BWP AQ 36 ASBESTOS ABATEMENT WORK PLAN
FOR FLOOR TILE MASTIC REMOVAL VIA SHOT BLASTING
HAVERHILL HIGH SCHOOL CAFETERIA
137 MONUMENT STREET, HAVERHILL, MA

Prepared for:

Haverhill Public Schools
4 Summer Street
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A. INTRODUCTION/BACKGROUND

The Haverhill High School had a pipe burst and significant flood that damaged flooring materials in the school including the cafeteria. Known asbestos-containing floor tile and mastic was damaged and some was removed during the February vacation week. Removal was performed by Massachusetts-licensed Asbestos Contractor, SenCam, Inc. (SenCam). However, removal in the cafeteria had to be deferred until that work could be coordinated and schedule.

There is approximately 3,500 square feet (~50' x 70') of floor tile and mastic on concrete that must be removed. Floor tile removal work is underway (reference Notification #100239721) and the mastic removal work is scheduled to commence on August 10, 2016 (this week).

As required by the Massachusetts Department of Environmental Protection (MADEP) this Work Plan has been prepared to address the removal and disposal of the asbestos-containing floor tile mastic using mechanical shot blasting methods. Removal and disposal will be performed by SenCam (License #AC000129) as described herein, upon receipt of DEP approval and submittal of required regulatory notifications.

The purpose of this Work Plan is to establish parameters for the safe removal and disposal of the ACM in compliance with governing asbestos regulations.

B. PROJECT CONTACTS

1. **Owner:** Haverhill Public Schools, 4 Summer Street, Suite #104, Haverhill, MA 01830; Tom Geary, Director of Facilities (978) 374-3400

2. **Asbestos Contractor**: SenCam, Inc., 741 South Main Street; Haverhill, MA 01835; Mr. Patrick Sennott, Owner (978) 683-7767 (MA License #000167)

3. **Asbestos Consultant**: Axiom Partners, Inc., Wakefield, MA 0180; Stephen Minassian, Project Manager, (978) 807-1407. Asbestos Project Monitors assigned to the project are yet to be determined.

C. SITE SPECIFIC ABATEMENT WORK PLAN

Abatement Means and Methods

The following site-specific work practices and engineering controls will be employed for this task which is expected to be completed in less than one week.

Section 1, Preparation

1. SenCam will establish a full containment (negative pressure enclosure) in compliance with governing Massachusetts and AHERA Regulations. The area is approximately 50' x 70' x 10' height (35,000 cubic feet). SenCam will use a minimum of two HEPA negative air filtration units to achieve 4 air changes per hour.

2. The abatement workers will be required to wear personal protective equipment during abatement activities. The required protective equipment included impervious full-body disposable coveralls,

protective hand, head, and footwear, and HEPA-filtered, negative pressure respirators (at a minimum) and fall protection when necessary.

Section 2, General

1. No Visible Dust Emissions will be the objective during this work, however, since this mastic removal will be performed inside a negative pressure enclosure (NPE), any visible emissions will be contained therein. No visible emissions will be permitted outside the NPE.

2. The materials/debris shall be kept wet sufficiently wetted at all times. Continuous misting of the air inside the NPE will be performed during mastic removal operations.

3. All SenCam workers will be Massachusetts-licensed Asbestos Workers with proper and current medical clearances and respirator fit test documentation.

4. Asbestos Project Monitors will be on site full time to support the project as described in Section F.

Section 3, Abatement Means and Methods

Floor Tile Mastic Removal

1. After work area set-up has been completed and approved by the Project Monitor, the workers will remove the floor tile using manual (hand scraping) methods. This work is currently underway.

2. Water will be used continuously during asbestos abatement operations to keep materials sufficiently wetted and to prevent visible dust/emissions. One or more airless sprayers or foggers will be used to constantly mist the air to minimize the generation of dust during mastic removal operations.

3. Once the floor tile has been removed, the floor tile mastic will be removed using mechanical shot/ bead blasting (e.g. Blastrac or equivalent).

4. The ACMs shall be kept wet during removal and packaging. Floor tile, mastic and spent blast media will be promptly packaged in two 6-mil labelled asbestos disposal bags and/or double-lined boxes or drums. The waste will be re-wetted as needed to ensure that it is sufficiently wetted for eventual disposal. All asbestos waste will be transported off site to an approved/licensed asbestos landfill.

D. PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. All SenCam and subcontractor workers will wear disposable suits and half-face HEPA-filtered air purifying respirators during all phases of abatement.

2. An initial exposure assessment (IEA) will be performed to determine if worker personal exposure levels are above or above the OSHA PEL and to determine if worker protection is adequate for the task(s).

E. WASTE PACKAGING AND DISPOSAL

1. SenCam will provide sufficient asbestos disposal bags or acceptable alternative (e.g. boxes, drums) for the resulting waste. Once properly sealed, the waste bags will be transported off site for disposal. Transportation of asbestos waste shall be in conformance with the US Department of Transportation Regulations 49 CFR Parts 172 and 173. The waste containers will be labeled in accordance with all governing regulations and be placarded with U.S. Department of Transportation (DOT) Placard 22-12 and additional appropriate asbestos warning labels.

2. Disposal 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. The waste will be disposed of at Minerva Enterprises, LLC located in Waynesburg, Ohio.

F. PROJECT MONITORING

1. AXIOM has Massachusetts-licensed Asbestos Project Monitors (APMs) on site full time during removal operations to ensure compliance with this Work Plan, to document the work and to perform ambient air monitoring as specified herein.

2. Ambient Air Monitoring: AXIOM's APM will perform air monitoring outside the containment during asbestos abatement activities. High volume air samples will be collected and analyzed by Phase Contrast Microscopy (PCM) be in accordance with the NIOSH 7400 Method. Sampling will be performed using electric pumps to achieve air sample volumes required for reporting limits. Air samples will be analyzed daily, typically on site.

   Air sample results will be compared to the DOS post-abatement release criteria of 0.010 f/cc. The following procedures shall be performed in the event excessive or elevated airborne fiber levels (< 0.010 f/cc) are measured outside the containment.

   a. Stop all work immediately;
   b. Restrict access to personnel with proper respiratory protection;
   c. Perform additional wetting and air misting procedures to reduce airborne fiber levels;
   d. Conduct additional air monitoring until airborne asbestos fiber levels are within acceptable levels;
   e. Assess work practices and engineering controls and modify as necessary to reduce levels once work recommences.
   f. Perform additional air sampling to document fiber levels during and after engineering controls means and methods are reevaluated and modified.
   g. If required by the MADEP, we will notify them if elevated fiber levels occur outside the NPE and we will provide the MADEP with daily PCM air sample results.

3. Final clearance air testing will be conducted by Transmission Electron Microscopy (TEM) in accordance with the AHERA requirements.