulation, pipe insulation, and spray-on fireproofing materials. Crocidolite, or "blue" asbestos, is also very resistant to acid and to the effects of outdoor exposure and weathering. It is used in textiles and high-strength cementitious products. Anthophyllite, actinolite, and tremolite asbestos have brittle fibers and, therefore, are used in a limited number of applications.

As a rule, the degree of asbestos hazard that exists in a particular property depends on a number of factors, the most important of which may be the nature of the asbestos products present. Asbestos-containing materials such as asbestos-cement pipe and shingles, roofing felts, vinyl floor tiles, and mastics in which the asbestos fibers are firmly bonded or encased in another material generally pose very little hazard after installation; however, sanding, grinding, drilling, abrading, or cutting these materials may release significant amounts of asbestos fibers.

Asbestos fibers are more readily released from friable materials like sprayed-on insulation. A material is considered **friable** if it can be easily crumbled, pulverized, or reduced to powder by hand pressure when dry. Friable materials can represent a serious potential health hazard in buildings. This does not mean, however, that all friable materials containing asbestos pose a hazard serious enough to warrant immediate corrective action. Textile products and preformed thermal insulation that contain asbestos are less of a hazard than friable materials, but they are somewhat more hazardous than those products in which the asbestos is encased or tightly bonded.

2.2 Health Effects

Several diseases have been clearly linked to exposure to airborne asbestos fibers, including asbestosis, lung cancer, and mesothelioma. Asbestosis (pulmonary fibrosis) is a chronic lung disease caused by permanent changes in lung tissue due to asbestos exposure. Lung cancer is a malignant and invasive growth or tumor in the lungs. Cigarette smoking significantly increases the risk of lung cancer for persons exposed to asbestos. Mesothelioma is an extremely rare cancer in the general population, but is not uncommon among asbestos workers or workers exposed to friable asbestos, such as shipyard employees. Some believe that it may develop even with very low levels of asbestos exposure. Mesothelioma affects the membrane (mesothelium) lining the chest or abdominal cavities.

The health hazard from asbestos exposure was first thought to be represented by a simple dose-response relationship. As more medical data have become available, it has been found that even persons exposed to low concentrations of airborne asbestos; e.g., families of asbestos workers, have developed asbestos-related diseases. However, the data are difficult to evaluate because there usually is a long delay between exposure and the detection of disease. This is called the latency period, and for asbestos diseases it is approximately 20-40 years. One hypothesis is that "an inverse relationship exists between dose rates and the latency period; as the dose rate becomes progressively lower, the latency period may approach the life span of exposed individuals" (Lory and Coin, 1981).

Because of a lack of specific health based information and a lack of understanding of the precise mechanism that contributes to the development of asbestos-related diseases, it has not been possible to establish permissible levels of exposure to asbestos that will ensure absolute safety. Nonetheless, Government regulators have established exposure limits below which they believe the risk is very low. It is now generally agreed that all unnecessary exposures to asbestos should be avoided, and that proper precautions should be taken to minimize risks if exposures are unavoidable.

2.3 Regulatory Requirements

This O&M Plan is prepared to maintain compliance with the US EPA AHERA regulations, as well as, OSHA regulations.

The AHERA and OSHA regulations require building owners to presume that building materials present within buildings are asbestos-containing until such time that the presence of asbestos is rebutted through sampling by an accredited asbestos inspector and laboratory analysis.

The AHERA and OSHA regulations also require that asbestos-containing or presumed asbestos-containing materials be identified by means of warning labels. Exceptions are granted where labeling is not feasible, such as marking floor coverings or ceiling tiles. Training for custodial workers is required under the regulations.

AHERA and OSHA also regulations require written notification to student's families, employees and contractors who might come in contact with confirmed or presumed asbestos-containing materials.

The regulations define basic work procedures that must be followed when working with or coming in contact with asbestos or presumed asbestos materials. For example, custodial employees buffing and waxing asbestos or presumed asbestos-containing floor coverings must work wet using low abrasion pads mounted on a buffing machines operating at speeds under 300 rpm.

3.0 PROGRAM RESPONSIBILITIES

3.1 Asbestos Program Coordinator

The Asbestos Program Coordinator for the facility is the AHERA Designated Person. Responsibilities of the Designated Person, working in conjunction with school management, include but are not limited to, the following:

(1) Respond to employee and contractor inquiries regarding the presence of asbestos-containing materials on the property.

(2) Maintain records associated with the program. These may include, but are not limited to, air sampling data, asbestos maintenance closure forms, and periodic condition and label inspection data.

(3) Identify maintenance and repair activities that may require asbestos removal and repair activities.

(4) Ensure that all necessary signs and warning labels required by the program are posted and remain in place.

(5) Arrange for testing, by a certified/licensed asbestos inspector, of suspect asbestos-containing materials not previously identified. Since the asbestos survey of the facility was conducted while the facility was occupied, all asbestos materials may not have been identified, the Coordinator should not assume all ACBM has been identified on the property.

(6) Ensure that outside contractors are notified of the presence of asbestos-containing materials before they begin work that might disturb these materials.

3.2 Building Employee Responsibilities

Building employees are also responsible for complying with the provisions of this O&M Plan. Major responsibilities of building employees are to assure they do not disturb confirmed or presumed ACBM.

In the event that employees, contractors, maintenance or service personnel encounter a material they suspect may contain asbestos and will be disturbed, they must immediately stop their activity and notify the Designated Person. The Designated Person will be responsible for determining whether or not suspect material is asbestos-containing, and what further actions are required before work can continue.

Building employees are also expected to notify the Designated Person if they observe damage or deterioration to ACBM or presumed ACBM, and they themselves are expected to do nothing to cause damage to such materials.

4.0 MANDATORY PROGRAM REQUIREMENTS

4.1 Caution Labels

Caution labels shall be affixed to or near all ACBM on the property where feasible. The labels shall be prominently displayed and will remain posted until the ACBM is removed. The caution labels should read, in print which is readily visible, because of large size or bright color, as follows:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

Revisions to the OSHA Asbestos Standards specifically call for placement of signs at the entrance to mechanical rooms/areas in which employees reasonably can be expected to enter and which contain asbestos-containing or presumed asbestos-containing thermal system insulation and/or surfacing

materials. OSHA also permits placement of signs inside mechanical areas, as opposed to outside them, as long as the sign is clearly visible to those entering the space. The signs must identify the material present, its location, and appropriate work practices to assure that the material is not disturbed.

It is generally not feasible to put labels on walls or floors. In such instances, alternatives are available. For example, if asbestos-containing floors are being serviced by employees who operate from a common equipment room day after day, then post the sign or label in the equipment room, which also may be termed the janitorial closet.

At periodic intervals, not to exceed semi-annually, the Designated Person, will inspect and ensure all caution labels and signs are in place and well maintained. Each such inspection shall be documented; a form to document these inspections is provided in Appendix C.

4.2 Training Requirements

The Designated Person and all members of the maintenance staff shall receive two hours of asbestos awareness training. The maintenance staff must receive this training through the school or their employers (if subcontractors), regardless of whether or not their work activities will involve actual direct contact with, or disturbance of, ACBM. New maintenance staff employees must receive the required training within 30 days of hire or transfer or before they come in contact with ACBM or presumed ACBM, whichever is sooner.

The awareness training will address the specific subjects listed below.

- Asbestos use and types
- Health effects, including the relationship between smoking and asbestos in producing lung cancer
- Names, addresses and phone numbers of public health organizations that provide information on smoking cessation programs. A list of such organizations is provided in Appendix E
- Recognition of ACBM damage, deterioration, and delamination
- Details of the Company's asbestos management program and the property's Operations and Maintenance Program
- Provisions of 29 CFR 1910.1001 and 1926.1101, the OSHA Asbestos Standard for General Industry and the Construction Industry, respectively, dated August 10, 1994, as amended June 29, 1995
- Employee responsibilities under the O&M program

A form to document training can be found in Appendix C. To enhance the credibility of the documentation, each employee should sign his/her own name in the appropriate space, as opposed to having someone else write in the participant's name.

4.3 Fiber Release Episodes

A fiber release episode may result from accidental damage or deterioration of ACBM. If one occurs, immediate action must be taken to prevent occupants and employees from being exposed to airborne asbestos fibers. The Designated Person must be contacted immediately. The Designated Person, in conjunction with these individuals, as well as, the Environmental Consultant, will be responsible for implementing the response actions listed below as necessary.

- Evacuate the affected area, post signs and lock all entrances to prevent access.

- Temporarily shut off or modify the air handling system serving the affected area of the property and limit all other sources of air movement.

The Designated Person, in conjunction with school management, will then jointly agree on subsequent remedial steps. These may include the following:

- Evaluate the need to retain an Environmental Consultant and a licensed asbestos abatement contractor.

- Document the incident using the Asbestos Maintenance Closure Form in Appendix C.

Additional procedures for fiber release management are listed in Appendix D.

4.4 Periodic Surveillance Activities

The Designated Person will inspect all ACBMs to identify any damage or deterioration which has occurred from maintenance or other activities. This will be performed semi-annually. See the Asbestos Survey Report prepared by EFI Global, Inc. for the locations of all known ACBM. The Designated Person will also inspect labels at six-month intervals and will document the results of these inspections in the asbestos program files. Periodic inspection results for asbestos-containing materials and caution labels shall be documented in all cases by the Designated Person.

4.5 Periodic Air Monitoring

In special circumstances, ambient air sampling may be performed periodically by an industrial hygienist, environmental consultant, or other licensed/accredited personnel to document a safe building environment. The need and requirements for air monitoring will be based upon periodic surveillance information concerning the location and condition of ACBM. The frequency and location of air monitoring will be determined by the Designated Person. The results of air sampling shall be included in the O&M Program files.

4.6 Waste Disposal

Asbestos regulations require that an asbestos abatement contractor handle, transport, and dispose of all asbestos-contaminated waste materials in a manner that prevents all visible emissions, and that do not expose individuals to asbestos fibers in air above specified levels. Along with the actual asbestos-containing material removed during O&M activities, other materials usually must be disposed of as contaminated waste as well.

All asbestos wastes must be carefully placed in 6-mil polyethylene bags that have pre-printed asbestos warning labels affixed to the bags. The bag shall be sealed airtight with duct tape or a metal twist band, and placed inside another clean, labeled 6-mil waste bag.

Asbestos waste products will be disposed of in accordance with all Federal, State and Local regulations. Waste material will be transported in accordance with all applicable regulations of the U.S. Department of Transportation. Disposal must occur at an authorized asbestos waste disposal site.

4.7 Recordkeeping

The Designated Person is responsible for assuring all records and documentation required in this O&M Program are maintained. Documentation includes, but is not limited to:

- Periodic surveillance activity reports and documentation, may include photographs or air sampling results (if deemed necessary), as applicable.

- Bulk sampling data generated from routine or special surveys.

- Records of personnel receiving asbestos awareness training.

- Asbestos Maintenance Closure Forms. At the completion of any asbestos abatement work (removal, enclosure, encapsulation, or repair) or after a fiber release episode, the asbestos abatement company supervisor or industrial hygienist overseeing the work must complete an Asbestos Maintenance Closure Form (see Appendix C). The purpose of the form is to provide documentation of abatement activity.

- Periodic Surveillance Summary Sheets. See Section 4.4 for periodic surveillance requirements, and Appendix C for a copy of the blank Periodic Surveillance Summary Sheet.

- This O&M Program and updates thereto.

- Documentation of all inquiries about locations of ACBM within the property or other aspects of the O&M Program. Only persons with a need to know; e.g., contractors, consultants, regulators, and Student's families, will be permitted to examine O&M Program documentation. A representative of management must be present at all times while the documentation is being examined. Under no circumstances will persons be permitted to take documents or make copies of O&M Program documents. The company representative will record all documents that the requestee has inspected.

- Memoranda and correspondence that pertain to the O&M program.

- Annual notifications to staff and families of students.

A recordkeeping system has been developed and its contents are listed in Appendix C. To assure uniformity, this system alone must be used to organize records required by the O&M Program.

All asbestos records shall be retained indefinitely. Although current legal mandates do not require that all asbestos records be retained indefinitely, long-term retention is nonetheless required by this program. Existing law does require that communications by the building owner and receipt by the owner of information re: the identification, location and quantity of asbestos-containing or presumed asbestos-containing materials, as well as written records of such notifications and their content, shall be maintained for the duration of ownership of the property, and shall be transferred to successive owners.

4.8 Contractor Notification

All contract work is cleared through the Designated Person before work begins. Having all contract work funneled through this person assures that appropriate notification is accomplished of the locations of asbestos-containing materials, thereby avoiding accidental disturbance of asbestos.

Despite this safeguard, a possibility still exists that a contractor who has not been briefed on the location of asbestos on the property could gain access to asbestos materials, and therefore potentially disturb them. This is most likely to happen with contractors who have been operating on the property for years and thus are considered as an extension of property staff.

Further, it might occur if the Designated Person merely limits the briefing about the whereabouts of asbestos to locations where the contractor is expected to work, as opposed to throughout the entire property. Briefing the contractor on asbestos throughout the property is crucial, since contractor duties often take them out of their immediate work zones unexpectedly.

Contractors shall be informed by the Designated Person, or designee, of the locations of asbestos on the property by means of the "Contractor Notification Letter" in Appendix F. The letter itself does not specify where asbestos is located; however, the Designated Person may allow the contractor to review the asbestos survey report.

The correspondence requires a signature from an authorized representative of the contractor. The contractor then is to return the letter to the Designated Person for filling in the "Correspondence and Memoranda" section of the O&M files. Some contractors may not return the signed form or, worse, may decline to do so. A reasonable effort should be made to obtain the proper signature. If that effort fails, consideration should be given to discontinuing use of that contractor for any future work on the property.

All verbal briefings given to contractors about asbestos must also be documented to include who performed the briefing, what was said, who received the briefing, that person's or those persons' job title(s) and the date the briefing was held. An authorized representative of the contractor must sign the documentation verifying that he/she received this information.

4.9 Asbestos Regulated Areas

An Asbestos Regulated Area is an area on the property containing asbestos or presumed asbestos that is so friable or badly damaged/deteriorated that access to the area must be restricted. Work in these areas should only be attempted by persons trained and experienced in handling asbestos-containing materials, and with the knowledge and consent of the Designated Person.

Building maintenance work within Asbestos Regulated Areas will be coordinated by the Designated Person. The Designated Person will use an asbestos abatement contractor to perform any required abatement work or maintenance activities which are expected to result in some release of asbestos fibers within an Asbestos Regulated Area. In addition, an Environmental Consultant should be retained to oversee the abatement contractor's work and perform air monitoring.

Other contractors or the property maintenance staff <u>will not</u> perform any maintenance activities within the designated Asbestos Regulated Area unless the Designated Person determines that the work can be done without disturbing ACBM or exposing contractors to asbestos fibers.

5.0 INVENTORY OF ACBM

A number of materials on the property contain asbestos. The asbestos inventory for the facility is presented in the attachment to the Asbestos Management Plan.

Appendix B outlines procedures for cleaning if friable asbestos-containing materials are damaged. Cleaning should be performed by properly trained personnel or a licensed asbestos abatement contractor.

The procedures outlined in Appendix B have been developed only to provide guidance to the Designated Person and maintenance staff when consulting with asbestos abatement personnel, who would perform all work on ACBM within the property.

6.0 LIMITATIONS

This Asbestos Operations & Maintenance program describes the known locations of asbestos as outlined in survey data identified in the Introduction section of this report. Other ACBM or PACM may be present on the property that have not yet been identified or for which identifying data was not provided when this O&M plan was prepared.

This plan does not purport to meet all legal and regulatory requirements. The mere development of an asbestos O&M Plan does not constitute regulatory compliance; rather, its provisions must be implemented. Additionally, while the latest AHERA and OSHA regulations were considered in its development, because AHERA and OSHA regulations are subject to interpretation, we offer no guarantee our interpretation is consistent with that of AHERA and OSHA.

Furthermore, no attempt was made to render provisions of this plan consistent with individual State and Local asbestos regulations. Users, therefore, must assume liability for conformance with regulatory requirements of all asbestos regulatory agencies. When in doubt, consult with an environmental consultant.

Mention of any firm or company in this plan does not constitute an endorsement of its competence or capabilities, real or implied. The buyer of environmental services is responsible for such determinations.

This plan assumes that Watertown Public School employees with 2-Hour Asbestos Awareness Training are prohibited from handling ACBM. While work practices are described for dealing with small amounts of ACBM, these work practices are intended for reference purposes only and for use only by personnel specifically trained in O&M procedures (i.e. 16-Hour Training for Class III work or 32-Hour Asbestos Abatement Worker Training).

O&M Plan users must recognize that information on asbestos locations on the property may change based, say, on new information developed or due to projects to abate ACBM. Issuance of this plan carries no duty on our part to update it. However, we urge users to update the plan regularly as changes that necessitate updating occur.

Persons with questions on the plan should contact:

Ms. Mary DeLai
Mary.delai@watertown.k12.ma.us

APPENDIX A
USEFUL REFERENCES

USEFUL RESOURCES

National Institute of Building Sciences. Guidance Manual: Asbestos Operations and Maintenance Work Practices. September 1992. [To purchase a copy, call 202/289-7800].

TOSCA Assistance Hotline of the U.S. Environmental Protection Agency: 202/554-1404.

U. S. Department of Labor, Occupational Safety and Health Administration. Asbestos Adviser. [Interactive program available on hard disk to assist users through OSHA's asbestos regulations; call your nearest OSHA Area Office to obtain a copy).

U.S. Environmental Protection Agency. Asbestos Hazard Emergency Response Act (40 CFR 763).

U. S. Department of Labor, Occupational Safety and Health Administration. Asbestos Standard for the Construction Industry. OSHA 3096: 1995 (Revised). [To obtain a free copy, contact your nearest OSHA area office or call 202/219-4667].

U. S. Department of Labor, Occupational Safety and Health Administration, Office of Health Compliance Assistance. OSHA Instruction CPL 2-2.63: Inspection Procedures for Occupational Exposure to Asbestos Final Rule 29 CFR Parts 1910.1001, 1926.1101 and 1915.1001. November 3, 1995. [To obtain a free copy, contain your nearest OSHA area office or call 202/219-8036.]

U. S. Environmental Protection Agency. Asbestos on Properties: Guidance for Service and Maintenance Personnel. EPA 560/5-85-018, July 1985. [Available for a charge from the National Technical Information Service, Springfield, Virginia at 1/800/553-6847 or 703/487-4650 or (fax) 703/321-8547].

U.S. Environmental Protection Agency. Guidance for Controlling Asbestos-Containing Materials in Buildings. EPA 560/5-85-024: June 1985. [Available for a charge from the National Technical Information Service, Springfield, Virginia at 1/800/553-6847 or 703/487-4650 or (fax) 703/321-8547].

U.S. Environmental Protection Agency. Managing Asbestos in Place: A Building Owners Guide to Operations and Maintenance Programs for Asbestos-Containing Materials. 20T-2003: July 1990. [Available for a charge from the National Technical Information Service, Springfield, Virginia at 1/800/553-6847 or 703/487-4650 or (fax) 703/321-8547].

APPENDIX B
CLEANING PROCEDURES

CLEANING PROCEDURES

Procedures in this section are to be performed by appropriately trained/licensed asbestos professionals only.

An initial cleaning will be required when damaged or disturbed asbestos-containing materials are identified on the property. The extent of the damage and the friability of the material will determine the extent of the cleaning procedures required.

If damage is minor, asbestos debris on floors and horizontal surfaces around the damaged area can usually be removed using a HEPA vacuum. A combination of HEPA vacuuming and wet mopping may be used to remove small amounts of asbestos debris under most circumstances. If more than three square feet of area is covered with loose debris, more extensive procedures will be required, by a licensed asbestos abatement contractor.

Protective clothing and respirators must be utilized during the cleaning activity. The work area will need to be cordoned off with safety warning tape and air monitoring may also be necessary during the cleaning effort.

Carpeting which has become contaminated with asbestos debris requires special treatment. The carpeting must be thoroughly vacuumed with a HEPA vacuum and steam cleaned. Liquid waste generated during these activities must be disposed of in accordance with Section 4.6.

Extensively damaged materials will most likely require oversight of cleanup activities by an environmental consulting firm. Cleaning procedures, under these circumstances, are usually done within a contained work area by trained individuals. The Designated Person or designee should be consulted if questions on the scope of the cleaning effort arise.

Under most circumstances, air monitoring should be performed during asbestos cleaning procedures. General area sampling shall be performed by an Environmental Consultant in accordance with AHERA regulations.

APPENDIX C
RECORDKEEPING SYSTEM

RECORDKEEPING SYSTEM

File Label	Contents
Asbestos Sampling	Asbestos survey reports and bulk sampling data.
Operations and Maintenance Plan	Operations and Maintenance Program.
Periodic Surveillance	Documentation of all periodic surveillance; e.g., Periodic Surveillance Summary Sheet, periodic air sampling data.
Training	Records of personnel asbestos training received.
Asbestos Abatement, Maintenance and Repair Reports	Copies of all fully completed Asbestos Maintenance Closure Forms, Maintenance, and Repair Work Order Permit forms, etc.
Fiber Release Episodes	Copies of procedures, reports and air sampling data pertaining to each fiber release episode.
Technical Bulletins	All policy directives, bulletins, and notifications prepared and implemented by Watertown Public Schools.

MAINTENANCE AND REPAIR REQUEST FORM
FOR ASBESTOS REGULATED AREAS

Building Address: _____ _____
Telephone Number: _____ Date: _____
Location of Work Area: _____
_____

Requested Starting Date: _____ Anticipated Completion Date: _____

Description of Work: _____
_____
_____

Name of Requestor: _____

Company Affiliation: _____

Telephone Number: _____

DESIGNATED PERSON USE ONLY

1. Work Practices Could Potentially Disturb ACBM: Yes: No:

2. Alternative Procedures to Prevent Disturbance of ACBM: Yes: No:

If yes, describe Alternative Procedures: _____
_____
_____

3. Request: Granted: Not Granted:

If not granted, please explain: _____
_____
_____

_____ _____
Designated Person Signature Date

cc: O & M – Abatement, Maintenance and Repair File

Operations & Maintenance (O & M) Program
Log Book

Instructions: Visitor completes the first four columns; building personnel the last column. Visitors may view O&M Program documents but may not leave with copies of them. **Use blue or black ink only.**

	Name	Representing	Time	Date	Items of Interest (List)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

cc: O & M - Log Book File

ASBESTOS MAINTENANCE CLOSURE FORM

Instructions: Fill out completely in blue or black pen only. Use more than one form if the project involves (a) two or more types of abatement, or (b) abatement of several types of asbestos-containing building materials (ACBM).

1. Property Name: _____

2. Type of abatement: Remove Encapsulate Enclose Repair

3. Contractor Name: _____ Monitor Firm: _____

4. Project Began On (date): _____ Project Ended On: _____

5. Location of Work (be precise): Floor Area Room

   Other: _____

   _____

6. Type of ACBM (fittings, ceiling tile, etc.) _____

---

7. Amount of Asbestos: Square feet: _____ Linear feet: _____ Other: _____

8. Control Methods Used (if not applicable, write "NA")

____ Pre-Cleaning	____ Neg. Air Filtration	____ Aggressive Sampling
____ Wet Methods	____ HVAC Shut Off	____ Final Air Clearance
____ Area Sealed	____ Glove Bag/Boxes	____ Encapsulation
____ Warning Signs	____ Air Monitoring	____ Final Visual Insp.
____ HEPA Vacuum		

9. Name of Disposal Site: _____

   Location: _____

   _____

   _____ _____

10. Post-Abatement Inspection Completed: Yes No

    _____ _____

    Signature Date

cc: Project Monitor
Designated Person
O & M - Abatement, Maintenance and Repair File

Asbestos Operations & Maintenance Program
Training Record

Date of Training _____ Initial ( ) Refresher ( )

Description of Training _____

_____

Handouts (Describe) _____

Attendees (List by Name)

1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____

Instructor's Name _____

Date of Training _____ Initial ( ) Refresher ( )

Description of Training _____

_____

Handouts (Describe) _____

Attendees (List by Name)

1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____

Instructor's Name _____

cc: O & M - Training File

ASBESTOS
OPERATIONS & MAINTENANCE
PROGRAM
Inspection Form
Warning Labels

Instructions: Describe below where on the property all warning labels are located. Be as specific as possible.

Location on property of warning labels:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Instructions: If all labels are in place, legible and conspicuous, write "Yes" in column 1. Otherwise write "No". If you write "No" in column 1, complete column 2 by writing "Yes" if the problem has been corrected; "no" if it hasn't. Otherwise, leave column 2 blank. After each inspection, place your initials in column 3 and the inspection date (m/d/y) in column 4. Column 1 should be filled out for each inspection. Columns 2, 3 and 4 should be completed as necessary.

#1 Functional? Yes/No	#2 If "No," Prob. Corrected? Yes/No	#3 Initials	#4 Date	#1 Functional? Yes/No	#2 If "No," Prob. Corrected? Yes/No	#3 Initials	#4 Date
1._____	_____	_____	_____	**16.**_____	_____	_____	_____
2._____	_____	_____	_____	**17.**_____	_____	_____	_____
3._____	_____	_____	_____	**18.**_____	_____	_____	_____
4._____	_____	_____	_____	**19.**_____	_____	_____	_____
5._____	_____	_____	_____	**20.**_____	_____	_____	_____
6._____	_____	_____	_____	**21.**_____	_____	_____	_____
7._____	_____	_____	_____	**22.**_____	_____	_____	_____
8._____	_____	_____	_____	**23.**_____	_____	_____	_____
9._____	_____	_____	_____	**24.**_____	_____	_____	_____
10._____	_____	_____	_____	**25.**_____	_____	_____	_____
11._____	_____	_____	_____	**26.**_____	_____	_____	_____
12._____	_____	_____	_____	**27.**_____	_____	_____	_____
13._____	_____	_____	_____	**28.**_____	_____	_____	_____
14._____	_____	_____	_____	**29.**_____	_____	_____	_____

15._____ _____ _____ _____ **30.**_____ _____ _____ ____

cc O & M - Periodic Surveillance File

GUIDE TO PERIODIC SURVEILLANCE

A key feature of the O&M Program is the re-inspection of all asbestos-containing building materials (ACBM) and/or presumed asbestos-containing materials (PACM) on the property. The re-inspection will insure that any damage or deterioration of the ACBM will be detected and corrective action taken. The following section describes the criteria for assessing ACBM/PACM.

The criteria for assessing ACBM/PACM condition should be used to evaluate each homogeneous area of ACBM/PACBM identified on the property. A homogeneous area is an area of ACBM/PACBM which appears the same by date of application, use, texture, color and overall appearance. The individual performing the re-inspection must inspect all areas of friable ACBM/PACBM during each re-inspection. It is not enough to inspect one small area of each ACBM/PACBM and assume the remaining area to be similar. All locations of each ACBM/PACBM identified on the property are provided in the Asbestos Management Plan prepared by EFI. The ACBM/PACBM must be assessed based on the following factors:

- **Changes in Material Condition**

Changes in material condition, which are not the result of renovations to improve material condition, such as painting, may represent degradation in material condition as a result of poor maintenance, aging, or other factors. Materials which have become discolored, blistered, cracked, etc. must be further evaluated to determine the extent and cause of the problem.

- **Damage to Material**

Damage to material may result from deterioration, water damage or physical damage. Deterioration of a material usually indicates damage resulting from aging or poor maintenance. Water damage may occur from pipes or roof leaks and is indicated by patches of discolored areas. Physical damage may result during routine maintenance activities, renovations, or accidental contact. Damage to any material requires response action.

Operations & Maintenance (O&M) Program
Periodic Surveillance Summary Sheet

Material Identification		Material Assessment					
Material Location	Material Description	Material Condition		Damage			No Damage
		Changed	Unchanged	Deterioration	Water	Physical	

APPENDIX D
FIBER RELEASE MANAGEMENT

FIBER RELEASE MANAGEMENT

Immediate response to fiber release episodes is essential. Initial procedures for response to any fiber release episode are detailed in Section 4.3.

The Environmental Consultant is capable of handling emergency response activities involving asbestos-containing materials. If a fiber release episode occurs, the Designated Person shall contact school management immediately. Abatement contractor personnel are available 24 hours a day to respond to all fiber release episodes.

Procedures for the management of fiber release episodes and cleanup of damaged ACBM differ depending upon the degree of damage to the material. The following sections detail work and management procedures for handling the cleanup of damaged ACBM.

The appropriate respiratory protection and protective clothing must be worn by personnel responding to fiber release episodes.

The Asbestos Maintenance Closure Form must be completed for all fiber release episodes. The closure forms shall be included in the asbestos program file.

APPENDIX E
ORGANIZATIONS OFFERING SMOKING CESSATION PROGRAMS

ORGANIZATIONS OFFERING SMOKING CESSATION PROGRAMS

NATIONAL CANCER INSTITUTE
Office of Cancer Communications
National Institutes of Health
Building 31, Room 10A24
Bethesda, MD 20892
1-800-4-CANCER (226 237)

AMERICAN CANCER SOCIETY
3340 Peachtree Road, N.E.
Atlanta, GA 30026
404/320-3333

AMERICAN HEART ASSOCIATION
7320 Greenville Avenue
Dallas, TX 75231
214/750-5300

AMERICAN LUNG ASSOCIATION
1740 Broadway
New York, NY 10019
212/245-8000

OFFICE ON SMOKING AND HEALTH
Department of Health and Human Services
Park Building, Room 110
Rockville, MD 20857
301/443-1575

APPENDIX F
SAMPLE NOTIFICATION LETTERS

SAMPLE CONTRACTOR NOTIFICATION LETTER

RE: Notification of Asbestos-Containing Material

Dear :

This correspondence is intended to inform you of the locations of asbestos-containing materials and presumed asbestos-containing materials at the above-referenced property. This information is provided on the enclosed attachment, which is located in the property's written Asbestos Management Plan.

Your signature below is acknowledgment that you have received the information, and pledge to pass it on to your employees who work at the property before they do work there that might disturb asbestos-containing materials or presumed asbestos-containing materials. Also, you are required to pass on any information concerning asbestos at this property to your subcontractors, if any, who may do work at this property. Please return a signed copy of this letter to my office at your earliest convenience.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Designated Person

_____
(Signature of Authorized Official)

_____
(Job Title of Authorized Official)

_____
(Date)

Attachment: Asbestos Material Inventory Form

cc: O&M Correspondence and Memoranda File

SAMPLE STUDENT FAMILY NOTIFICATION LETTER

RE: Notification of Asbestos-Containing Material

Dear :

On October 22, 1986, President Reagan signed into law an amendment to the Toxic Substance Control Act requiring schools to determine the presence of asbestos containing building materials in all school buildings. That amendment, called the Asbestos Hazard Emergency Response Act (AHERA) required that all school buildings be visually inspected by accredited inspectors and that bulk samples of suspected materials are taken where the material was not assumed to be asbestos. It further required that management plans be created for each individual building and that the maintenance and custodial personnel receive training. The plan must be implemented and the training must be completed by July 9, 1989. This document is the Asbestos Management Plan which provides the means and the methods to effectively deal with asbestos containing building materials.

All phases of asbestos inspection and management planning are reported in this plan including: response actions strategy, priorities, scheduling of abatement activities and coordination of personnel and evaluation of results. The plan has an additional function as a reporting document to that State. At the local level, the plan must be made available for general review by the school district.

The AHERA management plans for our school building is complete. Phillips School will be completing a three year re-inspection in 2020.

All asbestos containing materials are kept in good condition and the school has taken all necessary actions to insure the safety of all buildings occupants.

Please contact Mary DeLai or the school if you have any questions regarding this notice.

ATTACHMENT G

TRAINING DOCUMENTATION

CERTIFICATE OF COMPLETION

for

TWO HOUR ASBESTOS AWARENESS TRAINING
AHERA

Wayne Macleod

Has completed two hours of asbestos awareness training as required by the Asbestos Hazards Emergency Response Act (AHERA)

February 18, 2016
Date of Training

Instructor

Enviro-Safe Engineering
203 Prospect Street
Brockton, MA 02301

617-623-6678

CERTIFICATE OF COMPLETION

for

TWO HOUR ASBESTOS AWARENESS TRAINING
AHERA

Shane Lamages

Has completed two hours of asbestos awareness training as required by the Asbestos Hazards Emergency Response Act (AHERA)

February 18, 2016
Date of Training

Instructor

Enviro-Safe Engineering
203 Prospect Street
Brockton, MA 02301

617-623-6678

CERTIFICATE OF COMPLETION

for

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AHERA

Allel Duraoui

Has completed two hours of asbestos awareness training as required by the Asbestos Hazards Emergency Response Act (AHERA)

February 18, 2016
Date of Training

Instructor

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203 Prospect Street
Brockton, MA 02301

617-623-6678

CERTIFICATE OF COMPLETION

for

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AHERA

Joe Malone

Has completed two hours of asbestos awareness training as required by the Asbestos Hazards Emergency Response Act (AHERA)

February 18, 2016
Date of Training

Instructor

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203 Prospect Street
Brockton, MA 02301

617-623-6678

CERTIFICATE OF COMPLETION

for

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AHERA

John Ley

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February 18, 2016
Date of Training

Instructor

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617-623-6678

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AHERA

Steve Casella

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February 18, 2016
Date of Training

Instructor

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203 Prospect Street
Brockton, MA 02301

617-623-6678

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AHERA

Matt Gleason

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Date of Training

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203 Prospect Street
Brockton, MA 02301

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AHERA

Charles Latanowich

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Date of Training

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AHERA

Paul Barbato

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February 18, 2016
Date of Training

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Brockton, MA 02301

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AHERA

Tom Tarringto

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February 18, 2016
Date of Training

Instructor

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203 Prospect Street
Brockton, MA 02301

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AHERA

William A. Salaverria

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February 18, 2016
Date of Training

Instructor

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203 Prospect Street
Brockton, MA 02301

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AHERA

Paul Brennan

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Instructor

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Brockton, MA 02301

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Tony Maze

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February 18, 2016
Date of Training

Instructor

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Brockton, MA 02301

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AHERA

Bob Daly

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February 18, 2016
Date of Training

Instructor

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Brockton, MA 02301

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AHERA

John Barry

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February 18, 2016
Date of Training

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Brockton, MA 02301

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for

TWO HOUR ASBESTOS AWARENESS TRAINING
AHERA

Rick Hughes

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February 18, 2016
Date of Training

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Brockton, MA 02301

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AHERA

George Dany

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AHERA

Jeffrey Atwood

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for

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AHERA

Don Smith

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February 18, 2016
Date of Training


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Brockton, MA 02301

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for

TWO HOUR ASBESTOS AWARENESS TRAINING
AHERA

Lindo Norcross

Has completed two hours of asbestos awareness training as required by the Asbestos Hazards Emergency Response Act (AHERA)

February 18, 2016
Date of Training

Instructor

Enviro-Safe Engineering
203 Prospect Street
Brockton, MA 02301

617-623-6678

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for

TWO HOUR ASBESTOS AWARENESS TRAINING
AHERA

Anthony Murgo

Has completed two hours of asbestos awareness training as required by the Asbestos Hazards Emergency Response Act (AHERA)

February 18, 2016
Date of Training

Instructor

Enviro-Safe Engineering
203 Prospect Street
Brockton, MA 02301

617-623-6678