

ABATEMENT WORK PLAN FOR EMERGENCY ASBESTOS ABATEMENT PROJECT

**CONSENTINO MIDDLE SCHOOL
685 WASHINGTON STREET
HAVERHILL, MASSACHUSETTS**

Work Plan dated February 17, 2016

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THIS ASBESTOS ABATEMENT DESIGN IS FOR REMOVAL OF ASBESTOS-CONTAINING SPRAYED-ON FIREPROOFING, PIPE INSULATION, FLOOR TILE AND MASTIC AND OTHER ASBESTOS-CONTAMINATED MATERIALS FROM THE FIRST FLOOR LIBRARY, THE ADJACENT CORRIDORS AND CLASSROOM 39 (2ND FLOOR).

1. SUMMARY OF WORK

This emergency asbestos abatement project is the result of a major water and glycol leak and resulting flood in the school during a recent cold spell and during the February vacation week. The plumbing failure was associated with an AC/heating unit in Classroom 39 on the second floor above the library.

Once it was determined that asbestos-containing fireproofing was present and was impacted by the heating system pipe failure, the initial flood clean up and the damage assessment began and the MADEP was notified and an emergency waiver was requested for asbestos abatement.

The work will be performed within multiple containments, between 2 and 5 total (2-3 containments/phases for the time critical main corridor work). Since the Library was the epicenter of the water damage, it is closed until remediation/abatement work and reconstruction is completed. As such, the project will be phased to complete the main hallways around the front office and library. The main focus is the hallways due to the extent of damage and time required to abate and restore the area. Removal of water-damaged floor tile and mastic in Classroom #39 will be handled as the schedule allows. The Library abatement will begin promptly upon completion of the abatement in the corridors and Classroom 39.

The attached drawing provides a generalized arrangement for the preparation of the abatement work; however, Asbestos Abatement Contractor (Contractor) to build containment components to suit field conditions.

2. GENERAL REQUIREMENTS

The Contractor and all their supervisors and workers are licensed in the Commonwealth of Massachusetts to perform asbestos abatement work. Federal, State and local laws and regulations shall be strictly adhered to. Where any conflict arises between this work plan (design) and any federal, state or local laws or regulations, the laws/regulations shall supersede. Waste packaging, handling and disposal will be in accordance with this work plan and all regulatory requirements in force at the time of the work. Asbestos abatement work shall be conducted in accordance with federal, state and local requirements.

3. SPECIAL CONSIDERATIONS

The work is to be conducted in a school facility. Extra care shall be taken to ensure that all work is performed in an appropriate manner.

Clearance air sampling will be conducted following the Asbestos Hazard Emergency Response Act (AHERA) TEM protocol. Due to the nature of the project, all sample analysis will be expedited.

Since this emergency project also involves removal and clean-up of water and/or glycol damaged building materials (e.g. carpets, standing water, books, paper, fabrics, etc.) the Contractor will take appropriate measures to will address these materials and items with respect to potential asbestos contamination (handling, packaging, disposal) as well as disposal of liquids collected in drums during the initial response and clean up.

4. CODES AND STANDARDS

The publications listed below form part of this Abatement Work Plan to the extent referenced and applicable to the work described herein. The procedures outlined in this Work Plan have been developed to incorporate the requirements of these regulations and standards. The current edition of each reference shall be applicable. Note that the following list is not to be interpreted as inclusive of all applicable regulations.

1. Environmental Protection Agency:
 - a. 40 CFR Part 763 Asbestos Hazard Emergency Response Act
 - b. 40 CFR Part 61 National Emissions Standards for Hazardous Air Pollutants
 - c. EPA 340/1-90-019 Asbestos/NESHAP Adequately Wet Guidance (December 1990)
 - d. EPA 340/1-90-018 Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance (1990)
 - e. EPA 560/5-85-024 Guidance for Controlling Asbestos Containing Materials in Buildings (1985)
 - f. EPA 340/1-92-013 A Guide to Normal Demolition Practices Under the Asbestos NESHAP
2. Commonwealth of Massachusetts Department of Environmental Protection:
 - a. 310 CMR 7.00 Air Pollution Control Regulation
 - b. 310 CMR 18.00 and 19.00 Solid Waste Regulations
 - c. 310 CMR 40.00 Massachusetts Contingency Plan Regulations

3. Commonwealth of Massachusetts Department of Occupational Safety (DOS):
 - a. 453 CMR 6.00 The Removal, Containment, or Encapsulation of Asbestos
4. Occupational Health and Safety Administration (OSHA):
 - a. 29 CFR 1910.1001 General Industry
 - b. 29 CFR 1926.1101 Asbestos Standard for the Construction Industry
 - c. 29 CFR 1910.1001/29 CFR 1926.58 Amendment
 - d. 29 CFR Part 1910.134

5. PERSONAL PROTECTIVE EQUIPMENT

All workers performing the abatement work area shall be required to have and use the following personal protective equipment.

1. Half-face, negative pressure respirators with P-100 HEPA filters (minimum);
2. Safety Glasses;
3. Work Boots;
4. Disposable, full-body work suits; and
5. Gloves.

6. NEGATIVE PRESSURE ENCLOSURES AND REGULATED WORK AREAS

All asbestos abatement work will be performed within a negative pressure enclosure (containment). Only authorized personnel may enter the regulated work area. The designated "competent person" will supervise all asbestos work performed in the area.

The Contractor shall demarcate the regulated area in any manner that minimizes the number of persons within the area and prevents access by unauthorized personnel and protects persons outside the area from exposure to airborne asbestos. Proper asbestos warning signs will be prominently displayed at all points of access to each work area bearing the following information:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORY AND PROTECTIVE CLOTHING ARE
REQUIRED IN THIS AREA

Contractor employees will not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas.

7. HYGIENE FACILITIES

The Contractor shall establish a three-chamber decontamination facility (DF) immediately adjacent to each containment for the decontamination of employees, packaged asbestos waste and their equipment.

The DF shall include a Clean Room for changing out of street clothes and into disposable work clothes, a Shower Room for decontamination of workers, packaged waste and equipment and a Dirty Room for entry/exit to the actual work area and removal of contaminated work clothes prior to entry into the shower room. Note that entry to the work area shall only occur through the DF.

All equipment and the surfaces of containers filled with asbestos-containing materials will be cleaned prior to removal from the site. The Contractor shall ensure employees utilize the DF when exiting the work area.

The DF will be equipped with an operational shower facility with hot and cold running water, soap, disposable towels and other items necessary for the proper decontamination, containment and control of asbestos.

8. HOUSEKEEPING

Asbestos waste, scrap, debris, bags, containers, equipment, and contaminated clothing consigned for disposal will be collected and disposed of in sealed, labeled, impermeable bags or other approved impermeable containers.

The Contractor shall affix warning labels to all asbestos containers. Labels will be printed in large, bold letters on a contrasting background and used in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200). All labels will contain a warning statement against breathing asbestos fibers and contain the following wording:

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

9. EMERGENCY RESPONSE PROCEDURES

The Contractor shall post in a conspicuous location at the Site the name and address of the closest hospital with a route map illustrating the route from the Work Site to the hospital.

A daily Sign-In Log will be utilized to account for all personnel and visitors. The log will be administered by the Competent Person or Site Superintendent and will be used to account for all personnel after an emergency evacuation.

All personnel not involved in an emergency will proceed to the Contractor's field office unless otherwise directed.

All work site injuries will be promptly reported by the Contractor to the Owner.

An assessment of the problem will be made and appropriate actions implemented. Other personnel in the work area will be evacuated to a safe distance until the Site Superintendent and/or Competent Person determines that it is safe for work to resume.

Work will not commence until all emergency response activities are completed and hazard control issues are resolved.

10. ABATEMENT METHODS

Note that the School is closed for the project duration due to the scheduled school vacation week closure.

All non-fixed items (e.g. uncontaminated furnishings) will be removed from each work area.

The work will be performed within multiple containments, between 2 and 5 total (2-3 phases for the critical main corridor work). Since the Library was the epicenter of the water damage, it is closed until remediation/abatement work and reconstruction is completed. As such, the project will be phased to complete the main hallways around the office and library. The main focus is the hallways due to the extent of damage and time required to abate and restore the area. Removal of water-damaged floor tile and mastic in Classroom #39 will be handled as the schedule allows.

The containments will be constructed of two independent overlapping layers of 6-mil fire-retardant polyethylene sheeting (poly sheeting) on walls and floors, securely taped in place. Where appropriate, 4-mil poly will also be installed on the ceilings. Since the scope of work involves complete demolition of the suspended ceilings, protection of the tile ceilings (presumed contaminated) will not be necessary. Metal structural surfaces (e.g. beams and trusses as well as any MEP systems that will remain) will be cleaned, inspected then encapsulated. However, it should be noted that the underside of the roof (ceiling or deck viewed from below) consists of unfinished fiberglass insulating board in some areas which cannot be removed. Overspray "bulk" removal will be performed to the extent possible and then these surfaces will be encapsulated.

All windows, doors and other openings into/out of each containment shall be sealed with one layer of poly sheeting prior to the installation of the 2 layers of poly for the containment.

The Contractor shall install a decontamination facility at each containment and shall install and operate continuously a minimum of two (2) HEPA filtered exhaust units (minimum 2,000 Cubic feet per minute, CFM, each) exhausted to the exterior of the building. Calculations require only one unit for the corridor containments and Room 39, however, to ensure good inward airflow particularly after the suspended ceiling sections are removed, the second HEPA-exhaust unit shall also be operated during asbestos removal activities until successful clearance air sampling has been achieved. Additional back-up units will be on site if needed.

Removal of all ACMs (asbestos-containing fireproofing, pipe insulations and flooring materials) shall be performed using wet abatement methods to minimize airborne fiber release. All asbestos-containing and/or contaminated materials (ACMs) shall be packaged for disposal while wet. No dry removal or packaging shall be performed.

Any smooth metal items or cleanable FFE that can be properly and cost effectively decontaminated may be deemed non-contaminated by AXIOM's Asbestos Project Monitor if deemed thoroughly cleaned of any ACM residue.

Contractor shall provide the Asbestos Project Monitor (APM) as much notice of the completion of the abatement work. Prior to the clearance inspection, all packaged asbestos waste and non-essential tools shall be removed from the work area. Encapsulation of the work area shall not occur until after a successful clearance inspection has been achieved.

11. AIR MONITORING/CLEARANCE AIR SAMPLING

After a thorough cleaning of the workspace, and if a high degree of cleanliness has been achieved, the Contractor shall notify the Asbestos Project Monitor (APM) that the workspace is ready for inspection and final testing. The APM, with the assistance of the Contractor, will then visually inspect the workspace for the detection of any visible asbestos dust, residue or contamination. If the visual inspection does not reveal dust, residue or other signs of contamination, final air testing shall commence.

The final testing shall take place under active agitation of the air in the workspace with the HEPA-filtered exhaust units operating. The Contractor shall also supply and operate circulating fans and leaf blowers as directed by the APM and their technicians during this final testing to ensure effective air circulation.

Air sampling will be conducted following 40 CFR Part 763, Appendix A (AHERA) Transmission Electron Microscopy as required by the regulations and this work plan.

The final test shall consist of taking air samples in the workspace to establish that contamination levels do not exceed 70 structures per square millimeter (s/mm²) by Transmission Electron Microscopy (TEM) as required by regulations. If the results of the final testing are not satisfactory, thorough wet cleaning and/or HEPA vacuuming shall be repeated until the required decontamination levels are achieved.

The Work Area shall remain closed and sealed airtight, and the Contractor's HEPA-exhaust units shall remain continuously operating until air clearance analysis is satisfactorily completed.

Should the Contractor fail to achieve final air clearance per the requirements of this section during the first air clearance sampling conducted by the APM, the Contractor shall bear all further costs associated with preparation of the work area for re-testing, as well as the costs for the re-testing (APMs costs and Owners associated administrative costs) and any costs resulting from schedule delay for failure to meet the air clearance requirements of the Contract until acceptable air clearance testing is achieved.

Periodic air sampling outside each work area (containment) will be performed by AXIOM during asbestos removal activities. Results will be compared to the Massachusetts "clean air" standard of 0.010 fibers per cubic centimeter of air (f/cc). If results exceed this value, work will be suspended, the source of the elevated fiber level will be determine and corrective measure will be taken promptly prior to resuming asbestos removal work. Additional PCM air sampling will be performed to ensure that these areas are safe with respect to airborne asbestos exposure.

12.WASTE HANDLING AND DISPOSAL

The Contractor shall follow all regulatory requirements for the packaging, handling and disposal of asbestos-containing or asbestos-contaminated waste generated during this project.

The Contractor shall count or measure the volume of each filled container leaving the Work Area, and maintain a written record of such.

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LIBRARY, ADJACENT CORRIDORS & CLASSROOM 39

Asbestos waste disposed of by the Contractor shall be disposed of at a landfill acceptable to the Owner and approved by the EPA or local state to accept friable asbestos waste. Each load of waste leaving the project site shall have a Waste Shipment Record (WSR) completed per EPA requirements. A copy of the completed WSR shall be provided to the Owner.

Disposal of asbestos waste shall be in conformance with USEPA NESHAPS Regulations 40 CFR Part 61 and Massachusetts Department of Environmental Protection (DEP) Regulations 310 CMR 7.00, 18.00, and 19.00.

Prior to transportation of any ACM waste, all waste haulers will clearly label the containers/trucks with the appropriate United States Department of Transportation Placards bearing the numbers 2212.

End of Asbestos Abatement Work Plan