

**PROJECT SUMMARY REPORT FOR ASBESTOS RESPONSE ACTION
FLOOR TILE
HAVERHILL HIGH SCHOOL, ROOM A18
137 MONUMENT STREET, HAVERHILL, MA 01832**



PREPARED FOR:

**HAVERHILL PUBLIC SCHOOLS
4 SUMMER STREET
HAVERHILL, MA 01832**

PREPARED BY:

**AXIOM PARTNERS, INC.
1 PLEASURE ISLAND ROAD, SUITE 2C
WAKEFIELD, MA 01880**

AXIOM PROJECT NUMBER 01288.006

SEPTEMBER 28, 2017

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SUMMARY REPORT FOR ASBESTOS RESPONSE ACTION

CLIENT NAME: Haverhill Public Schools
4 Summer Street
Haverhill, MA 01832

LOCATION: Room A18
Haverhill High School
137 Monument Street
Haverhill, MA 01832

ASBESTOS CONTRACTOR: SenCam, Inc. (SenCam)
741 South Main Street
Haverhill, MA 01835

CONSULTANT: Axiom Partners, Inc. (AXIOM)
1 Pleasure Island Road
Wakefield, MA 01880

PROJECT DATES: August 28, 2017

I. INTRODUCTION

- A. AXIOM provided consulting support to Haverhill Public Schools during an Asbestos Response Action at Haverhill High School. It is our understanding that during preparations for the 2017-2018 school year, Facilities personnel identified an area of damaged and delaminating floor tile in Room A18.
- B. An area of approximately 40 square feet of 9" x 9" tan floor tile in Room A18 was cracked and coming loose from the concrete subfloor. Another 35 square feet of tile surrounding the damaged area may delaminate or become damaged in the near future. This floor tile was identified as a presumed asbestos-containing material (PACM) in AXIOM's 2016 three-year re-inspection report for the school. Removal of the tile would be required before Facilities personnel could replace it with new non-asbestos-containing floor tile.

II. SUMMARY OF ABATEMENT WORK

- A. AXIOM met at the site with Haverhill Designated Person Bill Evans on August 24, 2017 to assess the damage and discuss the scope of asbestos abatement for compliance with governing asbestos regulations¹. AXIOM and Mr. Evans contacted SenCam, Inc. (SenCam) of Haverhill, Massachusetts, a Massachusetts-licensed Asbestos Abatement Contractor. The parties discussed obtaining an emergency waiver to complete the removal before the first day of school on August 29, 2017.
- B. AXIOM contacted the Massachusetts Department of Environmental Protection on August 25, 2017, which granted an emergency waiver (waiver number NAW1708143) for the usual ten-day notification period for asbestos abatement. With this waiver number, SenCam filed their ANF-001 abatement notification with the Massachusetts Department of Labor Standards (MA DLS). Removal of the damaged floor tile was planned for August 28, 2017.

¹ EPA AHERA and NESHAP Regulations and Massachusetts Regulations

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Axiom Partners, Inc.

- C. A summary of ACBMs removed is as follows:

Material	Location	Approximate Quantity
9" x 9" Tan Floor Tile	Room A18 Near Windows	48 SF

- D. Ambient air sampling was performed during asbestos abatement activities to document the effectiveness of the contractors' work practices and engineering controls. One air sample was collected and analyzed according to the National Institute for Occupational Safety and Health (NIOSH) Method 7400 for Phase Contrast Microscopy (PCM). This method is recognized by the U.S. Occupational Health and Safety Administration (OSHA), the Environmental Protection Agency (EPA), the Massachusetts Department of Labor Standards (MA DLS) and MA DEP for its ability to characterize total airborne fiber levels. This air sample was analyzed by an AXIOM Asbestos Project Monitor (APM) who is also a trained PCM analyst.
- E. Upon completion of the floor tile removal, AXIOM's APM performed a post-abatement visual inspection of the containment to confirm that all specified ACBMs were completely removed. As necessary, the AXIOM APM instructed the contractor to re-clean areas that did not conform to visual inspection criteria before a certificate of visual inspection was completed.
- F. Upon completion of the visual inspection, AXIOM's APM performed clearance air sampling. As allowed by AHERA² for material quantities less than 160 square feet, air clearance testing was performed via PCM using high volume pumps to draw a volume of air through a membrane filter at a known rate not to exceed 15 liters per minute. Sampling volumes were between 1,200 and 1,800 liters of air. Air samples were analyzed via PCM according to NIOSH Method 7400. Air samples were analyzed by AXIOM's APM.
- G. A project may be considered complete when all air samples demonstrate airborne fiber concentrations inside the work area to be less than 0.010 fibers per cubic centimeter (f/cc), the MA DLS standard for re-occupancy following asbestos abatement. Each clearance air sample had a fiber concentration of less than 0.010 f/cc. The complete PCM analysis reports are attached (Appendix I). Upon receipt of the results, the Asbestos Contractor dismantled the containment and performed final work area clean-up.

III. ABATEMENT WORK PRACTICES AND ENGINEERING CONTROLS

- A. AXIOM Prepared a work plan (design) for this Asbestos Response Action. Please see Appendix II for a copy of this work plan.
- B. A decontamination facility (DF) was established at the entrance to the containment/negative pressure enclosure. The DF consisted of a series of chambers for workers to don personal protective equipment and to remove their contaminated disposable clothing and perform decontamination procedures before exiting the work area. Each room/chamber was separated by an airlock constructed of overlapping flaps of 6-mil polyethylene sheeting. Asbestos warning signs were posted at the entrances to all containments in accordance with 453 CMR 6.14(4)(a)3.

² EPA's Asbestos Hazard Emergency Response Act, 1986

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HAVERHILL HIGH SCHOOL
HAVERHILL PUBLIC SCHOOLS, HAVERHILL, MA**

Axiom Partners, Inc.

- C. Critical barriers, walls and ceilings were covered with two layers of 6-mil polyethylene sheeting and sealed with duct tape during abatement work. These practices meet or exceed MA DLS and AHERA requirements.
- D. Asbestos materials were wetted/misted with water to maintain them in a wet condition while being removed and packaged for disposal.
- E. The abatement workers were 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).
- F. The asbestos contractor was required to comply with all waste packaging, transportation and disposal requirements specified by governing regulations including the use of Asbestos Waste Shipment Records (AWSRs).

IV. ASBESTOS WASTE DISPOSAL

- A. Asbestos waste was sealed in a double layer of 6-mil polyethylene bags. The bags were then sealed and removed from the work area. The bags were marked with the required OSHA, EPA, and DOT asbestos warning labels.
- B. The waste consisted of the ACBMs described herein, contaminated polyethylene sheeting and disposable contractor equipment and personal protective equipment. The asbestos waste was transported by SenCam to their facility located in Haverhill, Massachusetts. SenCam placed the waste in a secure enclosed container that, once filled, was transported directly to the designated asbestos landfill.
- C. Regulations require that AWSRs used to document transportation of the asbestos waste to an approved asbestos landfill must be provided to the generator within 35 days of when the waste left the project site.

V. PROJECT MONITORING PERSONNEL

- A. Massachusetts-licensed APM Charles P. Powanda (License #AM 900571) was responsible for project monitoring activities and for performing final visual inspections and air clearance sampling.
- B. Heather R. Forgione, AXIOM's Project Manager, was responsible for ensuring that AXIOM personnel completed their responsibilities in compliance with governing regulations and the client's requirements.

Report Prepared by:



Heather R. Forgione
Project Manager

Report Reviewed by:



Stephen E. Minassian
Principal

APPENDIX I

AXIOM Project Documentation

Daily Site Log

Certificate of Visual Inspection

Asbestos Air Monitoring Work Sheet

Emergency Notification Form

SITE LOG

Axiom Partners, Inc.

One Pleasure Island Road
Wakefield, MA 01880
781-213-9198

Date: 08/28/17 Location: Room A18
 Project Number: 01288.005 Address: 137 Monument St Haverhill, MA
 Project Monitor: Charles Powanda Project: Emergency Floor Tile Removal
 License Number: AM 900571 On-Site Supervisor: Flavio Nunez
 Contractor: SenCam Number of Workers: 2

TIME	NOTES
0700	I arrived on site. I called Heather Forgione of Axiom and let her know I spoke to Leo Torres of SenCam and that he was not here because he had no paperwork.
0730	I call Bill Evans, Haverhill's Designated Person, to gain access. He informs me that someone is on their way to let me in and that he will be offsite for the day. I will have to remain to let the SenCam crew in when they arrive.
0800	I called Heather to let her know Leo and I have not heard back from Pat Senott of SenCam. I let her know the crew has not arrived.
0900	I spoke with Heather again and she let me know the crew is on their way and should be here within the hour.
1000	The SenCam crew arrived and mobilize to Room A18. They began preparation of the containment. I called Heather and asked about the washer and gas dryer, which are still in place and connected to utilities. She said the High School was responsible for having them removed. I called Tom in the school's maintenance Department to notify him.
1030	The school plumber arrives to disconnect the gas dryer.
1100	I approved the containment and SenCam began removal. I set up one PCM background air sample.
1145	I donned PPE and performed the visual inspection of the approximately 48 SF area of removed tile. I passed the visual clearance and set up two PCM clearance air samples.
1330	I collected the two PCM clearance air samples and read the samples. Results were below the DLS criteria of less than or equal to 0.010 f/cc of air. I notify SenCam that they are clear to break down their containment.
1430	After breaking down and packing up my equipment I depart the site.

Signature: Charles Powanda



ASBESTOS ABATEMENT
CERTIFICATION OF
VISUAL INSPECTION FORM

AXIOM PARTNERS, INC.
ONE PLEASURE ISLAND ROAD
WAKEFIELD, MA 01880
781-213-9198

Site Location: 137 MONUMENT ST. HAVERHILL, MA

Site Owner: HAVERHILL PUBLIC SCHOOLS

Date: 08/28/17 Time: _____ Project No.: 01288.005

Project Name: EMG. TILE Project Monitor: Y BROS

Contractor: SEN/CHM Waste Quantity: CHARLES POWRIWA

Locations and Quantities of ACMs Abated: _____

ROOM A18- TILE APPROX. 48 SF

ACMs/PACMs Remaining (if any): _____

A visual inspection of the above identified work area(s) has/have been completed by both parties below and the abatement work has been completed to the satisfaction of the parties identified below.

Pablo Nunez

Contractor Authorized Representative

PABLO

PENON NUNEZ

Printed Name

AS 030514

Title

08/28/17

Date

Charles Powriwa

Axiom Partners, Inc. Project Representative

CHARLES POWRIWA

Printed Name

AM 900571

Title

08/28/17

Date





ASBESTOS AIR MONITORING WORKSHEET

MAIN OFFICE:

One Pleasure Island Road
Wakefield, Massachusetts 01880
(781) 213-9198
(781) 213-6992 Fax

www.axiomenv.com

BRANCH OFFICES:

46 Watergate Lane
Barnstable, Massachusetts 02668
(508) 746-0877 / (508) 732-0281 Fax

10 Diamond Drive
Derry, New Hampshire 03038
(603) 434-5245 / (603) 434-5172 Fax

Site Address: 137 Monument St. Haverhill, MA
 Project Name: Tile
 Sampler Name: Charles Powanda Date: August 28, 2017
 Analyst Name: Charles Powanda Date: August 28, 2017

Project No: 01288.005
 Client: Haverhill Public Schools/Haverhill High School
 Location(s) Sampled: Room A18
 State License #: AM 900571

Sample Number	Sample Location	Sample Type*	Work Activity**	Sampling Time (Minutes-Military format)			Flow Rate (Liters per Minute)			Total Volume (Liters)	Fiber Density (f/mm ³)	Limit of Detection (f/mm ³)	Fiber Count #	RESULT Fibers/Cubic Centimeter
				Start	Stop	Total	Start	Stop	Average					
082817-99-01	Field Blank													
082817-99-02	Field Blank													
082817-99-03	Room A18	BG	1,3,5	10:46	11:42	56	15.3	15.3	15.30	856.8	2.5	7.0	2.0	0.001
082817-99-04	Room A18	IWA	6	11:56	13:29	93	15.3	15.3	15.30	1422.9	3.8	7.0	3.0	0.001
082817-99-05	Room A18	IWA	6	11:57	13:29	92	15.3	15.3	15.30	1407.6	2.5	7.0	2.0	0.001

CHAIN-OF-CUSTODY		Microscope ID # <u>1-86-786</u> Rotameter ID # <u>AX H-22</u>	*Sample Type Codes		**Work Activity Codes	
Relinquished by: _____	Printed Name: _____		IWA = Inside Work Area	1 = Background	9 = Pre-Abatement	
Date: _____	Time: _____	OWA = Outside Work Area	2 = Work Area Prep	10 = Gross Removal		
Received By: _____	Printed Name: _____	HEPA = HEPA Exhaust	3 = Asbestos Removal	11 = Fine Cleaning		
Date: _____	Time: _____	BG = Background	4 = Waste Loadout	12 = Repair/Encapsulation		
MA PCM Lab ID # <u>AA000179</u>	AIHA Lab # <u>121587</u>	PL = Personal	5 = Glovebag Removal	13 = Soil Remediation		
Analytical Method: NIOSH 7400, "A" Rules f/mm ² - fibers per square millimeter Effective Filter Area = 385 mm ² Field Area = 0.00785 mm ² * Fibers per 100 Fields unless specified		CL = Clearance	6 = Clearance Test	14 = Maintenance Activity		
Fibers/CC = (SAMPLE fibers/field) - (BLANK fibers/field) x (385) (7.85) x (liters)		DF = Decontam. Facility	7 = Repair/Encapsulation	15 = Other		
		OT = Other	8 = Cleaning/Decontamination	Analyst Signature: <i>Charles Powanda</i>		

New Hampshire Only (fax copy of form to NH Air Resources at 603-271-1381): Project Scope (Check One): Major (> 10 Inft/25 sqft of Friable ACM) Minor (≤ 10 Inft/25 sqft of Friable ACM)



Massachusetts Department of Environmental Protection

eDEP Transaction Copy

Here is the file you requested for your records.

To retain a copy of this file you must save and/or print.

Username: SENCAMINC

Transaction ID: 951926

Document: AQ 04 - Asbestos Removal Notification Form ANF-001

Size of File: 237.03K

Status of Transaction: In Process

Date and Time Created: 8/28/2017:12:14:44 PM

Note: This file only includes forms that were part of your transaction as of the date and time indicated above. If you need a more current copy of your transaction, return to eDEP and select to "Download a Copy" from the Current Submittals page.



- This is a revision to an existing form.

Project ID for existing form to be revised: _____

- This job is being conducted under a Blanket Permit.

MassDEP assigned Blanket Authorization ID: _____

- This job is being conducted under a Non Traditional Abatement Work Practice Permit.

MassDEP assigned Non Traditional Work Practice Authorization ID: _____

- This job does not require the use of an asbestos contractor licensed by the MA Department of Labor Standards because (please check one box below):

- This job involves breaking, shearing or slicing of non-friable asbestos-containing material only (e.g. cement shingles/panels, cement pipe, asphalt roofing or siding, vinyl floor tiles, etc.) in a manner that does not generate asbestos dust or render the material friable, as allowed by the Department of Labor Standards (DLS) at 453 CMR 6.13(2)(a)5. All work must be done in compliance with the applicable regulations at 310 CMR 7.15; or

- This job involves work on asbestos containing material that is classified by the Department of Labor Standards (DLS) as a 'Small-Scale Asbestos Project,' an 'Asbestos-Associated Project,' or an 'Asbestos Response Action' by qualified 'in-house' personnel as allowed by the Department of Labor Standards (DLS) at 453 CMR 6.00, and will be performed in accordance with all the requirements of 453 CMR 6.13 (1)(a), 453 CMR 6.13 (2)(a)1. and 3., and 453 CMR 6.14 (1)(a), as applicable. All work must be done in compliance with the applicable regulations at 310 CMR 7.15.

- None of the above conditions apply, generate a new form.



A. Asbestos Abatement Description

Instructions 1. All sections of this form must be completed in order to comply with MassDEP notification requirements of 310 CMR 7.15 and Department of Labor Standards (DLS) notification requirements of 453 CMR 6.12

MassDEP Use Only

Date Received

2. Submit Original Form To:

Commonwealth of Massachusetts
P.O. Box 4062
Boston, MA 02211

1. Facility Location:

HAVERHILL HIGH SCHOOL

137 MONUMENT STREET

a. Name of Facility

b. Street Address

HAVERHILL

MA

01832

9783745700

c. City/Town

d. State

e. Zip Code

f. Telephone

BILL EVANS

MAINTENANCE COORDINATOR

g. Facility Contact Person Name

h. Facility Contact Person Title

Worksite Location:

ROOM A18

i. Building Name, Wing, Floor, Room, etc.

2. Is the facility occupied? a. Yes b. No

3. Is this a fee exempt notification (city, town, district, municipal housing authority, state facility, or owner-occupied residential property of four units or less)? a. Yes b. No

4. Blanket Permit Project Approval, if applicable:

Approval ID #

5. Non-Traditional Asbestos Abatement Work Practice Approval, if applicable:

Approval ID #

6. Asbestos Contractor:

SEN CAM INC

741 SOUTH MAIN ST

a. Name

b. Address

HAVERHILL

MA

01835

9786837767

c. City/Town

d. State

e. Zip Code

f. Telephone

AC000129

h. Contract Type: 1. Written 2. Verbal

g. DLS License #

7. FE FLAVIO NUNEZ

AS031535

a. Name of Contractor's On-Site Supervisor/Foreman

b. DLS Certification #

8. AXIOM PARTNERS INC

AA000179

a. Name of Project Monitor

b. DLS Certification #

9. AXIOM PARTNERS INC

AA000179

a. Name of Asbestos Analytical Lab

b. DLS Certification #

10.

8/28/2017

8/28/2017

a. Project Start Date (MM/DD/YYYY)

b. End Date (MM/DD/YYYY)

10AM-3PM,

NOT APPLIC

c. Work Hours - Monday Through Friday

d. Work Hours - Saturday & Sunday

11. What type of project is this?

a. Demolition b. Renovation c. Repair d. Other - Please Specify: _____



BWP AQ 04 (ANF-001)

Asbestos Notification Form

100271637

Asbestos Project #

Project Revision

Project Cancellation

A. Asbestos Abatement Description: (cont.)

12. Abatement procedures (check all that apply):

a. Glove Bag b. Encapsulation c. Enclosure d. Disposal Only e. Cleanup

f. Full Containment g. Other - Please Specify: MINICONTAINMENT

13. Job is being conducted: a. Indoors b. Outdoors

14 a. Total amount of each type of asbestos Containing materials (ACM) to be removed, enclosed, or encapsulated:

0		75	
1. Linear Feet (Lin. Ft.)		2. Square Feet (Sq. Ft.)	
b. Boiler, Breaching, Duct, Tank Surface Coatings	1. Lin. Ft. 2. Sq. Ft.	c. Transite Pipe	1. Lin. Ft. 2. Sq. Ft.
d. Pipe Insulation	1. Lin. Ft. 2. Sq. Ft.	e. Transite Shingles	1. Lin. Ft. 2. Sq. Ft.
f. Spray-On Fireproofing	1. Lin. Ft. 2. Sq. Ft.	g. Transite Panels	1. Lin. Ft. 2. Sq. Ft.
h. Cloths, Woven Fabrics	1. Lin. Ft. 2. Sq. Ft.	i. Other - Please Specify:	
j. Insulating Cement	1. Lin. Ft. 2. Sq. Ft.	VAT & MASTIC	75 1. Lin. Ft. 2. Sq. Ft.

15. Describe the decontamination system(s) to be used:

ONE CHAMBER CHANGE ROOM/NEGATIVE PRESSURE HEPA AIR FILTRATION

16. Describe the containerization/disposal methods to comply with 310 CMR 7.15 and 453 CMR 6.14(2) (g):

WASTE WETTED/DOUBLE BAGGED IN 6 MIL POLY/EPA APPROVED LANDFILL

17. For Emergency Asbestos Operations, the MassDEP and DLS officials who evaluated the emergency:

GRADY DANTE	INSPECTOR
a. Name of MassDEP Official	b. Title of MassDEP Official
8/25/2017	NAW1708143
c. Date of Authorization (MM/DD/YYYY)	d. Waiver #
DAPHNE LOBOGNON	ADMINISTRATIVE ASSISTANT
e. Name of DLS Official	f. Title of DLS Official
8/28/2017	20270-2017
g. Date of Authorization (MM/DD/YYYY)	h. Waiver #

18. Do prevailing wage rates as per M.G.L. c. 149, § 26, 27 or 27A-F apply to this a. Yes b. No project?



B. Facility Description

1. Current or prior use of facility: HIGH SCHOOL
2. Is the facility owner-occupied residential with 4 units or less? a. Yes b. No
3. CITY OF HAVERHILL PUBLIC SCHOOLS 4 SUMMER STREET
 a. Facility Owner Name b. Address
HAVERHILL MA 01830 9783743400
 c. City/Town d. State e. Zip Code f. Telephone
4. BILL EVANS 137 MONUMENT STREET
 a. Name of Facility Owner's On-Site Manager b. Address
HAVERHILL MA 01832 9783745700
 c. City/Town d. State e. Zip Code f. Telephone
5. NOT APPLICABLE SAME
 a. Name of General Contractor b. Address
SAME MA 01832 0000000000
 c. City/Town d. State e. Zip Code f. Telephone
- LIBERTY MUTUAL INSURANCE COMPANY
 g. Contractor's Worker's Compensation Insurer
WC5-31S-481104-046
 h. Policy # 12/20/2017
 i. Expiration Date (MM/DD/YYYY)
6. What is the size of this facility? 200000 2
 a. Square Feet b. # of Floors

C. Asbestos Transportation & Disposal

1. Transporter of asbestos-containing waste material from site of generation:
 a. Directly to Landfill or b. To Temporary Storage Location/Transfer Station
- SENCAM,INC. 741 SOUTH MAIN STREET
 c. Name of Transporter d. Address
HAVERHILL MA 01835 9786837767
 e. City/Town f. State g. Zip Code h. Telephone
2. If a temporary storage location/transfer station is used, list name of transporter of asbestos containing waste material from temporary storage location/transfer station to final disposal site:
- SERVICE TRANSPORT GROUP 58 PYLES LANE
 a. Name of Transporter b. Address
NEW CASTLE DE 19720 8779999559
 c. City/Town d. State e. Zip Code f. Telephone

Note: Temporary storage of Asbestos containing waste material is only allowed at the place of business of a DLS licensed Asbestos contractor or a transfer station that is permitted by MassDEP and operated in compliance with Solid Waste Regulations 310 CMR 19.000



C. Asbestos Transportation & Disposal: (cont.)

3. Name and address of temporary storage location/transfer station for the asbestos containing waste material:

SENCAM, INC.		741 SOUTH MAIN STREET	
a. Temporary Storage Location Name		b. Address	
HAVERHILL	MA	01835	9786837767
c. City/Town	d. State	e. Zip Code	f. Telephone

4. Name and location of final disposal site (asbestos landfill):

MINERVA LANDFILL		UNKNOWN	
a. Final Disposal Site Name		b. Final Disposal Site Owner Name	
9000 MINERVA ROAD			
c. Address			
WAYNESBURG	OH	44688	3308663435
d. City/Town	e. State	f. Zip Code	g. Telephone

D. Certification

Note: Contractor must sign this form for DLS notification purposes

"I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment. The undersigned hereby states that I have read the Commonwealth of Massachusetts regulations governing asbestos abatement (453 CMR 6.00 promulgated by the Department of Labor Standards and 310 CMR 7.15 promulgated by the Department of Environmental Protection), and that I am aware that this permit application or notification shall not be deemed valid unless payment of the applicable fee is made."

PATRICK SENNOTT

1. Name

PRESIDENT

3. Position/Title

9786837767

5. Telephone

741 SOUTH MAIN STREET

7. Address

MA

9. State

PATRICK SENNOTT

2. Authorized Signature

8/28/2017

4. Date (MM/DD/YYYY)

SENCAM, INC.

6. Representing

HAVERHILL

8. City/Town

01835

10. Zip Code

APPENDIX II

AXIOM Asbestos Response Action Work Plan

**ABATEMENT WORK PLAN FOR
ASBESTOS RESPONSE ACTION
ASBESTOS-CONTAINING FLOOR TILE**

CLIENT NAME: Haverhill Public Schools
4 Summer Street
Haverhill, MA 01832

LOCATION: Room A18
Haverhill High School
137 Monument Street
Haverhill, MA 01832

ASBESTOS CONTRACTOR: SenCam, Inc. (SenCam)
741 South Main Street
Haverhill, MA 01835

CONSULTANT: Axiom Partners, Inc. (AXIOM)
1 Pleasure Island Road
Wakefield, MA 01880

PROJECT DATE: August 28, 2017

Prepared by Axiom Partners, Inc.



Stephen E. Minassian
Massachusetts Asbestos Designer AD 051928
August 25, 2017

SUMMARY OF WORK

The work involves the removal of approximately 40 square feet of damaged and delaminating presumed asbestos-containing floor tile in Room A18 as identified on the attached site plan. The damaged tile will be removed and replaced with new vinyl composite tiles.

The attached drawing provides a generalized arrangement for the preparation of the abatement work; however, the Massachusetts-licensed Asbestos Abatement Contractor (Contractor) will establish the regulated area based upon field conditions.

GENERAL REQUIREMENTS

The Contractor and their supervisor(s) and workers shall be licensed in the Commonwealth of Massachusetts to perform asbestos abatement work. The Contractor shall strictly adhere to all applicable federal, state and local laws and regulations. Where any conflict arises between this work plan and 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.

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.

Air sampling will be conducted following the Asbestos Hazard Emergency Response Act (AHERA) PCM protocol based on the quantity of material to be removed.

The Contractor will note that the Owner (Haverhill Public Schools) will pay for one (1) clearance inspection and test for this project. The Contractor shall reimburse the Owner for any testing required beyond the initial clearance inspection and testing to achieve acceptable clearance results, regardless of the reason(s) for the failure of the original clearance samples or inspection.

As applicable, the Contractor shall pay for and obtain required regulatory permits and notifications prior to the start of the work.

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 (EPA):
 - 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. 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

3. Commonwealth of Massachusetts Department of Environmental Protection (MA DEP) and Department of Labor Standards (MA DLS):
 - a. 310 CMR 7.15 Asbestos (MA DEP)
 - b. 453 CMR 6.00 The Removal, Containment or Encapsulation of Asbestos (MA DLS)

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;
2. Safety glasses;
3. Work boots;
4. Disposable, full-body work suits; and
5. Gloves.

REGULATED WORK AREAS

The affected area of the site shall be contained within a regulated area. This includes any adjoining area(s) where debris and asbestos waste accumulates or where airborne concentrations of asbestos exceed or may exceed 0.01 fibers per cubic centimeter of air (f/cc) by NIOSH Method 7400.

All asbestos abatement work or any other operations where airborne asbestos can potentially exceed 0.01 f/cc, will be performed within this regulated area. Only authorized personnel may enter the regulated work area. The Contractor's designated "Competent Person" (e.g., abatement supervisor) 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 the regulated area. The signs will bear 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.

HYGIENE FACILITIES

The Contractor shall establish a three-chamber decontamination facility (DF) immediately adjacent to the regulated work area 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.

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 waste 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

In addition, labels identifying the site owner and location of waste generation will be affixed to each container of asbestos waste.

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 sign-in log will be utilized to account for all personnel and visitors entering the containment. The log will be administered by the abatement supervisor and will be used to account for all personnel after an emergency evacuation.

All work site injuries will be promptly reported by the Contractor to the Owner. In the event of an unsafe condition or emergency (e.g., fire, loss of electricity), the Contractor shall evacuate all personnel from the containment and, if necessary, from the building. An assessment of the problem will be made and appropriate actions implemented. No personnel shall be allowed to re-enter the building or containment until the Competent Person/abatement supervisor and/or the Owner 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.

METHODS OF ABATEMENT

The Contractor shall move all remaining non-fixed items out of the work area. The work area shall be pre-cleaned using either High Efficiency Particulate Air (HEPA) vacuums or wet wiping of all surfaces.

The work will be performed within a regulated area (i.e., a containment). The regulated area will be constructed using two (2) overlapping layers of 6-mil fire-retardant polyethylene plastic sheeting (poly sheeting) on walls, securely taped in place. All windows, doors and other openings into/out of the work area shall be sealed with one (1) layer of poly sheeting prior to the installation of the

regulated area poly barriers. The Contractor shall take care not to seal live electrical equipment in the space and create an overheating hazard.

The Contractor shall install the decontamination facility (see requirements above) and shall install one or more negative air machines as appropriate with HEPA¹ filtration exhausted to the exterior of the building. The HEPA-exhaust unit(s) shall be operated at all times during asbestos removal activities until successful clearance air sampling has been achieved.

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

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.

As allowed by AHERA for material quantities less than 160 square feet, air clearance testing will be performed via Phase Contrast Microscopy. 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 containment shall remain demarcated and off-limits to building employees and the public 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 (APM 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.

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 containment, and maintain a written record of such.

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 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 within 30 days from the date the materials leave the project site.

Disposal of asbestos waste shall be in conformance with USEPA NESHAPS Regulations 40 CFR Part 61 and Massachusetts DEP Regulations regarding asbestos waste disposal.

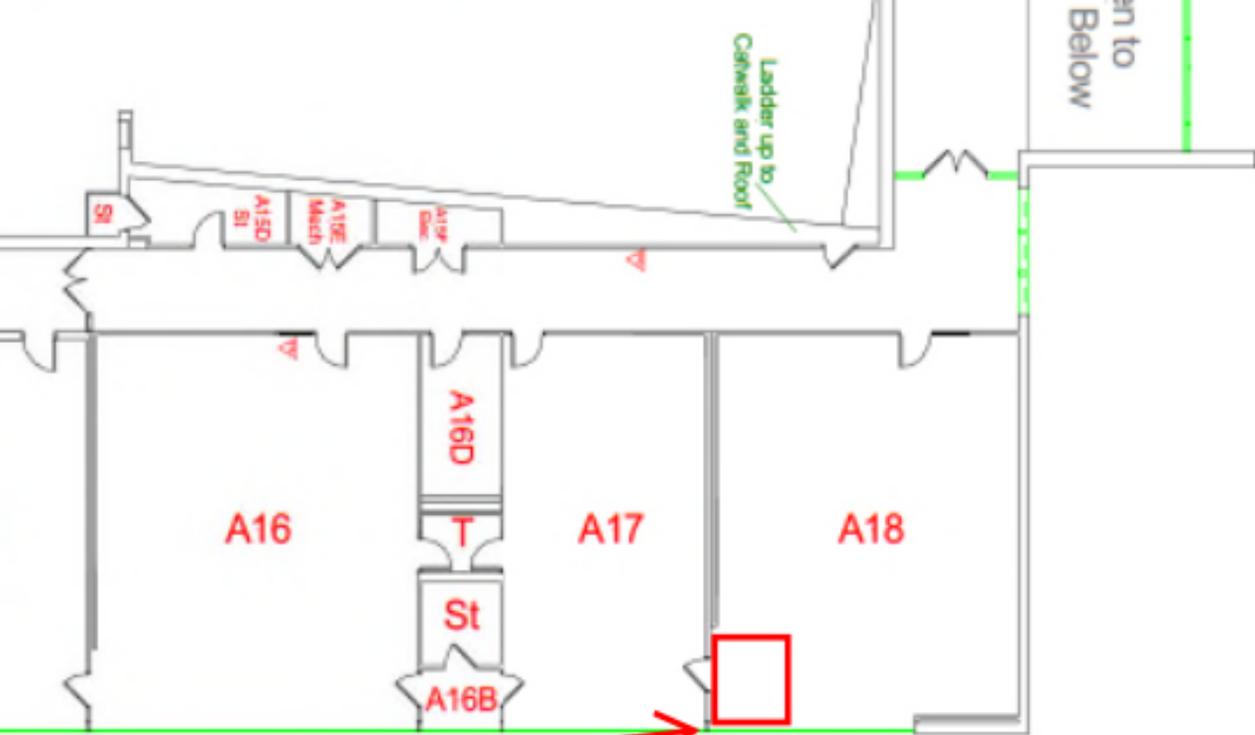
¹ High Efficiency Particulate Air

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 WORK PLAN

ATTACHMENT 1

SITE DRAWING



Approximate location of ~40 SF damaged floor tile

Response Action requires remote decontamination facility, location to be determined by Contractor