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DRAFT Analysis of Brownfields Cleanup Alternatives

Former A-1 Deli
88-92 Merrimack Street
Haverhill, Massachusetts 01832

Prepared for and funded by:
Merrimack Valley Planning Commission
160 Main Street
Haverhill, Massachusetts 01830
EPA Brownfields Assessment Grant #: 4B00A01088

On behalf of:
L'Arche Boston North
53 Wingate Street
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In Reference to:
Credere Project No. 23001742

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APPENDIX

1. INTRODUCTION

Credere Associates, LLC (Credere) was retained by the Merrimack Valley Planning Commission (MVPC) on behalf of the L'Arche Boston North (L'Arche) to prepare this Analysis of Brownfields Cleanup Alternatives (ABCA) for the cleanup of the property located at 88-92 in the City of Haverhill, Essex County, Massachusetts (Site). MVPC will use funding from a US Environmental Protection Agency (EPA) Brownfield Grant (Grant number: 4B00A00801) to fund this ABCA.

1.1 Purpose and Scope

The purpose and scope of this ABCA is to identify and select cleanup alternative(s) for hazardous building materials identified in and on the Site building. Detected building materials include asbestos, polychlorinated biphenyls (PCBs), lead paint, mold, and universal waste associated. No releases have been documented to soil, groundwater, or soil vapor at the Site and the Site does not have any Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Numbers (RTNs).

1.2 Site Description

The Site comprises one (1) parcel of land totaling approximately 0.08 acres with one two story building. The building is currently vacant but formerly operated as the A1 Deli restaurant. As such, the first floor of the building consists of two dining areas with tables, a counter dining area, and a kitchen. The second floor consists of event and multipurpose rooms. An attic crawlspace above a limited portion of the building is accessible from a second-floor bathroom. There are two separate basements, one accessible from 88 Merrimack Street and one from 92 Merrimack Street.

Electric and natural gas services are provided to the Site by National Grid. Water and wastewater services are provided by the City of Methuen.

A Site Location Plan has been provided as **Figure 1**, and pertinent Site details are depicted on **Figure 2**.

1.3 Site History

The Site building was constructed in 1840, which is inscribed on the façade. The building was originally three (3) stories tall and, over time, included units with addresses ranging from 88 to 98 Merrimack Street.

By 1886, the Site was developed with three (3) units within the "Kittredge Building", which extended to the east and west along Merrimack Street. The units were occupied by a fancy goods store, a milliner, and a tenement. By 1893, all three (3) units in the Site building were occupied by retail stores. From 1906 to 1965, the Site was occupied by various businesses, including jewelers, a beauty salon, an insurance company, interior designs, and a drug store. In the 1940s and 1950s, the Site building contained three (3) stories; however, at some time in the 1950s, the third floor

was removed for reasons unknown. The third-floor was anecdotally reported to have been destroyed by fire but this was not confirmed.

By 1984, the Site was occupied by A-1 Deli, Vathally's Coffee, Pantelis Jewelry, Old Valley Crafter, and Anton's Beauty. In 2005, 92 Merrimack Street was occupied by Mr. K's Auto School. By 2010, A-1 Deli had expanded to occupy the entire Site, and it remained until 2025. The Site is currently vacant.

1.4 Section 106 Historical Review

Credere (through EPA) has submitted a project notification letter to the Massachusetts Historical Commission (MHC) requesting a review for the proposed cleanup activities (building abatement and demolition) pursuant to the Section 106 National Historic Preservation Act (36 CFR Part 800). A review of the building's historical significance is required for all federally funded projects. A copy of the letter submitted to MHC is attached as **Appendix A**.

1.5 Proposed Redevelopment Plan

The proposed future redevelopment plan for the Site includes renovation of the interior of building into a restaurant with apartments on upper floors to house restaurant workers. The redevelopment would involve adding back the third floor.

L'Arche, the redeveloper of the Site, works to create spaces of genuine belonging for people with and without intellectual disabilities. As indicated above, the redeveloped building will be used to employ, train, house people in L'Arche's restaurant program.

2. SUMMARY OF PREVIOUS INVESTIGATIONS

The following are summaries of documents that were identified for the Site during Credere's research.

Phase I Environmental Site Assessment, Credere Associates, LLC, February 25, 2025

Credere completed a Phase I Environmental Site Assessment (ESA) for the Site dated February 25, 2025, for MVPC on behalf of L'Arche. The Phase I ESA included State and Federal file reviews, interviews with current and past owners and local government officials, and Site reconnaissance. Based on a review of historical sources, environmental databases, interviews, User provided information, Site reconnaissance, and judgment by the Environmental Professional, the February 25, 2025, Phase I ESA revealed no recognized environmental conditions (RECs) in connection with the Site. However, the following environmental findings, which do not meet the definition of a REC, historical REC (HREC), controlled REC (CREC), or *de minimis* condition (DMC), but do warrant the opinion of an environmental professional and may represent some degree of business environmental risk, were identified.

- Environmental Finding #1 – Potential presence of asbestos containing materials (ACMs) in/on the Site building
- Environmental Finding #2 – Potential presence of lead paint in/on the Site building
- Environmental Finding #3 – Potential presence of polychlorinated biphenyl (PCB)-containing materials in/on the Site building
- Environmental Finding #4 – Potential presence of radon above 4 picocuries per liter (pCi/L)
- Environmental Finding #5 – Known presence of mold in basement storage area

Based on the identified environmental findings, Credere recommended the following:

- Performance of a Hazardous Building Materials Survey (HBMS) to assess Site building materials if redevelopment activities will involve a change in use, i.e., from commercial to residential, or if building materials will be impacted during planned renovations

Pre-Renovation Hazardous Building Materials Survey, Credere Associates, LLC, July 18, 2025

From June 3 to 5, 2025, Credere conducted a pre-renovation HBMS for MVPC, on behalf of L'Arche, to assess for ACMs, lead paint, PCB-containing building materials, radon, and other regulated or universal wastes within the Site building. The following was identified during the HBMS :

- Four (4) ACMs were identified within the building, including approximately 100 square feet (sf) of linoleum of various colors in the 88 Merrimack Street basement; 1,000 square feet of yellow carpet adhesive in the 92 Merrimack Street first floor; 400 square feet of

linoleum of various colors in the kitchen; and 60 linear feet of black window caulk on the front exterior windows.

- Lead-containing paints (LCPs) were identified throughout the interior and exterior of the Site building.
- One (1) excluded PCB Bulk Product waste material, i.e., greater than 1 milligram per kilogram (mg/kg) but less than 50 mg/kg, black exterior window caulk, was identified on the front exterior of 88 Merrimack Street.
- Radon results for all radon testing locations were below the 2 pCi/L threshold for consideration of mitigation.
- The universal waste inventory included fluorescent light fixtures and bulbs, fridges, freezers, roof tar, mercury thermostats, fire extinguishers, exit signs, paint cans, waste oil drums, bleach, and degreaser in the Site building.

Mold was observed by Credere but not sampled during this work. L'Arche consulted with EnviroVantage (EV) regarding the observed mold. It was assessed by EV that mold, requiring abatement, was present in a portion of one of the basements in the building.

3. CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) was developed using the findings of previous investigations and may be revised or updated in the future if new information becomes available. The CSM includes a Site description, Site history, description of the area and physical setting of the Site, source areas and contaminants of interest (COIs), contaminants of potential concern (COPCs), nature and extent of contamination, exposure pathways, and potential human and environmental receptors.

3.1 Area and Physical Setting

The northern adjoining property is used as a parking lot, while the southern, eastern and western adjoining properties are developed with a mix of commercial and office spaces (see **Figure 2**).

According to the United States Geological Survey (USGS) 1:24,000 Surficial Geology Mass geographic information system (GIS) Data map, consisting of data layers created by a USGS study, the Site is underlain by floodplain alluvium, which consists of sand, silt and gravel within a present-day floodplain. According to the United States Geologic Survey map, Bedrock Geologic Map of Massachusetts, the Site is underlain by the Silurian Berwick Formation, which generally consists of calcareous metasandstone and metasiltstone, with minor muscovite schist.

The Site is located within the surficial drainage basin of the Merrimack River, located approximately 160 feet southeast of the Site, which flows east into the Atlantic Ocean. No surface water bodies are present on the Site. Stormwater likely infiltrates permeable surfaces surrounding the Site or flows into catch basins along Merrimack Street or overland to the Merrimack River.

3.2 Description of Existing Structure

The first floor of the Site building consists of two (2) dining areas, a counter, and a kitchen. The second floor consists of event and multipurpose rooms. An attic crawlspace above 92 Merrimack Street is accessible from a second-floor bathroom. Two (2) separate basements were observed; one (1) accessible from 88 Merrimack Street, is finished and used primarily for storage of furniture and decorations; the second accessible from the kitchen, with a concrete floor and stone or brick walls, used for food storage, including multiple walk-in refrigerators, prep space, and utility space. The second basement contains a natural gas heating system and a water heater.

3.3 Site Environmental Hazards and COIs

The following contaminant source areas were identified on Lot 80 based on the previous investigations at the Site.

- Site building components

Based on previous environmental investigations, current COPCs associated with the source area that have been previously documented to exceed applicable regulatory standards include the following:

- ACM

- LCP
- PCB-containing materials
- Mold
- Universal waste

ACM, in the form of multiple colors of linoleum flooring, yellow carpet adhesive, and black exterior window caulk, was identified during the 2025 pre-renovation HBMS conducted by Credere. The extent of asbestos is confined to these building materials, although it is possible previously inaccessible ACM may be encountered during future renovations.

LCP was identified on numerous materials both in the Site building and on the painted trim components on the building exterior. Those materials identified on the interior will require proper abatement prior to renovation. LCP on a building exterior tends to degrade, or the lead can leach from the paint into stormwater. Because the ground surface surrounding the Site building is paved and, therefore, impervious to stormwater flow, lead impacts to soil from the LCP on the building exterior are not anticipated.

PCBs were also identified in one material: black exterior window caulk.

Mold was observed by Credere and confirmed by EV. Mold abatement is necessary as a part of redevelopment. The source of mold is water intrusion which will also be fixed during future redevelopment.

3.4 Identified Site Risks

The environmental hazards in the building pose a potential risk to human health if the building was to be used in its present "as is condition" without further renovation. Risks posed by these building materials and the identified mold include:

Material Risk	Potential Exposure Pathway(s)	Exposure Pathway
Asbestos (non-friable)	Inhalation / Incidental Ingestion	Asbestos fibers may become airborne if materials are damaged or disturbed. Receptors can inhale or accidentally ingest fibers present in dust or debris.
Lead Paint	Ingestion	Ingestion of lead-contaminated dust, paint chips, or soil. Most common in children or through poor hygiene practices in occupational settings. Once ingested or absorbed, lead enters the bloodstream and can cause systemic health effects.
PCBs	Dermal Contact	PCBs in caulks can be absorbed through skin contact, especially during material

Material Risk	Potential Exposure Pathway(s)	Exposure Pathway
		handling or renovation.
	Inhalation	Volatilization of PCBs from building materials or contaminated dust can lead to inhalation exposure, particularly in poorly ventilated indoor environments.
	Ingestion	Incidental ingestion of PCB-laden dust or contaminated soil, especially in children or through hand-to-mouth contact in occupational settings.
Mold	Inhalation	Mold may become airborne if materials where it is present are damaged or disturbed. Receptors can inhale or accidentally ingest spores present in dust or debris.

*Universal waste has multiple potential exposure pathways depending on waste encountered and they are not all detailed here.

The Site building was most recently operated as a restaurant; however, the building is currently vacant. During future renovation/abatement activities construction workers will have a risk of exposure to asbestos fibers in air, lead-based paint, and PCBs for short durations but at significantly higher intensities. Potential exposure pathways during renovation include inhalation of airborne asbestos fibers and PCB/lead-based laden dust due to material disturbance, dermal contact with hazardous surfaces, such as PCB-containing caulk or lead paint, and ingestion of particulates via hand-to-mouth contact. Adherence to regulatory safety standards and implementation of proper engineering controls and personal protective equipment (PPE) are necessary to mitigate potential health risks in the construction worker scenario.

4. CLEANUP GOALS AND APPLICABLE GUIDELINES

4.1 Cleanup Objectives

The goal relative to the identified COPCs is to eliminate or manage the risks to human health and the environment through proper management, mitigation, and/or disposal of the identified COPCs. Considering the prior assessments and CSM, the objectives of the cleanup include the following:

1. Prevent future exposure to asbestos
2. Prevent future exposure to LCP
3. Prevent future exposure to PCB-Containing material removal
4. Prevent future exposure to surfaces with mold
5. Prevent exposure and future release of containerized oil and hazardous materials, as well as other universal waste components

The following guidelines will be applicable to the cleanup to achieve these objectives.

4.2 Asbestos-Containing Materials

All abatement and/or asbestos encapsulation work shall be completed in accordance with 310 CMR 7.15 Asbestos and 453 CMR 6.00 The Removal, Containment and Encapsulation of Asbestos. Proper management of ACM in the Site building is crucial to achieving this goal, in accordance with Massachusetts Asbestos Regulations. Asbestos removal, handling, and oversight will be conducted by appropriately trained and certified personnel to ensure compliance. Project monitoring and confirmatory air sampling will be conducted by a third-party Massachusetts DLS-certified asbestos project monitor.

Construction work involving exposure or potential exposure to any concentration of asbestos is regulated by OSHA 29 CFR 1910. The cleanup goal for ACM is abatement of all ACM that has been identified and designated for removal. Additional suspect ACM sampling of materials located behind walls or beneath floors may be necessary as renovation and/or demolition occurs if those materials are exposed.

All appropriately trained and certified personnel working in areas containing ACM will be notified of the locations, types, and quantities of ACM prior to their removal to eliminate the potential for exposure to workers and the release of airborne asbestos fibers to the environment.

4.3 Lead-Containing Paint

LCP in the Site building must be managed in strict adherence to the U.S. EPA Renovation, Repair, and Painting Program during renovations. Additionally, adherence to the work practices for lead abatement under Massachusetts lead regulations are strongly recommended to minimize the further spread of lead dust in the building, particularly after areas have been completed.

Identified LCP must be properly managed to allow safety of construction workers in accordance with the Occupational Safety and Health Administration (OSHA) Lead in Construction guidelines for work in Site buildings.

Clearance wipe testing, both during demolition, cleanup and construction, as well as final clearances prior to commercial occupancy of the Site building will be used to document the efficacy of lead management practices during redevelopment.

Building material waste generated under the selected alternative that cannot be reused onsite (lead painted materials only) must be disposed of offsite at an appropriately licensed landfill or recycling facility that can accept lead painted materials. Offsite disposal will be completed in accordance with Massachusetts Solid Waste Regulations.

4.4 PCB-Containing Materials

PCB-containing materials at the Site building will be managed as required by the Toxic Substance Control Act (TSCA). One material was identified as excluded PCB Bulk Product Waste material (i.e., greater than 1 mg/kg but less than 50 mg/kg). Once this material is removed, it will be disposed at a facility licensed to accept this waste material in accordance with 40 CFR §761.61(a)(5)(i)(B)(2)(ii).

4.5 Mold Abatement

The goal of this project will be removal all visible mold, mold substrate, and mold sources during building redevelopment of the building. This is the only viable alternative that allows for proper mitigation of risks if the building is to be reused in the future.

4.6 Universal and Other Regulation Waste

Universal or other regulated waste will be identified and managed in accordance with applicable Massachusetts regulations. Materials that would be characterized as universal, hazardous, or other regulated waste materials, including fluorescent light bulbs and ballasts, fridges, freezers, roof tar, mercury thermostats, fire extinguishers, exit signs, gallons of paint, 55-gallon waste oil drums, bleach, and degreaser, among other items, will be removed from service and disposed of prior to the proposed demolition. As such, the goal of the remediation is to properly manage and dispose of universal, hazardous, or otherwise regulated waste materials in such a way as to prevent the release of contained hazardous contents.

5. DESCRIPTION OF CLEANUP ALTERNATIVES

The remedial actions selected for the Site were selected with the intent to meet the goals outlined in **Section 4** with the express purpose of mitigating future exposure to the identified COIs. Multiple remedial alternatives are available to address the identified COIs at the Site; thus they were first pre-screened for general advantages and disadvantages, and the following three (3) corrective actions were selected for further evaluation and comparison. Alternative #1, "No Action", is included as required despite the fact that it does not achieve the project goals (i.e., does not lead to a meaningful cleanup of the identified contaminated media). Alternatives #2 and #3 were selected because they both will meet the project goals by addressing COIs. Identified remedial alternatives include:

- Alternative #1 – No Action
- Alternative #2 – Encapsulation of Hazardous Building Materials
- Alternative #3 – Complete Abatement and Proper Disposal of Hazardous Building Materials

These remedial alternatives were evaluated for implementation at the Site and are further discussed in the following sub-sections.

Alternative #1 - No Action Alternative

A "No Action" alternative signifies that no remediation activities would be implemented at the Site. The "No Action" alternative does not include a means for mitigating or eliminating potential exposure to contaminated building materials both during and following redevelopment. Therefore, the potential for human exposure continues to exist for future residents, excavation/construction workers, and visitors. This alternative is presented and discussed through the subsequent portions of this report as a baseline comparison and represents the existing conditions at the Site.

Alternative #2 – Encapsulation of Hazardous Building Materials, and Institutional Controls

This alternative would utilize standard cleanup techniques/approaches to allow the continued use of identified ACM, LBP, PCB-containing materials, and universal waste and other regulated wastes. These techniques would consist of encapsulation, enclosure, repair, repainting, or a combination of thereof to leave HBMs in-place. A Hazardous Building Material Management Plan (HBMMP) would then be developed and implemented to ensure that the hazardous building materials are managed properly in the future. Under this alternative, mold would be required to be properly abated because there is no remedial approach that will meet the project goals and allow the mold to remain in place.

HBM Alternative #3 – Complete Abatement and Proper Disposal of Hazardous Building Materials

This alternative would use standard cleanup techniques/approaches to abate, remove and properly dispose of all ACM, LCP, PCB-containing materials, mold, and universal waste and other regulated wastes throughout the Site building.

6. COMPARISON OF ALTERNATIVES

The comparison and evaluation of the remedial alternatives was conducted using the five criteria listed below:

1. Risk Reduction and Effectiveness
2. Feasibility and Ease of Implementation
3. Cost Effectiveness
4. Green Remediation Potential
5. Estimated time to reach "No Further Action"

Brief summaries of these five criteria and a discussion as to how they pertain to the remedial alternatives are presented below.

6.1 Description of Evaluation Criteria

Risk Reduction and Effectiveness

Risk reduction and effectiveness is considered the primary threshold criterion because the primary objective of any remedial action is to reduce or eliminate exposure of humans and the environment to the identified COIs. Alternatives must pass this criterion to be considered for implementation as the recommended alternative. It addresses whether a remedy provides adequate protection and describes how the risks posed by the Site are eliminated, reduced, or controlled. Protection of human health is assessed by evaluating how risk from each exposure route is eliminated, reduced, or controlled through each specific alternative. This criterion also addresses the ability of the alternative to achieve the cleanup goal under applicable guidelines/rules/regulation. Additionally, this criterion evaluates the long-term reliability of the alternative with respect to upkeep and the resilience of the alternative with respect to reasonably foreseeable changing climate conditions.

Feasibility and Ease of Implementation

This criterion analyzes technical feasibility and the availability of services and materials to perform the cleanup alternative. Locally available services and materials portend the level of feasibility of a cleanup alternative suggesting that the approach/technology is widespread throughout industry increasing its ease of implementability. As such, the relative need for specialty equipment, cleanup specialists, and hard-to-find resources are also evaluated. This criterion also evaluates each alternative in regard to the consistency and compatibility to the proposed reuse/redevelopment of the Site. Alternatives that are not consistent with the proposed reuse/redevelopment will be considered more difficult to implement.

Cost Effectiveness

Cost information presented for the alternatives evaluates the estimated capital, operational and maintenance costs of each alternative. Capital costs include direct capital costs such as materials and equipment. Costs are presented as a balancing criterion such that if a number of cleanup

alternatives are comparable for the previously discussed criteria, cost may be used as a distinguishing factor in the selection of the remedial action. Estimated costs were developed based on prior project and contractor experience, and current estimates received from contractors. Remediation is scheduled to take place in 2026, and as such, costs presented are in year 2026 dollars.

Green Remediation Potential

This criterion also evaluates the extent of green remediation techniques that can be employed as part of the project and their associated benefits relative to other alternatives. This criterion will be evaluated based on its consistency with EPA's *Principle for Greener Cleanup* policy.

Estimated Time to Reach "No Further Action"

This criterion is defined as the time it will take to achieve "No Further Action". Please note this criterion does not consider the time to implement the redevelopment or other non-environmental tasks.

6.2 Evaluation of Alternatives

Alternative #1 – No Action Alternative

The "No Action" alternative involves no cleanup of hazardous building materials or removal of universal waste and other regulated wastes. As such, this alternative would not include a means for mitigating or eliminating potential exposure to contaminants both during and following redevelopment. Therefore, the potential for human exposure continues to exist for future excavation/construction workers, residents, recreational/park users, and commercial workers. The "No Action" response is not protective of human health and the environment. Additionally, without action, the toxicity, mobility, and volume of contaminants will not be reduced. Therefore, this alternative is ineffective as a permanent remedial solution. As a result, this alternative cannot be considered as a final alternative for the Site. This required alternative is only used a baseline for comparison with the other alternative discussed below.

Alternative #2 – Encapsulation of Hazardous Building Materials, and Institutional Controls

Risk Reduction and Effectiveness

If implemented properly the encapsulation of COIs (except mold) method would prevent exposure to hazardous building materials. Encapsulation is effective and is also reliable because it employs proven technologies that will prevent exposure to future users of the building and construction workers doing required renovations. Long-term maintenance will be required of encapsulated COI will be necessary to appropriately manage and prevent the exposure to encapsulated and/or covered hazardous building materials. This alternative fulfills the overall protection of human health and the environmental requirement by mitigating the exposure to all COIs except mold which would be abated to ensure no future exposure. Mold would be completely abated as a part of this alternative. Throughout the redevelopment of the building, significant health and safety practices/notifications would have to be employed to protect workers. **This alternative reduces**

risk making it effective. Alternative #2 will not result in a reduction of volume of COIs remaining at the Site.

Feasibility and Ease of Implementation

This method would use standard and widespread and proven construction and institutional control techniques to manage the hazardous building materials left in place through encapsulation, enclosure, repair, and/or painting. However, this would leave mold impacted materials at the Site which would allow the mold to spread. The redevelopment plans for the building include extensive renovation and leaving these materials in place in place is incompatible with the proposed redevelopment of the Site. **This alternative is less feasible and implementable compared to Alternative #3**.

Cost Effectiveness

Based on prior project and contractor experience and current estimates received from contractors, the estimated cost of this alternative is broken down below:

Alternative #2 – Continued Use of Hazardous Building Materials	
1. Oversight of Encapsulation/Enclosure/Repair	$16,000
2. Encapsulation/Enclosure/Repair Management	$22,650
3. Hygienist Oversight (labor only)	$5,000
4. Asbestos-LBP-PCB-Mold Encapsulation/Enclosure/Repair, as applicable	$70,000
Total	**$103,650**

Green Remediation Potential

This alternative requires no offsite disposal of HBM and disposal of only abated Mold, resulting in limited fuel consumption and greenhouse gas emissions during trucking remediation waste off-site, and less disposal in a landfill than Alternative #3. **Therefore, this alternative will be sustainable and will likely have a smaller carbon footprint when compared to Alternative #3**.

Estimated Time to Reach "No Further Action"

Following the installation of controls and repair of hazardous building materials, and the implementation of a long-term management plan, the Site would meet the requirements for "No Further Action" and completion could be attained within approximately one year of implementation due to the requirement of implementation of ongoing institutional controls at the Site. This assumes that the long-term maintenance of the encapsulated COIs continues to be implemented into the future.

Alternative #3 – Full Abatement and Proper Disposal of Hazardous Building Materials

Risk Reduction and Effectiveness

This alternative fulfills the overall protection of human health and the environmental requirement by eliminating the risk of exposure to HBMs and eliminating or reducing the toxicity, mobility,

and volume of the COIs. This method relies on proper engineering controls and industry proven techniques to effectively abate and dispose of the hazardous building COCs. Once the remediation is complete, this method would permanently eliminate the potential exposure to HBMs. The associated benefits will be that there will be little to no restrictions for future construction activities and limited restrictions for future users, making this a desirable alternative. **Based on these considerations, this alternative is highly effective and more reliable than Alternative #2**.

Feasibility and Ease of Implementation

This method would use standard and proven construction, remedial, and abatement techniques to remove hazardous building materials. Therefore, this alternative is technically feasible and is easily implementable, because the project can be phased such that the hazardous building materials can be removed prior to redevelopment, thereby eliminating the risk of exposure to construction workers. **Therefore, this alternative is more feasible and implementable compared to Alternative #2.**

Cost Effectiveness

Based on prior project and contractor experience and current estimates received from contractors, the estimated cost of this alternative is broken down below:

Alternative #3 – Complete Abatement and Proper Disposal of Hazardous Building Materials	
1. Oversight of Remediation, Abatement, and Demolition	$16,000
2. Remediation Management	$22,650
3. Hygienist Oversight (labor only)	$5,000
4. Asbestos Abatement/Mold Remediation/Demolition	$223,500
Total	**$267,150**

Green Remediation Potential

This alternative requires more offsite disposal of HBMs, resulting in more fuel consumption and greenhouse gas emissions during trucking remediation waste off-site, and more disposal in a landfill than HBM Alternative #2. **Therefore, this alternative will be less sustainable and will likely have a larger carbon footprint when compared to Alternative #2**.

Estimated Time to Reach "No Further Action"

Immediately following the abatement and disposal of the HBMs and the receipt of any clearance sample results, the Site would meet the requirements for a determination of "No Further Action" and completion with no continued institutional controls could be attained within two months of implementing this alternative.

6.3 Justification for the Selected Remedial Alternative

The following table summarizes the comparison criteria and alternatives using a relative rank score. The top-ranking score is based on the total number of alternatives presented as part of this ABCA with each criterion considered and represents the best option for the comparison criteria.

Alternative	Reduced Risk & Effectiveness	Feasibility & Ease	Cost	Green Remediation Potential	Time	Total Score (max score 15)
#1 No Action	0					0
#2 Encapsulation of HBMS and Institutional Controls	2	2	3 ($103,650)	3	2	12
#3 Complete HBM Abatement	3	3	2 (267,150)	2	3	13

Based on the evaluation of the remedial alternative presented above, the recommended alternatives to address hazardous building materials at the Site are:

- **HBM Alternative #3 – Complete Abatement and Proper Disposal of Hazardous Building Materials**

Alternative #3 is recommended because it is effective in reducing risk of exposure and eliminates the volume of contaminants, has greater feasibility and ease towards completing the redevelopment than Alternative #2, and could be completed faster than Alternative #3 with no institutional controls required to be implemented.

7. CLIMATE CHANGE ADAPTATION AND GREEN REMEDIATION TECHNIQUES

7.1 Impacts of Climate Change

New England is experiencing higher sea levels and increasing inundation of low-lying coastal areas. More extreme precipitation events have resulted in increased flooding hazards, especially on roadways, and more severe droughts have occurred in the summer months. The Merrimack River is located 160 feet southeast of the Site and the Site is estimated to be 20-feet above the river above foreseeable flood zones, so no climate change related impacts are currently.

The Site is located in a highly developed urban upland and inland (non-coastal) area that is not highly vulnerable to hazards associated with potential climate change impacts, such as wildfires, landslides, erosion, flooding or drought events. The Site is situated approximately 160 feet northwest of the Merrimack River, outside the floodplain, and approximately 14 miles from the Atlantic Ocean. Therefore, the Site is not at high risk from sea level rise or coastal inundation.

The selected cleanup alternative is a low-risk scenario with respect to potential future impacts from climate change, as the cleanup will be conducted in the next year. Hazardous materials abatement will not involve long-term monitoring and because all materials and universal waste are being removed and properly disposed.

Based on the Site location and the anticipated short cleanup timeframe, impacts from climate change relative to the proposed cleanup are low or unlikely.

7.2 Green Remediation Techniques

The above cleanup alternative will involve abatement of hazardous materials. Abatement and renovation work will involve offsite disposal of hazardous building materials and construction materials. Asbestos materials will require disposal in a permitted landfill licensed to accept asbestos waste. Various Best Management Practices (BMPs) with regard to water, waste and energy will be considered as follows:

Waste Disposal and Transportation: Removed/abated materials will require offsite management by truck. The Site is also proximal to Worcester, Massachusetts, which is a hub for transportation by rail. Local contractors and local disposal facilities, where possible, will be used.

8. SCHEDULE

The cleanup will be funded by a Brownfields Revolving Loan Fund sub-grant from MVPC. L'Arche has already retained contractors to execute the presumptive cleanup approach presented herein, are currently in preparation. As required by the EPA cooperative agreement, a Community Involvement Plan (CIP) for the proposed cleanup has been prepared and is available for public review in the Merrimack Valley Planning Commission document repository.

A public meeting on the proposed cleanup will be held in Merrimack Valley Planning Commission (MVPC) offices. The public meeting will be held during the EPA required 30-day public comment period. The public comment will begin with the submission of this ABCA to the EPA and the meeting will be approximately 3 weeks into the process. After the public comment period, this ABCA will be finalized incorporating comments from the EPA and the public.

9. SUMMARY

Credere Associates, LLC (Credere) was retained by the Merrimack Valley Planning Commission (MVPC) on behalf of the L'Arche to prepare this ABCA for the cleanup and redevelopment of A-1 Deli located at 88-92 Merrimack Street (Tax Map 101-1, Lots 4 and 5) in the City of Haverhill, Massachusetts (Site). The purpose of this study is to identify the presumptive cleanup measure to mitigate identified environmental conditions at the Site and which would allow for continued assessment of subsurface soil beneath the building. Based on the ABCA presented in this report:

1. Remedial action is necessary to address asbestos, lead paint, PCBs, and mold in the Site building. Additionally, universal waste and other regulated wastes are present in the building will also need to be removed and property disposed.
2. In consideration of the CSM, cleanup goals, and applicable regulatory guidelines, Credere identified Alternative #3 abatement and removal of the identified hazardous building materials including: ACM, LCP, PCB-containing materials, and mold to be the best option for the Site.
3. All ACM, LCP, and hazardous building material wastes and universal waste will be disposed of appropriately offsite, in accordance with the applicable regulatory guidelines.

10. REFERENCES

Credere, February 2025, Phase I Environmental Site Assessment, A-1 Deli, 88-92 Merrimack Street, Haverhill, Massachusetts, for Merrimack Valley Planning Commission EPA Brownfields Assessment Program.

Credere, July 2025, Pre-Renovation Hazardous Building Materials Survey, A-1 Deli, 88-92 Merrimack Street, Haverhill, Massachusetts, for Merrimack Valley Planning Commission EPA Brownfields Assessment Program.

FIGURES

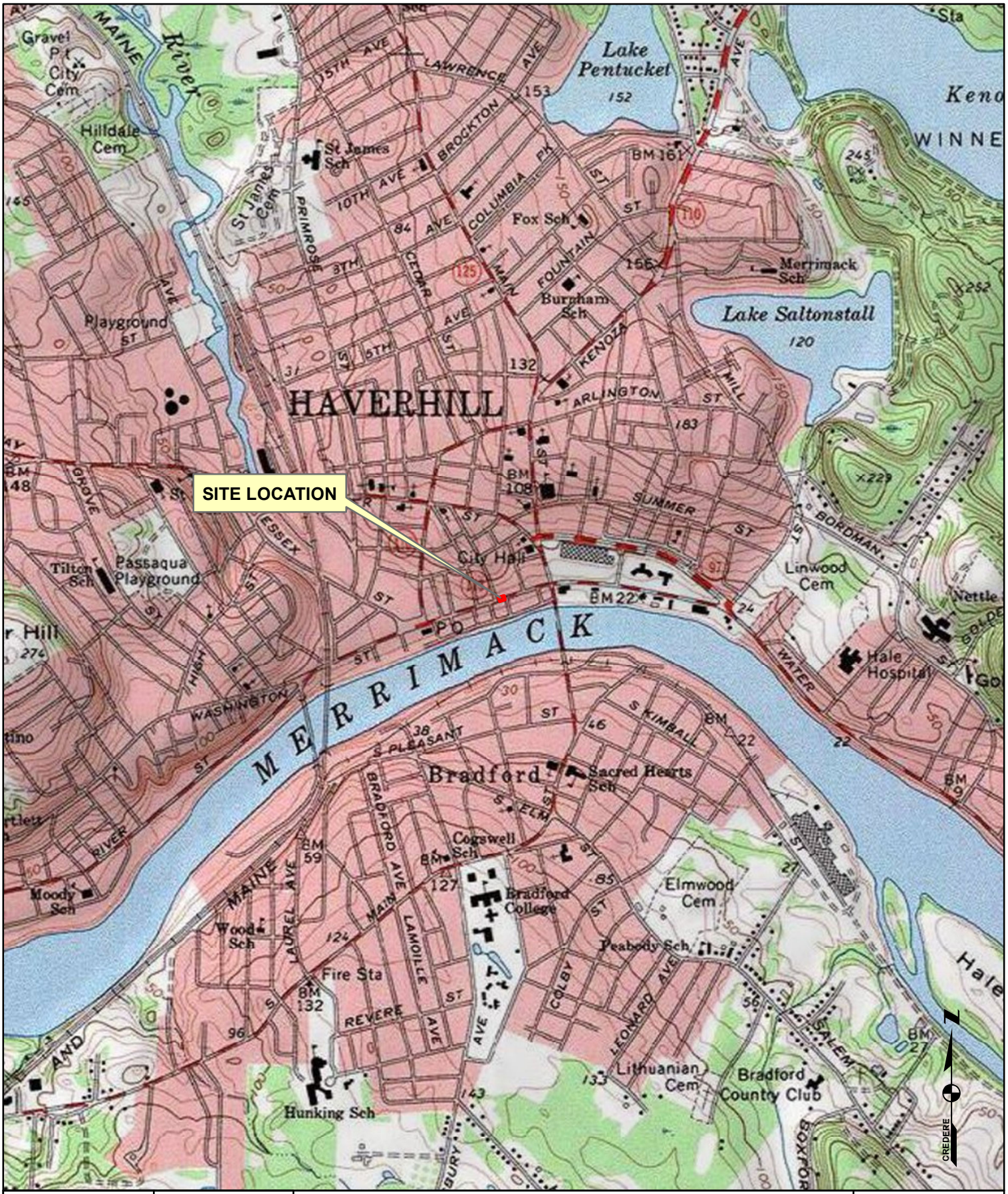

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FIGURE 1
SITE LOCATION PLAN

A-1 DELI
88-92 MERRIMACK STREET
HAVERHILL, MASSACHUSETTS

1,000 0 2,000 Feet

1 inch = 2,000 feet

HAVERHILL

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FIGURE 2
DETAILED SITE PLAN

A-1 DELI
88-92 MERRIMACK STREET
HAVERHILL, MASSACHUSETTS

- SITE BOUNDARY
- PARCEL BOUNDARIES
- FLOOR DRAIN
- 1 FOOT ELEVATION CONTOURS
- PRESUMED GROUNDWATER FLOW

NOTES:
EXISTING CONDITIONS AND FEATURES SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE BASED ON INFORMATION OBTAINED FROM THE CITY OF HAVERHILL ONLINE GIS DATA, MASSACHUSETTS GIS PARCEL LAYER, ESRI ORTHO PHOTOS, AND FIELD WORK PERFORMED ON JANUARY 22, 2025.

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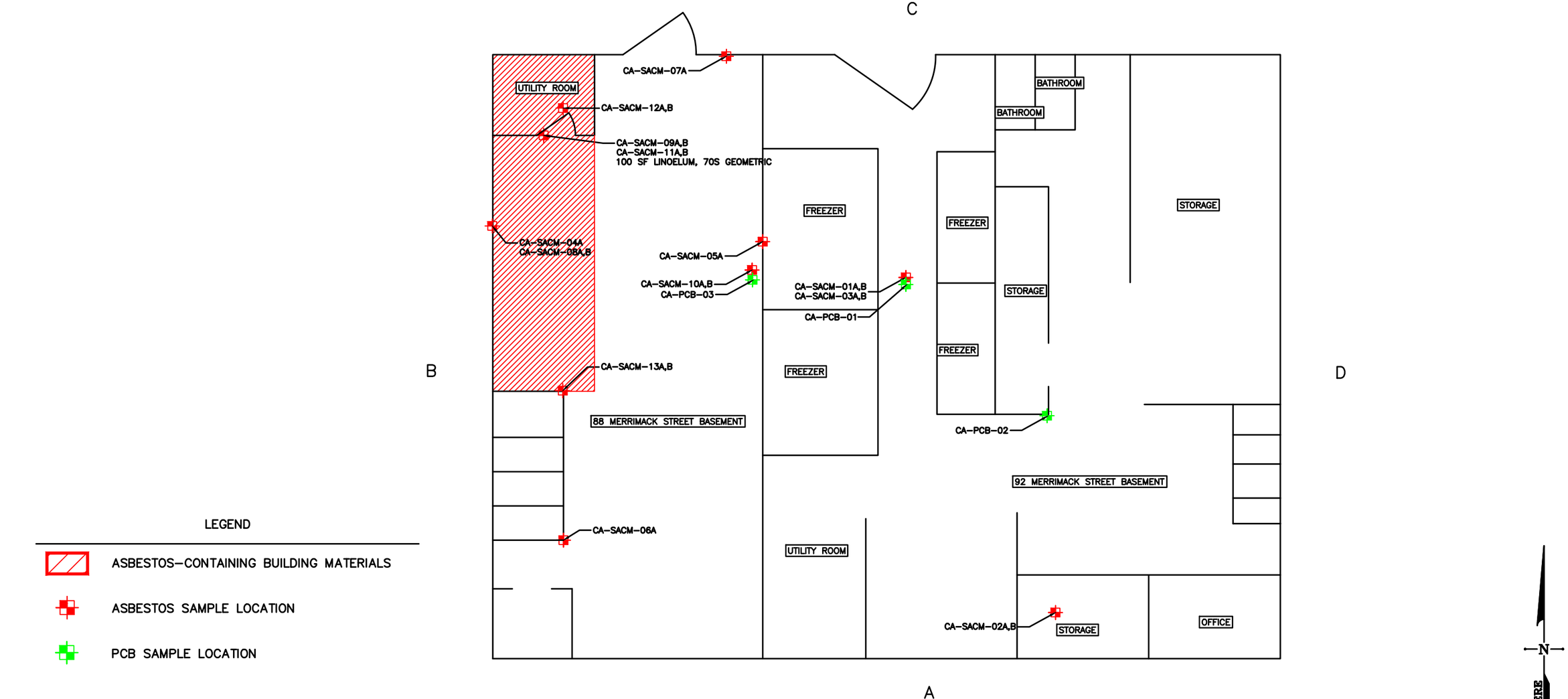

LEGEND

- ASBESTOS–CONTAINING BUILDING MATERIALS
- ASBESTOS SAMPLE LOCATION
- PCB SAMPLE LOCATION

NOTES:

1. BUILDING FEATURES ARE BASED ON UNDATED FIRE ESCAPE FLOOR PLAN AND FIELD WORK ON JUNE 5, 2025.

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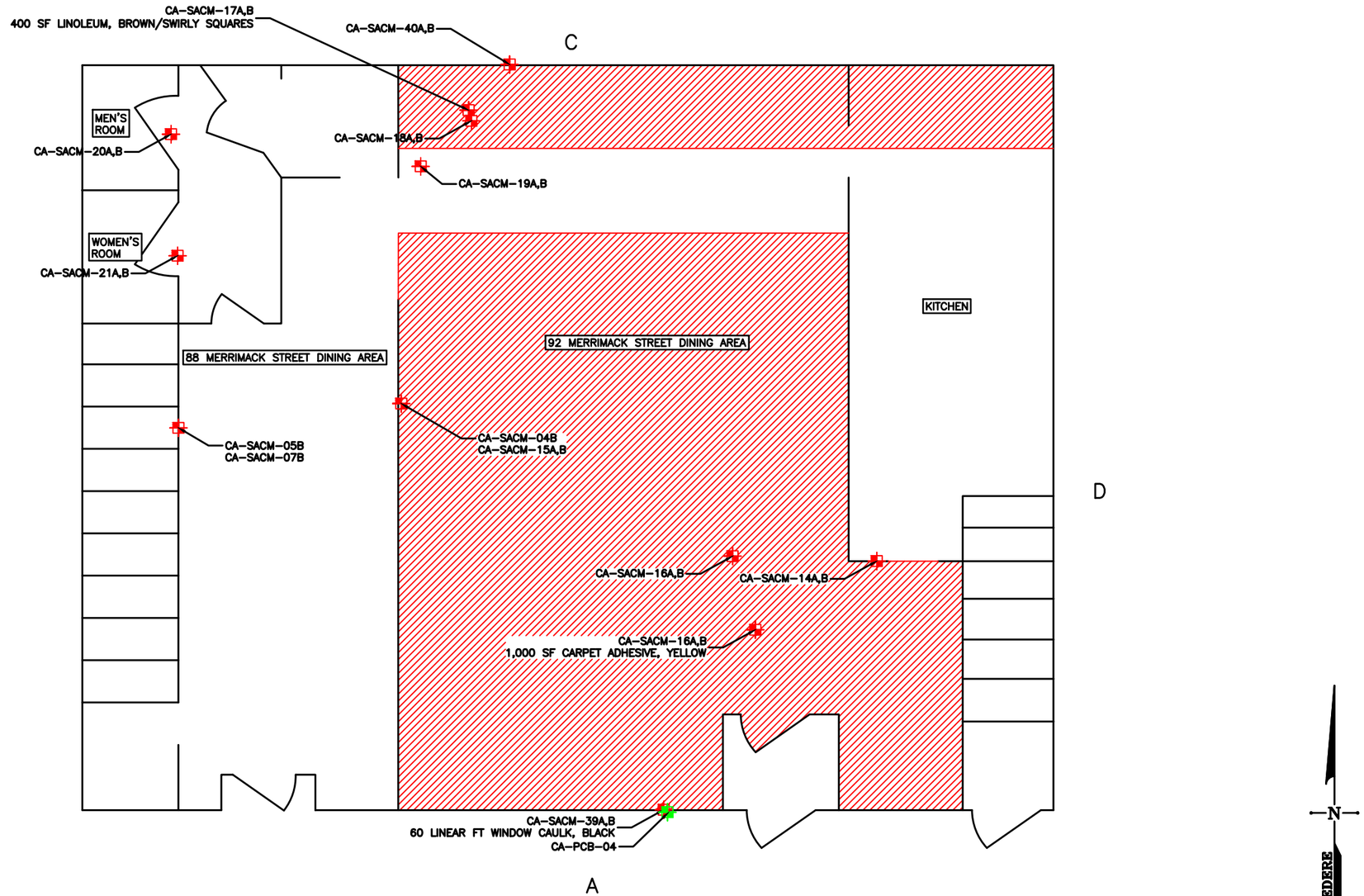
FIGURE #3
BASEMENT SAMPLE LOCATION MAP

A–1 DELI
88–92 MERRIMACK STREET
HAVERHILL, MASSACHUSETTS

NOT TO SCALE



LEGEND

- ASBESTOS-CONTAINING BUILDING MATERIALS
- ASBESTOS SAMPLE LOCATION
- PCB SAMPLE LOCATION

NOTES:

1. BUILDING FEATURES ARE BASED ON UNDATED FIRE ESCAPE FLOOR PLAN AND FIELD WORK ON JUNE 5, 2025.

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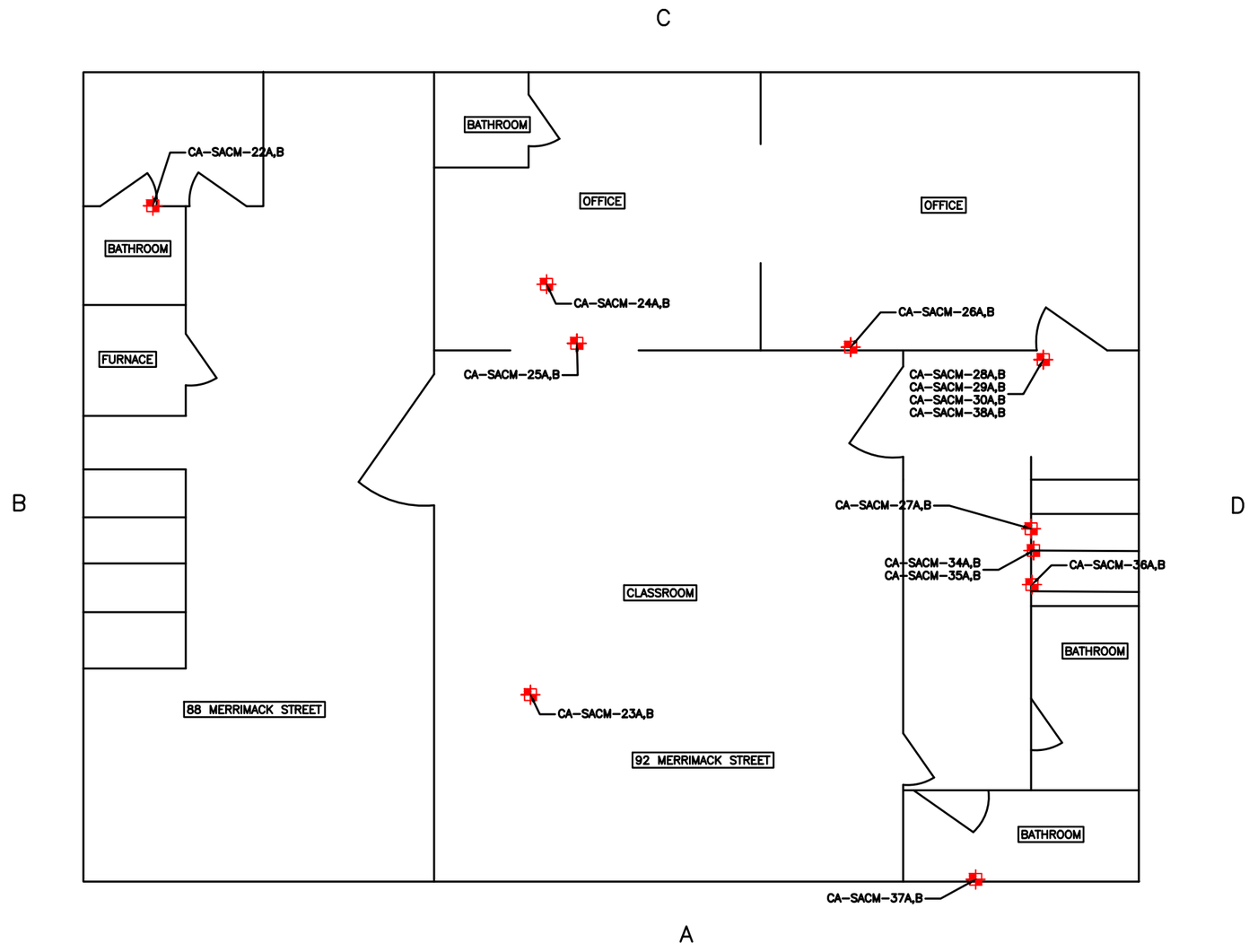
FIGURE # 4
FIRST FLOOR SAMPLE LOCATION MAP

A-1 DELI
88-92 MERRIMACK STREET
HAVERHILL, MASSACHUSETTS

NOT TO SCALE



LEGEND

- ASBESTOS-CONTAINING BUILDING MATERIALS
- ASBESTOS SAMPLE LOCATION
- PCB SAMPLE LOCATION

NOTES:

1. BUILDING FEATURES ARE BASED ON UNDATED FIRE ESCAPE FLOOR PLAN AND FIELD WORK ON JUNE 5, 2025.

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FIGURE # 5
SECOND FLOOR SAMPLE LOCATION MAP

A-1 DELI
88-92 MERRIMACK STREET
HAVERHILL, MASSACHUSETTS

NOT TO SCALE

Appendix A – MHA Project Notification Letter