Revere Federal Public Housing Comprehensive Rehabilitation

Request for Proposals

DEADLINE FOR BID SUBMISSION MONDAY, NOVEMBER 24, 2025, BY 5:00 PM

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DOCUMENTS ISSUED BY:
Revere Housing Authority
70 Cooledge Street
Revere, MA 02151

Advertisement

Revere Housing Authority

Request for Proposals for Architectural / Engineering Services
Federal Public Housing Comprehensive Rehabilitation

The Revere Housing Authority (RHA) is seeking a qualified architectural and engineering (A/E) firm registered in Massachusetts with relevant design experience for the comprehensive rehabilitation of two of its federal public housing properties – 14-1 Rose and Pomona composed of 100 units, and 14-3 Harris Street composed of 45 units.

Design work is expected to begin in January 2026, with a construction start date projected for 2027. The anticipated scope of work at each property includes architectural, HVAC, domestic hot water, electrical, plumbing, and fire protection. The design should maximize energy efficiency, minimize operating costs, and improve habitability. The construction cost estimated from a physical conditions assessment conducted in 2023 is approximately $30 million.

The scope of work for the contract includes comprehensive A/E services from confirming existing conditions, developing schematic plans, and carrying the project from construction administration through closeout and warranty inspections.

Proposal documents will be available beginning **Wednesday, November 5, 2025**. There is no charge for the Request for Proposals. These documents may be obtained at "revereha.com" under the "Bidding Opportunities" tab or by sending an e-mail request to Dean Harris at dharris@revereha.com.
The deadline for receiving proposal submissions is **Monday, November 24, 2025, by 5:00 PM**. Persons or firms interested in submitting a proposal must submit three (3) physical copies of the proposal plus one (1) electronic copy of the proposal on a flash drive by mail or hand delivery to 70 Cooledge Street, Revere, MA 02151; Attn: Dean Harris by the submission deadline. Any modification or withdrawal of proposals shall be made in writing and received by the RHA prior to the proposal submission deadline. The awarding Authority reserves the right to reject any and all bids and waive any informalities in the bidding if it is in the public interest to do so.

It is anticipated that interviews with selected applicants will take place **on Monday, December 8, 2025**. This is a qualifications-based RFP. The RHA will identify the most qualified respondent according to the criteria set forth in this RFP and then enter negotiations with that respondent regarding a fee for services. The award of the contract will be subject to the approval of the RHA's Board of Commissioners.

For more information, please contact Dean Harris at dharris@revereha.com.

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I. INTRODUCTION

The Revere Housing Authority (RHA) is seeking a qualified architectural and engineering (A/E) firm registered in Massachusetts with relevant design experience for the comprehensive rehabilitation of two of its federal public housing properties 14-1 Rose and Pomona and 14-3 Harris Street.

14-1 Rose and Pomona is composed of 28 two-story buildings, a community room building, a small garage space, and a former school building on a 4.5-acre site. The residential buildings contain three to four units, adding up to a total of 100 units. 14-3 Harris Street is composed of 2 buildings with 45 units on a 0.76-acre site.

The comprehensive rehabilitation of these properties will address urgent repair needs critical to the function of building systems, replace existing components that are beyond their useful life, and implement upgrades to bring the buildings to safe and comfortable conditions that are sustained for 20 years following the completion of the project. The accessible units will be upgraded to meet current standards set by the Massachusetts Architectural Access Board (MAAB). The rehabilitation will include sustainable design features and energy efficient materials that allow the properties to meet the requirements of the Massachusetts Stretch Energy Code, and to contribute to the Commonwealth's goal to be carbon neutral by 2050.

This is a qualifications-based RFP. Consultants should not specify their fee in their Proposal Submission. The RHA will identify the most qualified respondent according to the criteria set forth in the RFP and then enter into negotiations with the respondent regarding the fee for services.

The Cambridge Housing Authority (CHA), through its Planning and Development staff, is serving in the role of development consultant and will assist the RHA in administering activities related to the comprehensive rehabilitation.

Key Dates

Item	Date
RFP Documents Available	Wednesday, November 5, 2025
Pre-Bid Conference	Monday, November 17, 2025, at 12:00 PM
Last Day to Submit Questions	Thursday, November 20, 2025, at 5:00 PM
Proposals Due	Monday, November 24, 2025, at 5:00 PM
Interview with Selected Firms	Monday, December 8, 2025
Anticipated Contract Award and Notice to Proceed	Monday, January 5, 2026

The Pre-Bid Conference will be held virtually. Please contact Dean Harris at dharris@revereha.com to request a link to the conference.

The RHA will use its best efforts to follow the schedule but reserves the right to amend the schedule as deemed necessary by the RHA.

II. BACKGROUND AND OVERVIEW OF PHYSICAL CONDITIONS

As noted above, 14-1 Rose and Pomona is composed of 28 2-story buildings that were built in 1952. There are 20 one-bedroom units, 45 two-bedroom units, 25 three-bedroom units, and 10 four-bedroom units across this property. While there have been some updates to the buildings, many systems are original to the buildings and in poor condition. Heating is provided through central gas fired boilers installed in 1987, however many of the radiators in the units date from 1952 and are designed for the original steam heating system. The underground plumbing system is also original to 1952 and needs replacement, the interior plumbing system experiences frequent leaks. Electrical systems and fire protection systems are not up to current code requirements. The apartment finishes are worn and nearing the end of their useful life.

The two buildings that comprise 14-3 Harris Street were built in 1980. They contain 45 one-bedroom units. These buildings have benefited from several renovations projects in the past 15 years. Roofs were re-shingled in 2013. Exterior doors and windows were replaced in 2014. In 2017, the underground recirculation piping was replaced. Finally, there was an electrical retrofit in 2020. Nonetheless, many of the finishes and fixtures in the buildings are original and in poor condition. All kitchen and bathroom fixtures and appliances are worn and need to be replaced. Kitchen and bathroom floors are of VCT and vinyl that need to be replaced.

The RHA needs to address these issues and any others identified by the selected firm to make the properties safe and livable for its residents.

In 2023, RHA engaged the CHA to develop strategies to modernize the RHA's public housing portfolio and address the conditions described above. With the assistance of the CHA, RHA is implementing a conversion of the public housing units at 14-1 Rose and Pomona and 14-3 Harris Street through a blend of the U.S. Department of Housing and Urban Development (HUD)'s Rental Assistance Program (RAD) and of a Section 18 Disposition as allowed by the Housing Act of 1937. This conversion will include the completion of a capital needs assessment and will require that the comprehensive rehabilitation extends the life of the buildings to at least 20 years following the completion of the project.

In 2023, RHA and CHA procured the services of BWA Architecture to complete a physical conditions assessment of RHA's federal public housing portfolio. These assessment reports are included as Appendix I. BWA Architecture estimated the cost of interventions needed within the next 3 years to maintain safety and livability at approximately $30,000,000.

Physical Conditions

HVAC

At 14-1 Rose and Pomona, heating is through gas-fired boilers installed in 1987. Heating distribution piping is old and corroding. There is no central air conditioning. There are no exhaust fans in the bathrooms.

Each apartment at 14-3 Harris Street has gas-fired direct-vent heaters in the living rooms and bedrooms which are not properly vented and require constant maintenance. Many thermostats are broken and are missing.

Unit Interiors
At 14-1 Rose and Pomona, 50 percent of all bathrooms and kitchens are in very poor condition and need to be replaced, including rough plumbing, electrical and all finishes. Kitchen ceilings are damaged by plumbing and roof leaks. 20 percent of unit doors and frames are damaged. Wood floors need repairs and refinishing.

All kitchen and bathroom fixtures and appliances in the apartments at 14-3 Harris Street are worn and need to be replaced. Kitchen and bathroom floors are of VCT and vinyl that need to be replaced. Limited testing found asbestos in the kitchen flooring.

Fire Protection
Most buildings at 14-1 Rose and Pomona lack fire alarms and do not possess a fire suppression system.

At 14-3 Harris Street, the existing fire alarm system is beyond its useful life. There is no fire suppression system present.

Plumbing
At 14-1 Rose and Pomona, domestic supply piping is original to 1952 and experiences frequent leaks and breaks. There is no hot water recirculation system. Waste piping is original to the building and in very poor condition.

At 14-3 Harris Street, underground gas piping is original to construction and past its useful life. Waste piping below lavatories do not have pipe protection. Piping to the kitchen disposal experience frequent problems with grease buildup.

Electrical
At 14-1 Rose and Pomona, there are multiple electrical code violations in the units such as insufficient receptacles in the bedrooms, electric outlets with no covers, and lack of arc-fault protection in kitchens and bathrooms.

Structure
The buildings at 14-1 Rose and Pomona have suffered ongoing termite activity, and new evidence of termite damage has been revealed and addressed when minor repairs find damage. All buildings have foundation cracks; many appear to be caused by settlement. All entry stairs and handrails are deteriorating. Stairs have excessive cracking and spalling, largely due to the rusting and rust jacking of the rail posts that are set too close to the stoop and stair edge.

At 14-3 Harris Street, first floor truss joists are failing and require replacement. They are held together by pins, which are either corroding and failing or working loose, causing structural failure.

Building Envelope

Groundwater is infiltrating at basement walls and through cracks in floor slabs, causing basement flooding at multiple buildings across 14-1 Rose and Pomona. Windows which residents use for ventilation and air conditioning are difficult to operate. Approximately 25 percent of unit entry doors are in poor condition.

At 14-3 Rose and Pomona, window sealants are failing. Through-wall AC sleeves are not sealed, and condensate from AC units drains into the units causing water damage. The brick veneer on the exterior walls is bowing and deflecting – causing water filtration.

III. PROJECT GOALS

RHA have identified the following goals and priorities for the comprehensive rehabilitation of 14-1 Rose and Pomona and 14-3 Harris Street:

- Complete unit and building renovations that will result in housing of high-quality, and that improves the living conditions for RHA residents;
- Minimize operating costs;
- Upgrade accessible units so that they meet current MAAB and ADA regulations;
- Reduce energy use across the buildings and implement sustainable systems and materials that meet the Massachusetts Stretch Energy Code and contribute to the Commonwealth's goal of meeting carbon neutrality by 2050;
- Minimize disruption to residents during construction;
- Meet financial viability standards required by the RAD program of at least 20 years.

IV. SCOPE OF WORK

The selected team will provide the full range of architectural and design services. The full scope of each phase of design is described in the section below and
within
the Standard RHA Contract for Design Services found in Appendix II. Major tasks are as follows:

- Confirm and update the findings of the 2023 Physical Conditions Assessment to identify , prioritize and recommend the modernization scope to meet the RAD required 20-year viability standard.
- Upon authorization from the RHA, advance the approved modernization scope to Schematic Design. The Schematic Design phase will include presentation of three preliminary schematic design options, a preliminary analysis of the strengths and weaknesses of each option, and the costs associated with each option.
- Based on the preferred schematic design, prepare Design Development and Construction Documents, including plans and specifications using RHA requirements. Make three Design Development/Construction Document submissions: 60%, 90%, and 100% Bidding and Construction Documents. For each submission, provide a revised cost estimate prepared to RHA specifications. Assume the project will qualify for procurement relief from Massachusetts' bidding requirements, but it will follow federal procurement guidelines, including Davis Bacon wage rates.
- Throughout all phases of the project, interface with local building officials as required; make presentations at neighborhood and resident meetings and Zoning and other Local Board meetings as required; and prepare applications for City and/or State permits, including the MAAB as necessary.
- Attend regular design meetings and make presentations to residents, RHA staff, and other advisory and/or review parties. The A/E shall assume bi-weekly design check-in meetings with RHA staff.
- Assist RHA in bidding of Contract Documents including attending pre-bid and bid openings, monitoring Contractor Response, preparing addenda, performing reference checks, and submitting recommendation for award of the bid to most competitive bidder.
- During the construction phase, attend all weekly job meetings, and as warranted resident meetings.
- Prepare graphic material and physical samples as necessary for presentations to the RHA staff and residents and other advisory/review parties.
- Provide full Construction Administration services.

V. PROJECT PHASES OF THE WORK

Work under this RFP is divided into the Project Phases described below. The total duration of the A/E contract is currently TBD. The estimated duration of the A/E contract through completion of Construction Documents is estimated to be approximately 14 months, covering:

- An existing conditions review period of 2 months
- An estimated schematic design period of 4 months
- An estimated design development phase of 2 months
- An estimated construction documents phase of 6 months
- An estimated bidding period phase of 2 months
- An estimated construction administration phase of TBD months, plus an estimated close-out period of 3 months
- Warranty inspections approximately 10 months after construction is complete.

This project's success depends on RHA's ability to raise funds through a number of different financing sources. The selected A/E firm should be aware that a possible suspension or pause in the development process may occur prior to the construction document and/or bidding phase.

Project phases are described below and in
the Standard RHA Contract for Design Services in Appendix II. The primary tasks according to each phase are highlighted below.

Existing Conditions Phase

- Meet with RHA staff to confirm goals and priorities for the rehabilitation of the 14-1 Rose and Pomona and 14-3 Harris Street properties.
- Collect and study all available drawings, reports (including the 2023 Physical Conditions Assessment reports), maintenance reports, and other existing data pertaining to the properties.
- Conduct site visits, unit inspections, and interviews with RHA staff and residents regarding building conditions.
- Evaluate building systems including but not limited to their structural, mechanical, electrical, plumbing, utilities and fire protection systems.
- Review applicable zoning and building codes and regulations related to accessibility and environmental sustainability.
- Prepare and transmit and Existing Condition Report that includes:
    - Description and analysis of existing conditions of the sites and building systems.
    - Description of conditions that do not comply with federal, state, and local codes, and contemporary design and construction standards.
    - Baseline energy model for each property.
    - Prioritization of rehabilitation needs intro groups that range from urgent interventions needed to maintain safety to interventions that address residents' quality of life.
- Revise the Existing Conditions Report as needed for RHA approval. Submit in electronic format.

Schematic Design Phase

At the direction of the RHA, the architectural team will proceed to the Schematic Design Phase. General tasks to be performed include, but are not limited to:

- Attend a meeting with RHA staff to review the scope of work and schedule for the Schematic Design Phase of the project.
- Prepare three preliminary schematic designs that achieve a comprehensive rehabilitation of the buildings and generate different options for building systems that meet MA Stretch Energy Code requirements and decrease GHG emissions at the properties. It is expected that these three preliminary designs will result in the final Schematic Design. This will include a basic understanding of at least the site plan, floor plates, unit layouts, materials, and systems.
- Prepare graphic material and physical samples to be able to thoroughly explain and present preliminary schematic designs.
- Meet with RHA staff and/or residents to review and discuss preliminary schematic designs.
- Revise preliminary schematic designs as needed for RHA approval and selection of the final Schematic Design.
- Upon approval and selection of a preliminary schematic design, prepare Schematic Design Documents. The Schematic Design Documents will include:
    - Environmental assessment, and geotechnical and geoenvironmental studies to identify issues related to asbestos, LBP and radon.
    - Site plan, preliminary building plans, sections and elevations.
    - Description of building systems in written and plan formats.
    - Utility Analysis.
    - Analysis of relevant zoning, permitting and design guidelines including, but not limited to the City of Revere's Zoning Ordinance, HUD's design standards for federal public housing, and Enterprise Green Communities standards.
    - Recommendation of sustainable design strategies to meet Massachusetts Stretch Energy Code requirements and contribute to the Commonwealth 2050 Carbon Neutrality goal. Identify sources of funding that facilitate the implementation of these strategies.
    - Refinement of various options or combination of options resulting from the preliminary schematic designs, and an analysis of the strength and weaknesses of these options.
    - Detailed cost estimate for recommended option(s) prepared by an independent cost estimator.
    - Construction schedule including sequencing of work and estimated time allowances.
    - Outline specifications.
    - Statement or final schematic design goals.
    - Recommendation of final schematic design.
- Meet with RHA staff and/or residents to present and discuss the Schematic Design Documents at 50% and 100% completeness intervals.
- Prepare graphic material and physical samples to be able to thoroughly explain the Schematic Design Documents to RHA staff and the affected residents.
- Revise the Schematic Design Documents as needed for RHA approval. Submit in electronic format.

Design Development Documents Phase

Based on the Owner's approval of the Schematic Design Documents, the Architect shall prepare Design Development Documents. General tasks to be performed are:

- Illustrate and describe the development of the approved Schematic Design Documents through drawings and other documents, including plans, sections, elevations, typical construction details, and diagrammatic layouts of building systems to fix and describe the size and character of the Project as to architectural, structural, mechanical and electrical systems, and other appropriate elements.
- Provide outlined specifications that identify major materials and systems and establish, in general, their quality levels.
- Update of the construction cost estimate.
- Submit the Design Development Documents to the Owner.

Construction Documents Phase

At the direction of the RHA, the design team will proceed with Construction Documents Phase. General tasks to be performed are as follows:

- Meet with RHA and residents to review and select the preferred design option developed in the previous phase. Revise plans and specifications as necessary for RHA review and approval.
- Prepare 60% submission of Bidding and Construction Documents using RHA requirements. The submission will include:
    - Detailed architectural and engineering drawings.
    - Detailed specifications of products and construction techniques.
    - Details of any non-routine techniques and designs.
    - Recommended alternates to adhere to budget, if necessary, or if advisable, in order to meet design goals.
    - Product information (catalogue cuts and samples) for all materials.
    - List of all permits and approvals that must be obtained for the project and a schedule/plan for obtaining such.
    - Updated energy model and sustainable design assessment.
    - Updated construction schedule, including sequencing of work and estimated time allowances.
    - Updated cost estimate.
- Deliver to RHA two sets of the 60% submission of Bidding and Construction Documents, as well as a complete set in electronic format.
- Meet with RHA staff and residents to review 60% Bidding and Construction Documents.
- Revise the 60% submission of Bidding and Construction Documents as needed for RHA approval.
- Meet with various entities that must approve construction documents and/or issue permits for the project to get input and feedback.
- Prepare 90% Bidding and Construction Documents. Submission will include an independent cost estimate.

- Meet with RHA staff to review 90% Bidding and Construction Documents.
- Deliver to RHA 100% Bidding and Construction Documents. Submit in electronic format.
- Meet with RHA staff to review 100% Bidding and Construction Documents.
- Revise Bidding and Construction Documents and cost estimates as needed for RHA approval.
- Provide copy of documents created in digital media of the approved Bidding and Construction Documents, including plans if a CADD system has been used.
- Reproduce Bidding and Construction Documents for bidding of work.
- Assist RHA with outreach to contractors.

Procurement Phase

The A/E shall assist RHA in the procurement of a general contractor. Following RHA's approval, the A/E shall:

- Prepare all project design documents required for the solicitation and receipt of qualifications and proposals from a general contractor.
- Assist in the development of pre-qualifications and proposal selection criteria.
- Attend a pre-proposal briefing session and building tour. Note and answer all questions submitted in coordination with the RHA.
- Evaluate statements of qualifications received from general contractor firms in collaboration with a committee and make recommendations regarding the firms selected to respond to an RFP.
- Evaluate proposals received from pre-qualified general contractor firms, conduct interviews and make recommendations regarding the ranking of proposals.
- Assist the selection committee in non-fee-related negotiations for the drafting of a contract.

Construction Administration Phase

In addition to the items listed in the Contract for A/E services, the A/E should anticipate to:

- Attend all job meetings and prepare and distribute minutes of the meetings.
- Attend at least one inspection of construction quality and progress at the project site per week and furnish a written field report for each such visit.
- Visit the project site when problem solving is needed.
- Keep RHA informed of the progress and quality of the portion of construction work inspected and completed
- Hire and supervise a Clerk-of-the-Works.
- Attend and keep record of pre-construction conferences and all construction meetings.
- Prepare applications for all permits and other required approvals as necessary.
- Review and approve all contractor's submittal data, shop and detail drawings, change order requests, and periodic payment requests.
- Witness all tests and certify performance.
- Prepare and monitor punch list and completion of all punch list items.
- Obtain and review all operating and maintenance manuals and warranties and guarantees from contractor and manufacturers.

The A/E will be responsible for evaluations of the work, including:

- Consult with and make recommendations to RHA regarding construction and equipment warranties.
- Issue certifications required by project funders.
- Perform a warranty inspection of construction work, materials, systems and equipment. Make a written report to the RHA.

VI. ANTICIPATED PROJECT SCHEDULE

The designer performance times listed in the table below are requirements of this RFP, not estimates. After receipt of each required formal submission, RHA will issue a Design Review Memo to the designer, under normal circumstances within 2 to 3 weeks of receiving the submission.

The Design Review Memos will indicate whether the submission is "Approved or "Not Approved." Submissions that are not approved must be revised and resubmitted within the time period shown. A resubmission may consist of additional information requested by the reviewer, a partial resubmission, or complete resubmission. The reviewers may request that the resubmission be due at a meeting. If so, the resubmission deadline will also be the deadline for the meeting.

Submissions must be substantially complete. If, for example, a submission requires a cost estimate which has not been included, the RHA reviewers will notify the Designer of the missing item, and the submission will not be logged in or reviewed until the cost estimate is received. Once the submission is approved, RHA will issue a Notice to Proceed to the next phase of the project. The Designer Performance Schedule may be changed by the RHA if funding or other development issues require an extension of any phase.

Designer Performance Schedule:

Attend a Kick-Off meeting	Within 1 week of RHA contract execution Anticipated Monday, January 12, 2026
Existing Conditions Submission	March 9, 2026
Schematic Design Submission	July 6, 2026
Design Development Submission	September 7, 2026
60% CD Submission	TBD
90% CD Submission	TBD
100% CD Submission	March 8, 2027
Resubmissions	Due within 2 weeks of receipt of RHA comments

VII. WORK INCLUDED IN BASIC SERVICES

Unless specifically excluded, the A/E basic services consist of the tasks described within this RFP and in the attached Standard RHA Contract for Design Services. Generally, the A/E basic services tasks include, but are not limited to, the following: study work; design work; preparation of construction documents; bidding administration; contract administration; investigative, design, contract documentation, and administration of contract services by HVAC, plumbing, electrical, civil, and structural engineers as well as landscape architects; and other related work reasonably inferred.

Basic Services of the design team specifically include, but are not limited to, the following:

- Cost Estimating: Detailed construction cost estimates done by an independent cost estimator at intervals detailed herein are part of Basic Services. In the event a project cost estimate generated during a design phase exceeds the approved construction budget, the designer, as part of Basic Services, shall research and propose ways to reduce such costs while meeting RHA construction standards.
- Existing Conditions: Documentation of existing building dimensions, details, and general conditions is a Basic Service to the extent that such information is not available from RHA and is needed to complete the tasks and scope of the project.
- Energy Modeling and Sustainable Design Standards: As a Basic Service, the design team shall develop energy modeling to be used as design and decision-making tools. The team shall assist RHA by identifying subsidy/rebate/grant opportunities, evaluating carbon neutral options, and recommending appropriate green standards based upon the RHA's and this project's goals and objectives.
- Record Drawings: The drafting and printing of record drawings, based on information supplied by the construction contractor and/or the Clerk-of-the-Works are Basic Services.
- Clerk-of-the-Works: At this time, it is anticipated that this project will require a Clerk-of-the-Works. The hiring and supervision of a Clerk shall be included as an A/E Basic Service. Clerk-of-the-Works fees shall be reimbursable expenses.
- Revisions and Re-submission of "Non-Approved" Submissions: RHA will review and issue written comments on all formal Designer submissions. The designer shall revise and resubmit work that, in the written opinion of RHA, is "not approved," at no extra cost.
- Civil Engineering and Landscape Architecture: These are both included as part of Basic Services.
- Recycling and Trash Management: Basic Services shall include anticipation of waste materials during demolition and construction and the preparation and design of a recycling and waste management plan.

VIII. RHA CONTRACT REQUIREMENTS AND COORDINATION

These documents will be appended to and become part of the Standard RHA Contract for Design Services:

- Request for Proposals
- Architect's Response to the Request for Proposals

Any items or conditions described in this RFP which appear to contradict the Contract shall be brought to the attention of the RHA prior to execution of the Contract. If in the event one is found to contradict another at a later time, the most stringent condition or requirement shall apply.

A firm's acceptance and execution of the standard RHA Contract for Designer Services, with the above documents appended, is a requirement of this project. A copy of the standard RHA Contract for Designer Services can be found in Appendix II.

IX. SECTION 3 REQUIREMENTS

RHA, as a recipient of HUD funds, are required to comply with regulations implementing Section 3 of the Housing and Urban Development Act of 1968. The intent of Section 3 is to expand the economic opportunities generated by HUD financial assistance, to the greatest extent possible, to low and very low-income households. Proposals must include a plan that identifies specific employment and training opportunities that the selected firm will provide to RHA residents. Possible efforts may include employing residents to assist with existing condition surveys, translation services, drafting and distribution of resident notices, and coordination of activities during the construction phase of the project.

Proposals from women business enterprises (WBE) and minority business enterprises (MBE) are encouraged. Proposals will also demonstrate their strategies to procure WBEs and MBEs throughout the development process. Proposals will include a summary of the design firm's past efforts to procure W/MBEs; of advertisement strategies and selection criteria aimed at hiring these businesses; and an evaluation of the firms' ongoing efforts.

X. COMPENSATION

Since the RHA's ability to proceed with the full scope is dependent upon identifying sufficient funds to cover the project cost, the selected A/E firm should be aware that a possible suspension or pause in the development process might occur prior to the construction document or bidding phases.

Basic Services

This is a qualifications-based RFP. The fee for services will be negotiated between the RHA and the most qualified respondent, as determined by the criteria outlined in this RFP, after interviews have been concluded and before any award of contract. If agreement cannot be reached between RHA and the most qualified respondent, a fee for services will be negotiated between the RHA and the second most qualified respondent

The total fee for basic services for all phases of the project will be negotiated. Payments will be made upon approval of the design teams' formal submission of products required for each phase or work item.

Payments will be in accordance with the following payment schedule:

Project Phase	**Value of each Phase as Percentage of Total Fee**
Conceptual Design Phase	10%
Schematic Design Phase	20%
Design Development Documents Phase	5%
Construction Documents Phase	20%
Procurement Phase	10%
Construction Administration Phase	30%
Closeout and Warranty Phase	5%

Reimbursable Expenses

A specific listing of reimbursable expenses is detailed in Article 11.8 of the Standard RHA Contract for Professional Design Services, and require prior authorizations. These include, but are not limited to:

- Site surveys;
- Structural tests and materials tests;
- Geotechnical and geoenvironmental investigations and reports, including existing buildings hazardous material reports, Phase I, radon, flow test, boring tests, test pits, observation wells, testing and chemical analysis of site substrate conditions;
- Traffic studies;
- Arboreal studies;
- Historic or archaeological surveys or reports;
- Land surveys;

- Energy rebate modeling;
- Hazmat testing;
- Field testing;
- Construction phase testing;
- Project representative (clerk-of-the-works);
- Permitting and other fees required by authorities having jurisdiction over the Project;
- Printing, reproductions, plots, and standard form documents beyond what is required to be submitted as deliverables;
- Postage, handling, and delivery;
- Expense of overtime work requiring higher than regular rates, if authorized in advance by the Owner;
- Renderings, physical models, mock-ups, professional photography, and presentation materials requested by the Owner or required for the Project;
- All taxes levied on professional services and on reimbursable expenses;
- Registration fees and any other fees charged by the Certifying Authority or by other entities as necessary to achieve the Sustainable Objective; and,
- Other similar Project-related expenditures.

The A/E's procurement and supervision of these services are part of basic services.

XI. MINIMUM QUALIFICATIONS

To be eligible for selection, the design team must meet all the following minimum qualifications:

The design team must be led by a qualified Architecture firm with Massachusetts registration and must include qualified, Massachusetts registered engineers experienced in managing and coordinating a complex investigative and design project of this nature.

The design team must include qualified, registered architects experienced in modernization work in occupied housing developments.

The design team must include the full array of sub-consultants required to successfully execute the project, as well as an independent cost estimator experienced in the type of work covered by this RFP.

The design team must have past, successful experience in guiding an investigation/planning/design/construction effort with extensive input from a public agency, regulatory groups, funding agencies, tenant groups, and demonstrate strong ability to monitor construction firms.

The design team must be willing to execute the RHA standard Contract for Architectural/Engineering Services and to provide, immediately upon contract execution, a certificate of professional liability insurance to the RHA indicating minimum equal to the lesser of $1,000,000 or 10 per cent of the project's estimated cost of construction .

XII. DESIGNER SELECTION PROCESS AND CRITERIA

Selection Process

This is a qualifications-based RFP. The most qualified respondent will be determined according to the process detailed below. Once the most qualified firm has been identified, the RHA will negotiate a fee for services with the respondent. If no agreement on fees can be reached, the RHA will negotiate with the next most qualified respondent. The selection process for this project is as follows:

- RHA will review applicants' proposals to determine compliance with the minimum qualifications.
- For those proposals which meet the minimum qualifications, the RHA will select the most qualified design teams for interviews using the selection criteria outlined below.
- Interviews will be conducted with these firms. The interviews are anticipated to be attended by a committee composed of RHA staff.
- On the basis of the proposals, references, and interviews, the interview team will recommend a ranking of firms.
- The RHA will enter into negotiations with the top firm for a fee for services. If an agreement cannot be reached, the RHA will enter into negotiations with the next most qualified respondent.
- Final selection will be made by the RHA's Board of Commissioners.

Selection Criteria

In selecting the design team, the RHA will consider the criteria outlined in the following table; and the relative weight assigned to each criterion:

Ability **(15 points)**	• Ability to effectively manage rehabilitation projects of the type and size proposed for 14-1 Rose and Pomona and 14-3 Harris Street. • Ability of the firm to coordinate and manage other consultants and contractors. • Ability of the team to provide professional services in accordance with the project schedule and allocated budget. • Ability of the team to successfully complete all phases of work from planning/investigation through construction administration • and post-warranty tasks • Knowledge of and familiarity with all relevant building codes. • Ability of the team to provide professional services relevant to the structural and ventilation work. • Ability of the team to provide professional services relevant to the sustainable and energy efficient design work associated with the project. • The Design team's written willingness to defer a defined portion of its design services fee to construction loan closing

Experience (15 points)	• Team's experience with mixed-finance projects similar to this project scope and requirements. • Team's track record completing public bid projects in Massachusetts. • Team's track record producing contract documents for public bid jobs of same scale which have resulted in minimal change orders. • Team's experience with multi-family housing development and/or modernization. • Experience of the personnel assigned to the project, specifically the designated project manager. • Previous collaboration of team members. • Team's experience with planning and design work involving resident organizations. • Team's history with sustainable design projects, renewable and energy efficient building systems, and subsidy/rebate/grant opportunities. • Experience in Revere.
References (10 points)	• General past performance of the team with regard to public, private, and HUD-funded projects. • General past performance of the team on a modernization project of the type and scope proposed in this RFP.
Other (10 points)	• Current workload of the team. • Inclusion of Minority and Woman-Owned Business Enterprises (MBE/WBE) as team members. • Section 3 Proposed Plan.

The interview will be assessed according to the criteria below:

Interview (20 points)	• Clarity of proposal. • Team organization. • Well developed, thoughtful approach to undertaking and managing this type of project. • Quality of interview.

XIII. PROPOSAL REQUIREMENTS

The deadline for receiving proposal submissions is Monday, November 24, 2025, by 5:00 PM. Persons or firms interested in submitting a proposal must submit three (3) physical copies of the proposal plus one (1) electronic copy of the proposal on a flash drive by mail or hand delivery to 70 Cooledge Street, Revere, MA 02151; Attn: Dean Harris by the submission deadline to be considered valid. Any modification or withdrawal of proposals shall be made in writing and received by the RHA prior to the proposal submission deadline. The awarding Authority reserves the right to reject any and all bids and waive any informalities in the bidding if it is in the public interest to do so.

Submissions shall contain the following information:

1. Identification of project team members, roles and responsibilities.
    a. Indicate if firm/sub-consultant firm qualifies as an MBE/WBE.
2. Qualifications of each team member.
    a. Include brief overview relating qualifications to RHA work, as well as resumes and evidence of registration.
3. Proposed design team organizational chart.
    a. Identify project manager for each phase of the work.
4. Proposed approach to each phase of the work.
    a. Include specific information on means and methods proposed for the schematic design phase including a list of deliverables and suggestions for approaching work/project differently than specified.
5. References from at least three (3) of the most relevant projects for each team member.
    a. Use the form provided in Appendix III and be sure to include contact names, phone numbers, and email addresses which are current.
6. List of relevant completed housing or residential projects including type of project, date/state of completion, client contact information, project duration, and construction cost.
    a. Provide a list for each sub-consultant firm.
7. List of all on-going public and private projects including state of completion, client, project duration, and construction cost.
    a. Provide a list for each sub-consultant firm.
8. Proposed Section 3 Plan.
9. Evidence that liability insurance in the amount specified herein will be in force upon contract award.
10. A statement indicating acceptance of RHA's standard A/E contract for this project, as well as identification of any discrepancies between the contract and this RFP (if any noted).
11. Complete and executed copies of Attachment 1 – 6 forms.

This is a qualifications-based RFP. The RHA will identify the most qualified respondent according to the criteria set forth in this RFP and then enter negotiations with that respondent regarding a fee for services. Award of the contract will be subject to the approval of the RHA's Board of Commissioners.

For more information, please contact Dean Harris at dharris@revereha.com.

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APPENDIX I. PHYSICAL CONDITIONS ASSESSMENT

January 2024

CAPITAL NEEDS ASSESSMENT

FOR

Project 14-1

PREPARED FOR

Revere Housing Authority

BWA Project No. 2009M

BWA ARCHITECTURE

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Executive Summary

The Revere Housing Authority (RHA) retained BWA Architecture, Inc. (BWA) to prepare a comprehensive Capital Needs Assessment of the 14-1 properties at 905-927 Broadway in Revere, MA, a development comprised of 28 two-story buildings, a community room, garage space, and a school building., all constructed in 1952. 3 buildings have been remodeled to incorporate 5 accessible units. The remaining 22 residential buildings are 4-unit quadplexes for a total of 88 standard 2-bedroom units, with a property total of 100 units.

The premises exhibit limited vegetation, featuring predominantly grass lawns interspersed between structures interconnected by asphalt walkways. On-site surface parking is accommodated for approximately 82 vehicles across the site in small 6-12 car lots around all perimeters of the development. These lots, surfaced with asphalt, are deemed sufficient by RHA to meet the parking requirements of the tenants.

The purpose of the assessment is to assist RHA in planning and budgeting for future capital improvements and repair costs.

Not all deficiencies are obsolescent conditions: This report provides a comprehensive assessment of the property and distinguishes between items that are obsolescent and those that are optional improvements but are recommended for renovation.

Methodology

Reviewers from BWA and its team then conducted numerous site visits in May - September of 2023 and investigated building systems and components that were accessible. The field investigations were led by Steve Baker, AIA, Michele Auer, and David Tanner AIA; Norian Sianni Engineers (NSE) for plumbing, mechanical, and fire suppression systems; Nangle Engineering, Inc. (NEI) for electrical, communications, and fire alarm systems.

As part of the assessment, the BWA team reviewed existing building information provided by RHA, including limited original design drawings, drawings of projects performed at the property, maintenance logs, Revere public property information, and other property records. BWA interviewed property management and maintenance staff to learn about the maintenance history of the property, reported problems, and reviewed property maintenance records.

The primary purpose of our inspections was to identify and assess existing deficiencies, likely future problems due to aging or deterioration, and code violations that could trigger code compliance upgrades when other repairs are undertaken. Secondarily, the investigators also looked for opportunities for improved energy performance in the buildings and for possible discretionary improvements.

Prioritization of Recommendations

BWA assembled the results of the field inspections and used them to create a property information database. We identified a number of deficiencies for the property. For each, we drafted a recommendation for repair and established a relative priority for completion. Each item is assigned a priority of **1** (highest or most immediate) to **4** (optional improvements and upgrades).

Priority 1 requirements include urgent repairs to and replacements necessary to protect the structure or life safety and to allow for continued occupancy. Building envelope and mission-critical components that that are critical to occupancy and have a high likelihood of failure within the next three years are assigned Priority 1. Note that Priority 1 also includes code-compliance work that we believe will be required as part of a renovation. While some code compliance recommendations may be seen as improvements to the existing structures, if a code compliance concern is likely to be mandatory (i.e., it will be required in order to obtain permits), it is included in Priority 1. **The Owner should address Priority 1 requirements within the next 3 years.**

Priority 2 requirements include repairs to and replacements of components that are functionally obsolete, worn or damaged, or beyond their useful life, but continue to perform their basic function. **The Owner should plan and budget to address Priority 2 requirements within the next 3 to 7 years.**

Priority 3: Priority 3 requirements include components that are serviceable and good working condition but are expected to reach the end of their useful life or function in the next 8 to 15 years or more. **The Owner should include in its capital plan sufficient reserves to address Priority 3 requirements at the appropriate future time, usually within 8 to 15 years, but some items may not need replacement for up to 20 years.**

Priority 4: Priority 4 recommendations include optional or discretionary improvements that are enhancements to the project or will improve its function, but are not required to maintain the building in good working order or to meet mandatory building code provisions.

In general, any work item listed as a **requirement** is not discretionary but may be categorized as Priority 1 through 3; recommendations are upgrades and improvements categorized as Priority 4. Prioritization is more fully explained in Part 3 of this report.

Property Condition

Overall, we rate the condition of the property as **Poor**: most components are original to the structures, are aging and suffer from serious deferred maintenance due to the Authority's limited resources to maintain the buildings. The main structural components are in fair condition and show no obvious signs of deficiencies. Most of the deficiencies observed were aesthetic or related to accessibility and functionality at the unit interiors. Most building systems are at or close to their useful life. The properties at 14-1 are over 71 years old consisting of wood studs and joists over a concrete basement and foundation. Exterior stud walls were originally clad in brick and wood lap siding; however,

the building cladding was renovated to vinyl siding about 6 years ago. Over time there have been renovations to the interiors to keep them functional over the years, but most of the current renovation efforts occur at unit turnover. Following a comprehensive examination, which included visual inspections, scrutiny of maintenance records, and a review of decades-old drawings from diverse projects, we have formulated an assessment of both short and long-term requirements essential for the buildings.

Estimated Costs of Repairs and Improvements

BWA has developed conceptual cost estimates for each recommendation in this report based on recent comparable project costs. In total, we identified ***$27,226,144*** (trade cost only) in required or recommended capital improvement costs for this property for the next 20 years (uninflated), listed by priority as follows:

Priority	*Estimated Cost*
1	$ 20,773,840
2	$ 298,744
3	$ 5,793,119
4	$ 360,440
Total	**$ 27,226,144**

These estimates include direct (trade or subcontract) costs and project general requirements only; they do not include General Contractor overhead and profit, construction management, bonds, permits or insurance. These costs exclude the costs associated with additional testing, surveying, commissioning, as well as additional design fees by architects and engineers. These estimates do not include the costs associated with relocating and accommodating current residents.

Report Contents

Part 1 on this report contains a general summary of conditions.

Part 2 of this report contains a detailed narrative assessment of building conditions and identifies major issues raised in our inspection, listed by building system. For each issue, a recommendation for repair or replacement is also provided.

Part 3 of this report is a summary listing of all identified concerns and capital improvement recommendations, ordered by priority.

Respectfully submitted,
BWA Architecture, Inc.
January 2024

Part 1 - General Property Information and Major Concerns

Part 1.1 - Property Summary

The properties at 905-927 Broadway in Revere, MA are a 4.5 acre affordable housing development, constructed in 1952. The federally-assisted housing is comprised of 28 two-story buildings, a community room building, a small garage space, and a former school building. 3 of the buildings have been remodeled to create the site's 5 accessible units. The remaining residential buildings are 3 and 4-unit quadplexes for a total of 95 standard 2-bedroom units, with a property total of 100 units.

Each of the buildings share small entry vestibules and a connection to a stair leading up to a unit on the upper floor. There are no common amenities in the residential buildings. On site surface parking for about 82 automobiles is provided in cluster 6-14 spot off-street parking lots on all sides of the development. The lots are asphalt paved and are adequate for the parking needs of the tenants, according to RHA.

The property is a rectangular parcel save for a portion at the southwest corner bound by Rose and Broadway streets. The property is also bound to the N. by Hutchinson Street, to the West by Poloma Street. There is an open lawn with sparse mature trees between each of the buildings and is a significant amount of open space compared to the neighborhood density. (Figure 1.11)

Figure 1.11: Site Aerial

Each of the buildings has a gross footprint of between 890 and 1,775 square feet for a total footprint area of about 88,000 square feet. No fire suppression system is present.

According to the Town of Revere Zoning Map, the building is in a Residential Business (RB) zone, as is most of the residential area in which it is located. It is a legally non-conforming use as it was constructed prior to the current zoning designation. Specifically, the RB zoning allows for duplexes in the district, but not for apartments which the 4 unit duplexes which would be considered.

Part 1.2 - Property Condition

Overall, we rate the condition of the property as **Poor**: There have been updates to the buildings but nearly all components are original to the structures which are aging and suffering from significant deferred maintenance. Site settlement and overall age means there are some clear capital improvements necessary in order to provide safe and sanitary conditions for the residents. We are concerned about the systems and items that are difficult and costly to replace. At 71 years old, nearly all original underground plumbing is due for replacement. Interior plumbing is prone to leaks and lacks the recirculation loops for hot water in the Energy Code. Electrical wiring is, in most cases, fabric-wrapped Romex and not able to support code-required arc-fault updates.

Figure 1.21: Typical Accessible Building with ramp

Heating is provided by cast iron steam radiators that are original to the buildings The radiators are currently heated with boilers, though the piping is original and corroding and not properly sized for hydronic heat. Units lack air conditioning so tenants install inefficient window units.

Electrical systems are original to the development, and are not up to current code requirements. Units are missing receptacles in bedrooms, rooms are missing arc-fault protection, and there is cloth wire visible in walls. Tenants lack access to main electrical service disconnects in renovating building.

On our inspection of the building exteriors and the overall site, we found numerous concerns that should be addressed. The siding was replaced about 7 years ago and has only minor damage, but it's not clear whether there is still termite damage behind the replaced siding. The exterior concrete foundations and stoops are in very poor condition, showing signs of settlement issues that are impacting interior, exterior, and structural issues through most of the buildings.

Figure 1.22: Typical rear yard at each building

All apartment finishes are worn and tired. Some items are updated and repaired during unit turnovers but are mainly units still have finishes that are original. Kitchens and living rooms have a mix of VCT and Hardwood; in almost every unit, neither flooring type was in acceptable condition. Some bathrooms have had linoleum tiles replaced with ceramic mosaic, but the mosaics weren't put atop a proper substrate and are popping off the floor.

Ceilings are cracked throughout, mostly as a result of foundation movement. Water damage and stains are visible at ceilings, in basement walls, and at window sills. All doors and hardware are in need of replacement, including

frames are the basements where water infiltration and flooding have rusted them away at the base.

Figure 1.23: Typical interior finishes cracking – indicating site settlement

Figure 1.24: Typical kitchen at accessible units

The current vinyl windows are not original to the development. The windows vary in condition with some in fair shape, but many of them poor and need to

be repaired or replaced. Tenants complain of windows being too difficult to open, and on the exterior, lintels are rusting.

The 14-1 site is not particularly energy efficient, but there are some opportunities to improve the energy efficiency here. For instance, potential upgrades to water efficiency in bath and kitchen fixtures, and mechanical systems upgrades that will be required as part of the 2021 IECC with Massachusetts amendments when more than 50% of the building is renovated.

Part 2 – Physical Conditions Assessment

Part 2.01 - Accessibility

The properties at 14-1 are federally funded, publicly assisted housing. As such, the buildings must comply with relevant sections of the Americans with Disabilities Act (ADA), 521 CMR (the Massachusetts Architectural Access Board's regulation, or "MAAB"). ADA compliance is established in the Uniform Federal Accessibility Standard (UFAS). Because MAAB regulations are generally equal to or more restrictive than ADA/UFAS, compliance with MAAB is considered sufficient. Because they were constructed prior to 1991, the buildings are exempt from federal Fair Housing Act accessibility regulations.

To evaluate whether the property will be required to bring non-compliant items up to compliance with accessibility codes, the value of the modifications will need to be considered. According to the Revere Assessor's property database, the structures were assessed in 2023, with a value of $ 13,097,000; this is the assessed value of buildings and does not include the land value which is assessed at 18.2M. In accordance with the building code and MAAB, any capital improvement project, or cumulative capital improvement projects over a three-year period, with a cost exceeding 30 percent of the assessed building value (excluding land value) will require compliance with current code in most respects.

An accessibility upgrade took place in 2017 to the 14-1 site, during which two of the 4-unit "Type A" buildings and one of the 3-unit "Type C" buildings were remodeled. The renovation reduced the number of units in each building to two and one respectively an created a total of 5 accessible apartments. Despite the renovation, there are parts of the work that don't fully meet the current MAAB requirements for group 2B units.

Site:

In general, the site is accessible. Access to the front and rear building entries is via asphalt walks. These walks vary in condition from fair to poor, but are generally adequate for access to the buildings. Walks that are in poor condition are recommended for replacement. At ADA buildings, concrete ramps were added when the units were converted in 2017. Many of these ramps are in very poor condition (See Figure 2.01.07) and require work.

Behind each building is an asphalt-paved rear yard for trash bins and laundry drying lines. (See Figure 2.01.01). The is the head-height laundry drying line frames that are along the path from the rear exit to the front walk. The steel poles supporting the lines are about 68" above the paving and are a dangerous obstacle that needs to be remedied. 780 CMR, section 1003 requires free standing objects to be 80" above the walk surface when protruding into a path.

(See Section 2.02 for further site improvement recommendations)

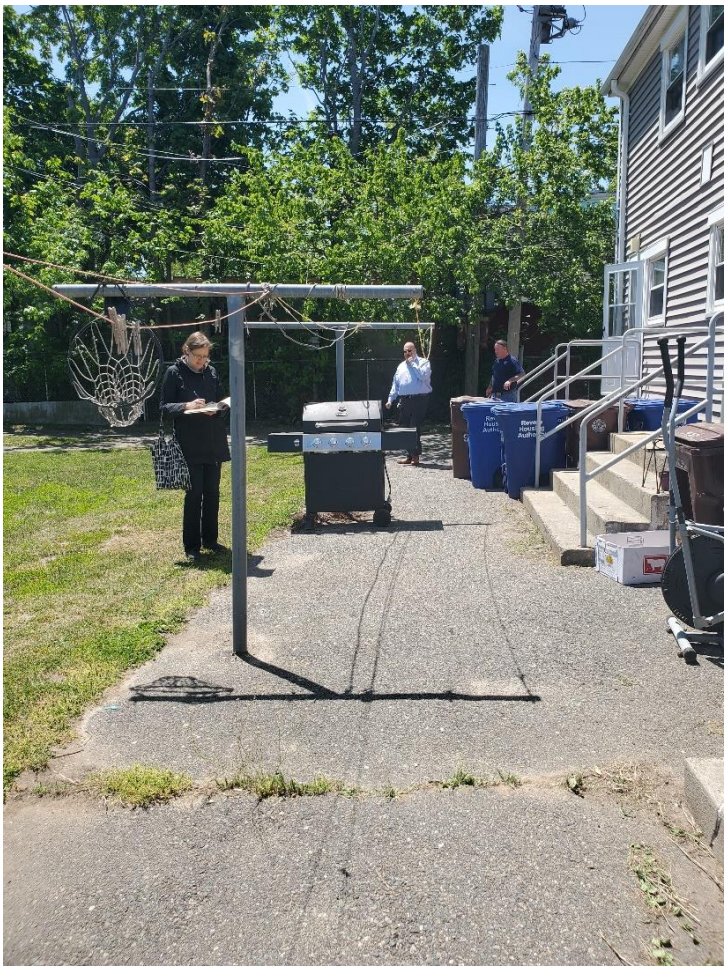

Figure 2.01.01: Cracked asphalt paving at rear entries with head-height laundry line supports and trash bins

Common Interior:

Common interiors elements for site 14-1 are generally limited to the small interior vestibules and a single interior stair in each of the ADA modified buildings. The entry vestibules (See Figure 2.01.02) and stair are rubber tread and in fair condition. Each vestibule contains a small clustered mailbox for each of four tenants.

Figure 2.01.02: Entry vestibule

The common areas of the ADA buildings lack proper wayfinding and interior signage. A substantial upgrade to the building will trigger the need to install interior signage to meet current MAAB standards with raised letters and Braille.

Accessible Units:

Of the 28 buildings at the 14-1 site, 3 buildings contain the site's 5 accessible units, meeting the 5% minimum number of units currently required to meet the MAAB standards. Additionally, 3 sensory adapted units are also provided, meeting the 2% requirement. However, accessible units do not meet current size and amenity requirements established by MAAB for group 2B units. Among the non-compliant conditions found, the size of the accessible bedrooms and living rooms are too small. In particular, the bedroom cannot accommodate the space required for a 5' turning radius that's outside of the door swing. In the bathroom, the shower controls that are required to be located on a side wall are located on the back wall.

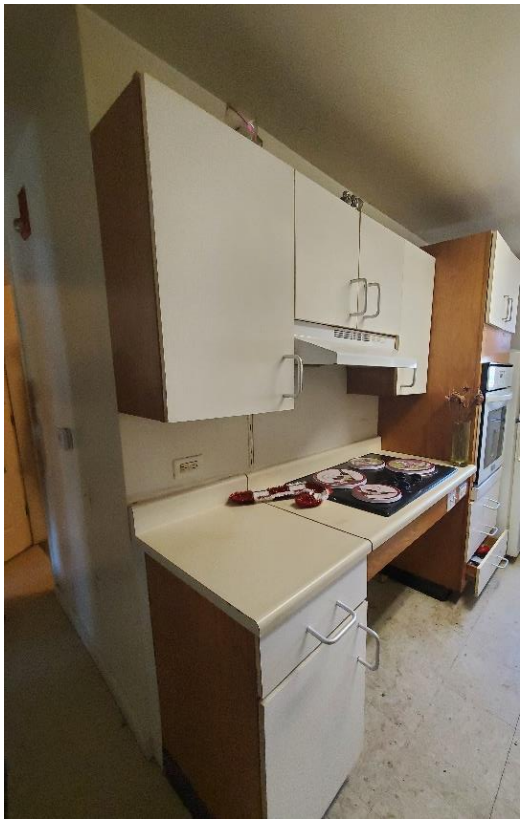

Figure 2.01.03: Typical Accessible Unit kitchen

Unit Kitchens:

While the renovations to the accessible units may have been code complaint when originally renovated, the kitchens lack the necessary 60” turn clearance space (See Figure 2.10.04). Also, the pull-side clearance at the egress door leading out of the kitchen is almost 12” less than what is required by MA 720 CMR.

The kitchen will require a full remodel to adjust the layout of the cabinets and open up the space next to the egress (See Figure 2.10.05). The remodel of the kitchen cabinets should be combined with finish upgrades that are recommended in the following sections (See Figure 2.01.03).

Common Stairwells:

The common stairs at ADA unit buildings lack handrail extensions at the top of the run. This is a potentially dangerous condition and is an accessibility code violation. The handrails should be replaced, and blocking added in the wall at the area where the handrail is to be extended. (See Figure 2.01.06)

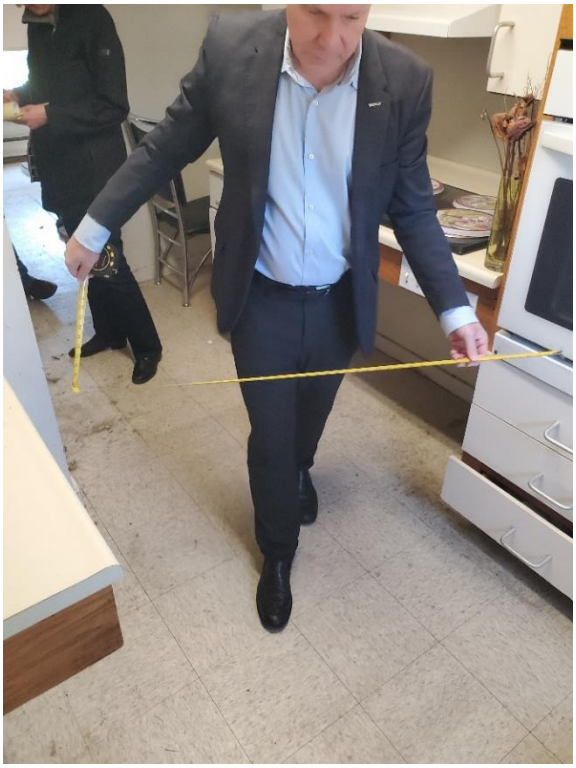

Figure 2.01.04: Turnaround Clearance in accessible kitchens does not meet the 60" clearance required

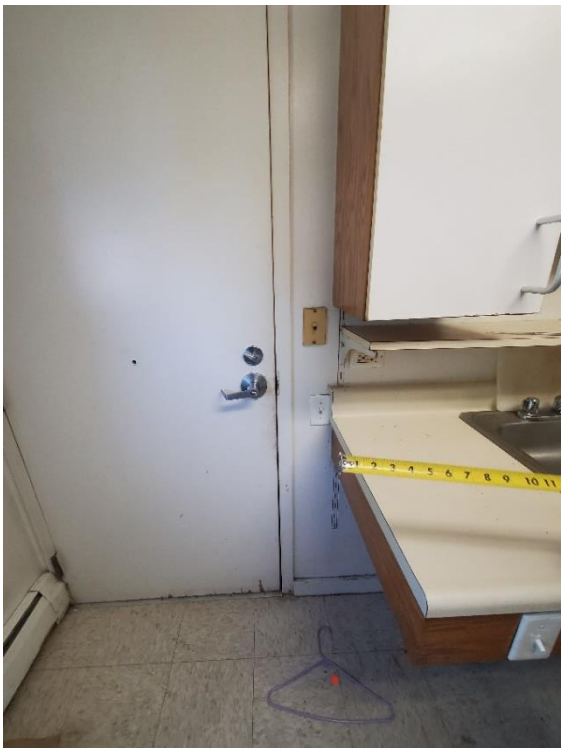

Figure 2.01.05: Egress at Kitchen, lacking 18" clear distance to pull side of door

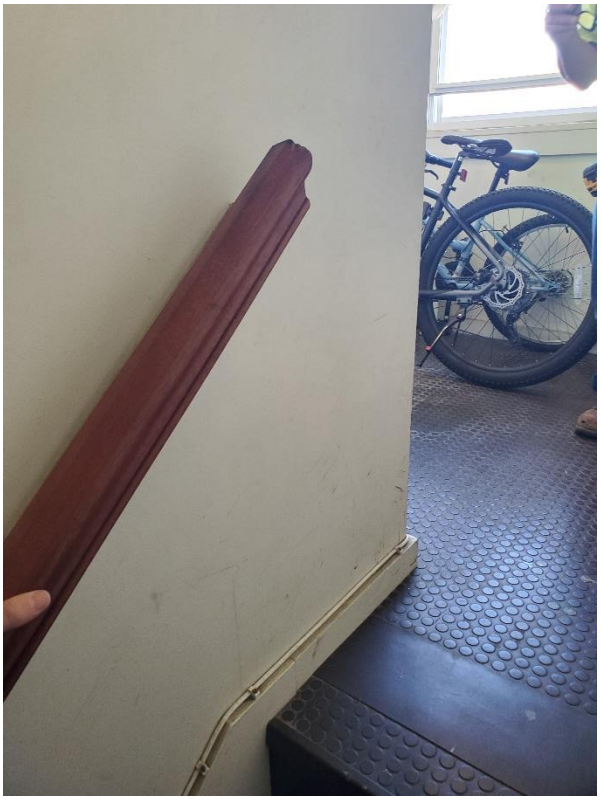

Figure 2.01.06: Handrails lack extension past last riser

Figure 2.01.07: Typical concrete ramp at accessible units

Figure 2.01.08: Dropoff at the top of ramp is >30". At this height, the rails should have pickets spaced less than 4" or solid barriers for fall protection

Figure 2.01.09: Egress stoops cracking at all post connections

Requirements:

- Rear unit egress door is too narrow (27" wide); this is a code violation. Demo for larger opening and install appropriately sized door and frame. This work may be required by a substantial alteration.

- Accessible Unit Configuration does not meet MAAB Requirements. Bedrooms and kitchens are too small to provide required maneuvering clearances. There is no living space available to enlarge the unit. Provide exterior additions at 5 ADA units to create more interior living area. Reconfigure unit interior as required.

- Interior unit entry doors at buildings with common entry stairs lack ADA hardware, a code violation. Replace non-ADA door knobs with lever sets at 5 units.

- Common stairs at ADA unit buildings lack handrail extensions, an accessibility code violation. Replace handrails at interior common stairs.

- At ADA converted units, interior signage in common areas fails to meet current MAAB requirements, lacking raised letters and Braille. Replace all interior signage to meet current MAAB standards.

- At entry stoops over 30” from adjacent grade, replace or install guard rails with solid faces or pickets spaced less than 4” (See Figure 2.01.09).

Part 2.02 – Site Work

Overview:

The following information is based on the original record drawings produced by Harold M. Turiello, Architect, dated March 15th 1951 and from field observations. Video surveillance is strongly suggested at this site to document the condition of all existing underground waste lines. A geotechnical report should be prepared to address subsurface soil conditions, groundwater elevations, soil conductivity, bearing capacities and provide design recommendations on pavement thickness and site structure design criteria.

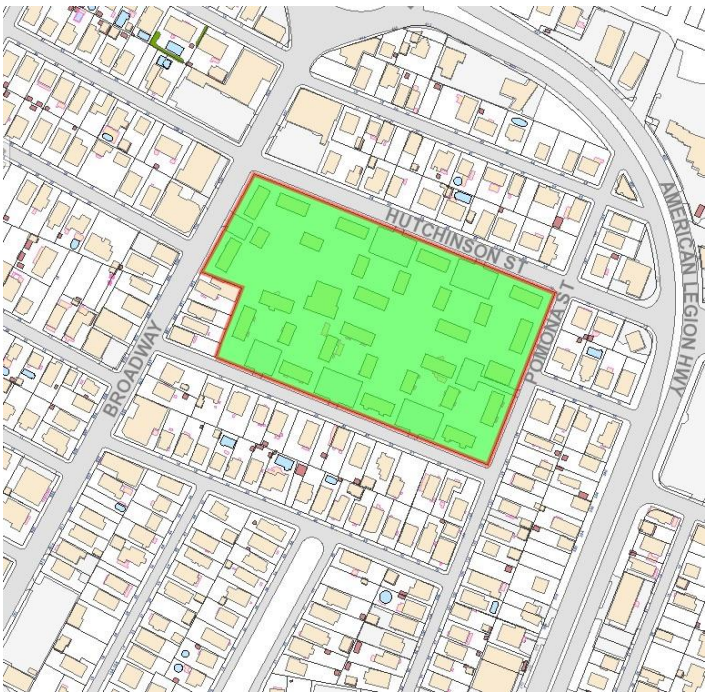

Figure 2.02.00: 14-1 Site

History:

Revere Housing Authority Federal Housing Development 14-1 is a 28 building 4.5 acre development bordered by Hutchinson St. to the north, Pomona St. to the east, Rose St. to the south, and Broadway St. to the west. Near the center of the site is a former school building that has been converted to offices. Also near the center is the former heating plant which was converted to a garage for RHA vehicles when the plant was decommissioned. The topography of the site is gently sloping, having just a few feet of fall across the property's length.

Figure 2.02.01: Typical ADA building with retrofitted vinyl siding on the top story.

Figure 2.02.02: Typical vinyl sided non-accessible units. Asphalt streets and drives lack curbs, creating conditions of eroded soil as shown.

Site Drainage:

This property has a history of problems with its underground storm drainage system. The storm drainage system is original to the site's development and are deteriorating. Maintenance reports show that the site drainage system has been problematic for many years and forcing the Housing Authority to replace portions of broken pipes as problems develop. This is an ongoing problem with the underground drainage system; property maintenance must regularly deal with catch basins that fill with sediment and debris. Most of the system is failing or will soon fail; the underground drainage system requires replacement.

Asphalt and Paving:

The site is paved with asphalt; concrete paving for walks is only present at accessible unit ramps and at building stairs/stoops. Seven asphalt parking lots serving between 5-14 cars each are scattered throughout the site. The lots and the granite curbs around the lots are in fair condition.

Figure 2.02.03: Broken asphalt paving. Ramp lacks a level discharge and needs all changes in level over ½" to be remedied.

Figure 2.02.04: Ramp lacks a level discharge and needs all changes in level over ½" to be remedied.

The pedestrian paths are connected by asphalt walks that are cracked and in need of repair or topping. The condition of the walk is currently acceptable, and in most cases, meets our standards for accessibility to the rear entry, but an asphalt topping, spot repairs, or full replacement of all the walks with a poured concrete walk over a bed of crushed stone should be considered in the next 7-10 years

Site Utilities:

This development is served by underground gas and sewer lines that are problematic and in need of immediate repair.

The existing underground gas lines are black steel and in very poor condition. The Housing Authority has repaired numerous leaks and failures, but the majority of the aging pipe remains. The Authority is not able to pass inspections on the black steel pipe as required for the current master metered design, and are incurring regular fines from Eversource. To bring the development up to code, the entirety of the gas network needs to be removed and replaced with a polyethylene pipe distribution network and individual meters at each building.

Vitreous clay sewer laterals are collapsing and backing up. RHA has performed an inspection and video-scoped the sewer lines, revealing collapses, obstructions, and settlement in portions of the aged piping. The vitreous clay piping is well is in very poor condition and needs to be completely replaced to avoid further maintenance. In addition, sewer manholes are cracking and frequently leaking. The manholes require frequent maintenance as they are often required to remove buildups of silt. The sumps are deteriorating, and leaks are frequent. Several of the broken manholes have already been replaced by RHA, and we expect that most or all of the site's remaining manholes will need replacement soon. As part of a comprehensive modernization of the site's sewer system, we recommend that all sewer manholes be replaced as part of a comprehensive renovation, that vitreous clay pipe be replaced with PVC, and all sewer manholes be excavated and replaced.

Figure 2.02.05: Typical spalling/patch at all rails on site.

Figure 2.02.06: Typical spalling / rusk jacking from the grouted handrail posts.

Figure 2.02.07: Stair damage, typical on most porch stairs in this development.

All entry stairs and handrails are deteriorating. (See Figures 2.02.05-07) Stairs are cracking and spalling due to their age and due to the rusting and rust jacking of the rail posts that are set too close to the stoop and stair edges. See Part 2.03 Structure for further information.

Figure 2.02.08: Accessible ramps and rails.

Outdoor Amenities

The outdoor playground is currently undergoing a full replacement, and is excluded from consideration in this report.

Behind each cluster of units is an asphalt-paved rear yard (See Figure 2.02.09). The consistent issue at the rear yard is the head-height laundry drying line frames that are along the path from the rear exit to the front walk. The steel poles supporting the lines are about 68” above the paving and are a dangerous obstacle that needs to be addressed. 780 CMR, section 1003 requires free standing objects to be 80” above the walk surface when protruding into a path.

There are no other amenities available to tenants at this location.

Figure 2.02.09: Egress path the rear of the units interrupted by drying racks at head height.

Landscaped Areas:

In general, the only landscaped areas at the development are the sparse shrubs sometimes located against the front of each building and a few instances along the narrow sides. The site is dotted with about a dozen mature trees. Ther eis no significant canopy coverage over walks or building shading from the trees. The remaining site flora is grassy lawn with a grided overlay of narrow asphalt walkways connecting buildings and parking. There is no irrigation system, and when we observed the site in the summer months, the grass appeared hearty in general, but dry and leaving bare dirt from foot and vehicle traffic at street and sidewalk edges. (See Figure 2.02.02)

Trash Pickup:

Trash is picked up from the barrels that are wheeled to the curb on trash day by the tenants. There is no provision for bulk or oversize item pickup. Frequently the tenants haul oversized items to the curb, causing fines to be assessed to RHA. No provision for recycling is provided. We recommend that a central pickup location and dumpsters for large items be created. We recommend bulk item and screening at new pickup locations and incorporating recycling dumpsters.

Figure 2.02.10: Some rain downspouts lack connectivity to the underground drainage like this one, shown draining to a bed next to a stairway.

Requirements:

- There is cracking in all bituminous walks. Conditions are still acceptable, but replacement in 7 to 10 years should be planned. Install new prepared base and bituminous walks throughout development in about 7 to 10 years. CIP concrete would be a more durable option.

- Underground gas piping is black steel in very poor condition: sections of pipe have experienced leaks and failures; multiple repairs have been performed. Master metering is not affordable to the Authority due to piping inspection requirements. Replace master metered deteriorated piping system with individual metered polyethylene piping service to each building.

- Vitreous clay sewer laterals are collapsing and backing up. Video-scoping shows obstruction and settlement in piping at multiple locations. VC piping is in very poor condition. VC piping is well beyond useful life. Replace

underground sewer laterals to each building with PVC. See related recommendation to replace manholes.

- Sewer manholes are cracking and experiencing leaks. Several manholes have already been replaced and others have deteriorating sumps, leaks, and are silting up. Manhole outside of 7 Hutchinson is broken. Replace all original sewer manholes; combine with sewer line replacement.

- Trash is picked up at the curb in barrels, but there is no provision for bulk or oversize item pickup. This results in frequent fines to RHA, which pays for the trash pickup. No provision for recycling is provided. Provide central pickup locations and dumpsters for large item and bulk trash pickup. Screen new central pickup locations. Incorporate recycling pickup.

- Clothesline rails are too low (eye/head injury hazard and ADA violation). Replace with new, taller clothesline framing and lines.

Part 2.03 – Structure

The buildings at 14-1 are wood framed structures atop concrete basements and foundations. The wood walls and wood joists appear to be in generally fair condition, except as affected by the foundation settlement described in detail below. Some of the buildings were infested with termites; a problem that was resolved at the same time that vinyl siding was added to replace deteriorated wood siding about 10 years ago. Interior walls are generally bearing and non-bearing wood stud walls with a gypsum wallboard finish.

Foundations:

All of the buildings on the property have foundation cracks. (See Figure 2.03.01) The cracks through the concrete foundation range from superficial surface cracking to more serious cracks that extend through the foundations. Many of the concerning issues appear to be caused by settlement or soils expansion. The foundation cracks have been sealed by maintenance to help waterproof the openings, but substantial work will be needed to remedy the settlement, which is the cause of the damage. Cracks that have been repaired and sealed in the past few years are already re-opening and need to be re-sealed. (See Figure 2.03.02 to 2.03.05).

From our survey, we observed four major foundation cracks that we feel certain are caused by settlement. The soils at this site are poor and required the foundations to be constructed with bell caissons. It is no surprise that the settlement is causing foundation and interior finish cracks through the interiors. In addition to finish cracking, racking doorways were also found. The likely remedy to the foundation settlement is to excavate and underpin the foundations. We estimate that about 25% of structures will need foundation underpinning, in addition to the repair of surface cracks and shoring of settled areas on the interior to address sagging framing causing the finish cracks and racking at doors.

Figure 2.03.01: Foundation Crack

Figure 2.03.02: Foundation Crack – Repaired by maintenance within the last 3 years; still increasing in width.

Figure 2.03.03: Foundation Crack – Repaired by maintenance within the last 3 years; still increasing in width.

Figure 2.03.04: Foundation Crack – roof drainage emptying against foundation.

Figure 2.03.05: Selant at foundation crack

Basements:

Among the problems found in the building basements is the potential presence of asbestos-containing materials (ACM). The adhesive observed on basement walls looks likely and was likely applied at a time when asbestos adhesive was common. There was limited testing of ACMs at the site (see report attached) and testing was not done on this particular adhesive. Limited testing found only one building with a positive test (door caulking), which should warrant testing of more materials throughout the development before a comprehensive work plan is developed for renovation. We recommend that the buildings be comprehensively tested for hazardous materials.

Figure 2.03.06: Vertical crack at basement foundation wall – at stair

In each basement, steel columns are grouted into the CMU walls. These steel columns are exhibiting minor distress and movement. The differential movement is causing the surrounding masonry to crack while basement moisture from infiltration and flooding is causing the embedded columns to rust. The columns appear to be structurally sound, but masonry repairs and additional waterproofing should be applied to stem the damage done. It is recommended that RHA continue to monitor these conditions for further damage.

At other areas in the basements, CMU partitions are separating from foundation walls, likely due to the foundation settling (See Figure 2.03.06 and 2.03.07). Previous repairs have filled surface gaps, but the repairs do little to stop the movement from settling; gaps are still opening. The separation issue may be a long-term problem and should have more structural investigation to determine a lasting solution. It may be that foundations will need to be underpinned, which is recommended as part of the foundation settlement issue in this section (See Figure 2.03.08 to 2.03.16).

Figure 2.03.07: Basement floor cracking with water infiltration – embedded steel column rusting

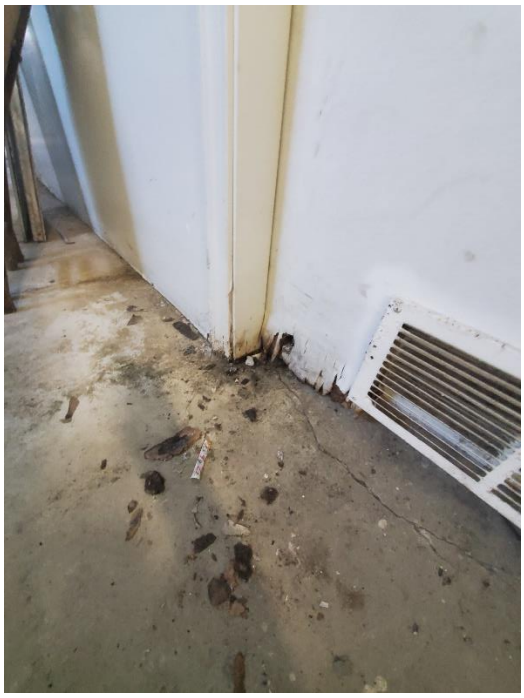

Figure 2.03.08: Basement floor cracking, water damage and mold at wall.

Figure 2.03.09: Basement floor – moisture penetrating slab under wall

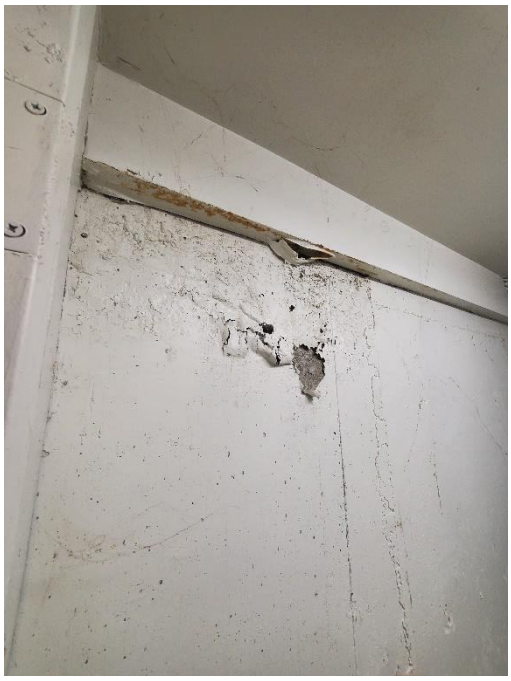

Figure 2.03.10: Painted steel beam rusting and wall peeling due to moisture trapped in the masonry.

Figure 2.03.11: Crack in foundation basement wall extending from window corner.

Figure 2.03.12: Vertical crack in CMU basement wall, extending through the floor slab.

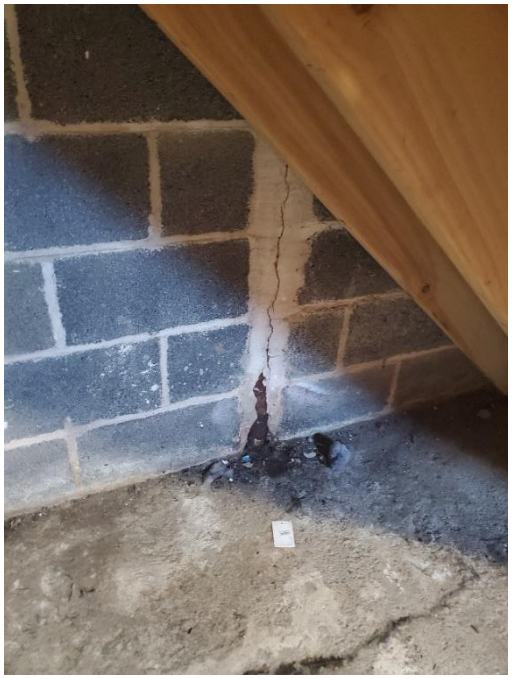

Figure 2.03.13: Vertical crack in CMU basement wall, extending through the floor slab.

Figure 2.03.14: Long basement floor cracks

Figure 2.03.15: Crack at window corner is basement foundation wall.

Figure 2.03.16: Basement floor cracking at bulkhead door.

Unit Entry Stairs (Exterior):

Each unit exterior entry has a small concrete stoop and 3-4 risers up to the front door. The stoops are poured-in-place concrete and have metal handrails on each side. At all units, these entry stairs and handrails are deteriorating. The concrete is under severe distress; concrete is cracking and spalling largely due to the rust jacking of the rail posts that are set too close to the stoop and stair edges. Several of the stoops are cracked at the joints where they connect to the exterior walls and are directing water toward the building and behind flashing. Most of the stoops are under the required height requiring guard rails, but Unit 22 was measured to be over 30” and will require pickets or panels to meet code. In all stairs surveyed, they were not built with a full height first riser. The difference in riser height exceeds the code tolerance for variation. Required is the replacement of all concrete entry stairs and handrails. The replacement concrete stoop should incorporate positive pitch to drain water away from the wall. A self-adhered water barrier should be installed at the joint to the wall, water-resistant PVC trim should be installed at the sill and apron under the door or where in contact with concrete, and sealant be applied to all gaps. The replacement handrails should be color galvanized rails set in sleeves that are more than 3" from the edge of the concrete. It is recommended that guards be provided at all stoops, but it is mandatory that guards be provided at drop-offs over 30”.

Floors and Framing:

Access to floor framing was limited to areas exposed in unit basements. The floor framing is composed of dimensional wood joists that bear on CMU demising walls with steel columns and girders at the mid-span. The floor framing appears to be in good condition; however, we found some areas where the integrity of the joists may be compromised. Some joists have been notched on the bottom edge to allow for renovated plumbing pipes to pass by them without jogging the lines. The notches vary in depth and severity and should be evaluated by a structural engineer before replacing all of the affected framing. Another result of the plumbing renovations is that the new lines pass horizontally through fire rated basement partitions and are not properly fire stopped. The missing fire stopping compromises the integrity of the fire rated demising walls and must be addressed. When remediation of the joists occurs, the plumbing lines in the basement should be re-routed to eliminate the need to notch any of the joists and all penetrations through rated walls must be properly fire stopped.

The wood framed buildings have suffered ongoing termite activity, and have been repaired at the same time that side was replaced. RHA has spot-fixed instances of termite damage and continues to do so. The problem appears to be systemic and ongoing. The likely cause is the building's proximity to grade. We recommend that the grade around the buildings be lowered to make termite entry more difficult. This work can be combined with the foundation repairs and include damp proofing to make the structures resistant to termite infiltration.

Windows:

Painted steel lintels at brick headers are a concern. Many of the painted steel lintels over windows are rusting, and weeps above the windows were clogged or non-existent (See Figure 2.03.17). At a minimum, we recommend that the lintels be scraped and painted following lead paint protocols. When windows are replaced (see separate recommendation), consider installing panning to encapsulate the steel lintels. Windows at 14-1 are discussed further in section 2.04 – Building Envelope.

Figure 2.03.17: Window lintels rusting through paint.

Requirements:

- All entry stairs and handrails are deteriorating. Stairs have excessive cracking and spalling, largely due to the rusting and rust jacking of the rail posts that are set too close to the stoop and stair edge. Height of stair entry at Unit 22 requires guards (not present). Height difference in risers at most stairs exceeds code allowance. Replace all concrete entry stairs and handrails with color galvanized rails set in sleeves that are more than 3" from the edge of the concrete; provide guards where required.

- Broken concrete landing directs water toward face of building behind flashing. Replace concrete stoops as recommended above. Pitch away from structure and install self-adhered membrane behind PVC trim and seal.

- All of the buildings on site have foundation cracks; many appear to be caused by settlement. Cracks that have been sealed in the past few years are re-opening. Repair and patch minor foundation damage. See related recommendation for major repairs in a small number of locations.

- We observed four major foundation cracks that appear to be caused by settlement. Foundations are on bell caissons, indicating poor bearing conditions. Interior cracking throughout the development. Underpin existing foundations in approximately 25% of foundations to prevent further settlement.

- Buildings have suffered ongoing termite activity, and new evidence of termite damage has been revealed and addressed when minor repairs find damage. The problem appears to be systemic and ongoing. Consider lowering grade around buildings to make termite entry more difficult. Combine with foundation repairs and damp proofing (see related recommendations).

- Floor framing notched for plumbing. Unsealed penetrations in rated wall at basement. Repair framing and reroute plumbing in approximately 20% of unit basements. Firestop any required penetrations.

- Potential asbestos-containing adhesive noted on basement wall. Limited testing found only one building with a positive test (door caulking). Comprehensively test all buildings for hazardous materials.

- Steel columns embedded in basement masonry wall are exhibiting minor distress and movement. Parging and surrounding masonry is cracked due to differential movement. Rust at column bases caused by basement flooding. Perform minor repairs to masonry and clean and repaint columns at two locations per building. Monitor for future movement.

- CMU partition has separated from foundation wall; evidence of movement. Previous repairs have failed. May be a long-term issue that requires more extensive investigation and repair. See related recommendation to address major settlement with underpinning.

- Steel lintels over windows are rusting. Scrape and paint following lead paint protocols. When windows are replaced (see separate recommendation), consider installing panning to encapsulate the steel lintels.

Part 2.04 – Building Envelope

The building envelope is in fair condition, however, there are numerous deficiencies that need to be addressed to maintain a weather tight and sound enclosure. The housing authority addressed the failing siding system and systemic termite damage less than 10 years ago with vinyl-siding veneer and localized termite remediation (See Figure 2.04.01). Less than two years ago, new shingles were added to all roofs. Aside from these updates, the upkeep to the exterior has been limited to maintenance items and the building enclosure is due for numerous exterior improvements, described below.

Figure 2.04.01: Vinyl siding damage

Windows and Doors:

The vinyl windows on the buildings are at least 14 years old, replaced as part of a window replacement project by RHA. Residents complain that windows are difficult to open, and we found several that were difficult to operate. (See Figure 2.04.02). Thought the windows aren't very old, these units don't meet current energy code for U value or SHGC. A comprehensive review and testing of all windows should be performed to identify and remedy window issues, including water damage, fogged insulated glass units, water damaged interior trim, and failing counterweights. If there is a comprehensive renovation project where the scope exceeds 50% of the building's assessed value, then a complete renovation of the windows, complying with the current IECC 2021 energy code with Massachusetts amendments, will be required.

Figure 2.04.02: Typical window head.

Unit entry doors at 14-1 are panel hollow metal doors and frames with a half-glass storm door. The doors are raised ~6" above the front concrete stoops, over a wood skirtboard. Doors and knob-type door hardware appears to be original to the building (See figure 2.04.03 and 2.04.04). The unit entry doors are aging, and approximately 25% are damaged and in need of replacement. Gaskets and seals are failing, thresholds and skirtboards are rotten. Found in a limited testing at the property, perimeter sealants were found to be asbestos-containing and will require abatement. Many doors need to be painted, as door finish is worn, damaged, and not consistent throughout the development. Storm doors vary in condition and about 25% of them are poor and in need of immediate replacement, and some are improperly hung or damaged. Before work is done for door replacement, we recommend that a comprehensive haz-mat survey be completed to determine the full scope of areas, particularly around doors, that may contain ACM. When work is done to replace unit entry or storm doors, it is recommended that a durable PVC door trim and skirtboard be installed to replace the rotten wood currently in-place. Long term, all doors should be considered for replacement in less than 10 years (See figure 2.04.05 and 2.04.06).

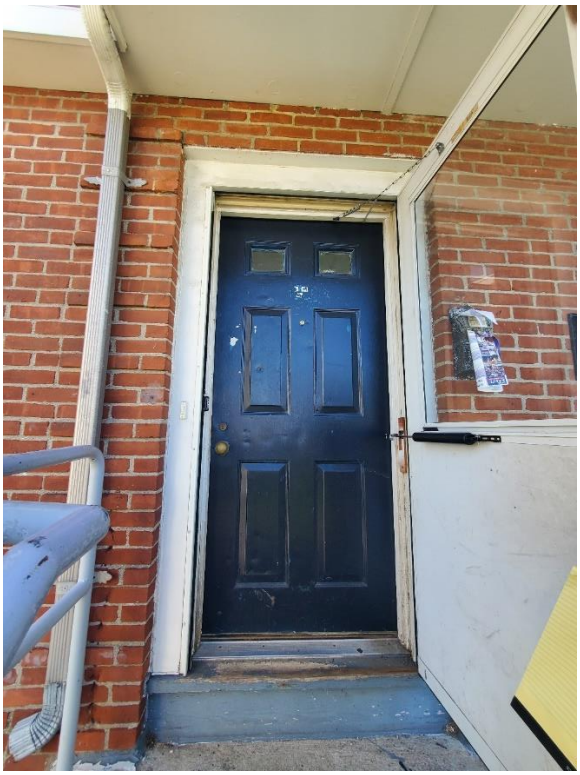

Figure 2.04.03: Typical unit entry door

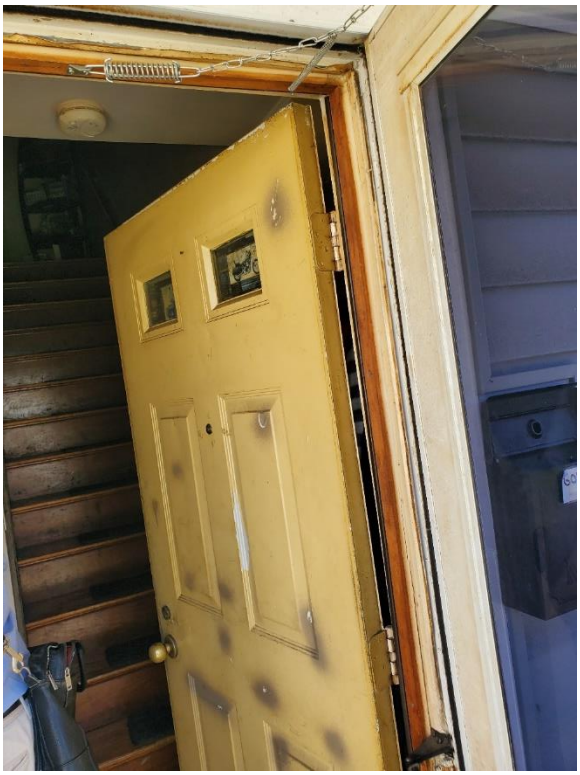

Figure 2.04.04: Typical unit entry door

Figure 2.04.05: Stoop connection at entry and deteriorating sill at door

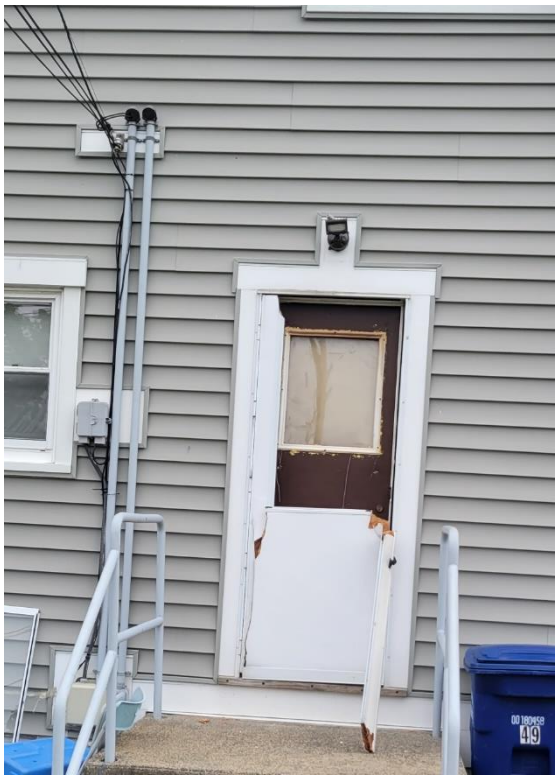

Figure 2.04.06: Damaged rear entry storm door

Porches:

Porches on each building are covered with a wood framed and shingled overhang, supported by three wood veneer columns. These overhangs are fitted with aluminum gutters / downspouts, and extend about 3' from the wall to provide a bit of protection at each pair of unit entries. All of the porches were in poor condition with issues that range from peeling paint to water-damage. Some areas of water damage to soffits and columns were severe and need to be rebuilt. Almost all of the connections from the stoops at the building wall were cracked and patched with sealant (See figure 2.04.07 to 2.04.10). Some were spalling from handrail rust jacking. Others were pulling away from the wall with gaps that were likely sources for some of the moisture found in basements.

Porch columns that show rot and damage need to be repaired or replaced and ideally covered with a durable PVC column cover. Where deteriorating soffits are found, we recommend that the porches be rebuilt the eliminate all rotting and compromised substructure and replaced in-kind.

Figure 2.04.07: Peeling columns at unit entry

Figure 2.04.08: Porch soffit with significant damage from water infiltration

Figure 2.04.09: Porch soffit with significant damage from water infiltration

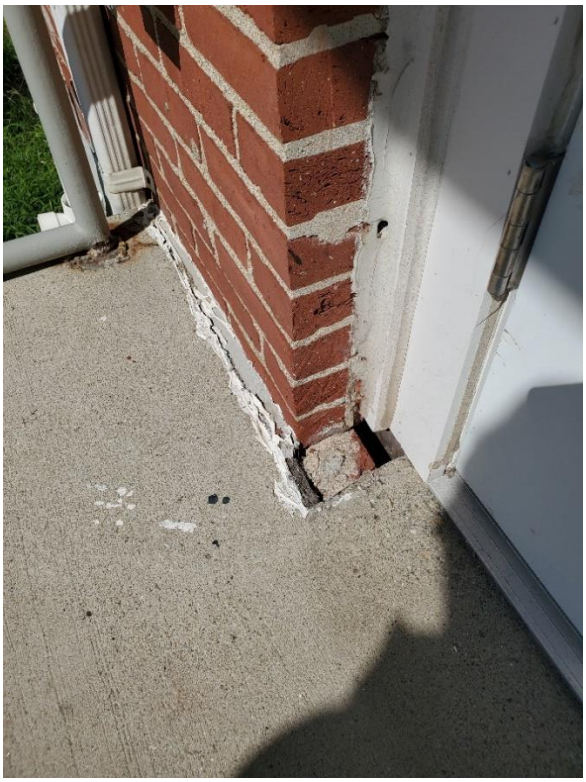

Figure 2.04.10: Stoop connection at entry with gaps

Gutters at roofs and porch overhangs collect rainwater and lead it through aluminum downspouts to grade. In some instances, the water is taken into sub-surface drainage, tied into the site's storm water system. In some areas, the connection to underground drainage has been foregone or damaged, causing rainwater to be collected and directed right at the building foundation. There were numerous foundation cracks documented in this development, and it is likely that one of the factors causing them is excessive water against the building foundation. Excess water at the foundation can not only affect basement moisture levels, but can also cause mold and encourage freeze-thaw cracking. All areas found to be surface-draining at the building envelope should be addressed (See figure 2.04.11).

Figure 2.04.11: Downspout leader not connected to underground storm drainage

Roofing:

Roofing consists of asphalt shingles over wood decking and joists. The roofs were replaced less than 2 years ago, and are in good condition. It is unclear whether the new shingles were applied over the existing or whether the former were removed and the substrate inspected for repair. Residents reported no current roof leaks, though there are still areas in unit interiors that have severe water damage from roof leaks that weren't repaired as part of the re-roofing project. Those items are described in the Unit Interiors section 2.06 of this report.

It was evident from inspection of the soffit vents that the attics are not adequately vented. The existing vinyl soffits have very small soffit holes and do not have enough open area for ventilation. In addition, there are several areas with insulation or other obstructions blocking the vent holes. The shingles that were recently replace will fail prematurely if attic ventilation is not improved (See figure 2.04.12).

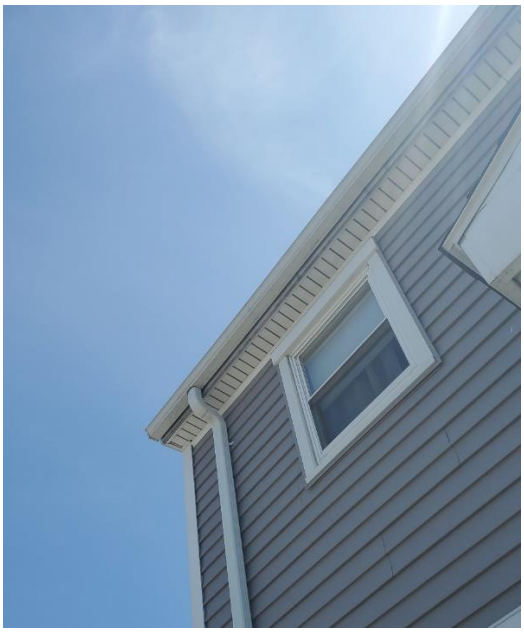

Figure 2.04.12: Ineffective soffit vent preventing proper roof ventilation

Exterior Openings

Each building has several window wells at basement level. In almost all cases, the semi-circular steel window well was damaged and filled with soil. Most of the wells were overgrown with weeds. These wells are a source of water infiltration into the basement. The clogged wells subject the windows and seals to excessive freeze-thaw damage, eventually leading to envelope failure, foundation deterioration, and basement flooding. The wells require constant maintenance and cleaning (See figure 2.04.13 to 2.04.15).

Figure 2.04.13: Window wells filled with debris and vegetation

Figure 2.04.14: Window wells filled with debris and vegetation

Figure 2.04.15: Window wells filled with debris and vegetation

Each basement is accessed from an interior stair and a basement bulkhead and stair from the back of each unit. The steel basement bulkheads vary but some are in poor condition. Recently, the bulkheads have been failing, requiring maintenance to repair or replace the steel doors with a PVC bulkhead. Almost all of the doors have broken handles. It is clear from their age and the rate of failures that maintenance has addressed that the majority of the remaining bulkheads will need to be replaced sometime in the next 10 years. We estimate that approximately 10% are due for repair in the next 1-3 years (See figure 2.04.16).

Figure 2.04.16: Basement bulkheads are failing

There is distress at brick masonry above window and door heads: minor cracking and evidence of past repointing and repairs. This appears to be related to building movement, although sagging lintels may be contributing. See other recommendations to address settlement and address lintel corrosion. Perform minor repointing at cracks and open joints as needed. Price assumes 20% of lintels need repair.

Requirements:

- Windows are at least 14 years old; some are difficult to operate. Residents complain that windows are difficult to open and close. Perform minor tune-up on all windows as needed: replace balances, IG units where fogged, check operation. Replace all vinyl windows with units meeting the current energy code in about 10 years. At the time of replacement, inspect and repair all water damage. Replace AWB, flashings, interior trim, and all window sills along with a full window replacement project.

- Unit entry doors are aging; appx 25% are in poor condition. Hardware is not accessible, gasketing has failed, and thresholds are damaged or rotting. Perimeter sealants are ACM at some locations. Replace appx 25% of unit entry doors and hardware and abatement sealant where required. Plan to replace the remaining 75% in the next 10 years.

- Unit entry doors are showing wear and aging; most are in need of paint. Paint unit exterior doors not replaced as part of another item.

- Groundwater is infiltrating at basement walls and through cracks in floor slabs, causing basement flooding at multiple buildings. Ensure positive drainage away from structure at grade. Connect downspouts to underground piping to leaching galleys below basement elevation. Injection grout cracks at basement slabs. Install drainage mat and waterproofing at foundation walls where flooding is most severe.

- Mold/water damage on entry canopy due to undrained valley. Rebuild all double canopies to have a single hipped roof with gutter and downspout

- Porch columns are damaged and rotting at bases. Some have already been replaced with PVC column covers. Replace deteriorating and damaged porch columns with PVC column covers. Assume 25% need immediate replacement. Plan to replace the remaining 75% in the next 5 to 10 years.

- Attics are not adequately vented. Shingles were recently replaced; premature roof failure can be expected if ventilation is not improved. Install new venting vinyl soffits, ridge vent, and static roof vents to meet code-required ventilation area. Ensure roof insulation is protected with insulation baffles.

- Some storm doors are in poor condition, improperly hung (not square); wood door skirt is deteriorated. Perimeter sealants are ACM at some locations. Replace 25% of storm doors now. Abate ACM sealants where required. Install new PVC door trim and skirtboard. Replace 50% of storm doors in about 10 years. Abate ACM sealants where required. Install new PVC door trim and skirtboard.

- Window wells are a maintenance issue. Many are filled with soil and debris above sill of window and are leaking. Clean basement window wells. Remove debris, seal areas of water damage.

- Downspouts empty against brick facade and foundation. Biological growth (algae) is present, brick and concrete are spalling. Extend downspout to grade and direct outlet away from building into underground drainage.

- Gutters and rain leaders were recently replaced and are in generally good condition. We noted a handful of locations where leaders are damaged or improperly secured to the buildings. Repair and resecure approximately 10 rain leaders as required.

- Some basement bulkheads are in poor condition. A few have already been replaced. Replace approximately 10% of damaged, deteriorating, or inoperative bulkhead doors.

- There is minor distress at brick masonry above window and door heads: minor cracking and evidence of past repointing and repairs. This appears to be related to building movement, although sagging lintels may be contributing. See other recommendations to address settlement and address lintel corrosion. Perform minor repointing at cracks and open joints as needed. Price assumes 20% of lintels need repair.

Part 2.05 – Common Interiors

Common interiors at the 14-1 site are limited to the shared interior stairs and vestibules at three buildings that have been renovated to accommodate the site's ADA units. The renovations created a small entry vestibule and single flight of stairs connecting two units. Basements for the renovated buildings have been added to this section of the report since tenants in those buildings share common basement space.

Basements:

Each building is constructed over a full concrete basement that provides storage for residents and contains the building's boilers. The boilers are located at one end of the basement (See figure 2.05.01), and is piped to each unit. Residents report issues with the water temperature and time that it takes for the boilers to provide heat to units on the far end. This item is addressed in further in the plumbing and HVAC sections of this report.

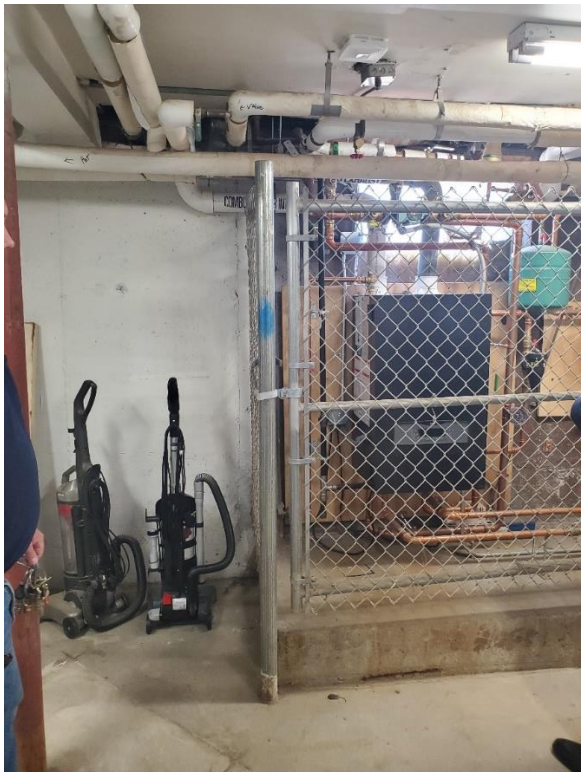

Figure 2.05.01: Basement – shared boiler

The basements maintain the required egress via the bulkheads at each unit, or as a combined unit. Some units share a common basement vestibule leading to a shared bulkhead door that extends under a neighboring unit. There are problems with the basement wall configuration as they do not alight to the demising walls above. Since they aren't aligned there are areas of the basement ceiling that are overlapping the units above, so they are not fire separated from the overlapping units, a code violation. In order to correct this violation, new gypsum wallboard ceilings with insulation will need to be installed over the existing joists to create a rated separation. All penetrations through the ceiling will need to be fire-stopped, and fire-rated access panels installed to maintain valve access. The unrated basement doors will need to be replaced with a 45min UL rated hollow metal door and frame, and all penetrations properly fire-stopped. This work will be required if as part of any substantial modernization to the buildings (See figure 2.05.02 to 2.05.04).

In isolated areas around the boilers Peeling/delaminating GWB ceiling finish at common basement near boiler. This appears to be an isolated condition, but should be reviewed at all boilers to ensure that the problem isn't systemic. Ceiling repair includes repairing existing drywall ceilings, patching, and paint.

No active or passive radon ventilation systems are installed in any of the 14-1 basements. 780 CMR Ch 51 requires all substantially altered existing structures provide a passive radon ventilation system. This work should be included with the priority 1 modifications in this report.

Figure 2.05.02: Plumbing passing over unit separation CMU wall. Wall rating of 1-hour is compromised by the openings for pipes

Figure 2.05.03: Plumbing passing through unit separation CMU wall. Wall rating of 1-hour is compromised by the openings for pipes

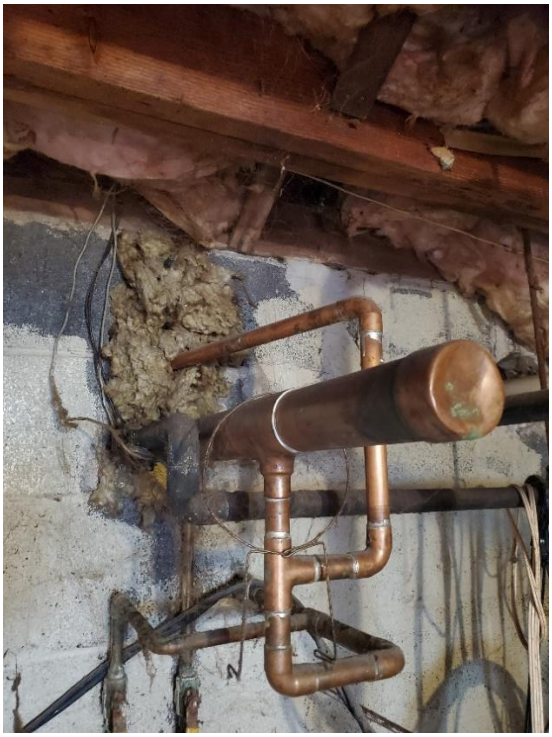

Figure 2.05.04: Plumbing passing through rated 1-hr unit separation CMU wall – fitted with mineral wool, not properly fire-stopped

Stairs at Accessible Buildings:

At buildings that have been renovated to accommodate the ADA units, a common star has been incorporated into a shared entry vestibule. The stairs are covered with a durable rubber tread and flooring at landings. They appear to be fully accessible, with the exception of handrails. These stairs lack handrail extensions at the top of each run, an accessibility code violation. The rails need to be replaced to include extensions at the top, and a return at the bottom.

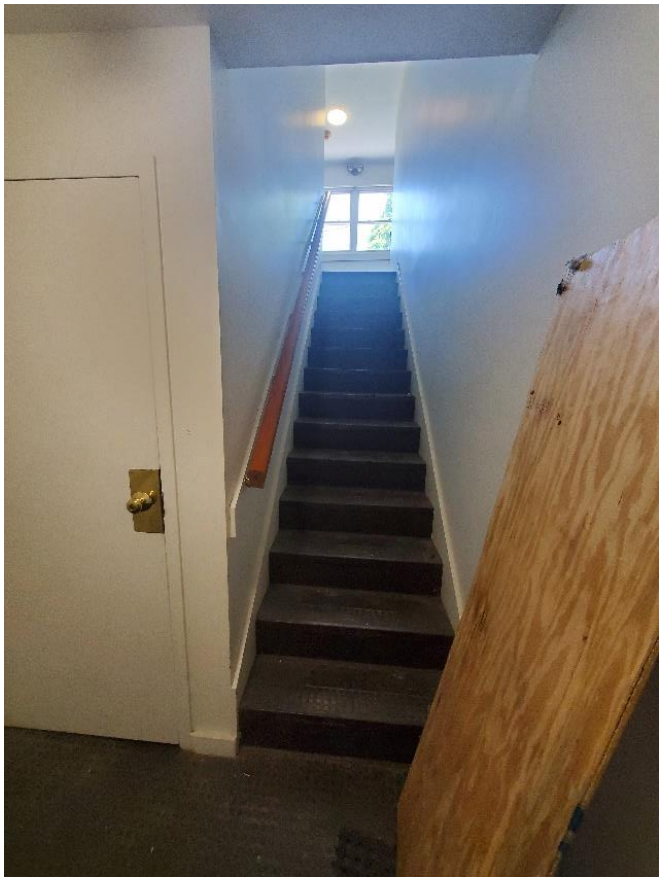

Figure 2.05.05: Stair to 2nd level at common entry vestibule that was added at buildings modified for accessible units

Figure 2.05.06: Stair at level 2, lacking horizontal rail extension

Figure 2.05.07: Entry vestibule at accessible buildings

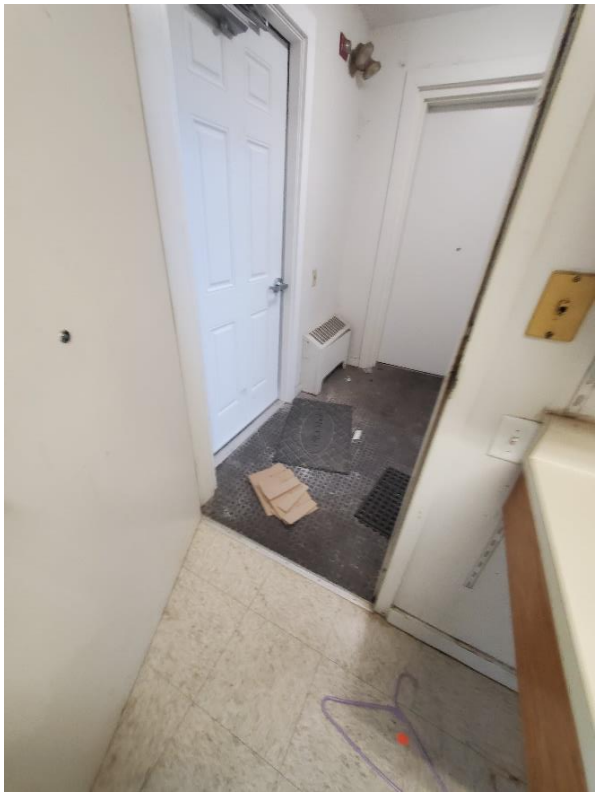

Figure 2.05.08: Entry Vestibule – egress from an accessible kitchen

Figure 2.05.09: Egress door at Entry Vestibule

Requirements:

- Peeling/delaminating GWB ceiling finish at common basement near boiler. This is a singular condition. Repair ceiling to restore fire rating.
- Penetrations in basement through a rated firewall were not properly fire-stopped. Install firestopping at all open pipe penetrations in basement firewalls. Price is an allowance per building for repairs.
- Offsets in vertical fire separations between townhouse units are not fire rated at basement ceilings. This is a code violation. Install firestopping and GWB ceilings at offset areas.
- Some units share a common basement vestibule leading to a shared bulkhead door. These vestibules are not fire separated from the unit interior, a code violation. Replace unrated basement doors, install GWB separation assemblies, and firestop openings.
- Floor/ceiling assembly between common basement and first floor is uninsulated and unprotected with GWB in some locations. Insulate and install Type C GWB membrane for code compliance. This work will be required in any substantial modernization.
- Common stairs at ADA unit buildings lack handrail extensions, an accessibility code violation. Replace handrails at stairs.
- Prep all basement slabs for radon ventilation.

Part 2.06 – Unit Interiors

As part of our inspection of conditions at development 14-1, we assessed the immediate and long term needs for safe and clean conditions for the next 10 years. Our findings for the interior conditions for the units should come as no surprise, since the project was constructed of modest means in 1952. The project is due for extensive renovation. The quality of the units varies, but systemic issues are consistent throughout. Units newly turned over are painted by the authority and evaluated for minor finish updates, otherwise, all finishes, fixtures, and equipment are from the original to the 1952 building construction.

Walls and Ceilings:

Walls are standard painted gypsum wallboard over wood studs. Ceiling finishes are generally drywall, but there are some areas with acoustical grid ceilings.

The buildings recently underwent a re-roofing to address systemic leaking, however not all of the water damage that prompted the re-roofing was repaired. We documented interior damage that included finish staining and open holes into the attic. Peeling ceiling paint was a consistent issue found in most units, and indicative of a larger issue with attics that are likely driving poorly-vented water vapor through ceilings. Surfaces also exhibit cracking from building movement, water damage from impacts, and general aging. These interior walls and ceilings are in poor or very poor condition and are in need of immediate repair (See figures 2.06.01 to 2.06.07). Other units where walls and ceilings are in fair condition should be replaced as a priority 2 item, or as substantial renovations dictate. Due to the ACMs present in drywall joint compound, improvements to drywall items, renovation projects must consider relocating residents.

Figure 2.06.01: Damaged acoustical tile ceiling in living room

Figure 2.06.02: Damaged drywall ceiling in living room

Figure 2.06.03: Damage at drywall ceiling near access panel in typical bedrooms and living rooms

Figure 2.06.04: Patched drywall on kitchen ceiling

Figure 2.06.05: Drywall damage

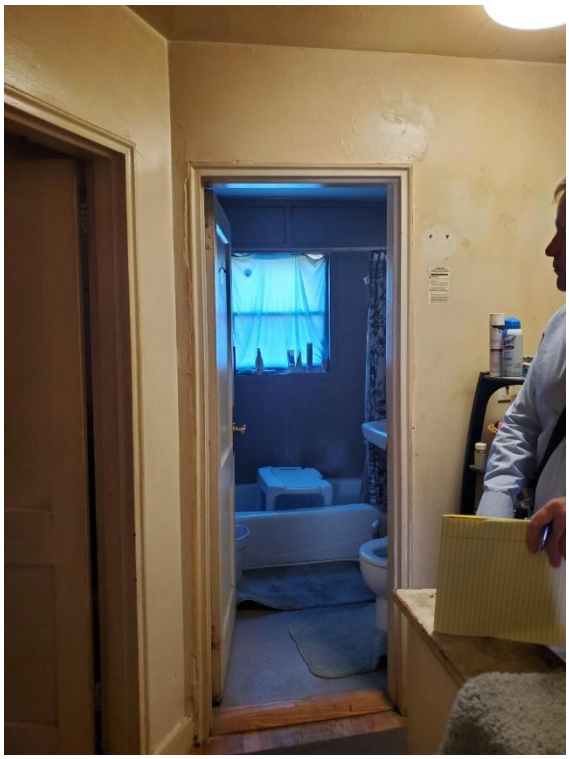

Figure 2.06.06: Bathroom entry – frame was racked from settlement

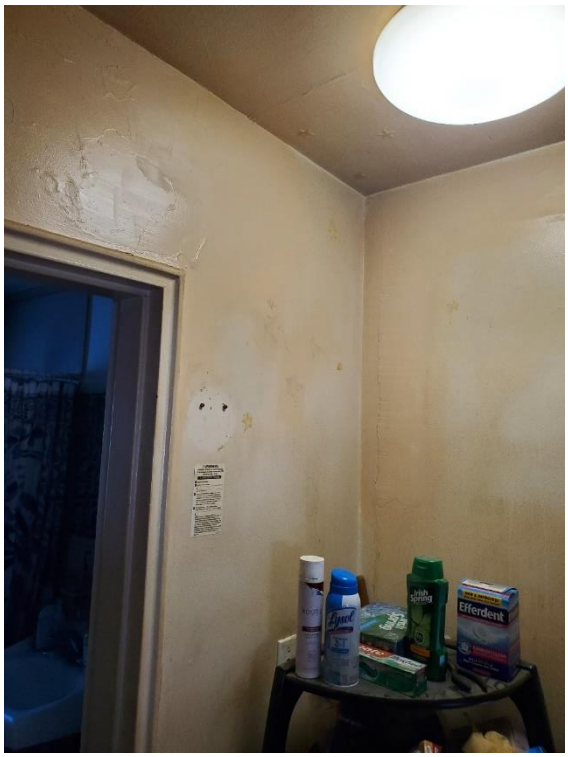

Figure 2.06.07: Damaged and discolored drywall

Flooring

Flooring in 14-1 is a mix of VCT, carpet, hardwood oak, vinyl tile, and ceramic tile. Areas have been updated inconsistently, but generally kitchens are vinyl or ceramic tile. Living rooms are generally hardwood, and bathrooms are usually sheet vinyl or ceramic tile. All floors vary in condition from fair to very poor.

In bathrooms, the ceramic tile floors are not waterproof and the wood substrate is warping and damaged (See Figures 2.06.08 and 2.06.09). Tiles are popping off of the floor at walls and tub transitions in some units. Our recommendation is to remove and replace the tile, subfloor, and repair water damage to joists. When this work is done, the subfloor should be replaced with cement backer board and the framing inspected for water damage and further repairs.

Figure 2.06.08: Mosaic tile in about 30% of units. All units with mosaic tile are experiencing problems like those shown.

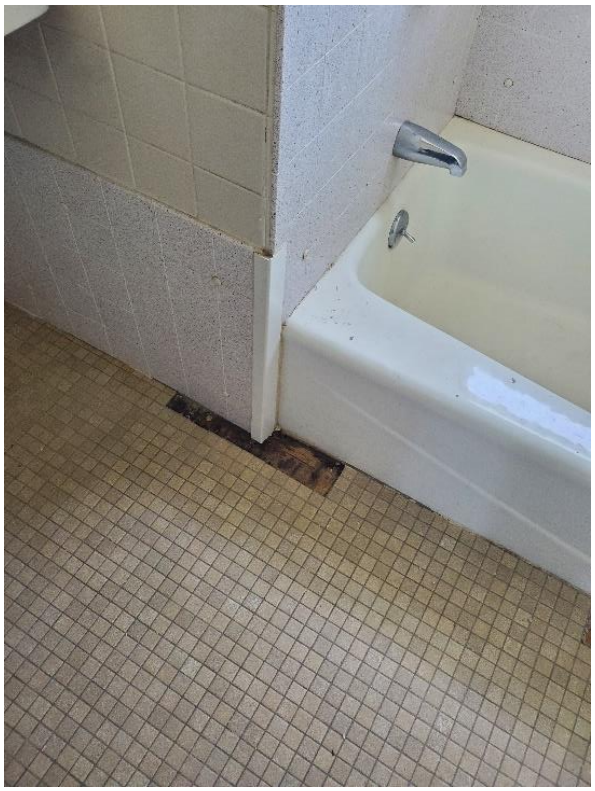

Figure 2.06.09: Mosaic tile in about 30% of units. All units with mosaic tile are experiencing problems like those shown.

VCT is in generally poor condition in kitchens. 6x6 ceramic tile is present in some kitchens and where present it is usually broken, worn, and buckling. It is our recommendation that all types of kitchen flooring, be replaced with a durable material such as LVT over repaired or replaced substrates as part of a recommended renovation of all kitchens in the development (See Figure 2.06.10).

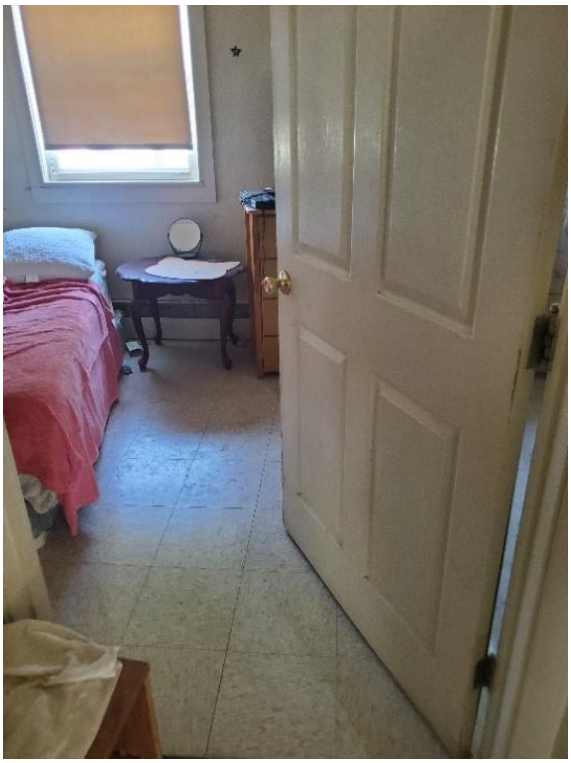

Figure 2.06.10: VCT tile in typical bedrooms and living rooms

Hardwood flooring in living rooms is original to the construction of the units in 1952. The solid oak floors are showing extensive wear and, in most cases, can be revitalized by sanding and refinishing. In isolated areas, the damage to the floors is deep or rot has set in at areas that are frequently subjected to moisture. Areas that are damaged will require removal and replacement of damaged boards, replacement or refurbishment of substrate and possible structure, and refinishing. VCT can be expected to last about 40 years with proper upkeep. The age of the current VCT is unknown but is tired and in poor condition. We recommend replacing it within the next 3 years or in conjunction with a full renovation. When replacing the flooring in the bedrooms and living rooms, a high quality (LVT) is recommended. A luxury vinyl tile (LVT) will be more durable and may pay for itself over the life cycle. We recommend testing all areas of flooring for asbestos containing materials prior to any floor rehabilitation. Abatement or encapsulation of the flooring may be necessary. (See Figures 2.06.10 - 2.06.15).

Figure 2.06.11: VCT tile in kitchens

Figure 2.06.12: Cracked ceramic tile at kitchen

Figure 2.06.13: Hardwood floors in bedrooms in need or refinishing and repair

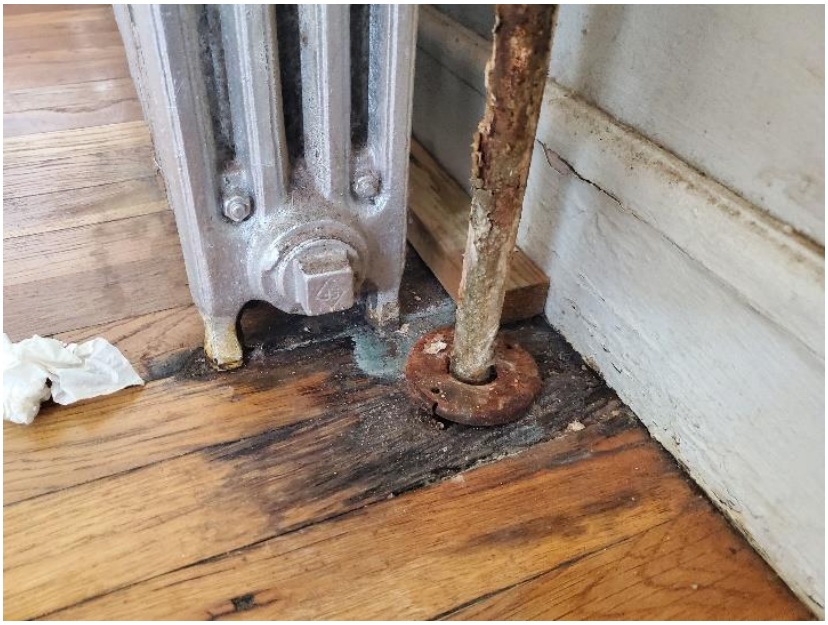

Figure 2.06.14: Hardwood floors in bedrooms in need or refinishing and repair.

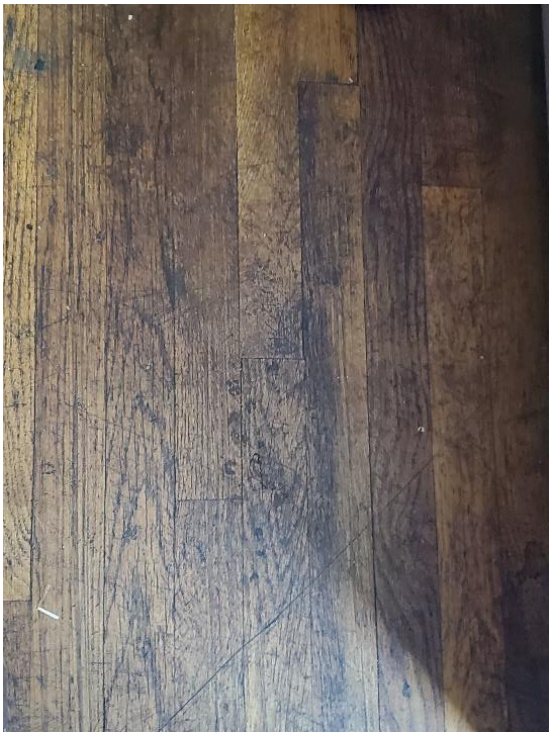

Figure 2.06.*15: Hardwood floors at living areas in need of refinishing and repair.*

Basements are bare concrete. Conditions of basement floors vary, but all had cracking that is generally expected from buildings of this age. Some of the basement floors; however, were cracked along the entire length or width of the basement and at some locations cracks originated at steel columns and areas of stress. The patterns and frequency of the long basement cracking indicates site settlement and foundation stress. All basements had moisture infiltration through the slab and in some cases, through the foundation walls. See Section 2.05 for more information on basements.

Doors and Carpentry:

Unit interior doors, frames, and hardware are original to the structure and in poor condition. About 20% of the doors are estimated to be in very poor condition; they are original to the property and need replacement. Many are sagging, wracked by settlement and have been shaved down to fit because they are difficult to close and latch and should be removed, repaired and rehung. Settlement issues are likely causing the misalignments and need to be investigated and openings squared. All of the basement doors reviewed were corroded, many damaged. We recommend that 20% of doors be replaced with new panels, frames, and lever hardware as a priority 1 item. About 80% are still in fair condition and we recommend that the doors, frames, and hardware be replaced in about 7-10 years. All repairs to doors will need to incorporate costs associated with the patching and painting at frame replacement. (See Figures 2.06.16 and 2.06.19).

Figure 2.06.16: Typical basement doors and hardware.

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Figure 2.06.17: Accordion closet door

All units have hollow metal entry doors that enter off of common vestibules. The hardware at typical units seems to be in fair condition, but at accessible units, the door hardware is not code compliant. The hardware at all 5 ADA units should be replaced with lever sets.

Closet doors are required at every closet instance in units, and some were missing. Of the doors found in apartments, the style varied from an accordion style to bifold. Most were in fair condition.

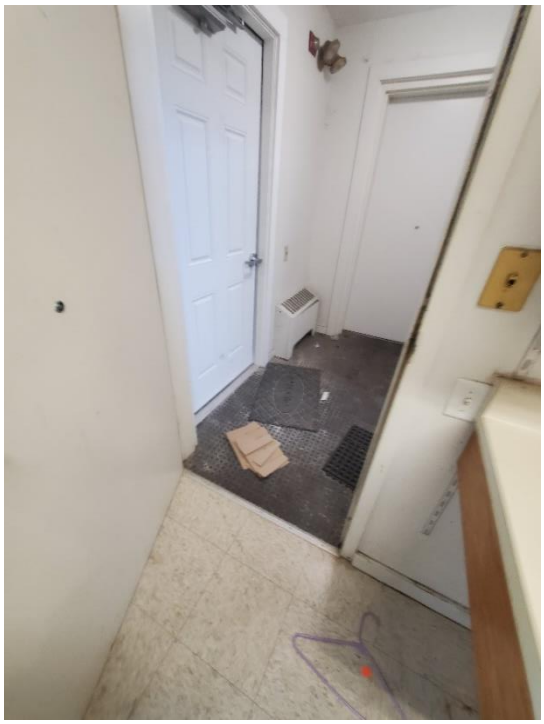

Figure 2.06.18: Unit entry door

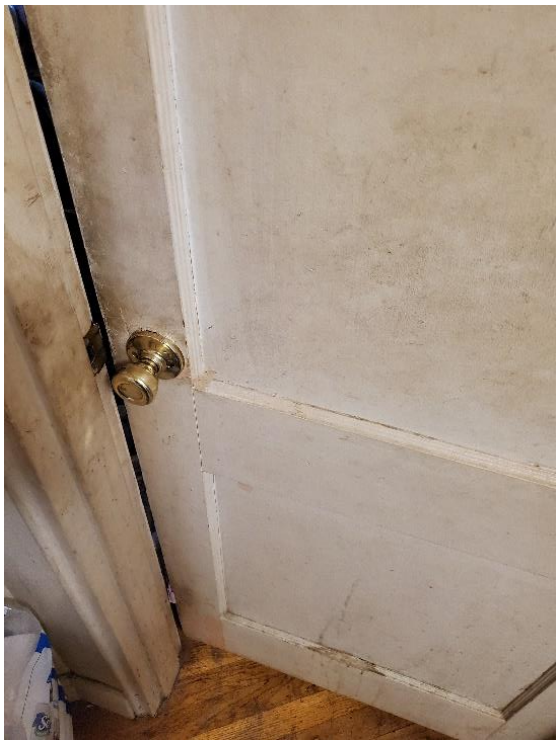

Figure 2.06.19: Bathroom Door

Figure 2.06.20: Water damage at sills and frames

Figure 2.06.21: Typical damaged roller blinds

Units are furnished with either blinds or roller shades at all windows. The shades were in poor or in very poor condition, and should be conserved for replacement along with any comprehensive interiors update. *(See Figure 2.06.21)*

Kitchens:

Kitchen cabinets and counters are in poor condition. The cabinet fronts are MCP, and not a durable design. The aged kitchen cabinets have water damage, delamination, and are chipping. The door alignment is off and needs adjustment in all units. Sink bases are in very poor condition; they are discolored and damaged from water exposure. Countertops are plastic laminate in varying conditions and in some cases were covered with a film by residents. All kitchens lack backsplashes at cooktops, and in some units, tenants were fabricating their own. Kitchens have gas ranges in varying conditions ranging from fair to poor. Overall, the kitchen layout is awkward, with the refrigerator located across the room and facing the rear exit door. (See Figures 2.06.22 – 2.06.32)

None of the observed kitchen appliances are Energy Star compliant. Kitchen exhaust is being handled by recirculating vent hoods over the gas stoves. These vent hoods ranged from fair to very poor condition.

As part of the rough plumbing pipe replacement (See Section 2.09) the kitchen wet walls will need to be cut and patched. For comprehensive modernization, this has been factored into our estimates. For the 50% of kitchens that are in fair condition that may remain, the kitchen wet walls will need to be cut and patch; cabinets removed and reinstalled.

When renovation occurs, the opportunity should be taken to update the kitchen layout to relocate the refrigerator. To get more life from a renovation, it's recommended that solid surface countertops be installed in lieu of plastic laminate.

Full modernization to kitchens should include new sinks and water-sense faucets, LED lighting, and flooring. Appliances in all apartments should be replaced with Energy Star models for improved energy efficiency. Recirculating hoods should be replaced with ducted exhaust to the exterior. Switched under-cabinet lighting to light the work surface is also recommended.

Figure 2.06.22: Kitchen countertop with tenant-applied protective film

Figure 2.06.23: Kitchen lacks backsplash

Figure 2.06.24: Mis-aligned kitchen cabinets

Figure 2.06.25: Kitchen Hood, stove lacking backsplash

Figure 2.06.26: Typical kitchen layout – refrigerator across the room in foyer

Figure 2.06.27: Typical cabinet front delamination

Figure 2.06.28: Accessible kitchen

Figure 2.06.29: Typical kitchen cabinets and countertop

Figure 2.06.30: Typical kitchen cabinets, delaminating MCP

Figure 2.06.31: Kitchen countertop, delaminating and worn plastic laminate

Figure 2.06.32: Damage at kitchen ceiling

GWB kitchen ceilings have been damaged by plumbing and roof leaks above. Many have been extensively patched in past. Some have peeling paint, and many others are cracked. We recommend that the kitchen ceilings be repaired, and the drywall replaced where necessary throughout. *(See Figure 2.06.32)*

Figure 2.06.33: Baseboard heat at various locations in units.

Bathrooms

Unit bathrooms are aging and have had very few updates since the buildings were constructed. Wall finishes are tired and dated. In typical unit bathrooms, the bath plumbing fixtures and fittings are aging. Most lavatories and tubs are original to structure; many are stained and rusting. Tub finish is poor; many have been refinished previously. The grout joints and joints at the tub are beginning to deteriorate due to age and the ceramic tile is popping off the wall in the tub surrounds that have not already been replaced by solid surface. Bathroom windows have ceramic tile sills, and many are coming loose, allowing water to seep into the wall cavity. Valve handles and accessories are missing or broken. Tubs are scratched and require refinishing. Bathroom flooring is tired and damaged, and in some units the ceiling was composed of acoustical ceiling tile, which is a sanitary code violation. *(See Figure 2.06.40)*

We estimate that approximately 50% of the standard unit bathrooms are in poor or very poor condition and require a comprehensive renovation to all fixtures, flooring, accessories, window sills, and lighting. The remaining 50% of bathrooms should have immediate repairs made to drain assemblies, valves, and accessories, and all units with poor flooring should be replaced, including

new subfloor. Bathrooms not receiving a full modernization now will require a full renovation in the next 7 to 10 years.

Rough plumbing piping replacement (See section 2.09) will require cutting and patching of wet walls in unit baths. Any bathroom not scheduled for comprehensive modernization will require cutting and patching at wet walls, including tile and solid surface replacement to accommodate the rough piping replacement. At the time of plumbing upgrades and repairs, RHA should consider providing solid surface tub surrounds where replacement has not already occurred. All fixture stops should be replaced as part of the bathroom modernization.

ADA bathrooms are similarly aging and have numerous issues. Many of the bathrooms have adhesion/wear issues at the rubber tile and at the ceramic tile flooring (noted in the section above). Bathroom mirrors are delaminating, and bathroom doors are damaged and delaminating. The ADA bathrooms do not meet current MAAB clear space requirements and should be reconfigured. Any substantial renovation to units will trigger requirements to bring the accessible bathrooms up to current standards. During reconfiguration, all fixtures, doors, and finishes should be replaced.

Figure 2.06.34: Bathroom lavatory drains – all drains had missing or inoperable popup drains

Figure 2.06.35: Bathroom tub and accessories

Figure 2.06.36: Broken mixing valve at tub

Figure 2.06.37: Bathroom tub and accessories

See electrical section 2.011 for recommendations for replacement of all bathroom lighting and exhaust fan units.

Figure 2.06.38: Bathroom exhaust fan and light assembly

Figure 2.06.39: Handrails at accessible bathroom

Figure 2.06.40: VCT ceiling tile and GWB cracking at bathroom

Figure 2.06.41: Damaged unit windows

In summary, 50% of unit bathrooms should be comprehensively modernized now, and the remaining 50% within the next five to seven years. Modernizations to include new finishes, fixtures, trim, LED lighting, and accessories. When modernized, the bathtubs should be replaced or resurfaced. When modernizing bathrooms, RHA should consider adding a new water-resistant wainscot of tile or solid surfacing should be provided at the wet walls. Finally, sheet vinyl flooring and damaged mosaic tile floors should be replaced in-kind.

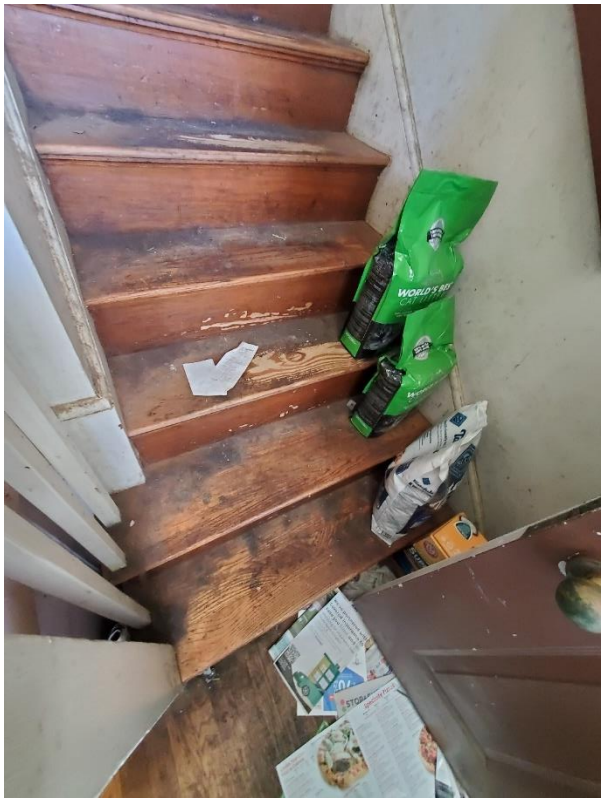

Figure 2.06.42: Damaged unit stair

Figure 2.06.43: Damaged unit stair

Interior Stairs:

Wood tread stairs connect the levels internally in each unit. The stair treads are worn and damaged in about half of all units. Some treads have been replaced. (*See Figures 2.06.42 – 2.06.43*) Replace any damaged treads and install a rubber tread cover to increase the durability of the treads and safety for the tenants. It is estimated that approximately 50% of the stairs in the units have wear and damage that will need to be addressed now. We recommend that resilient trades be installed in the remaining units at turnover or in the next 5-7 years.

On our survey of the property, we found stair landing framing and wood flooring loose (moves underfoot) in one location that will require reframing of the landing and the replacement of the hardwood flooring. It is assumed that this is a localized condition, but further inspection of all stairs and landings is recommended.

ADA Units:

There are five units that were reconfigured for accessibility; however, the configuration of the accessible units at 14-1 do not meet current MAAB requirements. Specifically, bedrooms and kitchens are too small to provide required maneuvering clearances. Unfortunately, due to the existing layout, there is no living space available to borrow from to enlarge the units. In order to make the units fully accessible, an addition to the building will be required. We are recommending that the five units that are intended for accessibility receive an exterior addition and a reconfiguration replete with new finishes and bathroom updates.

Lighting

See Section 2.11 for lighting and electrical recommendations

Requirements:

- Ceramic tile bathroom floor is not waterproof; the wood substrate is warping and damaged. Remove and replace the tile, subfloor, and repair water damage to joists. Replace the subfloor with Durock, waterproofing, and ceramic tile. Estimating 25% of units require this work in next 3 years; combine with other bath improvements.

- Ceramic tile is popping from tub surrounds at about 1/3 of units. Provide solid surface tub surrounds where replacement has not already occurred. See related recommendation to modernize baths.

- Accessible Unit Configuration does not meet MAAB Requirements. Bedrooms and kitchens are too small to provide required maneuvering clearances. There is no living space available to enlarge the unit. Provide exterior additions at 5 ADA units to create more interior living area. Reconfigure unit interior as required.

- Acoustic ceiling tile has been installed in a few bathrooms; this is a sanitary code violation (not cleanable). Remove suspended ceiling and repair or replace original GWB ceiling. Estimated 10% of units require this work in next 3 years; combine with other bath improvements.

- Unit doors are misaligned, door paint peeling. Investigate settling (can often cause door alignment/fitting issues). Resolve movement, square up openings or plane down doors. Scrape and paint, and rehang doors. Replace 80% of unit doors frames and hardware in the next 7 to 10 years.

- Closet doors are missing at some bedrooms. Install new bifold closet doors where missing. Estimated 10% of closet doors are missing.

- Unit interior doors, frames, and hardware are original to the property and in poor condition. Many are sagging or wracked by settlement and do not close properly or have been shaved down to fit. About 20% are poor or damaged. Remaining 80% should be replaced in coming years. Replace 20% of unit interior doors, frames and hardware now; replace the rest in 7 to 10 years. Include finish patching after frame replacement.

- Interior unit entry doors at buildings with common entry stairs lack ADA hardware, a code violation. Replace non-ADA door knobs with lever sets at 5 units.

- Stair landing framing and wood flooring is loose (moves underfoot). Reframe landing and reset hardwood flooring. Assumed to be a localized condition.

- Wood stair treads are worn and damaged in about half of all units. Some treads have been replaced. Replace any damaged treads and cover with resilient treads. Perform this work on appx 50% of stairs now; install resilient treads in remaining units as unit turnover work.

- Tile is failing and coming loose at bathroom window sill. Perform tile repairs as needed. Replace with solid surface sill as part of window replacement project. Estimated 50% need repairs.

- VCT is in generally poor condition in kitchens; tile is typically broken, worn and buckled throughout the development. Replace VCT flooring in all kitchens. See related recommendations to modernize kitchens.

- ADA bathrooms are aging and have several issues that need to be resolved. There are numerous adhesion and wear issues at the rubber tile flooring.

Bathroom mirrors are delaminating. Bathroom doors are damaged/delaminating. Replace fixtures, doors, and refresh all finishes. (part of a comprehensive ADA bathroom reconfiguration).

- Kitchen ceilings are damaged by plumbing and roof leaks above. Many have been extensively patched in past. Typical in nearly all units. Repair and replace kitchen ceilings throughout.

- Appx 50% of baths are in poor or extremely poor condition and require comprehensive modernization to maintain habitability. Finishes, fixtures, and accessories are damaged, deteriorated, or missing. Comprehensively modernize 50% of unit baths now. Include replacement of rough plumbing and electrical and all finishes. See related recommendations.

- Appx 50% of baths are in fair condition and require comprehensive modernization in a few years. Comprehensively modernize remaining 50% of unit baths in 7 to 10 years. Include replacement of rough plumbing and electrical and all finishes. See related recommendations.

- Appx 50% of unit kitchens are in poor or extremely poor condition and require comprehensive modernization to maintain habitability. Comprehensively modernize 50% of unit kitchens now. Include replacement of rough plumbing and all finishes. See related recommendations.

- Appx 50% of unit kitchens are in fair condition and require comprehensive modernization in a few years. Comprehensively modernize 50% of unit kitchens in 7 to 10 years. Include replacement of rough plumbing and all finishes. See related recommendations.

- Bath plumbing fixtures and fittings are aging. Most lavatories and tubs are original to structure; many are stained and rusting out at drain fittings. Tub finish is poor; many have been refinished previously. Drain assemblies are broken at many locations. Replace plumbing fixtures and fittings as part of bath mod project. Perform minor repairs (i.e., replacing drain assemblies, refinishing scratched tubs) on baths not scheduled for comprehensive modernization. Estimated 50% of units.

- Interior walls and ceilings are GWB in poor or very poor condition in about 25% of units; fair condition in most of the rest. Surfaces exhibit cracking from building movement, water damage from past plumbing and roof leaks, impacts, and general aging. Perform GWB patching and repairs as required. About 25% of units require significant finish repair work now. Bath and kitchen finishes are included in other recommendations. Will require relocating residents.

- Window roller shades are in poor or very poor condition in most units. Some have been replaced on unit turnover. Replace appx 75% of roller shades now and the rest on unit turnover.

- Rough plumbing piping replacement will require cutting and patching of wet walls in unit kitchens and baths not scheduled for comprehensive modernization now. Cut and patch kitchen wet wall finishes as required to access in-wall piping for replacement.

- Unit interiors will require repainting after other work is performed. Repaint unit interiors; price includes surface preparation and partial priming of disturbed surfaces and 2 finish coats.

- Wood floors need repair and refinishing, and should be addressed in 50% of units.

- Rear unit egress doors were found that are too narrow (27" wide); this is a code violation. (Appears to be a singular condition.) Demo for larger opening and install appropriately sized door and frame. This work may be required by a substantial alteration.

Part 2.07 – Waste Handling

The 14-1 development does not have a central waste handling system. Residents are provided with waste and recycling bins which are stored in the rear paved areas behind each unit. Residents are tasked with rolling their own bins out to the street edge every week for trash pickup. (See Figure 2.07.01)

Trash is picked up at the curb in barrels, but there is no provision for bulk or oversize item pickup. This results in frequent fines to RHA, which pays for the trash pickup. No provision for recycling is provided. We recommend that provisions be made at the development to add screened dumpsters for large items and recycling.

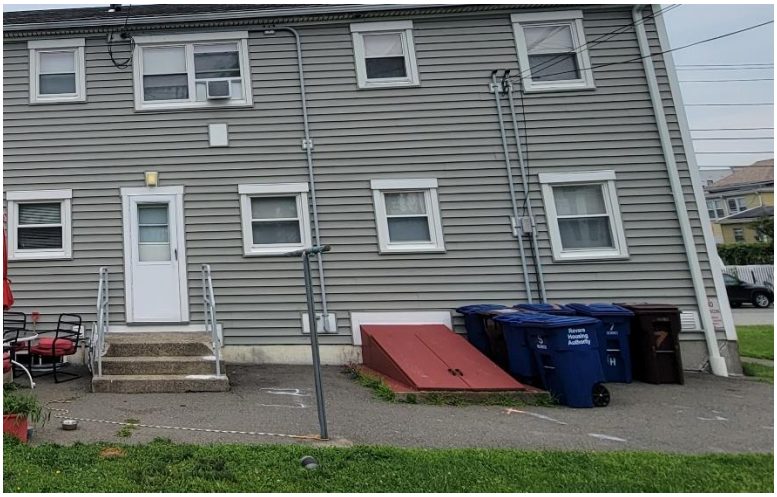

Figure 2.07.01: Waste and trash bins at rear yard

Recommendations for Improvements:

- Trash is picked up at the curb in barrels, but there is no provision for bulk or oversize item pickup. This results in frequent fines to RHA, which pays for the trash pickup. No provision for recycling is provided. Provide central pickup locations and dumpsters for large item and bulk trash pickup. Screen new central pickup locations. Incorporate recycling pickup.

Part 2.08 – Fire Suppression Systems

The 28 buildings on this property house 100 dwelling units and were constructed circa 1952. No fire suppression system was installed at that time.

Code Issues and Triggers

- At the time of construction, it was not code required to provide a fire suppression system for these buildings. Current codes require fire suppression systems for any building containing 3 or more dwelling units. Any major renovation will require installation of a sprinkler system.

Recommendations:

- Provide fire suppression systems.

Requirements:

- If a major renovation occurs provide NFPA-13R compliant fire suppression system.

Part 2.09 – Plumbing Systems

The 28 buildings on this property were constructed circa 1952. Some of the plumbing piping has been replaced with some remaining from original construction. Hot water is provided by a gas fired boiler connected to an indirect fired hot water tank at each building. The boilers and tanks were installed in 2021. Most plumbing fixtures appear original to the buildings and are in poor condition.

Main Service

One 1" water service provides cold water to each building. The 1" service is connected to a water meter in the basement. The cold water service is assumed to be original from 1952.

Waste, Vent and Rain Leaders

Waste piping risers were observed in the basement between dwelling units. The waste piping is cast iron and appears original to the building. It is presumed that all waste piping within the buildings is cast iron and original. There are sections of PVC on the waste risers where standpipes have been installed for washing machines. With the cast iron piping original to construction leaks and repairs of piping over 70 years old will be become more common and potentially at a rapid rate.

Figure 2.09.01: PVC STANDPIPES CONNECTED TO CAST IRON WASTE RISERS WITHIN BASEMENTS

Vent piping is installed within the walls and not visible for observation. What appears to be cast iron vent piping is visible through the roof and is presumed to be of similar age to the waste piping.

The buildings have pitched roofs with gutters and downspouts down to the perimeter. There is no internal storm drain system within the buildings.

Supply Piping

The copper cold water and domestic hot water piping in all buildings appears to be original to the buildings with the exception of new piping provided when new water heating systems were provided. The existing piping is in poor condition. There are visible signs of past leaks where some have been repaired. No domestic hot water recirculation is present. Recirculation was required with the replacement of the domestic water heating equipment in 2021 per the 2018 International Energy Code. The piping up through the building is of unknown age and condition but is assumed to be original. The visible piping in the basement and crawlspaces is insulated with fiberglass insulation however much of it is missing or deteriorated. Areas of newer insulation are present in some locations near the newly replaced heating and hot water systems.

Domestic Water Heating

Each building has a gas fired HTP ELU-150WBN boiler capable of 150,000 BTU/HR input installed in 2021. The boiler provides space heating and domestic hot water serving the dwelling units in each building. The boiler provides hydronic heating of the 80-gallon indirect fired HTP Superstor tank coils. The HTP boiler has an integral pump that supplies water to the indirect fired tank. The boiler and indirect fired tank appear in good condition. When the DHW system was installed in 2021 it was connected to the existing DHW distribution piping which is in poor condition. The copper piping that was installed during the boiler and water tank replacement has not been insulated. Uninsulated domestic hot water piping is a code violation.

Honeywell AM series tempering valves are adjacent to the DHW tanks tempering the hot water temperature to the building. Valves were installed in 2021 and are in good condition.

Figure 2.09.02: INDIRECT FIRED DOMESTIC HOT WATER TANK

Gas Piping

The site has underground gas piping between all buildings. According to the 1987 site utilities drawings there is a gas meter at 905 Broadway that provides gas to half of the site. The gas meter is located on the exterior of the building and is connected to the site gas piping. According to the same drawings there is a gas meter located at 160 Pomona Street adjacent to the old central heating

building that is connected to the site gas piping. The underground gas piping was disconnected and capped in the middle of the site in 1987 to provide two gas services each serving half the site. The age of the site gas piping is unknown but based on review of drawings it was installed prior to 1987 but after 1952. The gas meter at 160 Pomona St was not observed. The meter at 905 Broadway appears to have been recently upgraded. A 1" gas pipe enters each building serving the gas fired boiler and also has a ½" branch to each gas fired cooking range in each kitchen and gas fired dryer in each apartments basement.

Figure 2.09.03: TYPICAL GAS SERVICE ENTRY WITH SHUTOFF VALVE WITHIN BASEMENT

Plumbing Fixtures

Kitchen sinks are stainless steel single bowl with 2 handle faucets that are in poor condition. Some of the kitchen sinks and faucets may be original to construction. As units are turned over some kitchens have received new cabinets and, in some cases, new sinks and sometimes reuse of the existing sink. Different aerators are present in most dwelling units. Traps are of varying

materials and conditions. Shutoff valves are multi-turn and are in poor condition.

Figure 2.09.04: TYPICAL KITCHEN SINK FROM RECENTLY TURNED OVER DWELLING UNIT

Dwelling unit lavatories and faucets in most cases are likely original to the buildings and are in poor condition. Some lavatories were observed stained to a point where it is unlikely, they could be cleaned. Different aerators are present in most dwelling units. Traps are of varying materials and conditions. Shutoff valves are multi-turn and are in poor condition.

Figure 2.09.05: TYPICAL LAVATORY AND TOILET

Dwelling unit toilets are in poor condition and are of varying manufacturers and models. Most toilets are between 2.2 or 1.6 GPF but some may have higher GPF. Shutoff valves are multi-turn and are in poor condition. Toilets are not sealed to the floor.

Dwelling unit bathtubs appear original to the buildings and in poor condition. Some bathtubs were observed stained with worn and failing enamel. Shower valves were primarily a Symmons Temptrol and appeared in poor condition. Different shower heads are present in most dwelling units.

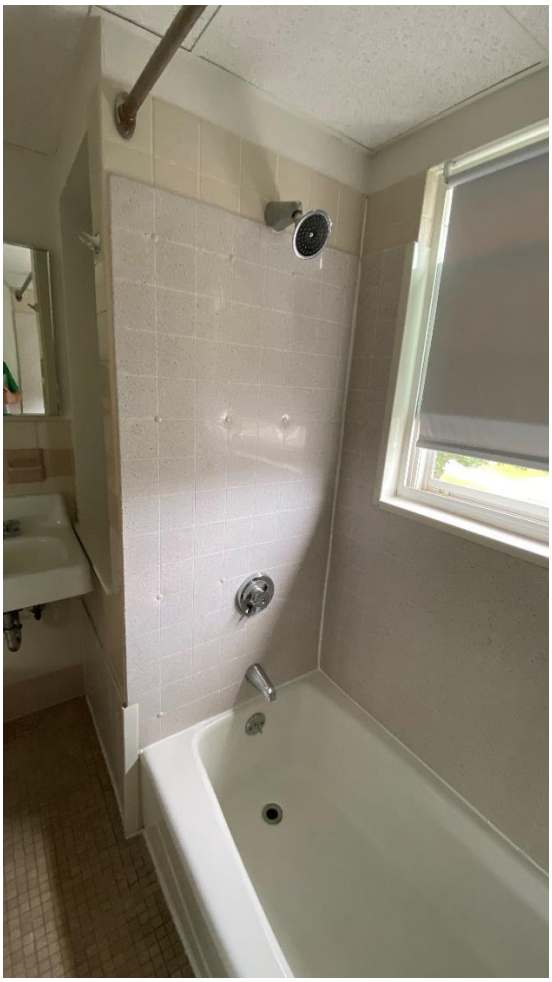

Figure 2.09.06: TYPICAL BATHTUB

Dwelling units have a 2” washing machine standpipe and individual hot and cold shutoff valves for the washing machine. The laundry valves appear to be in poor condition. In some locations, the pitch on washing machine plumbing is not correct. The washing machine standpipes are PVC and were retrofitted into the existing cast iron waste stack. Each standpipe waste pipe has a backwater valve before the waste pipe connects to the stack. The addition of the standpipes was likely in the last 10-20 years.

Figure 2.09.07: TYPICAL WASHING MACHINE CONNECTIONS

All buildings have an exterior hosebibbs at the back of the building. Many hose bibbs were observed broken with missing handles. The RHA indicated the residents are not supposed to use the hose bibbs however continue to do so. The RHA has removed the handles from many hose bibbs to prevent residents from using them. The hose bibbs are multiple different styles having been replaced over the years. Some appear original to the buildings.

Figure 2.09.08: TYPICAL BROKEN HOSEBIBB

18 Rose St has an accessible dwelling unit that was in the process of being turned over. The kitchen sink is a stainless-steel single bowl with a 2-handle paddle faucet. The sink and faucet appear in poor condition. The trap below the kitchen sink is PVC, is in poor condition and does not have pipe protection of the waste and trap piping below the sink.

The bathroom has an accessible lavatory and faucet with waste piping including pipe protection that appears in good condition. The accessible toilet appears relatively new and is sealed to the floor. The seat is currently missing however we understood this to be part of the turnover process. The accessible bathtub has an adjustable handheld shower wand and tub spout. The bathtub, valve, handheld wand and tub spout appear to be in fair condition.

Sump pumps are located in the basement of each building and discharge indirectly to the site storm drainage system exterior of building. RHA indicates they have problems with the site storm drainage system constantly during period of heavy rainfall. It is not clear when the sump pumps were added to the buildings. They are in poor condition.

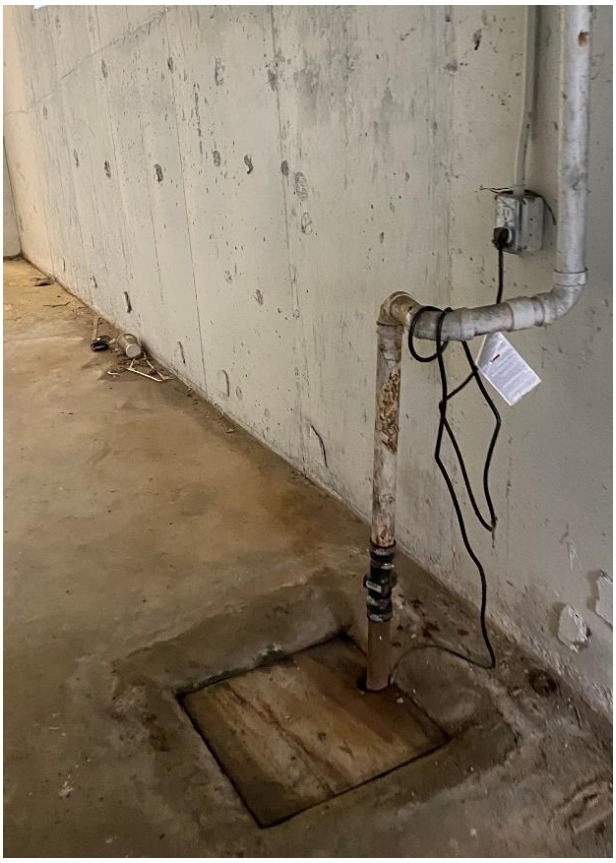

Figure 2.09.09: TYPICAL BASEMENT SUMP PUMP

Code Issues and Triggers

- Uninsulated DHW piping is a code violation. Insulation should be provided where missing.

Requirements:

- Per recent DPU ruling each building must have its own gas meter and service. Housing authorities and building owners are not allowed to serve multiple buildings from one meter without being regulated as a pipeline provider. (Our understanding is that complying with pipeline provider standards are difficult and the authority runs the risk of significant fines. Most authorities appear to be eliminating underground gas piping between buildings and installing multiple gas services instead.) The buildings must be brought into compliance with these requirements as soon as possible or heavy fines may be incurred.

Recommendations:

- Provide replacement of waste piping to avoid future leaks that may become more frequent.

- Provide replacement of cold water and domestic hot water distribution piping to avoid future leaks that may become more frequent. This piping includes insulation.
- Provide DHWR recirculation pump and piping in the basement of the buildings to the risers to meet the IECC.
- As part of all upgrades provide insulation on all exposed piping, valves and pump bodies and equipment subject to energy loss.
- Disconnect underground gas piping between buildings. If gas fired systems are to remain provide new gas services to each building.
- Provide new kitchen sinks and faucets. Provide low flow 1.5 GPM or lower faucets. Consider vandal proof aerators to prevent residents from replacing aerators. Provide new brass traps with cleanouts. Connect to existing waste piping. Provide new shutoff valves.
- Provide new lavatories and faucets. Provide low flow 1.0 GPM or lower faucets. Consider vandal proof aerators to prevent residents from replacing aerators. Provide new chrome plated brass traps. Connect to existing waste piping. Provide new shutoff valves.
- Provide new toilets. Provide low flow 0.8 GPF toilets. Provide new shutoff valves. Seal toilets to the floor to prevent overflows from leaking into dwelling units, the basement and crawlspaces.
- Provide new bathtubs, shower valves and shower heads. Provide low flow 1.5 GPM showerheads. Consider vandal proof showerheads to prevent residents from replacing showerheads.
- Replace exterior hose bibbs with locking cover or hose bibbs that are operable with a key.
- Replace sump pumps in all buildings to ensure reliability. (included in waste piping update)
- Add additional wall brackets to provide proper pitch to washing machine drain piping at approximately 20% of locations.

Part 2.10– HVAC Systems

The 28 buildings on this property were constructed circa 1952. At the time of construction, a central steam heating plant was located at 160 Pomona Street that provided steam to the entire site. The 1987 plans indicate the steam system was disconnected and removed. It is not clear if steam piping remains installed on the site. Gas fired boilers and water tanks were installed in 1987 that were recently replaced in 2021. In 1987 the new boilers were connected to the existing steam risers and radiators in the buildings. No exhaust fans exist within bathrooms.

Dwelling units Systems and Equipment

Cast iron radiators are located within bedrooms, living rooms and kitchens below each window and within bathrooms behind the door. The radiators were previously used for 2 pipe steam and have been converted for hydronic. Of the radiators observed they appear in very poor condition and are presumed to be from the original construction in 1952. According to the 1987 drawings new, larger cast iron radiators were provided in the second floor corner bedrooms to provide additional heat. Many radiators were observed blocked by furniture or with belongings stored on top. With the radiators previously sized for steam they are likely undersized for use with hydronic heat.

Figure 2.10.01: TYPICAL APARTMENT CAST IRON RADIATOR

Each dwelling unit has a thermostat located in the living room that opens and closes a zone valve in the basement to provide space heat to the dwelling unit. When a thermostat calls for heat the main building circulator for the building is enabled. The building circulator is a TACO 007e variable speed pump installed in 2021. Dwelling unit thermostats are non-programmable thermostats by Braeburn. They are in poor condition.

Figure 2.10.02: TYPICAL APARTMENT THERMOSTAT

Air conditioning is provided by tenants in the form of window air conditioners. They are installed and stored by the tenants. The RHA indicates installation by the tenant can lead to broken windows and screens when air conditioners.

Figure 2.10.03: TYPICAL APARTMENT WINDOW AIR CONDITIONERS

Most bathrooms do not contain exhaust fans. Dropped ceilings were observed in bathrooms. The ceiling tiles associated with dropped ceiling are a soft material and may generate mold growth without proper bathroom exhaust. With no bathroom exhaust fans there is no ventilation of dwelling units and the dwelling units are relying on natural ventilation with the operable windows. Bathroom exhaust fans have been provided in 18 and 20 Rose Street bathrooms and are ducted to the exterior. The fans are in fair condition.

Common Area Systems and Equipment:

Each dwelling unit within the buildings has individual entrances with no common areas interior of the building. There are no common systems except at 18 and 20 Rose St where a common hallway between dwelling units has a cabinet convector with a zone valve and Honeywell T87 thermostat. The cabinet convector and thermostat are in fair condition.

Boilers and Accessories:

Each building has a gas fired HTP ELU-150WBN boiler capable of 150,000 BTU/HR input and they were installed in 2021. The boiler provides space heating and domestic hot water serving the dwelling units in each building. The boiler provides hydronic heating of the 80-gallon indirect fired HTP Superstor tank coils. The HTP boiler has an integral pump that supplies water to the indirect fired tank. The boiler and indirect fired tank appear in good condition.

Figure 2.10.04: TYPICAL BUILDING BOILER AND HOT WATER TANK

The boiler system piping is copper with a 6-gallon expansion tank, Fernox TF-1 inline magnetic separator, Spirotherm

junior air separator and TACO 007e space heat pump for the entire building. The boilers are piped to the exterior with PVC for combustion air and CPVC for exhaust venting. Boiler condensate drains to a combination neutralizer and pump that pumps treated boiler condensate to the waste system. The neutralizing reservoirs appeared full of condensate in most cases with no neutralizing media.

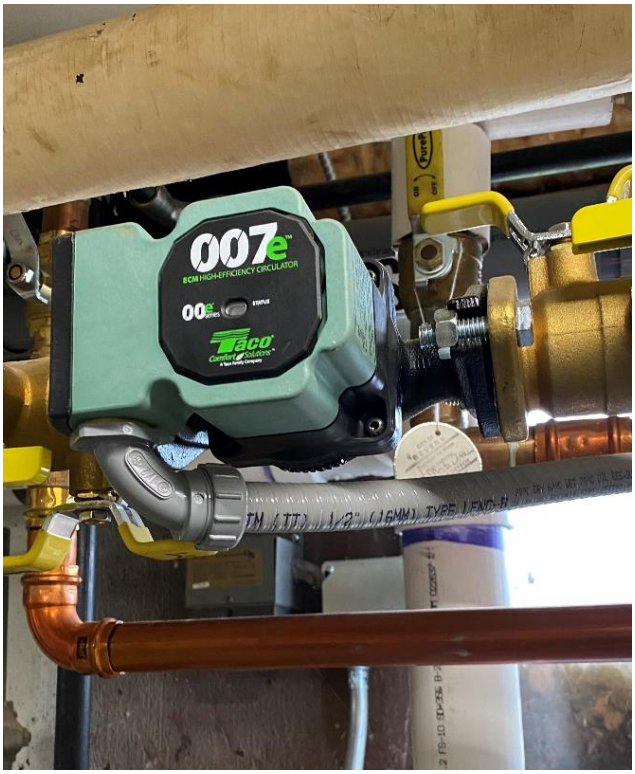

Figure 2.10.05: TYPICAL BUILDING SPACE HEAT PUMP

Figure 2.10.06: TYPICAL BOILER EXHAUST AND COMBUSTION AIR PIPING

When the boiler systems were replaced in 1987 they were connected to the existing steel steam heating distribution piping. During the 2021 heating plant replacement the space heat piping was connected to the same existing piping. The existing heating distribution piping is located in the ceiling of the basement with risers exposed in the living room and kitchen to serve the radiators at the second floor. The steel steam heating distribution piping is believed to be original to the building circa 1952. The piping appears to be in very poor condition. In speaking with the RHA the piping remains untouched with the exception of repairs as needed.

Copper to steel connections are observed at the location where the boiler system has been connected to the building distribution piping. With the boiler hydronic piping system primarily constructed of copper and the building distribution system steel dissimilar metals will corrode, provide black water conditions, leaks will occur and potential debris will break off from inside the piping and clog the boiler aluminum heat exchanger. The boilers heat exchanger has narrow passageways and when clogged and heated the debris will weld itself to the heat exchanger reducing the output of the heat exchanger and lead to potential cracking of the heat exchanger in the future.

The piping at the ceiling is insulated. It was unclear if the insulation has asbestos containing material. With the piping original to construction leaks and repairs of piping over 60 years old will be become more common potentially at a rapid rate.

Insulation is missing on all space heating piping at the boilers. It does not appear the insulation was provided during the 2021 boiler installation. The lack of insulation in these areas results in energy generated for the dwelling units and domestic hot water being delivered to the basement rather than dwelling units. This also increased the basement temperature. The lack of insulation was a code violation when the system was installed in 2021.

Basements have been provided with Humidex air extraction systems ducted to the exterior to help reduce humidity levels in the basement. The air extraction systems are fans with low intake grilles and high discharge ductwork to the exterior. These fans were operating during our visit and are loud. We understand the fans operate continuously.

Figure 2.10.07: TYPICAL BASEMENT HUMIDEX FAN

Requirements:

- Provide insulation on all space heat piping as required by code. Included in HVAC system update
- Provide dielectric unions at all dissimilar metal connections as required by code. Include in HVAC system update.

Recommendations:

- Provide replacement of radiators with properly sized radiation in their entirety. Radiators are in very poor condition. Instruct residents not to block radiators with furniture belongings. This reduces the output of the radiation. Replace radiators with properly sized radiation. Combine with distribution piping and insulation work. Include in HVAC system update.
- Provide new programmable thermostats required per code. Include in HVAC system update.
- No central air conditioning system is provided. Gas-fired heating system is archaic. Convert to electric ASHPs for heating and cooling.
- Exhaust fans that exhaust to the exterior should be provided in all apartment bathrooms. We recommend exhaust fans are set to continuous operation with a boost to full speed with the light switch. Combine with other bath improvement projects.
- Consider adding DHW tank insulating blankets on tanks to decrease the energy loss from the tank to the mechanical room. Perform routine annual maintenance on the water heater tanks including drain down and replacing anode rods as needed.
- Provide insulation on all exposed piping, valves, pump bodies, air separators and equipment subject to energy loss.
- Provide treatment of the water to prevent corrosion and failure of the piping and equipment.
- Remove leaking distribution piping system. Include in HVAC system update.
- Consider commercial dehumidifiers drained or pumped to the ejector pumps within the basement. The existing air extraction system does not provide a refrigeration cycle to mechanically remove moisture from the room.

Part 2.11 – Electrical

Power Distribution

The site is fed overhead via utility poles. The site overhead distribution is primary metered at the first utility pole on the site. Each building is fed via an aerial feeder drop, which drops down to a panelboard in one of the dwelling unit basements. The main circuit breaker at the panelboard in 18-24 Rose Street, a four-unit building with ADA units, was observed to be rated 200A (See Figure 2.11.01). In each building this panelboard feeds each dwelling unit loadcenters and the building's heating & hot water equipment and other common loads.

Figure 2.11.01: 18-24 Rose Street house panel

The dwelling unit loadcenters are located in the basement of each unit, except 18-24 Rose Street where the loadcenters are located in the unit.

The dwelling unit loadcenters are General Electric, with the exception of the dwelling units at 18-24 Rose Street which has a Challenger loadcenters.

Standby and Emergency Power Supply Systems

N/A except for 18-24 Rose Street.

At 18-24 Rose Street, the emergency egress lighting battery units (EBU) and incandescent remote heads appear to be original to the ADA conversion. The life expectancy of an EBU battery is two to four years.

Common Areas

N/A except 18-24 Rose Street.

At 18-24 Rose Street, receptacles are located throughout the basement.

Stairwells

N/A except 18-24 Rose Street.

At 18-24 Rose Street, no receptacles were observed in the stairwells.

Lighting

The lighting appears to have been recently replaced with LED fixtures or retrofit kits as part of a utility energy saving audit initiative.

Apartments

The apartment loadcenters (See figure 2.11.02) are 16 circuit General Electric, 100A main lug only loadcenters with up to twelve (12) 15 and 20 ampere 1 pole circuit breakers. Some units also have a 30A/2P circuit breaker for an electric dryer.

Figure 2.11.02: Loadcenter at 33 Hutchenson Street

There is no dedicated bathroom circuit.

There are no arc-fault circuit-interrupting (AFCI) protected circuit breakers in the loadcenters.

Each apartment is provided with a dedicated laundry circuit The ranges are gas fired.

Dwelling unit lighting consists of:

- A linear surface mounted LED fixture in the kitchen;
- A surface mount LED cloud fixture in the bathroom;
- A surface mount LED cloud fixture in the hallway;

The living room and bedrooms have switched receptacles. Some units have tenant installed fixtures/ceiling fans.

Receptacle spacing within the apartments, for the most part, meets current code, a couple exceptions were noted where the spacing exceeds 12'.

The same condition exists with the kitchen counter receptacle spacing, where in a few instances, the spacing exceeds 2' from a kitchen counter receptacle.

Some units have electric dryer receptacle circuits installed.

Recommendations:

- Item 1 – Upgrade dwelling unit & building feeders and distribution equipment.
  If electrification of the site is desired, the dwelling unit & building feeders and distribution equipment would need to be evaluated to confirm if they are sufficiently sized to power electric ranges, electric dryers, and electric heat/air conditioning. Based on a recent similar project, with four multi-bedroom dwelling unit buildings, the calculations indicated that a 100 ampere dwelling unit feeder and a 200 ampere building feeder would not be adequate for the added electrical loads. Those calculations required a minimum 125 ampere dwelling unit feeders and 250 ampere building feeder.
- Item 2 – Provide SPD at dwelling unit feeders.

  Per the MEC, feeders that serve dwelling units are required to have an SPD. An SPD should be provided in the house/distribution panelboards.

- Item 3 - Relocate building feeder entrance/distribution/house power equipment to outside building, perhaps in a dog house.
  It could be argued that the feeder entrance/distribution equipment is located in a non-readily accessible location (i.e., a tenant space requiring notice to access).

- Item 4 – Replace all electrical wiring with code compliant wiring and devices as part of a comprehensive renovation addressing the following issues:

  Add ceiling mounted LED light fixtures to living room and bedrooms.
  Replace emergency egress lighting battery units, remote heads and exit signs with new LED units.

  Provide AFCI protection for all new or extended 20A branch circuits within the dwelling units.

Provide a code compliant dedicated bathroom branch circuit.

Add a dedicated 20A AFCI protected branch circuit to the bathroom, along with a duplex GFCI-protected receptacle.

Correct Massachusetts Electrical Code (MEC) receptacle code spacing violations.

Add receptacles to the following locations:

- Where a wall space[1] is more than 6' from a receptacle; o Where a wall space is 24" or greater and does not have a receptacle;

- Where a wall line of a kitchen counter is more than 24" from a receptacle.

Add GFCI protection for refrigerator receptacle.

The circuit serving the refrigerator receptacle should be AFCI/GFCI protected if located within 6' of the edge of the sink.

Provide GFCI protection for range receptacle.

[1] Wall space as define by the MEC is any unbroken wall 2' or more in width along the floor line (including corners) by openings, doorways, fireplaces, and fixed appliances.

[2] MEC Rule 11 addresses the issue of incompatibility of certain equipment with GFCI protection, until a solution is provided by the equipment manufacturer. This equipment may be allowed to not be GFCI protected with provisions for future correction, requiring local wiring inspector approval.

Part 2.12 – Communications Systems

Telephone and Cable Television (CATV)

Telephone and cable television services are provided overhead via utility poles or satellite dishes. The Revere HA has recently completed a siding project at the site cleaning up the communications service drops and wiring on the exterior of the buildings.

Figure 2.12.01: Power and communications service entrance drops

One telephone jack was observed in the living room. CATV has been added through the years, based on tenants needs. Coaxial cables are run along walls to desired locations.

Intercom/Doorbell

The dwelling units are provided with doorbells with pushbuttons at the front door only.

18-24 Rose Street has a traditional push button intercom system with an entry unit located outside the front door and a three-button apartment unit located in each dwelling unit.

No issues were observed with these systems.

Emergency Communications Systems

N/A

Video Surveillance System

No video surveillance system was observed at this site.

Recommendations:

• Item 1 – Replace communication system infrastructure with new.

The existing and abandoned communications systems (telephone and cable TV) should be removed and replaced with new. This should include demolition of all the abandoned cables and outlets throughout the building. The new communications infrastructure should include:

- A dedicated space for local service provider (LSP) entry equipment and network interface components (NICs);
- A media cabinet in each dwelling unit with a coaxial and category 6.

  (CAT6) cable homerun back to the NIC; o CATV jack (single gang plate with Type F connector) in each bedroom and living room with wiring back to media cabinet;
- Telephone jack (single gang plate with (1) RJ45 jack) in each bedroom and living room with wiring back to media cabinet

• Item 2 – Provide new PoE enterprise video surveillance system to monitor potential troubled areas such as pathways and parking areas.

This measure should be considered if desired by the RHA

Part 2.13 – Fire Alarm System

M.G.L. c. 148, s. 26C requires any building with six or more dwelling units to have a fire detection and alarm system in the common areas of the building. The buildings at this development are comprised of 2-4 dwelling units per building with no common areas, except for 18-24 Rose Street which has four dwelling units with common stairs and basement.

Fire protection is provided via individual household fire warning systems in the dwelling units, comprised of interconnected smoke alarms and battery-operated carbon monoxide (CO) alarms on each level of the dwelling unit. Current code however requires smoke alarms on each level, outside of sleeping areas and inside of each bedroom.

At 18-24 Rose Street in addition to the dwelling unit household fire warning systems and CO alarms, there is a fire alarm system that provides automatic detection and notification in the common areas of the building. While not required by code, local fire departments are hesitant to reduce the level of fire protection that is existing. This system should be maintained.

Requirements:

Item 1 – Add smoke alarms to bedrooms.

The bedroom smoke alarms should be interconnected with the existing interconnected smoke alarms on each level of the dwelling unit.

Recommendations:

- Item 1 – Replace existing smoke alarms (See Figure 2.13.01) with new.

Smoke alarms should be replaced every 10 years. When the smoke alarms are added to the bedrooms, the existing smoke alarms should be replaced so that all the devices are of the same year and manufacturer/compatible with each other.

- Item 2 – At 18-24 Rose Street, replace fire alarm system that serves common areas.

The fire alarm system was installed when the building was converted to ADA units. The existing FireLite MS-10UD 10 zone conventional fire alarm control panel is still manufactured and supported by the manufacturer; however, the peripheral devices appear dated and near end of life (See Figure 2.13.02).

At a minimum the smoke detectors and notification devices should be replaced with new.

New devices should be added as required in accordance with 527 CMR 1, The Massachusetts Comprehensive Safety Code, 780 CMR, The Massachusetts Building Code and all associated referenced codes.

Though not required by code a cellular dialer with central station monitoring should be provided to at a minimum provide owner property protection.

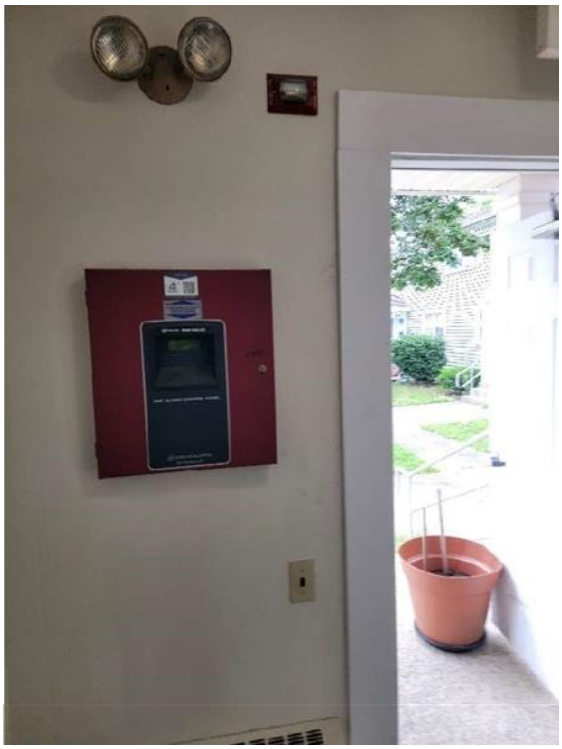

Figure 2.13.01: Existing firelite MS-10UD FACP and AV device above at 18-24 Rose Street

Figure 2.13.02: Existing system smoke detector at 18-24 Rose Street

Part 2.14 – Energy Conservation

There are some opportunities to improve the property's energy efficiency. Some of the items in the requirements below are going to be triggered when substantial renovations take place. The following list of recommendations includes energy efficiency recommendations mentioned elsewhere in this report.

Requirements*:*

- Install new radiators and properly sized distribution piping with insulation.
- When kitchens and baths are modernized, install low-water use fixtures.
- When kitchen appliances are replaced, install Energy-Star rated appliances.
- Install efficient aerators on all plumbing fixtures as they are replaced
- Install 0.8 gpf toilets as they are replaced.
- Replace old exterior and interior lighting fixtures with new energy efficient LED models.

Recommendations for Improvements (Not Required):

- Add energy recovery ventilators to building exhaust ductwork.
- Install occupancy sensors on lighting throughout common entries and stairs.
- Move to all electric means of heating and cooling including domestic hot water this may also require a larger electrical service.
- Replace inefficient window air conditioners with high efficiency central heat pumps
- Perform a solar study to identify potential use of photovoltaic panels on the sloped roofs.
- Provide electric vehicle changing stations in the parking lots for use by residents.

Part 2.15 – Hazardous Materials

A Hazardous Materials Survey was performed by UEC in August-September of 2023. The report found asbestos-containing sealant in unit door frame caulking. A copy of the hazmat report is appended to the appendix of this needs assessment.

[redacted]

14-1 Priority 1 — Part 3 - Prioritized Capital Needs

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
17	14-1	3 Electrical	Exposed romex cable in basement.	Cover romex or install into conduit. (Included in larger electrical upgrade.)	1	$0
21	14-1	3 Electrical	Multiple electrical code violations are present in units: Insufficient quantity of receptacles in bedrooms. Bedrooms and all 2nd floor rooms are all 15A circuits (no 20A circuits except for baths). Bath fans are original wiring. Bare outlets observed in 2nd floor bedrooms (cloth wire visible in wall). No dedicated circuit provided for air conditioning units. Kitchens and baths have GFCI (but not arc-fault-protected) receptacles. No GFCI receptacles are provided at building exteriors.	Replace all electrical wiring with code compliant wiring and devices as part of a comprehensive renovation.	1	$1,013,800
22	14-1	3 Electrical	Main electrical service and unit disconnects are located within a dwelling unit basement, and undersized.	As part of building electrical upgrade, relocate electric service disconnects to the exterior. This work will be required by a substantial modernization.	1	$309,660
25	14-1	3 Electrical	Water and heating pipes pass above electrical panels	Reroute piping to avoid panel clearances. This item to be combined with water system upgrades recommended below.	1	$23,296
123	14-1	3 Electrical	There are no smoke alarms in bedrooms, a code violation.	Add smoke alarms to bedrooms.	1	$207,360
126	14-1	3 Electrical	Smoke alarms to be replaced every 10 years.	Replace existing smoke alarms when adding smoke alarms to bedrooms.	1	$70,200
128	14-1	3 Electrical	Bathrooms do not appear to have a dedicated branch circuit.	Any bathroom upgrade should include the addition of a dedicated bathroom branch circuit. (Price included with other electrical update.)	1	$0
313	14-1	4 Common Interior	Common stairs at ADA unit buildings lack handrail extensions, an accessibility code violation.	Replace handrails at stairs.	1	$3,242
315	14-1	4 Common Interior	Some units share a common basement vestibule leading to a shared bulkhead door. These vestibules are not fire separated from the unit interior, a code violation.	Replace unrated basement doors, install GWB separation assemblies, and firestop openings.	1	$78,400
32	14-1	4 Common Interior	Peeling/delaminating GWB ceiling finish at common basement near boiler. This is a singular condition.	Repair ceiling to restore fire rating.	1	$800
35	14-1	4 Common Interior	Floor/ceiling assembly between common basement and first floor is uninsulated and unprotected with GWB. (This occurs in a limited number of locations and areas.)	Insulate and install Type C GWB membrane for code compliance. This work will be required in any substantial modernization.	1	$25,350
275	14-1	4 Common Interior	Buildings lack radon ventilation	Prep all basement slabs for radon ventilation.	1	$135,240
316	14-1	7 Bldg Envelope	There is minor distress at brick masonry above window and door heads: minor cracking and evidence of past repointing and repairs.	This appears to be related to building movement, although sagging lintels may be contributing. See other recommendations to address settlement and address lintel corrosion. Perform minor repointing at cracks and open joints as needed. Price assumes 20% of lintels need repair.	1	$18,480
9	14-1	7 Bldg Envelope	Windows are at least 14 years old; some are difficult to operate. Residents complain that windows are difficult to open and close.	Perform minor tune-up on all windows as needed: replace balances, IG units where fogged, check operation. See related recommendation to replace all windows in about 10 years.	1	$35,850

14-1 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
281	14-1	7 Bldg Envelope	Unit entry doors are aging; appx 25% are in poor condition. Hardware is not accessible, gasketing has failed, and thresholds are damaged or rotting. Perimeter sealants are ACM at some locations.	Replace appx 25% of unit entry doors and hardware now. See related recommendations to paint remaining 75% of doors and replace in 10 years. Price includes perimeter sealant abatement where required and storm door replacement.	1	$307,350
10	14-1	7 Bldg Envelope	Unit entry doors are showing wear and aging; most are in need of paint.	Paint unit exterior doors. See related recommendation to replace 25% of unit exterior doors.	1	$32,000
16	14-1	7 Bldg Envelope	Groundwater is infiltrating at basement walls and through cracks in floor slabs, causing basement flooding at multiple buildings..	Ensure positive drainage away from structure at grade. Connect downspouts to underground piping to leaching galleys below basement elevation. Injection grout cracks at basement slabs. Install drainage mat and waterproofing at foundation walls where flooding is most severe.	1	$1,008,000
38	14-1	7 Bldg Envelope	Mold/water damage on entry canopy due to undrained valley.	Rebuild all double canopies to have a single hipped roof with gutter and downspout	1	$110,600
39	14-1	7 Bldg Envelope	Porch columns are damaged and rotting at bases. Some have already been replaced with PVC column covers.	Replace deteriorating and damaged porch columns with PVC column covers. Assume 25% need replacement	1	$32,400
45	14-1	7 Bldg Envelope	Some storm doors are in poor condition, improperly hung (not square); wood door skirt is deteriorated. Perimeter sealants are ACM at some locations.	Replace 25% of storm doors now. Abate ACM sealants where required. Install new PVC door trim and skirtboard. See related recommendations.	1	$44,600
450	14-1	7 Bldg Envelope	Storm doors will need to be removed when unit entry doors are replaced; many are in poor condition and not worth salvaging.	Replace 25% of storm doors when unit entry doors are replaced. Cost included with unit entry door replacement.	1	$0
47	14-1	7 Bldg Envelope	Window wells are a maintenance issue. Many are filled with soil and debris above sill of window and are leaking.	Clean basement window wells. Remove debris, repair areas of water damage, and seal all joints.	1	$48,600
48	14-1	7 Bldg Envelope	Downspouts empty against brick facade and foundation. Biological growth (algae) is present, brick and concrete is spalling	Extend downspout to grade and direct outlet away from building into underground drainage. (Cost included with related recommendation.)	1	$0
286	14-1	7 Bldg Envelope	Gutters and rain leaders were recently replaced and are in generally good condition. We noted a handful of locations where leaders are damaged or improperly secured to the buildings.	Repair and resecure rain leaders as required. Price assumes 10% require some work.	1	$10,648
	14-1	7 Bldg Envelope	Some basement bulkheads are in poor condition. A few have already been replaced.	Replace damaged, deteriorating, or inoperative bulkhead doors. Price assumes 10% replacement.	1	$21,300
166	14-1	8 HVAC	No central air conditioning system is provided. Gas-fired heating system is archaic.	Convert to electric ASHPs for heating and cooling.	1	$2,760,000
161	14-1	8 HVAC	Apartments thermostats are non-programmable thermostats by Braeburn. They are in poor condition.	Provide new programmable thermostats required per code. (Included in HVAC system update.)	1	$0
162	14-1	8 HVAC	Insulation is missing at all heating piping in units. Exposed piping is a potential burn hazard.	Provide insulation on all exposed piping, valves, and equipment subject to energy loss. Price included with other recommendation.	1	$0
163	14-1	8 HVAC	Copper to steel connections are present where the boiler system has been connected to the building distribution piping. Dissimilar metals will corrode.	Provide treatment of the water to prevent corrosion and failure of the piping and equipment.	1	$5,600

14-1 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
164	14-1	8 HVAC	Heating distribution piping is original to the building and was intended for a steam heating system. The piping is in very poor condition and has a history of increasingly frequent breaks and leaks.	Remove leaking distribution piping system. (Included in HVAC system update.)	1	$0
165	14-1	8 HVAC	Heating is provided by cast iron radiators in very poor condition. The radiators are original to the buildings; they were previously used for 2 pipe steam and have been converted for hydronic. With the radiators previously sized for steam they are undersized for use with hydronic heat. Some piping is rotted out.	Replace radiators with properly sized radiation. Combine with distribution piping and insulation work. (Included in HVAC system update.)	1	$0
167	14-1	8 HVAC	No bathroom exhaust fans are present, a code violation.	Exhaust fans that exhaust to the exterior should be provided in all apartment bathrooms. We recommend exhaust fans are set to continuous operation with a boost to full speed with the light switch. Combine with other bath improvement projects.	1	$240,000
301	14-1	9 Unit Interior	Kitchen ceilings are damaged by plumbing and roof leaks above. Many have been extensively patched in past. Typical in nearly all units.	Repair and replace kitchen ceilings throughout.	1	$244,125
302	14-1	9 Unit Interior	Wood stair treads are worn and damaged in about half of all units. Some treads have been replaced.	Replace any damaged treads and cover with resilient treads. Perform this work on appx 50% of stairs now; install resilient treads in remaining units as unit turnover work.	1	$123,525
303	14-1	9 Unit Interior	Appx 50% of baths are in poor or extremely poor condition and require comprehensive modernization to maintain habitability. Finishes, fixtures, and accessories are damaged, deteriorated, or missing.	Comprehensively modernize 50% of unit baths now. Includes replacement of rough plumbing and electrical and all finishes. See related recommendations.	1	$1,232,950
306	14-1	9 Unit Interior	Appx 50% of unit kitchens are in poor or extremely poor condition and require comprehensive modernization to maintain habitability.	Comprehensively modernize 50% of unit kitchens now. Includes replacement of rough plumbing and all finishes. See related recommendations.	1	$1,328,650
309	14-1	9 Unit Interior	Bath plumbing fixtures and fittings are aging. Most lavatories and tubs are original to structure; many are stained and rusting out at drain fittings. Tub finish is poor; many have been refinished previously. Drain assemblies are broken at many locations.	Replace plumbing fixtures and fittings as part of bath mod project (cost included with other recommendations). Perform minor repairs (i.e., replacing drain assemblies, refinishing scratched tubs) on baths not scheduled for comprehensive modernization. Price is an allowance per bath for 50% of units.	1	$75,000
310	14-1	9 Unit Interior	Interior walls and ceilings are GWB in poor or very poor condition in about 25% of units; fair condition in most of the rest. Surfaces exhibit cracking from building movement, water damage from past plumbing and roof leaks, impacts, and general aging.	Perform GWB patching and repairs as required. About 25% of units require significant finish repair work now. Bath and kitchen finishes are included in other recommendations. Will require relocating residents.	1	$237,600
311	14-1	9 Unit Interior	Unit interior doors, frames, and hardware are original to the property and well beyond their useful life. Many are sagging or wracked by settlement and do not close properly or have been shaved down to fit. About 20% are poor or damaged. Remaining 80% should be replaced in coming years.	Replace 20% of unit interior doors, frames and hardware now; replace the rest in 7 to 10 years. Cost includes finish patching after frame replacement.	1	$208,012
312	14-1	9 Unit Interior	Window roller shades are in poor or very poor condition in most units. Some have been replaced on unit turnover.	Replace appx 75% of roller shades now and the rest on unit turnover.	1	$145,647

14-1 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
314	14-1	9 Unit Interior	Interior unit entry doors at buildings with common entry stairs lack ADA hardware, a code violation.	Replace non-ADA door knobs with lever sets at 5 units.	1	$2,029
320	14-1	9 Unit Interior	Unit interiors will require repainting after other work is performed.	Repaint unit interiors; price includes surface preparation and partial priming of disturbed surfaces and 2 finish coats.	1	$349,692
329	14-1	9 Unit Interior	Rough plumbing piping replacement will require cutting and patching of wet walls in unit kitchens not scheduled for comprehensive modernization now.	Cut and patch kitchen wet wall finishes as required to access in-wall piping for replacement. May require cabinet removal.	1	$80,500
330	14-1	9 Unit Interior	Rough plumbing piping replacement will require cutting and patching of wet walls in unit baths not scheduled for comprehensive modernization now.	Cut and patch wet wall finishes in baths as required for rough piping replacement. Price includes wall tile replacement.	1	$120,750
331	14-1	9 Unit Interior	Wood floors need repair and refinishing	Repair damaged wood floors and refinish in 50% of units	1	$386,400
280	14-1	9 Unit Interior	All buildings exhibit finish cracking throughout interior finishes that is consistent with building settlement. Many door and window openings are visibly out of square; some do not operate properly	Repair minor finish damage and cracking throughout development. Replace wracked doors and windows that do not operate properly. See related recommendation for structural repairs and underpinning to address movement. Price is an allowance for repairs.	1	$760,320
11	14-1	9 Unit Interior	Ceramic tile bathroom floor is not waterproof; the wood substrate is warping and damaged.	Remove and replace the tile, subfloor, and repair water damage to joists. Replace the subfloor with Durock, waterproofing, and ceramic tile. Price assumes 25% of units require this work in next 3 years; combine with other bath improvements.	1	$480,000
12	14-1	9 Unit Interior	Ceramic tile is popping from tub surrounds at about 1/3 of units.	Provide solid surface tub surrounds where replacement has not already occurred. See related recommendation to modernize baths; cost is for other baths.	1	$30,720
13	14-1	9 Unit Interior	Accessible Unit Configuration does not meet MAAB Requirements. Bedrooms and kitchens are too small to provide required maneuvering clearances. There is no living space available to enlarge the unit.	Provide exterior additions at 5 ADA units to create more interior living area. Reconfigure unit interior as required.	1	$750,000
20	14-1	9 Unit Interior	Acoustic ceiling tile has been installed in a few bathrooms; this is a sanitary code violation (not cleanable).	Remove suspended ceiling and repair or replace original GWB ceiling. Price assumes 10% of units require this work in next 3 years; combine with other bath improvements.	1	$8,400
24	14-1	9 Unit Interior	Stair landing framing and wood flooring is loose (moves underfoot)	Reframe landing and reset hardwood flooring. Assumed to occur in 20% of stairs	1	$84,480
26	14-1	9 Unit Interior	Tile is failing and coming loose at bathroom window sill	Perform tile repairs as needed. Replace with solid surface sill as part of window replacement project. (Price is for minor repairs, assuming 50% need repairs.)	1	$39,600
29	14-1	9 Unit Interior	Closet doors are missing at some bedrooms.	Install new bifold closet doors where missing. Price assumes 10% of closet doors are missing.	1	$23,016
31	14-1	9 Unit Interior	Penetrations in basement through a rated firewall were not properly firestopped.	Install firestopping at all open pipe penetrations in basement firewalls. Price is an allowance per building for repairs.	1	$14,000
465	14-1	9 Unit Interior	Offsets in vertical fire separations between townhouse units are not fire rated at basement ceilings. This is a code violation.	Install firestopping and GWB ceilings at offset areas.	1	$242,550
36	14-1	9 Unit Interior	VCT is in generally poor condition in kitchens; tile is typically broken, worn and buckled throughout the development.	Replace VCT flooring in all kitchens. See related recommendations to modernize kitchens.	1	$105,600

14-1 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
37	14-1	9 Unit Interior	ADA bathrooms are aging and have several issues that need to be resolved. There are numerous adhesion and wear issues at the rubber tile flooring. Bathroom mirrors are delaminating. Bathroom doors are damaged/delaminating.	Replace fixtures, doors, and refresh all finishes. (part of a comprehensive ADA bathroom reconfiguration).	1	$0
28	14-1	9 Unit Interior	Rear unit egress door is too narrow (27" wide); this is a code violation. (Appears to be a singular condition.)	Demo for larger opening and install appropriately sized door and frame. This work may be required by a substantial alteration.	1	$4,800
127	14-1	Electrical	Incandescent emergency egress lighting is well beyond useful life and in poor condition.	Replace with new LED emergency egress lighting at all locations.	1	$20,160
125	14-1	Fire Protection	Most buildings lack fire alarms as required by code. Fire alarm systems in 2 buildings are obsolete.	Install new addressable fire alarm systems throughout. This work will be required by a substantial alteration. Includes detectors in crawl spaces.	1	$742,854
146	14-1	Fire Protection	No fire suppression systems are present. Current codes require fire suppression systems for the buildings.	Substantial renovation will trigger the requirement for fire suppression in buildings with 3 or more apartments.	1	$1,174,656
19	14-1	Plumbing	Reverse pitch on washing machine/upstairs plumbing	Add additional wall bracket to provide proper pitch. Assumes 20% of units will require work.	1	$6,000
148	14-1	Plumbing	Copper domestic supply piping is original to the buildings; it is well beyond useful life and is in poor condition. Development suffers from increasingly frequent pinhole leaks in copper.	Replace copper distribution piping. Combine with bath and kitchen improvements.	1	$1,075,200
149	14-1	Plumbing	No domestic hot water recirculation system is present in the buildings. Recirculation is required by code.	Provide DHWR recirculation pump and piping in the basement of the buildings to the risers to meet code. This work will be required by a substantial alteration.	1	$316,032
152	14-1	Plumbing	Many kitchen sinks and faucets are in poor condition and show their age. Traps are of varying materials and conditions. Shutoff valves are multi-turn and are in poor condition. Breakages and clogs are frequent	Provide new kitchen sinks and faucets and low flow 1.5 GPM faucets. Price includes new kitchen countertops, traps, and shutoff valves. (Combine this work with other kitchen improvements.)	1	$0
153	14-1	Plumbing	Lavatories are in poor condition and show their age. Some lavatories were observed stained. Some faucets were observed missing handles. Shutoff valves are multi-turn and are in very poor condition; many are frozen.	Provide new lavatories and faucets with low flow 1.0 GPM faucets. (Combine this work with other bath improvements.)	1	$0
154	14-1	Plumbing	Toilets are in fair to poor condition and are varying manufacturers. Most toilets are between 2.2 or 1.6 GPF. Shutoff valves are multi-turn and are in poor condition.	Provide new low flow 0.8 GPF toilets. (Combine this work with other bath improvements.)	1	$0
155	14-1	Plumbing	Bathtubs are in poor condition and show their age. Some batl	Provide new bathtubs, shower valves and low flow 1.5 GPM s	1	$0
156	14-1	Plumbing	The waste piping is cast iron, original to the building (more than 70 years old), and in very poor condition. Waste piping is rotting, with frequent breakages.	Replace all waste piping. Combine with kitchen and bath improvements	1	$229,840
1	14-1	Site	Underground gas piping is black steel in very poor condition: sections of pipe have experienced leaks and failures; multiple repairs have been performed. Master metering is not affordable to the Authority due to piping inspection requirements.	Replace master metered deteriorated piping system with individual metered polyethylene piping service to each building.	1	$221,760
2	14-1	Site	Vitreous clay sewer laterals are collapsing and backing up. Videoscoping shows obstruction and settlement in piping at multiple locations.	VC piping is well beyond useful life. Replace underground sewer laterals to each building with PVC. See related recommendation to replace manholes.	1	$489,440

14-1 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
3	14-1	Site	Sewer manholes are cracking and experiencing leaks. Several manholes have already been replaced and others have deteriorating sumps, leaks, and are silting up. Manhole outside of 7 Hutchinson is broken.	Replace all original sewer manholes; combine with sewer line replacement.	1	$79,200
43	14-1	Site	Clothesline rails are too low (eye/head injury hazard and ADA violation).	Replace with new, taller clothesline framing and lines.	1	$183,280
46	14-1	Structural	Broken concrete landing directs water toward face of building behind flashing	Replace concrete stoops as recommended above. Pitch away from structure. Install self-adhered membrane behind PVC trim and seal	1	$20,160
4	14-1	Structure	All entry stairs and handrails are deteriorating. Stairs have excessive cracking and spalling, largely due to the rusting and rust jacking of the rail posts that are set too close to the stoop and stair edge. Height of entry at Unit 22 requires guards (not present). Height difference in risers at most stairs exceeds code allowance.	Replace all concrete entry stairs and handrails with color galv rails set in sleeves that are more than 3" from the edge of the concrete; provide guards where required.	1	$967,680
5	14-1	Structure	All buildings have foundation cracks; many appear to be caused by settlement. Cracks that have been repaired and sealed in the past few years are re-opening. Apparent cold joints in foundation walls cracking.	Repair and patch minor foundation damage. See related recommendation for major repairs at other locations.	1	$69,600
6	14-1	Structure	We observed four major foundation cracks that appear to be caused by settlement. Foundations are on bell caissons, indicating poor bearing conditions. Interior cracking throughout the development.	Underpin existing foundations to prevent further settlement. Price assumes 7 locations (25% of buildings).	1	$265,230
7	14-1	Structure	Buildings have suffered ongoing termite activity, and new evidence of termite damage has been revealed and addressed when minor repairs find damage. The problem appears to be systemic and ongoing.	Consider lowering grade around buildings to make termite entry more difficult. Combine with foundation repairs and dampproofing (see related recommendations). Cost includes landscape restoration.	1	$1,118,208
15	14-1	Structure	Floor framing notched for plumbing. Unsealed penetrations in rated wall at basement.	Repair framing and reroute plumbing. Firestop any required penetrations. Assumes 20% of unit basements need work.	1	$20,280
18	14-1	Structure	Potential asbestos-containing adhesive noted on basement wall. Limited testing found only one building with a positive test (door caulking).	Comprehensively test all buildings for hazardous materials. Price is an allowance for testing suspect ACMs and removing positive ACMs.	1	$52,500
30	14-1	Structure	Steel columns embedded in basement masonry wall are exhibiting minor distress and movement. Parging and surrounding masonry is cracked due to differential movement. Rust at column bases caused by basement flooding.	Perform minor repairs to masonry and clean and repaint columns. Monitor for future movement. Price assumes 2 per building.	1	$94,618
33	14-1	Structure	CMU partition has separated from foundation wall; evidence of movement. Previous repairs have failed.	May be a long-term issue that requires more extensive investigation and repair. (See related recommendation to address major settlement with underpinning.)	1	$0
44	14-1	Structure	Steel lintels over windows are rusting.	Scrape and paint following lead paint protocols. When windows are replaced (see separate recommendation), consider installing panning to encapsulate the steel lintels.	1	$6,000
82				**Total Priority**	**1**	**$20,773,840**

14-1 Priority 2

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
40	14-1	7 Bldg Envelope	Attics are not adequately vented. Shingles were recently replaced; premature roof failure can be expected if ventilation is not improved.	Install new venting vinyl soffits, ridge vent, and static roof vents to meet code-required ventilation area. Ensure roof insulation is protected with insulation baffles.	2	$222,208
23	14-1	9 Unit Interior	Unit doors are misaligned, door paint peeling	Investigate settling (can often cause door alignment/fitting issues). Resolve movement, square up openings or plane down doors. Scrape and paint, and rehang doors.	2	$1,536
42	14-1	Site	Play equipment is aging	Replace play equipment and surfacing.	2	$75,000
3				**Total Priority**	**2**	**$298,744**

14-1 Priority 3

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
8	14-1	7 Bldg Envelope	Windows are at least 14 years old. Windows do not meet the current energy code. Tested windows were in fair shape, but some were difficult to operate.	Replace all vinyl windows with units meeting the current energy code in about 10 years. At the time of replacement, inspect and repair all water damage. Replace AWB, flashings, interior trim, and all window sills along with a full window replacement project. See related recommendation to perform tune-up as needed.	3	$903,420
282	14-1	7 Bldg Envelope	Unit entry doors are aging; most are in fair condition. Hardware is not accessible, gasketing has failed, and thresholds are damaged or rotting. Perimeter sealants are ACM at some locations.	Plan to replace remaining 75% of unit entry doors and hardware in about 10 years. See related recommendation to replace 25% of doors now.	3	$922,050
285	14-1	7 Bldg Envelope	Porch columns are damaged and rotting at bases.	Plan to replace all remaining original porch columns over the next 5 - 10 years. Assume 50% need replacement during that time.	3	$64,800
	14-1	7 Bldg Envelope	About half of storm doors are in fair condition and remain serviceable. Perimeter sealants are ACM at some locations.	Replace 50% of storm doors in about 10 years. Abate ACM sealants where required. Install new PVC door trim and skirtboard. See related recommendations.	3	$89,200
304	14-1	9 Unit Interior	Appx 50% of baths are in fair condition and require comprehensive modernization in a few years.	Comprehensively modernize remaining 50% of unit baths in 7 to 10 years. Includes replacement of rough plumbing and electrical and all finishes. See related recommendations.	3	$1,232,950
307	14-1	9 Unit Interior	Appx 50% of unit kitchens are in fair condition and require comprehensive modernization in a few years.	Comprehensively modernize 50% of unit kitchens in 7 to 10 years. Includes replacement of rough plumbing and all finishes. See related recommendations.	3	$1,328,650
311	14-1	9 Unit Interior	Unit interior doors, frames, and hardware are original to the structure and well beyond their useful life. About 80% are still in fair condition.	Replace 80% of unit interior doors, frames and hardware in 7 to 10 years. Cost includes finish patching after frame replacement. See related recommendation to replace 20% of door now.	3	$832,049
41	14-1	Site	There is cracking in all bituminous walks. Conditions are still acceptable, but replacement in 7 to 10 years should be planned.	Install new prepared base and bituminous walks throughout development in about 7 to 10 years. CIP concrete would be more durable.	3	$420,000
7				**Total Priority**	**3**	**$5,793,119**

14-1 Priority 4

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
317	14-1	3 Electrical	Building exterior lights are not on time clocks or sensors; residents leave them on.	Install photocells or time clock system for buildings for energy efficiency.	4	$39,000
159	14-1	8 HVAC	HTP Superstor indirect fired DHW tanks are located in each mechanical room, installed during the boiler room replacement in 2021 The tanks appear to be in good condition.	Consider adding DHW tank insulating blankets on tanks to decrease the energy loss from the tank to the mechanical room.	4	$5,040
168	14-1	8 HVAC	The basement has Humidex air extraction systems located with two rooms to help reduce humidity levels in the basement. These fans were operating during our visit; the owner reports that the fans operate continuously. Ground water was observed on the floor of the basement.	Provide commercial dehumidifiers drained or pumped to the ejector pumps within the basement. The existing air extraction system does not provide a refrigeration cycle to mechanically remove moisture from the room. See related recommendations to address water intrusion in basements.	4	$3,200
124	14-1	Electrical	Each bedroom has switched receptacles, not ceiling mounted lighting.	Provide ceiling mounted lighting if desired.	4	$207,360
151	14-1	Plumbing	Many hose bibbs were observed broken or missing handles. The RHA has removed the handles from many hose bibbs to prevent residents from using them. The hose bibbs are multiple different styles having been replaced over the years. Some appear original to the buildings.	Replace exterior hose bibs with locking cover or hose bibbs that are operable with a key.	4	$14,000
14	14-1	Site	Trash is picked up at the curb in barrels, but there is no provision for bulk or oversize item pickup. This results in frequent fines to RHA, which pays for the trash pickup. No provision for recycling is provided.	Provide central pickup locations and dumpsters for large item and bulk trash pickup. Screen new central pickup locations. Incorporate recycling pickup.	4	$15,840
668	14-1	Electrical	No video surveilance system is present.	Provide a new surveilance system to monitor community spac	4	$76,000
7				**Total Priority**	**4**	**$360,440**

Part 4 - Appendix

FINAL REPORT
FOR
ASBESTOS CONTAINING MATERIALS IDENTIFICATION SURVEY
AT
REVERE HOUSING AUTHORITY
REVERE, MASSACHUSETTS

PROJECT NO: 223 614.00

SURVEY DATES:
August 29 – September 5, 2023

SURVEY CONDUCTED BY:

UNIVERSAL ENVIRONMENTAL CONSULTANTS

UEC universal environmental consultants

September 7, 2023

Ms. Michele Auer
BWA Architecture
132 Lincoln Street
Boston, MA 02111

Reference: **Asbestos Containing Materials Identification Survey**
Revere Housing Authority, Revere, MA

Dear Ms. Auer:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

Enclosed please find the report for Asbestos Containing Materials Identification Survey at the Revere Housing Authority, Revere, Massachusetts.

Please do not hesitate to call should you have any questions.

Very truly yours,

Universal Environmental Consultants

_____
Ammar M. Dieb
President

UEC:\223 614.00\Report.DOC

Enclosure

INTRODUCTION:
Universal Environmental Consultants (UEC) has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of thirty-three year years of experience.

UEC was contracted by BWA Architecture to conduct a determination survey for accessible Asbestos Containing Materials (ACM) at Revere Housing Authority, Revere, MA. *No destructive or roof testing was performed, and the investigation was limited. This report should not be used to renovate or demolish the buildings.*

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos and determination of types of ACM found for remediation. Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with Environmental Protection Agency (EPA) standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. Leonard J. Busa (AI-034963). The samples were analyzed by a Massachusetts licensed laboratory Asbestos Identification Laboratory, Woburn, MA.

Samples results are attached.

FINDINGS:
The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed. All suspect materials were grouped into homogenous areas. By definition, a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. Per Massachusetts guidelines a homogeneous area shall be determined to be ACM based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount 1 percent or greater. However, per the Department of Environmental Protection (DEP) regulations 310CMR 7.15 all suspect materials that contain any amount of asbestos must be considered asbestos for proper disposal if it is scheduled to be removed.

The survey was limited and therefore, additional ACM may be found during any renovation or demolition activities.

Number of Samples Collected
August 29, 2021
Twenty-four (24) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. Joint compound at 18-24 Rose Street
2. Joint compound at 18-24 Rose Street
3. Exterior window framing caulking at 18-24 Rose Street
4. Exterior window framing caulking at 10-16 Rose Street
5. Exterior window framing caulking at 32-38 Rose Street
6. Roofing debris at 32-38 Rose Street
7. Joint compound at 40-44 Rose Street
8. Joint compound at 40-44 Rose Street
9. Exterior window framing caulking at 46-52 Rose Street
10. Exterior door framing caulking at 46-52 Rose Street
11. Exterior window framing caulking at 54-58 Rose Street
12. Joint compound at 76-82 Rose Street
13. Joint compound at 76-82 Rose Street
14. Exterior window framing caulking at 76-82 Rose Street
15. Exterior caulking at seams of bulkhead at 76-82 Rose Street
16. Exterior caulking at seams of bulkhead at 165-172 Pomona Street
17. Exterior window framing caulking at 165-172 Pomona Street
18. Exterior dark caulking at seams of bulkhead and foundation at 165-172 Pomona Street

19. Exterior door framing caulking at 148-154 Pomona Street
20. Exterior window framing caulking at 905-911 Broadway
21. Exterior door framing caulking at 915-917 Broadway
22. Exterior window framing caulking at 915-917 Broadway
23. Exterior window framing caulking at 921-927 Broadway
24. Exterior caulking at seams of bulkhead at 915-917 Broadway

Sample Results

Type and Location of Material	**Sample Result**
1. Joint compound at 18-24 Rose Street	No Asbestos Detected
2. Joint compound at 18-24 Rose Street	No Asbestos Detected
3. Exterior window framing caulking at 18-24 Rose Street	No Asbestos Detected
4. Exterior window framing caulking at 10-16 Rose Street	No Asbestos Detected
5. Exterior window framing caulking at 32-38 Rose Street	No Asbestos Detected
6. Roofing debris at 32-38 Rose Street	No Asbestos Detected
7. Joint compound at 40-44 Rose Street	No Asbestos Detected
8. Joint compound at 40-44 Rose Street	No Asbestos Detected
9. Exterior window framing caulking at 46-52 Rose Street	No Asbestos Detected
10. Exterior door framing caulking at 46-52 Rose Street	No Asbestos Detected
11. Exterior window framing caulking at 54-58 Rose Street	No Asbestos Detected
12. Joint compound at 76-82 Rose Street	No Asbestos Detected
13. Joint compound at 76-82 Rose Street	No Asbestos Detected
14. Exterior window framing caulking at 76-82 Rose Street	No Asbestos Detected
15. Exterior caulking at seams of bulkhead at 76-82 Rose Street	No Asbestos Detected
16. Exterior caulking at seams of bulkhead at 165-172 Pomona Street	No Asbestos Detected
17. Exterior window framing caulking at 165-172 Pomona Street	No Asbestos Detected
18. Exterior dark caulking at seams of bulkhead and foundation at 165-172 Pomona Street	No Asbestos Detected
19. Exterior door framing caulking at 148-154 Pomona Street	No Asbestos Detected
20. Exterior window framing caulking at 905-911 Broadway	No Asbestos Detected
21. Exterior door framing caulking at 915-917 Broadway	No Asbestos Detected
22. Exterior window framing caulking at 915-917 Broadway	No Asbestos Detected
23. Exterior window framing caulking at 921-927 Broadway	No Asbestos Detected
24. Exterior caulking at seams of bulkhead at 915-917 Broadway	No Asbestos Detected

August 30, 2023
Thirty-nine (39) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. Exterior window framing caulking at 266 Cushman Street
2. Exterior window framing caulking at 254 Cushman Street
3. Exterior door framing caulking at 255 Cushman Street
4. Exterior door framing caulking at 272 Cushman Street
5. Exterior door framing caulking at 2 Harris Street
6. Exterior door framing caulking at 2 Harris Street
7. Exterior window framing caulking at 2 Harris Street
8. Exterior caulking in brick sill at 2 Harris Street
9. Exterior unit vent grille caulking at 2 Harris Street
10. Exterior unit vent grille caulking at 2 Harris Street
11. Joint compound at 2 Harris Street center stairwell
12. Joint compound at 2 Harris Street community room
13. Joint compound at 2 Harris Street community room
14. Mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room
15. Mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room
16. Mastic for mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room

17. Light grey 12” x 12” vinyl floor tile at 2 Harris Street community room
18. Mastic for light grey 12” x 12” vinyl floor tile at 2 Harris Street community room
19. Popcorn ceiling at 2 Harris Street community room
20. Popcorn ceiling at 2 Harris Street community room
21. Popcorn ceiling at 2 Harris Street community room
22. Exterior window framing caulking at 15-21 Hutchinson Street
23. Exterior window framing caulking at 71-77 Hutchinson Street
24. Exterior window framing caulking at 57-63 Hutchinson Street
25. Exterior window framing caulking at 57-63 Hutchinson Street
26. Exterior window framing caulking at 57-63 Hutchinson Street
27. Exterior window framing caulking at 43-49 Hutchinson Street
28. Exterior door framing caulking at 57-63 Hutchinson Street
29. Exterior door framing caulking at 29-35 Hutchinson Street
30. Exterior caulking at seams of bulkhead at 71-77 Hutchinson Street
31. Joint compound at Cooledge Street heating room
32. Joint compound at Cooledge Street heating room
33. Exterior window framing caulking at 301 Coolidge Street
34. Exterior window framing caulking at 291 Coolidge Street
35. Exterior window framing caulking at 259 Coolidge Street
36. Exterior door framing caulking at 291 Coolidge Street
37. Exterior door framing caulking at 257 Coolidge Street
38. Exterior door framing caulking at 267 Coolidge Street
39. Exterior black paper behind vinyl siding at Coolidge Street

Sample Results

Type and Location of Material	**Sample Result**
1. Exterior window framing caulking at 266 Cushman Street	5% Asbestos
2. Exterior window framing caulking at 254 Cushman Street	5% Asbestos
3. Exterior door framing caulking at 255 Cushman Street	No Asbestos Detected
4. Exterior door framing caulking at 272 Cushman Street	5% Asbestos
5. Exterior door framing caulking at 2 Harris Street	No Asbestos Detected
6. Exterior door framing caulking at 2 Harris Street	No Asbestos Detected
7. Exterior window framing caulking at 2 Harris Street	No Asbestos Detected
8. Exterior caulking in brick sill at 2 Harris Street	No Asbestos Detected
9. Exterior unit vent grille caulking at 2 Harris Street	No Asbestos Detected
10. Exterior unit vent grille caulking at 2 Harris Street	No Asbestos Detected
11. Joint compound at 2 Harris Street center stairwell	No Asbestos Detected
12. Joint compound at 2 Harris Street community room	No Asbestos Detected
13. Joint compound at 2 Harris Street community room	No Asbestos Detected
14. Mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room	No Asbestos Detected
15. Mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room	No Asbestos Detected
16. Mastic for mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room	No Asbestos Detected
17. Light grey 12” x 12” vinyl floor tile at 2 Harris Street community room	4% Asbestos
18. Mastic for light grey 12” x 12” vinyl floor tile at 2 Harris Street community room	7% Asbestos
19. Popcorn ceiling at 2 Harris Street community room	No Asbestos Detected
20. Popcorn ceiling at 2 Harris Street community room	No Asbestos Detected
21. Popcorn ceiling at 2 Harris Street community room	No Asbestos Detected
22. Exterior window framing caulking at 15-21 Hutchinson Street	No Asbestos Detected
23. Exterior window framing caulking at 71-77 Hutchinson Street	No Asbestos Detected
24. Exterior window framing caulking at 57-63 Hutchinson Street	No Asbestos Detected
25. Exterior window framing caulking at 57-63 Hutchinson Street	No Asbestos Detected
26. Exterior window framing caulking at 57-63 Hutchinson Street	No Asbestos Detected
27. Exterior window framing caulking at 43-49 Hutchinson Street	No Asbestos Detected
28. Exterior door framing caulking at 57-63 Hutchinson Street	No Asbestos Detected
29. Exterior door framing caulking at 29-35 Hutchinson Street	2% Asbestos

30. Exterior caulking at seams of bulkhead at 71-77 Hutchinson Street	No Asbestos Detected
31. Joint compound at Cooledge Street heating room	No Asbestos Detected
32. Joint compound at Cooledge Street heating room	No Asbestos Detected
33. Exterior window framing caulking at 301 Coolidge Street	5% Asbestos
34. Exterior window framing caulking at 291 Coolidge Street	5% Asbestos
35. Exterior window framing caulking at 259 Coolidge Street	5% Asbestos
36. Exterior door framing caulking at 291 Coolidge Street	No Asbestos Detected
37. Exterior door framing caulking at 257 Coolidge Street	No Asbestos Detected
38. Exterior door framing caulking at 267 Coolidge Street	No Asbestos Detected
39. Exterior black paper behind vinyl siding at Coolidge Street	No Asbestos Detected

August 31, 2023
Twenty-nine (29) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. 2’ x 4’ Suspended acoustical ceiling tile at 1 Hutchinson Street second floor bathroom
2. Wall plaster at 1 Hutchinson Street second floor closet
3. Mottled grey 12” x 12” vinyl floor tile at 1 Hutchinson Street kitchen
4. Mastic for mottled grey 12” x 12” vinyl floor tile at 1 Hutchinson Street kitchen
5. Wall plaster at 1 Hutchinson Street stairs down to basement
6. Joint compound at 1 Hutchinson Street kitchen
7. 2’ x 4’ Suspended acoustical ceiling tile at 37 Hutchinson Street living room
8. Mottled grey 12” x 12” vinyl floor tile at 37 Hutchinson Street kitchen
9. Mottled grey 12” x 12” vinyl floor tile at 23 Hutchinson Street kitchen
10. Mastic for mottled grey 12” x 12” vinyl floor tile at 59 Hutchinson Street kitchen
11. Stick-on 12” x 12” vinyl floor tile at 59 Hutchinson Street kitchen
12. Joint compound at 59 Hutchinson Street kitchen
13. Joint compound/wall plaster at 59 Hutchinson Street kitchen
14. Wall plaster at 69 Hutchinson Street stairs down to basement
15. Old sink damproofing at 69 Hutchinson Street kitchen
16. Mottled grey 12” x 12” vinyl floor tile at 69 Hutchinson Street kitchen
17. Mastic for mottled grey 12” x 12” vinyl floor tile at 69 Hutchinson Street kitchen
18. Ceiling plaster at 59 Hutchinson Street living room
19. Old sink damproofing at 1 Hutchinson Street kitchen
20. Ceiling plaster at 37 Hutchinson Street hallway
21. Joint compound at 250 Cushman Avenue kitchen
22. Mottled grey 12” x 12” vinyl floor tile at 250 Cushman Avenue kitchen
23. Dark brown 12” x 12” vinyl floor tile at 252 Cushman Avenue laundry room
24. Mastic for dark brown 12” x 12” vinyl floor tile at 252 Cushman Avenue laundry room
25. Joint compound at 266 Cushman Avenue kitchen
26. Mottled brown 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen
27. Mastic for mottled brown 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen
28. Mottled beige 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen
29. Mastic for mottled beige 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen

Sample Results

Type and Location of Material	**Sample Result**
1. 2’ x 4’ Suspended acoustical ceiling tile at 1 Hutchinson Street second floor bathroom	No Asbestos Detected
2. Wall plaster at 1 Hutchinson Street second floor closet	No Asbestos Detected
3. Mottled grey 12” x 12” vinyl floor tile at 1 Hutchinson Street kitchen	No Asbestos Detected
4. Mastic for mottled grey 12” x 12” vinyl floor tile at 1 Hutchinson Street kitchen	No Asbestos Detected
5. Wall plaster at 1 Hutchinson Street stairs down to basement	No Asbestos Detected
6. Joint compound at 1 Hutchinson Street kitchen	No Asbestos Detected

7.	2’ x 4’ Suspended acoustical ceiling tile at 37 Hutchinson Street living room	No Asbestos Detected
8.	Mottled grey 12” x 12” vinyl floor tile at 37 Hutchinson Street kitchen	No Asbestos Detected
9.	Mottled grey 12” x 12” vinyl floor tile at 23 Hutchinson Street kitchen	No Asbestos Detected
10.	Mastic for mottled grey 12” x 12” vinyl floor tile at 59 Hutchinson Street kitchen	No Asbestos Detected
11.	Stick-on 12” x 12” vinyl floor tile at 59 Hutchinson Street kitchen	No Asbestos Detected
12.	Joint compound at 59 Hutchinson Street kitchen	No Asbestos Detected
13.	Joint compound/wall plaster at 59 Hutchinson Street kitchen	No Asbestos Detected
14.	Wall plaster at 69 Hutchinson Street stairs down to basement	No Asbestos Detected
15.	Old sink damproofing at 69 Hutchinson Street kitchen	No Asbestos Detected
16.	Mottled grey 12” x 12” vinyl floor tile at 69 Hutchinson Street kitchen	No Asbestos Detected
17.	Mastic for mottled grey 12” x 12” vinyl floor tile at 69 Hutchinson Street kitchen	No Asbestos Detected
18.	Ceiling plaster at 59 Hutchinson Street living room	No Asbestos Detected
19.	Old sink damproofing at 1 Hutchinson Street kitchen	No Asbestos Detected
20.	Ceiling plaster at 37 Hutchinson Street hallway	No Asbestos Detected
21.	Joint compound at 250 Cushman Avenue kitchen	2% Asbestos
22.	Mottled grey 12” x 12” vinyl floor tile at 250 Cushman Avenue kitchen	No Asbestos Detected
23.	Dark brown 12” x 12” vinyl floor tile at 252 Cushman Avenue laundry room	No Asbestos Detected
24.	Mastic for dark brown 12” x 12” vinyl floor tile at 252 Cushman Avenue laundry room	No Asbestos Detected
25.	Joint compound at 266 Cushman Avenue kitchen	2% Asbestos
26.	Mottled brown 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen	No Asbestos Detected
27.	Mastic for mottled brown 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen	No Asbestos Detected
28.	Mottled beige 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen	No Asbestos Detected
29.	Mastic for mottled beige 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen	No Asbestos Detected

September 1, 2023
Thirty-two (32) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. Joint compound at 22 Rose Street kitchen
2. Mottled grey 12” x 12” vinyl floor tile at 22 Rose Street kitchen
3. Mastic for mottled grey 12” x 12” vinyl floor tile at 22 Rose Street kitchen
4. White/grey 12” x 12” vinyl floor tile at 60 Rose Street kitchen
5. Mastic for white/grey 12” x 12” vinyl floor tile at 60 Rose Street kitchen
6. 2’ x 4’ Suspended acoustical ceiling tile at 60 Rose Street first floor bathroom
7. Gypsum ceiling at 70 Rose Street kitchen
8. Joint compound at 70 Rose Street kitchen
9. Stick-on floor tile at 70 Rose Street kitchen
10. Parge on foundation wall at 90 Rose Street basement
11. 2’ x 4’ Suspended acoustical ceiling tile at 90 Rose Street second floor bathroom
12. Wall plaster at 154 Pomona Street kitchen
13. Mottled brown 12” x 12” vinyl floor tile at 154 Pomona Street kitchen
14. Joint compound at 154 Pomona Street kitchen
15. Wall plaster at 154 Pomona Street stairs down to basement
16. Mottled brown 12” x 12” vinyl floor tile at 907 Broadway kitchen
17. Joint compound at 907 Broadway kitchen
18. 2’ x 4’ Suspended acoustical ceiling tile at 909 Broadway
19. Wall plaster at 909 Broadway stairs down to basement
20. Wall plaster at 909 Broadway kitchen
21. Ceiling plaster at 909 Broadway living room
22. Mottled brown 12” x 12” vinyl floor tile at 259 Cooledge Street hallway closet
23. Joint compound at 259 Cooledge Street hallway
24. Mottled grey 12” x 12” vinyl floor tile at 283 Cooledge Street hallway closet
25. Mastic for mottled grey 12” x 12” vinyl floor tile at 283 Cooledge Street hallway closet
26. Gypsum ceiling at 283 Cooledge Street living room
27. Joint compound at 283 Cooledge Street kitchen

28. Gypsum wall at 304 Cooledge Street kitchen
29. Textured joint compound at 304 Cooledge Street stairs up to second floor
30. Joint compound at 311 Cooledge Street stairs up to second floor
31. Mottled beige 12” x 12” vinyl floor tile at 311 Cooledge Street kitchen
32. Mastic for mottled beige 12” x 12” vinyl floor tile at 311 Cooledge Street kitchen

Sample Results

Type and Location of Material	**Sample Result**
1. Joint compound at 22 Rose Street kitchen	No Asbestos Detected
2. Mottled grey 12” x 12” vinyl floor tile at 22 Rose Street kitchen	No Asbestos Detected
3. Mastic for mottled grey 12” x 12” vinyl floor tile at 22 Rose Street kitchen	No Asbestos Detected
4. White/grey 12” x 12” vinyl floor tile at 60 Rose Street kitchen	No Asbestos Detected
5. Mastic for white/grey 12” x 12” vinyl floor tile at 60 Rose Street kitchen	No Asbestos Detected
6. 2’ x 4’ Suspended acoustical ceiling tile at 60 Rose Street first floor bathroom	No Asbestos Detected
7. Gypsum ceiling at 70 Rose Street kitchen	No Asbestos Detected
8. Joint compound at 70 Rose Street kitchen	No Asbestos Detected
9. Stick-on floor tile at 70 Rose Street kitchen	No Asbestos Detected
10. Parge on foundation wall at 90 Rose Street basement	No Asbestos Detected
11. 2’ x 4’ Suspended acoustical ceiling tile at 90 Rose Street second floor bathroom	No Asbestos Detected
12. Wall plaster at 154 Pomona Street kitchen	No Asbestos Detected
13. Mottled brown 12” x 12” vinyl floor tile at 154 Pomona Street kitchen	No Asbestos Detected
14. Joint compound at 154 Pomona Street kitchen	No Asbestos Detected
15. Wall plaster at 154 Pomona Street stairs down to basement	No Asbestos Detected
16. Mottled brown 12” x 12” vinyl floor tile at 907 Broadway kitchen	No Asbestos Detected
17. Joint compound at 907 Broadway kitchen	No Asbestos Detected
18. 2’ x 4’ Suspended acoustical ceiling tile at 909 Broadway	No Asbestos Detected
19. Wall plaster at 909 Broadway stairs down to basement	No Asbestos Detected
20. Wall plaster at 909 Broadway kitchen	No Asbestos Detected
21. Ceiling plaster at 909 Broadway living room	No Asbestos Detected
22. Mottled brown 12” x 12” vinyl floor tile at 259 Cooledge Street hallway closet	No Asbestos Detected
23. Joint compound at 259 Cooledge Street hallway	3% Asbestos
24. Mottled grey 12” x 12” vinyl floor tile at 283 Cooledge Street hallway closet	No Asbestos Detected
25. Mastic for mottled grey 12” x 12” vinyl floor tile at 283 Cooledge Street hallway closet	No Asbestos Detected
26. Gypsum ceiling at 283 Cooledge Street living room	No Asbestos Detected
27. Joint compound at 283 Cooledge Street kitchen	2% Asbestos
28. Gypsum wall at 304 Cooledge Street kitchen	No Asbestos Detected
29. Textured joint compound at 304 Cooledge Street stairs up to second floor	No Asbestos Detected
30. Joint compound at 311 Cooledge Street stairs up to second floor	3% Asbestos
31. Mottled beige 12” x 12” vinyl floor tile at 311 Cooledge Street kitchen	No Asbestos Detected
32. Mastic for mottled beige 12” x 12” vinyl floor tile at 311 Cooledge Street kitchen	No Asbestos Detected

September 5, 2023
Fourteen (14) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. Mottled grey 12” x 12” vinyl floor tile at 3 Harris Street kitchen
2. Mastic for mottled grey 12” x 12” vinyl floor tile at 3 Harris Street kitchen
3. Mottled brown 12” x 12” vinyl floor tile at 4 Harris Street kitchen
4. Mottled grey 12” x 12” vinyl floor tile at 4 Harris Street bathroom
5. Mastic for mottled grey 12” x 12” vinyl floor tile at 4 Harris Street bathroom
6. Old brown linoleum floor covering at 14 Harris Street bathroom
7. Mastic for old brown linoleum floor covering at 14 Harris Street bathroom
8. Joint compound at 14 Harris Street kitchen
9. Joint compound at 16 Harris Street kitchen

10. Old brown linoleum floor covering at 21 Harris Street bathroom
11. Joint compound at 21 Harris Street kitchen
12. Mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen
13. Mastic for mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen
14. Joint compound at 40 Harris Street kitchen

Sample Results

Type and Location of Material	**Sample Result**
1. Mottled grey 12” x 12” vinyl floor tile at 3 Harris Street kitchen	No Asbestos Detected
2. Mastic for mottled grey 12” x 12” vinyl floor tile at 3 Harris Street kitchen	No Asbestos Detected
3. Mottled brown 12” x 12” vinyl floor tile at 4 Harris Street kitchen	No Asbestos Detected
4. Mottled grey 12” x 12” vinyl floor tile at 4 Harris Street bathroom	No Asbestos Detected
5. Mastic for mottled grey 12” x 12” vinyl floor tile at 4 Harris Street bathroom	No Asbestos Detected
6. Old brown linoleum floor covering at 14 Harris Street bathroom	20% Asbestos
7. Mastic for old brown linoleum floor covering at 14 Harris Street bathroom	N/A (No Sample)
8. Joint compound at 14 Harris Street kitchen	No Asbestos Detected
9. Joint compound at 16 Harris Street kitchen	No Asbestos Detected
10. Old brown linoleum floor covering at 21 Harris Street bathroom	20% Asbestos
11. Joint compound at 21 Harris Street kitchen	No Asbestos Detected
12. Mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen	2% Asbestos
13. Mastic for mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen	5% Asbestos
14. Joint compound at 40 Harris Street kitchen	No Asbestos Detected

Observations and Conclusions:
All ACM must be removed by a Massachusetts licensed asbestos abatement contractor under the supervision of a Massachusetts licensed project monitor prior to any renovation or demolition activities that might disturb the ACM.

1. Exterior window framing caulking at 266 Cushman Street was found to contain asbestos.
2. Exterior door framing caulking at 272 Cushman Street was found to contain asbestos.
3. Light grey 12” x 12” vinyl floor tile at 2 Harris Street community room was found to contain asbestos.
4. Mastic for light grey 12” x 12” vinyl floor tile at 2 Harris Street community room was found to contain asbestos.
5. Exterior door framing caulking at 29-35 Hutchinson Street was found to contain asbestos.
6. Exterior window framing caulking at 301 Coolidge Street was found to contain asbestos.
7. Exterior window framing caulking at 291 Coolidge Street was found to contain asbestos.
8. Exterior window framing caulking at 259 Coolidge Street was found to contain asbestos.
9. Joint compound at 250 Cushman Avenue was found to contain asbestos.
10. Joint compound at 266 Cushman Avenue was found to contain asbestos.
11. Joint compound at 259 Cooledge Street was found to contain asbestos.
12. Joint compound at 283 Cooledge Street was found to contain asbestos.
13. Joint compound at 311 Cooledge Street was found to contain asbestos.
14. Old brown linoleum floor covering at 14 Harris Street bathroom was found to contain asbestos.
15. Old brown linoleum floor covering at 21 Harris Street bathroom was found to contain asbestos.
16. Mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen was found to contain asbestos.
17. Mastic for mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen was found to contain asbestos.
18. All remaining suspect materials were found not to contain asbestos.
19. The survey was limited and therefore, additional ACM may be found during any renovation or demolition activities.

DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:

Asbestos samples were collected using a method that prevents fiber release. Homogeneous sample areas were determined by criteria outlined in EPA document 560/5-85-030a. Bulk material samples were analyzed using PLM and dispersion staining techniques in accordance with EPA/600/R-93/116 method.

LIMITATIONS AND CONDITIONS:
This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state, and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied, or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Inspected By:

_____
Leonard J. Busa
Asbestos Inspector

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email: mikemanning@asbestosidentificationlab.com

NVLAP® Testing
Lab Code: 200919-0

Batch: 103115

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing ,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing ,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1130114	Joint Compound (JC)	18-24 Rose Front Hall	white	Non-Fibrous 100	None Detected
2 / 1130115	JC Clg	18-24 Rose Basement	white	Non-Fibrous 100	None Detected
3 / 1130116	Window Frame Caulk	18-24 Rose Exterior @ Brick	multi	Non-Fibrous 100	None Detected
4 / 1130117	Win Fr Caulk Seams	10-16 Rose Exterior	multi	Non-Fibrous 100	None Detected
5 / 1130118	Door Frame Caulk Seams	32-38 Rose Exterior	multi	Non-Fibrous 100	None Detected
6 / 1130119	Roofing Debris	32-38 Rose Exterior Front @ Soil	multi	Fiberglass 25 Non-Fibrous 75	None Detected
7 / 1130120	JC	40-44 Rose Basement	white	Non-Fibrous 100	None Detected
8 / 1130121	JC Clg	40-44 Rose Basement Clg	white	Non-Fibrous 100	None Detected
9 / 1130122	Window Fr	46-50 Rose Exterior	multi	Non-Fibrous 100	None Detected
10 / 1130123	Door Fr	46-50 Rose Exterior Front	multi	Non-Fibrous 100	None Detected
11 / 1130124	Win Fr @ Seams	54-58 Rose Exterior	multi	Non-Fibrous 100	None Detected
12 / 1130125	JC Clg	76-82 Rose Basement Rear Hall	white	Non-Fibrous 100	None Detected
13 / 1130126	JC	76-82 Rose Rear Hall	white	Non-Fibrous 100	None Detected
14 / 1130127	Win F	76-82 Rose Exterior	multi	Non-Fibrous 100	None Detected
15 / 1130128	Caulk @ Seams of Bulkhead	76-82 Rose Exterior	multi	Non-Fibrous 100	None Detected
16 / 1130129	Caulk @ Seams of Bulkhead	165-172 Pomona Exterior	multi	Non-Fibrous 100	None Detected

Sampled: August 29, 2023 **Received:** August 29, 2023 **Analyzed:** August 29, 2023

Wednesday 30 August

Analyzed by: Elai Maxwell **Batch:** 103115

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing ,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
17 / 1130130	Win Fr @ Seams	165-172 Pomona Exterior	multi	Non-Fibrous 100	None Detected
18 / 1130131	Dark Caulk Where Bulkhead Meets Foundation	165-172 Pomona Exterior	black	Non-Fibrous 100	None Detected
19 / 1130132	Door Fr	148-154 Pomona Exterior	multi	Non-Fibrous 100	None Detected
20 / 1130133	Win Fr @ Seams	905-911 Broadway	multi	Non-Fibrous 100	None Detected
21 / 1130134	Door Fr	915-917 Broadway Exterior (Brick)	multi	Non-Fibrous 100	None Detected
22 / 1130135	Win Fr	915-917 Broadway Exterior (Brick)	multi	Non-Fibrous 100	None Detected
23 / 1130136	Win Fr	921-927 Broadway Exterior (Vinyl)	multi	Non-Fibrous 100	None Detected
24 / 1130137	Caulk @ Seams of Bulkhead	921-927 Broadway Exterior	multi	Non-Fibrous 100	None Detected

Sampled: August 29, 2023 **Received:** August 29, 2023 **Analyzed:** August 29, 2023

Wednesday 30 August

Analyzed by: Elai Maxwell **Batch:** 103115

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, Ma Building Name Revere Housing

Sample	Description of Material	Sample Location	
1	Joint Compound (JC)	18-24 Rose	Foothall
2	JC clg		Bsmt
3	window frame caulk		Exterior c brick
4	win fr caulk - seams	10-16 Rose	Exterior
5	door frame caulk - seams	32-38 Rose	Exterior ~~c brick~~
6	roofing debris	32-38 Rose	Exterior Front c soil
7	JC	40-44 Rose	Bsmt
8	JC clg	40-44 Rose	Bsmt clg
9	window fr	46-52 Rose	Exterior
10	Door fr	46-52 Rose	Exterior Front
11	win fr c seams	54-58 Rose	Exterior
12	JC clg	76-82 Rose	Bsmt
13	JC	76-82 Rose	rear hall
14	win fr	76-82 Rose	Exterior
15	caulk c seams of bulkhead	76-82 Rose	Exterior
16	caulk c seams of bulkhead	165-172 Pomona	Exterior
17	win fr c seams	165-172 Pomona	
18	Dark Caulk where bulkhead meets foundation	165-172 Pomona	
19	Door fr	148-154 Pomona	
20	win fr c seams	905-911 Broadway	

Reported By: [signature] Date: 8/29/23 Due Date: **24-Hours**

Received By: [signature] Date: 8/29/23

202

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere ma Building Name Revere Housing

Sample	Description of Material	Sample Location
21	Roof fr	915-917 Broadway exterior (brick)
22	win fr	915-917 exterior (brick)
23	win fr	921-927 exterior (vinyl)
24	caulk e seams of bulkhead	915-917 exterior

Reported By: [signature] Date: 8/29/23 Due Date: **24-Hours**

Received By: Date:

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email:
mikemanning@asbestosidentificationlab.com

NVLAP Testing
Lab Code: 200919-0

Batch: 103244

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
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- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1131382	Window Frame Caulk	Exterior 266 Cushman (Rear)	multi	Non-Fibrous 95	Detected Chrysotile 5
2 / 1131383	Win Fr	Exterior 254 Cushman	multi	Non-Fibrous 95	Detected Chrysotile 5
3 / 1131384	Door Frame Caulk	Exterior 255 Cushman	white	Non-Fibrous 100	None Detected
4 / 1131385	Door Fr and Residue? Orig	Exterior 272 Cushman	multi	Non-Fibrous 95	Detected Chrysotile 5
5 / 1131386	Door Fr	Exterior 2 Harris Door #1	gray	Non-Fibrous 100	None Detected
6 / 1131387	Door Fr	Exterior 2 Harris Door #23	gray	Non-Fibrous 100	None Detected
7 / 1131388	Win Fr	Exterior 2 Harris by #2	multi	Non-Fibrous 100	None Detected
8 / 1131389	Caulk in Brick Sill #7	Exterior 2 Harris	multi	Non-Fibrous 100	None Detected
9 / 1131390	Grill Frame Caulk	Exterior 2 Harris	gray	Non-Fibrous 100	None Detected
10 / 1131391	Grill Fr	Exterior 2 Harris by #18	gray	Non-Fibrous 100	None Detected
11 / 1131392	Joint Compound (JC)	Interior Center Stairwell	white	Non-Fibrous 100	None Detected
12 / 1131393	JC (Clg)	Interior Community Room	white	Non-Fibrous 100	None Detected
13 / 1131394	JC	Interior Community Room	white	Non-Fibrous 100	None Detected
14 / 1131395	12" Mottled Brown VT	Interior Community Room Laundry Rm	brown	Non-Fibrous 100	None Detected
15 / 1131396	12" Mottled Brown	Interior Community Room Laundry Rm	brown	Non-Fibrous 100	None Detected
16 / 1131397	Adhesive #15	Interior Community Room Laundry Rm	yellow	Non-Fibrous 100	None Detected

Sampled: August 30, 2023 **Received:** August 31, 2023 **Analyzed:** August 31, 2023

Friday 01 September 2023

Analyzed by: Elai Maxwell **Batch:** 103244

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
17 / 1131398	12" Lt Gray	Interior Community Room Storage by Kitch	white	Non-Fibrous 96	Detected Chrysotile 4
18 / 1131399	Mastic #17	Interior Community Room Storage by Kitch	black	Non-Fibrous 93	Detected Chrysotile 7
19 / 1131400	Popcorn Ceiling (PC)	Ctr Interior Community Room Basement	white	Non-Fibrous 100	None Detected
20 / 1131401	PC	Exit Stairs Interior Community Room Basement	white	Non-Fibrous 100	None Detected
21 / 1131402	PC	Interior 2 Harris Community Rm (Bsmt)	white	Non-Fibrous 100	None Detected
22 / 1131403	Win Fr	Exterior 15-21 Hutchinson	multi	Non-Fibrous 100	None Detected
23 / 1131404	Win Fr	Exterior 71-77 Hutchinson	multi	Non-Fibrous 100	None Detected
24 / 1131405	Win Fr at Brick	Exterior 57-63 Hutchinson	multi	Non-Fibrous 100	None Detected
25 / 1131406	Win Fr at Brick	Exterior 57-63 Hutchinson	multi	Non-Fibrous 100	None Detected
26 / 1131407	Win Fr Bsmt/Foundation	Exterior 57-63 Hutchinson	multi	Non-Fibrous 100	None Detected
27 / 1131408	Win Fr	Exterior 43-49 Hutchinson	multi	Non-Fibrous 100	None Detected
28 / 1131409	Door Fr (Brick)	Exterior 57-63 Hutchinson	multi	Non-Fibrous 100	None Detected
29 / 1131410	Door Fr (Brick)	Exterior 29-35 Hutchinson	multi	Non-Fibrous 98	Detected Chrysotile 2
30 / 1131411	Caulk at Seams of Bulkhead	Exterior 71-77 Hutchinson	multi	Non-Fibrous 100	None Detected
31 / 1131412	JC	Interior at Typ Htg Rm-1 Cooledge St	white	Non-Fibrous 100	None Detected
32 / 1131413	JC	Interior at Typ Htg Rm-2 Cooledge St	white	Non-Fibrous 100	None Detected

Sampled: August 30, 2023 **Received:** August 31, 2023 **Analyzed:** August 31, 2023

Friday 01 September 2023

Analyzed by: Elai Maxwell **Batch:** 103244

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
33 / 1131414	Win Fr	Exterior 301 Cooledge Street	multi	Non-Fibrous 95	**Detected** **Chrysotile 5**
34 / 1131415	Win Fr	Exterior 291 Cooledge Street	multi	Non-Fibrous 95	**Detected** **Chrysotile 5**
35 / 1131416	Win Fr	Exterior 259 Cooledge Street	multi	Non-Fibrous 95	**Detected** **Chrysotile 5**
36 / 1131417	Door Fr	Exterior 291 Cooledge Street	multi	Non-Fibrous 100	None Detected
37 / 1131418	Door Fr	Exterior 257 Cooledge Street	multi	Non-Fibrous 100	None Detected
38 / 1131419	Door Fr	Exterior 267 (Rear) Cooledge Street	multi	Non-Fibrous 100	None Detected
39 / 1131420	Black Paper Behind Vinyl Siding at Htg Rm	Cooledge Street	black	Cellulose 75 Non-Fibrous 25	None Detected

Sampled: August 30, 2023 **Received:** August 31, 2023 **Analyzed:** August 31, 2023

Friday 01 September 2023

Analyzed by: Elai Maxwell **Batch:** 103244

1

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

2 → #2 Harris = #5 — #21

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location		
1	window frame caulk	exterior	266 Cushman (rear)	
2	win fr		254 Cushman	
3	door frame caulk		255	
4	door fr & residue? orig		272	
5	door fr	exterior	2 Harris	door #1
6	door fr			door #23
7	win fr			by #2
8	caulking brickwall & 7			
9	grille frame caulk			
10	grille fr			by #18
11	Joint Compound (JC)	interior	center stairwell	
12	JC (clg)		Community Room	
13	JC			
14	12" mottled Brown VT			Laundrym
15	12" mottled Brown			
16	adhesive #15			
17	12" Lt grey			storage bakita
18	mastic #17			storage bakita
19	Popcorn Ceiling (PC)	ceil		basement
20	PC	ceil/stairs		basement

Reported By: [signature] Date: 8-30-23 Due Date: **24-Hours**

Received By: [signature] Date: 8/31/23

2

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location
21	PC	interior 24 Harris Community Rm (Basmt)
22	wind fr	exterior 45-21 Hutchinson
23	wind fr	71-77
24	wind fr @ brick	57-63
25	wind fr @ brick	57-63
26	wind fr bsmt/foundation	57-63
27	wind fr	43-49
28	door fr (brick)	57-63
29	door fr (brick)	29-35
30	caulk @ seams of bulkhead	71-77
31	JC	interior @ Typ bfg rm-1 Coolidge St
32	JC	interior @ Typ bfg rm-2
33	wind fr	exterior 301 Coolidge Street
34	wind fr	291
35	wind fr	259
36	door fr	291
37	door fr	257
38	door fr	267 (rear)
39	Black paper behind vinyl siding @ bfg rm	

Reported By: Date: 8-30-23 Due Date: 24-Hours

Received By: Date:

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email:
mikemanning@asbestosidentificationlab.com

NVLAP Testing
Lab Code: 200919-0

Batch: 103305

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
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- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1131888	2x4 SAT-I (Older Side Fissures	2nd Fl Bathroom 1 Hutchinson	gray	Fiberglass 30 Cellulose 60 Non-Fibrous 10	None Detected
2 / 1131889	Wall Plaster (WP)	2nd Fl Closet 1 Hutchinson	gray	Non-Fibrous 100	None Detected
3 / 1131890	12" Mottled Gray VT	Kitchen 1 Hutchinson	gray	Non-Fibrous 100	None Detected
4 / 1131891	Adhesive #3	Kitchen1 Hutchinson	tan	Non-Fibrous 100	None Detected
5 / 1131892	WP	Stairs dn to Basement 1 Hutchinson	multi	Non-Fibrous 100	None Detected
6 / 1131893	Joint Compound (JC)	Kitchen1 Hutchinson	white	Non-Fibrous 100	None Detected
7 / 1131894	SAT-I	Liv Rm 37 Hutchinson	gray	Fiberglass 30 Cellulose 60 Non-Fibrous 10	None Detected
8 / 1131895	12" Mottled Brown VFT	Kitchen 37 Hutchinson	tan	Non-Fibrous 100	None Detected
9 / 1131896	12" Mottled Brown VFT	Kitchen 23 Hutchinson	tan	Non-Fibrous 100	None Detected
10 / 1131897	Adhesive #9	Kitchen 59 Hutchinson	yellow	Non-Fibrous 100	None Detected
11 / 1131898	12" Stick On Floor Tile	Kitchen 59 Hutchinson	multi	Non-Fibrous 100	None Detected
12 / 1131899	JC (Clg)	Kitchen 59 Hutchinson	white	Non-Fibrous 100	None Detected
13 / 1131900	Composite JC/WP	2nd Fl Wp Closet/Kitchen 59 Hutchinson	multi	Non-Fibrous 100	None Detected
14 / 1131901	WP	Stairs dn to Basement 69 Hutchinson	multi	Non-Fibrous 100	None Detected
15 / 1131902	(Old) Sink dp	Kitchen 69 Hutchinson	tan	Non-Fibrous 100	None Detected
16 / 1131903	12" Mottled Gray VT	Kitchen 69 Hutchinson	multi	Non-Fibrous 100	None Detected

Sampled: August 31, 2023 **Received:** September 01, 2023 **Analyzed:** September 01, 2023

Tuesday 05 September

Analyzed by: Michael Thomas

Batch: 103305

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
17 / 1131904	Adhesive #16	Kitchen 69 Hutchinson	tan	Non-Fibrous 100	None Detected
18 / 1131905	Ceiling Plaster (cp)	Liv Rm 59 Hutchinson	multi	Non-Fibrous 100	None Detected
19 / 1131906	(old) Sink dp	Kitchen 1 Hutchinson	tan	Non-Fibrous 100	None Detected
20 / 1131907	cp	Hall 37 Hutchinson	multi	Non-Fibrous 100	None Detected
21 / 1131908	JC	Kitchen 250 Cushman	tan	Non-Fibrous 98	**Detected** Chrysotile 2
22 / 1131909	12" Mottled Gray VT	Kitchen 250 Cushman	gray	Non-Fibrous 100	None Detected
23 / 1131910	12" Dk Brown VT	Kichten Laundry Rm 252 Cushman	brown	Non-Fibrous 100	None Detected
24 / 1131911	Adhesive #23	Kichten Laundry Rm 252 Cushman	multi	Non-Fibrous 100	None Detected
25 / 1131912	JC	Kitchen 266 Cushman	tan	Non-Fibrous 98	**Detected** Chrysotile 2
26 / 1131913	12" Mottled Brown	Hall 266 Cushman	brown	Non-Fibrous 100	None Detected
27 / 1131914	Adhesive #26	Hall 266 Cushman	multi	Non-Fibrous 100	None Detected
28 / 1131915	12" Mottled Beige	Kitchen 266 Cushman	tan	Non-Fibrous 100	None Detected
29 / 1131916	Adhesive #28	Kitchen 260 Cushman	multi	Non-Fibrous 100	None Detected

Sampled: August 31, 2023 **Received:** September 01, 2023 **Analyzed:** September 01, 2023

Tuesday 05 September

Analyzed by: Michael Manning

Batch: 103305

1 of 2

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Lynn, MA Building Name Lynn Housing

Sample	Description of Material	Sample Location	
1	2:4 SAT-I (older, side fissures)	2nd FL bathrm	1 Hutchinson
2	wall plaster (WP)	2nd FL closet	
3	12" mottled grey VT	Kitchen	
4	adhesive #3	Kitchen	
5	WP	stairs dn to bsmt	
6	Joint Compound (JC)	Kitchen	
7	SAT-I	Livrm	37 Hutchinson
8	12" mottled Brown VT	Kitchen	" " "
9	12" mottled Brown VT	Kitchen	23 Hutchinson
10	adhesive #9	Kitchen	59 Hutchinson
11	12" stick-on Floor Tile	Kitchen	
12	JC (old)	Kitchen	
13	composite JC/WP	2nd FL closet/Kitchen	
14	WP	stairs dn to bsmt	69 Hutchinson
15	(old) sink dp	Kitchen	
16	12" mottled grey VT	Kitchen	
17	adhesive #16	Kitchen	
18	ceiling plaster (CP)	Livrm	59 Hutchinson
19	(old) sink dp	Kitchen	1 Hutchinson
20	CP	hall	37 Hutchinson

Reported By: [signature] Date: 8/31/23 Due Date: **24-Hours**

Received By: [signature] Date: 9/1/23

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere ma Building Name Revere Housing

Sample	Description of Material	Sample Location
21	JC	Kitchen 250 Cushman
22	12" mottled grey vt	Kitchen 250 Cushman
23	12" Dk Brown vt	Kitchen Laundry rm 252 Cushman
24	Adhesive #23	" " " " "
25	JC	Kitchen 266 Cushman
26	12" mottled Brown	hall 266
27	adhesive #26	hall 266
28	12" mottled Beige	Kitchen 266
29	Adhesive #28	Kitchen 260

Reported By: [signature] Date: 8/31/23 Due Date: **24-Hours**

Received By: Date:

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email:
mikemanning@asbestosidentificationlab.com

NVLAP Testing
Lab Code: 200919-0

Batch: 103402

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

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- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1132862	Joint Compound (JC)	Kitchen 22 Rose	white	Non-Fibrous 100	None Detected
2 / 1132863	Mottled Gray 12" VT	Kitchen 22 Rose	gray	Non-Fibrous 100	None Detected
3 / 1132864	Adhesive #2	Kitchen 22 Rose	black	Non-Fibrous 100	None Detected
4 / 1132865	White w/ Gray Flecks 12: VT	Kitch 60 Rose	gray	Non-Fibrous 100	None Detected
5 / 1132866	Adhesive #4	Kitch 60 Rose	tan	Non-Fibrous 100	None Detected
6 / 1132867	2X4 SAT-I (Older, Side Fissures)	1st Fl Bathroom 60 Rose	gray	Fiberglass 15 Mineral Wool 15 Cellulose 55 Non-Fibrous 15	None Detected
7 / 1132868	Gyp Clg	Kitch 70 Rose	gray	Cellulose 5 Non-Fibrous 95	None Detected
8 / 1132869	JC	Kitch 70 Rose	white	Non-Fibrous 100	None Detected
9 / 1132870	Stick-on 12" VT	Kitch 70 Rose	black	Non-Fibrous 100	None Detected
10 / 1132871	Parge on Foundation Wall	Bsmt 70 Rose	gray	Non-Fibrous 100	None Detected
11 / 1132872	SAT-I	2nd Fl Bathrm 90 Rose	gray	Fiberglass 15 Mineral Wool 15 Cellulose 55 Non-Fibrous 15	None Detected
12 / 1132873	Wall Plaster (WP)	1st Fl Closet 90 Rose	gray	Cellulose 5 Non-Fibrous 95	None Detected
13 / 1132874	Mottled Brown 12" VT	Kitchen 154 Pomona	gray	Non-Fibrous 100	None Detected
14 / 1132875	JC	Kitchen 154 Pomona	white	Non-Fibrous 100	None Detected
15 / 1132876	WP	Stairs Dn to Bsmt 154 Pomona	gray	Cellulose 5 Non-Fibrous 95	None Detected
16 / 1132877	Mottled Brown 12" VT	Kitch 907 Broadway	gray	Non-Fibrous 100	None Detected

Sampled: September 01, 2023 **Received:** September 05, 2023 **Analyzed:** September 05, 2023

Wednesday 06 September

Analyzed by: **Batch:** 103402

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
17 / 1132878	JC	Kitch 907 Broadway	white	Non-Fibrous 100	None Detected
18 / 1132879	SAT-I	Liv. Rm 909 Browadway	gray	Fiberglass 15 Mineral Wool 15 Cellulose 55 Non-Fibrous 15	None Detected
19 / 1132880	WP	Stairs Dn to Bsmt 909 Broadway	gray	Cellulose 5 Non-Fibrous 95	None Detected
20 / 1132881	WP	Kitchen 909 Broadway	gray	Cellulose 5 Non-Fibrous 95	None Detected
21 / 1132882	Ceiling Plaster (CP)	Liv Rm 909 Broadway	multi	Cellulose 5 Non-Fibrous 95	None Detected
22 / 1132883	Mottled Brown 12" VT	Hall Closet 259 Cooledge	gray	Non-Fibrous 100	None Detected
23 / 1132884	JC	Hall 259 Colledge	tan	Non-Fibrous 97	**Detected** **Chrysotile 3**
24 / 1132885	Mottled Gray 12" VT	Hall Closet 283 Cooledge	gray	Non-Fibrous 100	None Detected
25 / 1132886	Mastic #24	Hall Closet 283 Cooledge	black	Non-Fibrous 100	None Detected
26 / 1132887	Gyp Clg ?	Liv Rm 283 Cooledge	gray	Cellulose 5 Non-Fibrous 95	None Detected
27 / 1132888	JC	Kitch 283 Cooledge	tan	Non-Fibrous 98	**Detected** **Chrysotile 2**
28 / 1132889	Gyp Wall	Kitch 304 Cooledge	gray	Cellulose 5 Non-Fibrous 95	None Detected
29 / 1132890	Textured JC Wall	Stairs up to 2nd Fl 304 Cooledge	white	Non-Fibrous 100	None Detected
30 / 1132891	JC (Clg)	Stairs up to 2nd Fl 311 Cooledge	tan	Non-Fibrous 97	**Detected** **Chrysotile 3**
31 / 1132892	Mottled Beige 12" VT	Kitchen 311 Cooledge	gray	Non-Fibrous 100	None Detected
32 / 1132893	Mastic #31	Kitchen 311 Cooledge	brown	Non-Fibrous 100	None Detected

Sampled: September 01, 2023 **Received:** September 05, 2023 **Analyzed:** September 05, 2023

Wednesday 06 September

Analyzed by: **Batch:** 103402

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location	
1	Joint Compound (JC)	Kitchen	22 ROSE
2	mottled grey 12" VT	/	/
3	adhesive of #2		
4	white w/ grey flecks 12" VT	Kitch	60 ROSE
5	adhesive of #4	"	
6	2.4 SAT-T (older, side fissures)	1st Fl bathrm	
7	Sp ceiling	Kitch	70 ROSE
8	JC	Kitch	
9	STUCK-on 12" VT	Kitch	
10	parge on foundation wall	bsmt	
11	SAT-T	2nd Fl bathrm	90 Rose
12	wall plaster (WP)	1st Fl closet	" "
13	mottled Brown 12" VT	Kitchen	154 Pomona
14	JC	Kitch	
15	WP	stairs dn to bsmt	
16	mottled Brown 12" VT	Kitch	907 Broadway
17	JC	Kitch	" "
18	SAT-T	Liv rm	909 Broadway
19	WP	stairs dn to Bsmt	/ /
20	WP	Kitchen	

Reported By: [signature] Date: 9-1-23 Due Date: **24-Hours**

Received By: Date: 9/5/23

2 of 2

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location	
21	ceiling plaster (CP)	Liv rm	909 Broadway
22	mottled beige 12" vt	hall closet	259 Coolidge
23	JC	hall	259 Coolidge
24	mottled grey 12" vt	hall closet	283 Coolidge
25	mastic #24	hall closet	
26	gyp clg ?	Liv rm	
27	JC	kitch	
28	gyp wall	Kitch	304 Coolidge
29	Textured JC wall	stains up to 2nd fl	" " "
30	JC (clg)	stains up to 2nd fl	311 Coolidge
31	mottled beige 12" vt	Kitchen	
32	mastic #31	" "	

Reported By: [signature] Date: 8-1-23 Due Date: **24-Hours**

Received By: Date:

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email:
mikemanning@asbestosidentificationlab.com

NVLAP Testing
Lab Code: 200919-0

Batch: 103443

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere Ma

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere Ma

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1133126	Mottled Grat VT-I	Kitchen 3 Harris	gray	Non-Fibrous 100	None Detected
2 / 1133127	Adhesive #1	Kitchen 3 Harris	yellow	Cellulose 10 Non-Fibrous 90	None Detected
3 / 1133128	Mottled Brown VT-II	Kitchen 4 Harris	brown	Non-Fibrous 100	None Detected
4 / 1133129	VT-I	Bathroom 4 Harris	gray	Non-Fibrous 100	None Detected
5 / 1133130	Adh #4	Bathroom 4 harris	yellow	Cellulose 10 Non-Fibrous 90	None Detected
6 / 1133131	Old Brown Lino	Bathroom 14 Harris	multi	Cellulose 10 Non-Fibrous 70	**Detected** **Chrysotile 20**
7 / 1133132	Adhesive #6 NO SAMPLE	Bathroom 14 Harris			Not Analyzed
8 / 1133133	Joint Compound (JC)	Kitchen 14 Harris	white	Non-Fibrous 100	None Detected
9 / 1133134	JC	Kitchen 16 Harris	white	Non-Fibrous 100	None Detected
10 / 1133135	Old Gray Lino	Bathroom 21 Harris	multi	Cellulose 10 Non-Fibrous 70	**Detected** **Chrysotile 20**
11 / 1133136	JC	Kitchen 21 Harris	white	Non-Fibrous 100	None Detected
12 / 1133137	Old Mottled Light Lime VT	Kitchen 21 Harris	multi	Non-Fibrous 98	**Detected** **Chrysotile 2**
13 / 1133138	Mastic #12	Kitchen 21 Harris	black	Cellulose 5 Non-Fibrous 90	**Detected** **Chrysotile 5**
14 / 1133139	JC	Kitchen 40 Harris	white	Non-Fibrous 100	None Detected

Sampled: September 05, 2023 **Received:** September 06, 2023 **Analyzed:** September 06, 2023

Thursday 07 September

Analyzed by: Jonathan Chann **Batch:** 103443

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location	
1	mottled grey VT-I	Kitchen	3 Harris
2	adhesive #1	Kitch	3 Harris
3	mottled brown VT-II	Kitch	4 Harris
4	VT-I	bathroom	4 Harris
5	adh #4	bathroom	4 Harris
6	old Brown Line	bathroom	14 Harris
7	adhesive? #6	bathroom	14 Harris
8	Joint Compound (old JC)	Kitchen	14 Harris
9	JC	Kitch	16 Harris
10	old grey Line	bathrm	21 Harris
11	JC	Kitchen	21 Harris
12	old mottled Light Line VT	Kitchen	21 Harris
13	mastic #12	Kitch	21 Harris
14	JC	Kitch	40 Harris

Reported By: [signature] Date: 9/5/23 Due Date: **24-Hours**

Received By: [signature] Date: 9/6/23

January 2024

CAPITAL NEEDS ASSESSMENT

FOR

Project 14-3

PREPARED FOR

Revere Housing Authority

BWA Project No. 2009M

BWA ARCHITECTURE

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Executive Summary

The Revere Housing Authority (RHA) retained BWA Architecture, Inc. (BWA) to prepare a comprehensive Capital Needs Assessment of the 14-3 properties at 2 Harris Street in Revere, MA, a two-building development. Each building is two-story with a footprint of about 15,600sf. One building contains a community room, community kitchen, and a storage basement. The buildings were originally constructed in 1980 the buildings have 45 single-bedroom units that are accessible from shared entrance s and internal corridors.

On site surface parking for about 16 automobiles is provided in a lot on the west side of the property. An additional 6-7 parking spots is provided on the east side, parallel to Harris Street.

The purpose of the assessment is to assist RHA in planning and budgeting for future capital improvements and repair costs.

Not all deficiencies are obsolescent conditions: This report provides a comprehensive assessment of the property and distinguishes between items that are obsolescent and those that are optional improvements but are recommended for renovation.

Methodology

BWA assembled a team of consultants for this assessment, including Norian Siani Engineers (NSE) for mechanical, plumbing, and fire protection systems evaluation; Nangle Engineering, Inc. (NEI) for electrical, fire alarm, and telecommunications systems evaluation. BWA reviewed architectural finishes, code compliance, energy conservation, and provided cost estimates.

As part of the assessment, the BWA team reviewed existing building information provided by RHA, including limited original design drawings, maintenance logs, Revere public property information, and other property records. BWA interviewed property management and maintenance staff to learn about the maintenance history of the property, reported problems, and reviewed property maintenance records.

Reviewers from BWA and its team then conducted site visits in May through October of 2023 and investigated building systems and components that were accessible. The field investigations were led by Steve Baker, AIA, Michele Auer, and David Tanner AIA Norian Siani Engineers (NSE) for mechanical, plumbing, and fire protection systems evaluation; Nangle Engineering, Inc. (NEI) for electrical, fire alarm, and telecommunications systems evaluation.

The primary purpose of our inspections was to identify and assess existing deficiencies, likely future problems due to aging or deterioration, and code violations that could trigger code compliance upgrades when other repairs are undertaken. Secondarily, the investigators also looked for opportunities for improved energy performance in the buildings and for possible discretionary improvements.

Prioritization of Recommendations

BWA assembled the results of the field inspections and used them to create a property information database. We identified a number of deficiencies for the property. For each, we drafted a recommendation for repair and established a relative priority for completion. Each item is assigned a priority of **1** (highest or most immediate) to **4** (optional improvements and upgrades).

Priority 1 requirements include urgent repairs to and replacements necessary to protect the structure or life safety and to allow for continued occupancy. Building envelope and mission-critical components that that are critical to occupancy and have a high likelihood of failure within the next three years are assigned Priority 1. Note that Priority 1 also includes code-compliance work that we believe will be required as part of a renovation. While some code compliance recommendations may be seen as improvements to the existing structures, if a code compliance concern is likely to be mandatory (i.e., it will be required in order to obtain permits), it is included in Priority 1. **The Owner should address Priority 1 requirements within the next 3 years.**

Priority 2 requirements include repairs to and replacements of components that are functionally obsolete, worn or damaged, or beyond their useful life, but continue to perform their basic function. **The Owner should plan and budget to address Priority 2 requirements within the next 3 to 7 years.**

Priority 3: Priority 3 requirements include components that are serviceable and good working condition but are expected to reach the end of their useful life or function in the next 8 to 15 years or more. **The Owner should include in its capital plan sufficient reserves to address Priority 3 requirements at the appropriate future time, usually within 8 to 15 years, but some items may not need replacement for up to 20 years.**

Priority 4: Priority 4 recommendations include optional or discretionary improvements that are enhancements to the project or will improve its function, but are not required to maintain the building in good working order or to meet mandatory building code provisions.

In general, any work item listed as a **requirement** is not discretionary but may be categorized as Priority 1 through 3; recommendations are upgrades and improvements categorized as Priority 4. Prioritization is more fully explained in Part 3 of this report.

Property Condition

Overall, we rate the condition of the property as **Fair**: the main structural components are in poor condition and will need to be addressed. The main exterior condition of the building is fair, and like most buildings built around this time, the interiors are aging and generally poor. Most building finishes are at or close to their useful life. The properties at 14-3 are 43 years old and were built from wood studs and joists over a concrete basement and foundation. Exterior walls are wood stud brick cavity walls. Over time there have been renovations to the interiors to keep them functional over the years, but most of the current renovation efforts occur at unit turnover. After multiple visual inspections and

review of maintenance records, we have assessed the short and long term needs that the buildings will require.

Estimated Costs of Repairs and Improvements

BWA has developed conceptual cost estimates for each recommendation in this report based on recent comparable project costs. In total, we identified ***$8,716,596*** (trade cost only) in required or recommended capital improvement costs for this property for the next 20 years (uninflated), listed by priority as follows:

Priority	*Estimated Cost*
1	$ 7,890,172
2	$ 112,380
3	$ 155,100
4	$ 558,944
Total	**$ 8,716,596**

These estimates include direct (trade or subcontract) costs and project general requirements only; they do not include General Contractor overhead and profit, construction management, bonds, permits or insurance. These costs exclude the costs associated with additional testing, surveying, commissioning, as well as additional design fees by architects and engineers. These estimates do not include the costs associated with relocating and accommodating current residents.

Report Contents

Part 1 on this report contains a general summary of conditions.

Part 2 of this report contains a detailed narrative assessment of building conditions and identifies major issues raised in our inspection, listed by building system. For each issue, a recommendation for repair or replacement is also provided.

Part 3 of this report is a summary listing of all identified concerns and capital improvement recommendations, ordered by priority.

Respectfully submitted,
BWA Architecture, Inc.
January 2024

Part 1 - General Property Information and Major Concerns

Part 1.1 - Property Summary

MA Revere Housing Authority Federal Housing Development 14-3 was constructed in 1980. On this site are a total of 45 single-bedroom units. Of the 45 units, 4 are configured to be ADA compliant.

The 14-3 property is a federally funded development consisting of a 2 building, 0.76-acre development bordered by Sewall St. to the north, Harris St. to the east, Winthrop Ave to the south, and to single family residences along the east and northeast property border. The site slopes a few feet from the retaining wall at the southwest corner of Winthrop Ave and Harris St.to the northwest along Winthrop Street. Concrete sidewalks, installed this year, connect the buildings to the street and to a single parking lot to the west. Grass lawn and mature trees fill the courtyard and provide a buffer to the buildings from the streets. (Figure 1.11)

History:

Over the past 10 years the site has been renovated several times. Roofs were re-shingled on both buildings, addressing systemic leaking, in 2013. Exterior envelope improvements were made when all exterior doors and windows were replaced in 2014. In 2017, underground recirculation piping was replaced. In Between 2020 and 2023 the site underwent a lighting retrofit and updates to the concrete walks.

Figure 1.11: Site Aerial

On site surface parking for about 16 automobiles is provided in a lot on the west side of the property. Additionally, 6-7 parallel parking spots is provided on the east side of the site, along Harris Street.

According to the Town of Revere Zoning Map, the building is in a Residential Business (RB) zone, as is most of the residential area in which it is located. It is a legally non-conforming use as it was constructed prior to the current zoning designation. Specifically, the RB zoning allows for duplexes in the district, but not for clustered unit apartments.

Part 1.2 - Property Condition

Overall, we rate the condition of the property as **Fair**: The updates that have taken place of the past 10 years have helped address some of needs of the site and buildings; however, there are still significant capital needs. At 43 years old, many of the building's core components are beginning to fail or require increased maintenance. The majority of its original finishes, systems, and fixtures need to be replaced immediately.

Figure 1.21: View from parking

On our inspection of the building exteriors and the overall site, we found numerous things of concern that will need to be addressed by RHA. Windows

are only 13 years old, but there are complaints about them being difficult to use.

As mentioned above, all apartment finishes are worn and tired and in dire need of replacement. Some things like kitchen flooring and damaged hardware are replaced or repaired upon unit turnovers but the majority of units still have their original finishes, appliances, accessories, etc. Unit Kitchens are in generally poor condition. The cabinets, countertops, appliances, and finishes are almost always original to the building's construction and poor. Similarly, bathrooms are all original to the development. ADA bathrooms fail to meet current MAAB requirements. Standard bathrooms are full of broken fixtures, bad valves, damaged tubs, etc. and are overdue for a full modernization. Wood flooring is in mostly fair condition wood, but kitchens and baths have VCT and sheet vinyl that is poor. In this report, where the VCT and vinyl are recommended for replacement, they will have to be properly abated due to the presence of asbestos fond in a recent hazardous materials report.

Figure 1.22: Courtyard façade and retaining wall

Figure 1.23: Basement file storage and boiler room

The 14-3 site is not particularly energy efficient, but there are some opportunities to improve the energy efficiency here. For instance, potential upgrades to water efficiency in bath and kitchen fixtures, and mechanical systems upgrades that will be required as part of the 2021 IECC with Massachusetts amendments when more than 50% of the building is renovated.

Part 2 – Physical Conditions Assessment

Part 2.01 - Accessibility

As publicly assisted housing, the buildings must comply with relevant sections of the Americans with Disabilities Act (ADA), 521 CMR (the Massachusetts Architectural Access Board's regulation, or "MAAB"). ADA compliance is established in the Uniform Federal Accessibility Standard (UFAS). Because MAAB regulations are generally equal to or more restrictive than ADA/UFAS, compliance with MAAB is considered sufficient. Because they were constructed prior to 1991, the buildings are exempt from federal Fair Housing Act accessibility regulations.

History:

According to the Revere Assessor's property database, the structures were assessed in 2023, with a value of $ 4,638,000; this is the assessed value of both buildings and does not include the land value. In accordance with the building code and MAAB, any capital improvement project, or cumulative capital improvement projects over a three-year period, with a cost exceeding 30 percent of the assessed building value (excluding land value) will require compliance with current code in most respects.

Site:

In general, the accessibility around the site is good. The walks and ramps were recently replaced (See Figure 2.01.01 and 2.01.02). The concrete is in new condition and adequately connects tenants and visitors to common areas and units.

Figure 2.01.01: 14-3 Courtyard

Figure 2.01.02: Typical concrete ramp at accessible units

Common Interior:

Residents have access to a common space in the larger building on the south corner of the site. The common entry opens into a laundry, community area, and a community kitchen. Below the community room is a boiler room that is also used for file storage.

In the entry lobby are the clustered resident mailboxes, which are presumed to be original to the building (See Figure 2.01.03). They are not within ADA reach

ranges and are not up to current USPS standards. Our recommendation is to have the mail area expanded to allow for new clustered mail boxes that meet ADA reach ranges and USPS standards, including an area for large package delivery. RHA may want to consider a separate package delivery option such as a package room or automated package lockers.

Signage throughout the common areas does not meeting current accessibility requirements, and should be replaced. The signage should be sized appropriately and replaced with braille and raised lettering to meet ADA and MAAB requirements. This work will be required as part of a substantial renovation meeting the limits described at the beginning of this chapter.

Figure 2.01.03: Cluster mailboxes

This development's community kitchen was not designed be accessible. Among the items that we documented, the stove was entirely disconnected and not usable (See Figure 2.01.04). Smoke detectors, accessible hood controls, and wall ovens are missing. Countertops were not at the appropriate height and cabinets exceed reach ranges (See Figure 2.01.05).

A full renovation will be necessary to make the kitchen accessible, and should be reconfigured per 521 CMR. When renovation occurs, demo and abate the existing VCT and replace with a durable ceramic tile or LVT. Reference attached hazardous materials report.

Figure 2.01.04: Community kitchen

Figure 2.01.05: Community kitchen

There are two restrooms that join the main entry lobby and common corridors (See Figure 2.01.06). These restrooms are intended to be accessible, however, they do not meet current MAAB requirements. They lack proper clearances for maneuverability and do not have proper grab bars. The emergency pull strings were tested and did not function, and lavatories were missing covers on drains. (See Figure 2.01.07 and 2.01.08). Both restrooms need to be expanded in order to achieve required clearances.

The restrooms require new blocking and grab bars as required by 521 CMR as well as protection on plumbing. Fixtures, accessories and floor finish should all be refreshed as part of the reconfiguration. As with all accessibility items in this section, the upgrades will be required with any substantial renovation to the building.

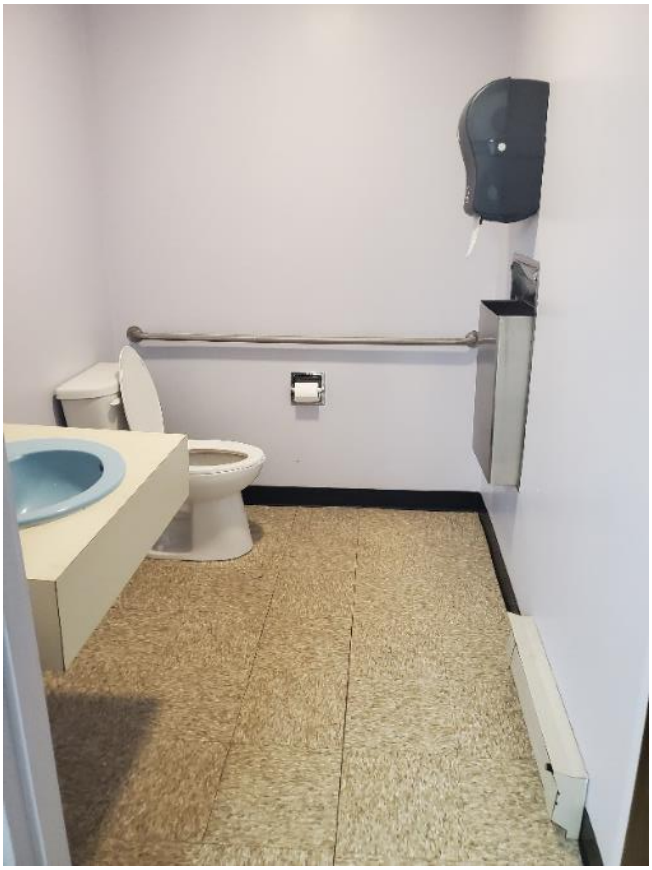

Figure 2.01.06: Public restroom

Figure 2.01.07: Lavatory at public restroom

Figure 2.01.08: Lav drain missing protective cover at public restroom

Accessible Units:

The 14-3 site contains 2 buildings with 4 accessible units. The number of units currently required to meet the MAAB standards is 5% of total units or 2, so the development meets minimums. We did not observe any other sensory adapted apartments; MAAB requires 2% of units to be sensory adapted and should be provided as part of the next modernization. Unit interiors are generally accessible; however, the designated accessible units fail to comply with all MAAB requirements for group 2.

Unit Kitchens:

While the renovations to the accessible units may have been code complaint when originally renovated, but the kitchens do not meet current 521 CMR requirements. Kitchen controls for the exhaust hood and under-counter light are missing. Open shelving is non-compliant, the sink lacks clearances the sides as well as the proper thermal protection at drains (See Figures 2.01.09 and 2.01.10).

The kitchens need to be reconfigured. In addition to being non-compliant with code, the kitchen finishes are aged and in need for repair and replacement. The VCT flooring is in poor condition, as is the sealant at backsplashes and fixtures. As part of the required reconfiguration of the ADA kitchens, all fixtures, cabinets and finishes should be replaced. As part of the renovation, finishes must be abated as detailed in the hazardous materials report attached to this document.

Figure 2.01.09: Accessible unit kitchen

Figure 2.01.10: Accessible unit kitchen

Unit Bathrooms:

Similar to the unit kitchens, the ADA bathrooms were built prior to the requirements of 521 CMR and do not meet all requirements for accessibility. The finishes are old and tired are at the end of their useful life (See Figures 2.01.11 and 2.01.12). Our recommendation is that the ADA bathrooms be comprehensively renovated for accessibility per 521 CMR, including replacement of all fixtures, flooring, and accessories.

Figure 2.01.11: Accessible bathroom

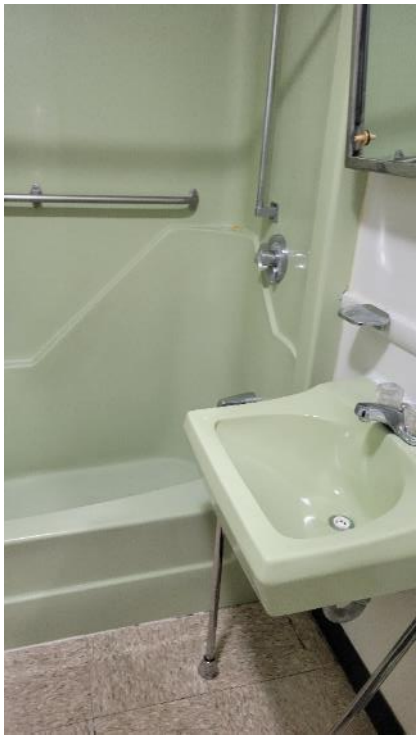

Figure 2.01.12: Accessible bathroom

Recommendations:

- Resident mailboxes are not within ADA reach ranges. Mailboxes do not meet current USPS standards and will have to be replaced. Install new mailboxes at accessible heights. Include new CBUs.

- Signage is not accessible. Provide accessible signage throughout building with braille and raised lettering meeting ADA and MAAB requirements. This work will be required by a substantial renovation.

- Community kitchen is not accessible, stove was disconnected and not usable. Missing smoke detectors. Reconfigure kitchen for accessibility per 521 CMR. Abate flooring (see hazmat report). This work will be required by a substantial renovation.

- Common restrooms do not meet MAAB clearance requirements and lack grab bars. Pull strings inactive. Reconfigure restrooms to achieve required clearances. Install accessories and grab bars as required by 521 CMR. This work will be required by a substantial renovation.

- ADA bathrooms do not meet all requirements for accessibility, and finishes are at the end of their useful life. Demo and reconfigure bathroom for accessibility per 521 CMR. As part of a comprehensive ADA bathroom upgrade replace all fixtures, flooring, and accessories.

- ADA unit kitchens do not meet MAAB requirements. Reconfigure kitchen for accessibility per 521 CMR. Replace all appliances, fixtures, and cabinets.

- All ADA unit kitchen finishes, including VCT floor, GWB, wall splashes/caulk are worn and need repair/replacement. Abate and replace as part of comprehensive ADA kitchen modernization. Include as part of ADA kitchen modernization.

Part 2.02 – Site Work

Overview:

The 14-3 site is a 0.76-acre development bordered by Sewall St. to the north, Harris St. to the east, Winthrop Ave to the south, and residences along the east and northeast property border (See Figure 2.02.01). The site slopes a few feet from the retaining wall at the southwest corner of Winthrop Ave and Harris St.to the northwest along Winthrop. New concrete sidewalks, connect the buildings to the street and parking while grass lawns and mature trees fill the courtyard and buffer each building from the streets (See Figure 2.02.01). In general, we rate the condition of the site at the development as good.

History:

MA Revere Housing Authority Federal Housing Development 14-3 was constructed in 1980. On this site, there are a total of 45 single-bedroom units.

Figure 2.02.01: Site plan of 14-3

Figure 2.02.02: Aging electrical/telecom cabinets

Site Drainage:

Site drainage at the property appears to be adequately designed and maintained. We noted several drop inlets in lawn low areas, as well as drainage collection near the building foundations. The rain leaders from the guttered roofs lead to underground storm drainage at almost every instance. A few were surface draining, but there were no signs of erosion on damage to nearby structures (See Figures 2.02.03 to 2.02.06).

Figure 2.02.03: Grating at storm drainage

Figure 2.02.04: Drop inlet

Figure 2.02.05: Typical downspout leader connected to underground drainage

Figure 2.02.06: Surface drainage – gas meter and exterior routed lines

Asphalt and Paving:

There is a parking lot on the west side of the property for about 16 automobiles. The bituminous concrete paving and lot striping is in good condition. The lot is properly bordered by granite curbs and connects to the newly-installed concrete sidewalks (See Figures 2.02.07 to 2.02.08).

Figure 2.02.07: Concrete curbs at north parking

Figure 2.02.08: New concrete paving at courtyard

Figure 2.02.09: New concrete paving at courtyard

Outdoor Amenities:

No outdoor amenities are provided.

Landscaped Areas

In general, with the exception of the site walls and retaining walls, project landscaping is in good condition. The majority of the site is grassy lawn which was dry and receding from the concrete walks at some locations (See Figure 2.02.10). There are medium-sized shrubs at random intervals along the rear building elevations on the courtyard side and mulched shrubbery along the facades facing the street (See Figures 2.02.11 and 2.02.12).

The major problem at the 14-3 site is with the degradation of the brick site walls located on the southeast and northwest sides of the courtyard. The walls appear to be double-wythe brick and are about 7 feet tall. The walls to the northwest show efflorescence and cracking. On the southeast side, the bricks are cracked, missing, and the brick copings have broken free of the wall (See Figures 2.02.13 to 2.02.17).

Our recommendation is to clean and repoint the brick, where possible. The copings should be rebuilt or preferably replaced with a new precast concrete coping in order to provide a continuous barrier against further water intrusion.

Figure 2.02.10: Courtyard

Figure 2.02.11: Landscaping at front entry

Figure 2.02.12: Transformer and landscape mulch

Figure 2.02.13: Damaged brick cap at site walls

Figure 2.02.14: Vertical cracks at brick site walls

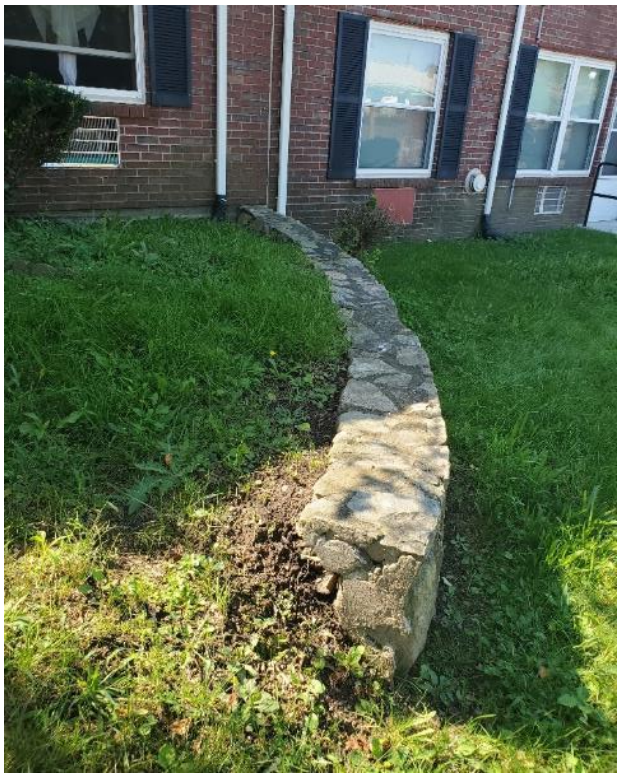

Figure 2.02.15: Stone retaining wall

Figure 2.02.16: Cracked and degrading brick site walls

Figure 2.02.17: Chipped brick at site walls

Recommendations:

- Efflorescence, missing bricks, biological growth at brick site walls. Walls feature brick copings and appear to lack flashings of any kind under the coping. Cracking brick observed at pilaster transitions. Repoint brick, clean wall, and replace brick coping with precast coping and provide continuous flashing at top of wall to prevent water entry into top of wall.

Part 2.03 – Structure

Introduction:

The buildings at 14-3 are two-story wood framed structures on concrete basements, crawlspaces, and foundations. Exterior walls are wood framed bearing walls with a brick veneer. BWA did not have access to a set of design documents for the building at this site. Except for some subtle rippling in the brick veneer, the 43-year-old structure appears to be sound from the exterior. Interior walls are gypsum wallboard over wood studs.

Floor Joists:

Floor joist appear to be a "Web Joist" system with dimensional wood chords and galvanized tube steel webs. The floor joists have clear moisture damage (See Figure 2.03.06). All of the galvanized webs are oxidizing, likely from consistent exposure to the moist crawl space. We accessed the crawl space from the small access door in the basement and found numerous joists with corrosion, particularly at the pipe connections at the wood and at the retaining pin through the chord. Pins are rusting, and in some locations, were working loose, indicating the joists were failing (See Figures 2.03.01 to 2.03.05). Several floors are unacceptably deflected. Building maintenance confirmed that there are bouncy floors throughout.

We recommend that the floor joists be reinforced. New framing should be introduced into the crawlspaces under both buildings and installed to repair or replace the joists throughout. Due to the limited access to the crawlspaces, particularly at the larger building on the southern corner of the site, this work will require cutting holes in first floor to allow access from the unit above.

Figure 2.03.01: Typical truss pin working free

Figure 2.03.02: Corroded truss web and pin with water damage

Figure 2.03.03: Rusting truss pin and web

Figure 2.03.04: Rusted and undersized truss pin

Figure 2.03.05: Rusting truss pin at crawl space

Figure 2.03.06: Rusting pins and water damage at truss

TJI joists observed under the first-floor are also showing clear signs of water damage (See Figure 2.03.07). Where attached to the exterior walls, the joist hangers appear to be undersized and missing fasteners. Several joists were found to be penetrated by pipes that are outside of the safe coring zones. TJIs should be reinforced or replaced) with treated wood framing. This work should be done in tandem with the joist repair project described above.

Figure 2.03.07: TJI Joist with water damage – corroded hangar

Basement Floors:

Basement floors were generally good, but there were some large cracks found, indicating that the building may be settling (See Figure 2.03.08). The cracks do not appear to be structural in natures, but should be watched for changes. We suggest that the cracks be patched and repaired and that an investigation into settlement be performed, and the basement slab should be monitored for changes.

Figure 2.03.08: Basement floor cracking at doorway

Recommendations:

- First floor truss joists are failing and require replacement. They are held together by pins, which are either corroding and failing or working loose, causing structural failure. Several floors are unacceptably deflected. Reinforce existing truss joists with new framing throughout. This work will require cutting holes in first floor to allow access to the crawl space from the unit above.

- TJI joists observed under the first-floor show signs of water damage, hangers appear to be undersized and some are missing fasteners. Several observed with pipe penetrations outside of acceptable coring zones. Reinforce entire first floor framing system (TJIs and trusses).

- Floor slab at common area basement exhibits cracking and some settlement. Repair and patch slab cracks. Investigate settlement and monitor repairs.

Part 2.04 – Building Envelope

Overall, the building envelope is in fair condition, but there are deficiencies that need to be addressed. The 43-year-old brick veneer shows obvious signs of movement. Roofs are new, but the fascia and gutters are damaged. The windows at 14-3 are only 9 years old and should last for another 10-15 years, but are difficult for residents to use. Aside from the re-roofing that took place in 2013, there have been no other major exterior renovations.

Exterior Wall:

The brick veneer on the two buildings is backed by wood studs and sheathing with an unknown cavity width. The brick does not appear to have relieving angles at the 2nd story, but is continuous up to the gables about 27-30 feet high. It's at the higher unsupported walls that the brick veneer is revealing sever distress, revealed in the waviness or rippling bands as it extends upward. In other areas of the exterior wall, where the brick is subjected to moisture from splashing and condensate exposure, other problems appear. There are areas where the moisture is causing mold, mortar degradation, and efflorescence (See Figures 2.04.01 and 2.04.02).

The mold and efflorescence are major concerns, but at the areas that have been degraded, the mortar will need to be repaired or replaced to stabilize the brick from further damage. Our recommendation is that the brick veneer be removed and replaced. When rebuilding the wall, a minimum 1" cavity with the appropriate weeps and mortar net should be provided to ensure that hydrostatic and freezing water are prevented from affecting the new veneer. When replacing the veneer, it will be essential to update the exterior insulation to meet new energy code requirements.

Brick pilasters around entryway doors were left unsupported when the sidewalks were recently replaced (See Figures 2.04.03 and 2.04.04). As such, they are showing damage, chipping, and missing mortar. As part of the larger brick replacement suggested, these pilasters need to be properly supported. We suggest widening the walkways with a deep foundation below frost or to support the pilaster with stainless angles that can be anchored to the foundation.

Figure 2.04.01: Efflorescence

Figure 2.04.02 Degraded mortar at entry

Figure 2.04.03: Brick pilasters lacking foundation, degraded mortar

Figure 2.04.04: Brick pilasters lacking foundation, degraded mortar

AC and PTAC Sleeves:

Each unit in the building has an AC sleeve and grille under the bedroom and living room windows. Each of the common spaces has a similar PTAC sleeve and louver. The through-wall AC sleeves are in poor condition (See Figure 2.04.05). There is a lack of flashing and sealant joint maintenance around each of them. They are not properly sealed; the damaged sheet metal and failing joint sealants are allowing the open joints to bring unconditioned air to freely enter the unit. Around the sleeves are open mortar joints and cracks, likely due to freezing moisture in the cavities (See Figures 2.04.06 and 2.04.07). In some locations, the sleeves are unable to properly drain, and are leaking condensate into the interior. The condensate is damaging floors, window frames, and sills (See Figures 2.04.08 to 2.04.10).

We believe that these sleeves are past their useful life and will continue to be a problem if left in-place. We suggest that they be removed and sealed. Replace the sheet metal grilles with brick infill and repair the damage in the walls from moisture. With the sleeves sealed, residents can still use window AC units, or if able, we suggest that high-efficiency heat pumps be installed as part of a heating system upgrade.

Figure 2.04.05: Damaged AC sleeve

Figure 2.04.06: Degraded mortar at PTAC vent

Figure 2.04.07: Corner crack at PTAC vent

Figure 2.04.08: Crack at sealed AC sleeve

Figure 2.04.09: Brick sill and wall wet from AC condensate above

Figure 2.04.10: Condensate re-routing

Step cracking is usually sign of a major concern and indicative of settlement issues when found in a masonry wall (See Figures 2.04.11 and 2.04.12). We documented and example from an AC sleeve at 2nd floor extending to lintel of 1st floor window. We recommend that this step cracking be reviewed with a structural engineer to address the need for foundation repair and possibly shore foundations.

Figure 2.04.11: Stepped crack at AC Sleeve

Figure 2.04.12: Sealed AC sleeve and masonry cracks

Windows:

Windows that were replaced in 2014, are in fair condition (See Figure 2.04.13). Windows appear to be weather tight but they likely do not meet current energy code. The windows are difficult for tenants to operate, and in one case we found a unit that was out of square and unable to open. It's likely that the windows will last another 15 years if maintained. When windows are replaced, we recommend more efficient units and that the windows have smaller sash sizes or use casement windows that are easier for residents to operate.

At window sills throughout the development, it's evident that there is insufficient slope of window sill and not enough overhang at the sill drip edges. Water is running down the face of the wall below sills and causing the mortar to crack. In some instances, this damage is causing the separation of the entire brick sill from the wall (See Figures 2.04.14 to 2.04.16). When brick veneer is replaced, the recommendation is to include precast sills with drip edge with new flashings, end dams and weeps below the sill.

Figure 2.04.13: Typical 1st floor window

Figure 2.04.14: Typical windows

Figure 2.04.15: Entry walk with brick at the base damaged from salt and snow

Figure 2.04.16: Typical rear porch and stair – mold on brick – exhaust fans

Roofing

At 14-3, the roof eaves are guttered with most downspouts leading to underground drainage (See Figure 2.04.17). Under the soffits is an exterior gas line that appears to be added in a later renovation to connect to the units' gas-fired space heaters. Water is damaging and causing the deteriorating the wood eaves. The water damage is likely being caused by blocked gutters (See Figures 2.04.18 and 2.04.19).

We found gutters with sediment and growing vegetation. (See Figures 2.04.20 and 2.04.21). The gutters need to be cleaned immediately and periodically to prevent further damage. All areas of rotting wood fascia need to be removed, flashed properly, and replaced. Ideally the fascia would be replaced with a synthetic PVC trim that is more durable and rot resistant.

Figure 2.04.17: Typical soffit with gas line under eaves

Figure 2.04.18: Main entry- damaged fascia, soffit, and gutter

Figure 2.04.19: Main entry – damaged fascia and gutter

Figure 2.04.20: Rippled brick veneer and vegetation in roof gutters

Figure 2.04.21: Exterior pipe and wire routing create nesting for birds

Each of the buildings have a number of ground-level areaways for crawl-space ventilation. Most of the areaways at the development are covered in dirt allowing vegetation to take root (See Figure 2.04.22). The areaway vents are not only failing to function for ventilation, but are likely allowing water infiltration. Since it is now allowable by code to close-up crawl space vents, we suggest these be cleaned and infilled with masonry.

Figure 2.04.22: Areaway filled with debris

Recommendations:

- Brick veneer is exhibiting severe distress. Brick veneer should be removed and replaced. A minimum 1" cavity should be provided. Retrofit foundation wall if necessary to allow cavity and drainage. Consider installing insulation if none exists.

- Brick pilasters around entryway doors are no longer supported at grade (walkways were lowered). Insert brick at base of pilasters to properly support existing veneer. If walkway (which used to support pilaster) is no longer wide enough to provide support due to recent replacement work, install stainless steel angle at grade for support of veneer.

- Through-wall AC sleeves are not sealed. There are open mortar joints at window sills and failing sealant joints allowing unconditioned air to freely enter unit interiors. Condensate from units drains to interior in some locations and has damaged flooring. Evidence of water entry around AC sleeve. Remove through-wall AC sleeves. Infill openings to match surrounding construction. Repair and replace damaged flooring areas. Assume residents will use window units or provide heat pumps in future heating system upgrade.

- Lack of flashing and poor sealant maintenance around PTAC sleeve opening. AC sleeves to be infilled as described above.

- Insufficient slope of window sill/insufficient drip edge. Mortar cracking below window sill (separation of entire sill from rest of veneer). When brick veneer is replaced, include precast sills with drip edge. Install new flashings, end dams and weeps below sill.

- Water damage and deterioration at roof edge, likely due to blocked gutters (vegetation growing in gutters observed elsewhere). Clean gutters and ensure that a maintenance plan is in place for continual upkeep. Remove and replace rotted wood fascia and install flashing.

- Step cracking from AC sleeve at 2nd floor extending to lintel of 1st floor window. Step cracking is indicative of settlement issues. Review with a structural engineer to address foundation repair and possible need to shore foundations.

- Crawl space vents are covered up (areaways clogged with dirt/debris). Infill crawl space vents with masonry; clear all areaways of debris.

- Unit window found to be out of square and will not fully close. Repair window and est 10% of unit windows where damaged.

- Window sash sizes are large and difficult for residents to operate. Windows were replaced in 2014 and should last for at least another 15 years. When windows are replaced, provide sash sizes that are easier for residents to operate.

Part 2.05 – Common Interiors

Common areas in both buildings include a lobby/mail area, common laundry, community room, common restrooms, a community kitchen, and a boiler room in the basement that is being used for file storage. The common areas, particularly the floor coverings, are aging poorly and in need up updates. Numerous capital improvements are needed; described below.

Community Room:

The Community Room finishes are in poor condition. The space lacks a vestibule at its entry, which is required by the current energy code and would be required as part of a larger renovation to the property. The wall finishes are painted drywall, lacking a wainscot or more durable finish typically found in community-use areas. Flooring at the Community Room is thin pile type carpet which is soiled and delaminating from the subfloor in several areas. The delaminations are a concerning tripping hazard - especially for this building serving the elderly (See Figures 2.05.01 to 2.05.03). As part of a comprehensive renovation and energy update, we recommend that a vestibule be created which will help control energy loss and that the carpet be replaced, ideally with a durable LVT that can stand up to heavier use and is easily cleaned.

There is evidence of rodent infestation in the Community Room. To control the infestation, all wall openings should be identified and then patched or sealed. Additionally, pest control needs to be engaged to remedy the infestation and help to maintain an environment is sanitary and inhospitable to vermin.

Figure 2.05.01: Community Room

Figure 2.05.02: Community Room

Figure 2.05.03: PTAC at community room

Basement Mechanical Room:

The basement mechanical room is being used as an auxiliary file storage and inhibits access to domestic hot water boilers and tanks (See Figures 2.05.04). The files are subject to the damp conditions found in the basement. Revere Housing Authority needs to address the file storage issue with a secure area for the numerous documents. We strongly recommend that an alternate like a secure external storage space or building addition be considered. Unsurprisingly, there is water infiltration into the basement mechanical room that is staining and deteriorating walls and floors (See Figures 2.05.05). We were unable to ascertain the nature of the leaks, but we recommend that the source of leaks be investigated and properly remediated to prevent further

deterioration, mold growth, and damage to items in the basement. We anticipate needing injection grouting and negative side waterproofing to properly seal basement walls from further infiltration.

Figure 2.05.04: Basement boiler room – currently used for file storage

Figure 2.05.05: Leaks at boiler room

At basement ceilings, water is seeping through. (See Figures 2.05.06 to 2.05.08). Ceiling finishes are badly deteriorated, molding, and damaging steel beam fireproofing. The source of the infiltration isn't evident without further destructive investigations. Our recommendation is that water-damaged areas be demolished so that the leaks can be properly identified and remediated. Following leak repairs, all finishes and bam fireproofing will require replacement in-kind.

Also found were code violations at the threshold of the basement storage room. The 2" step down into the room is an accessibility code violation and a potentially dangerous condition. To remedy, the concrete slab around the door will need to be chipped-away, regraded, and replaced to eliminate the step.

It is required by code that rooms used for storage be 2-hr separated from rooms used for assembly (Community Room) or from dwelling units. The basement storage room exists under both but the ceiling is not designed as a barrier. Piping and valves that are buried in the in the floor assembly make a code-compliant barrier in the ceiling difficult, and will have to be moved. After moving the plumbing from between the joists, a continuous 2-hour rated assembly should be constructed.

Figure 2.05.06: Basement boiler room – currently used for file storage

Figure 2.05.07: Basement boiler room – currently used for file storage

Figure 2.05.08: Unsealed penetrations

Common Stairs and Corridors:

There are several problems with the common hall stair. First, the upper stair landing does not afford clear space outside of door swing and there is no room to stand on landing if the door is opened (See Figure 2.05.11). Next, the stairs are steep and not appropriate for elderly (See Figure 2.05.13). Finally, the stairs and are covered in worn carpet (See Figure 2.05.12). While the stairs should ideally be replaced to eliminate all of the conditions described, the reconfiguration of the stair is likely not able to be prioritized in a renovation. At a minimum, the carpet should be replaced with a durable flooring such as rubber or LVT that will require less maintenance and provide longer life. (See Figures 2.05.09 and 2.05.10).

There is no means of controlling wind-driven rain from blowing in at the door threshold where the entries are flush with the exterior paving. We recommend that trench drains be installed at all flush entries and that they are connected to underground site storm drainage.

Figure 2.05.09: Stair entry

Figure 2.05.10: Threshold at stair entry

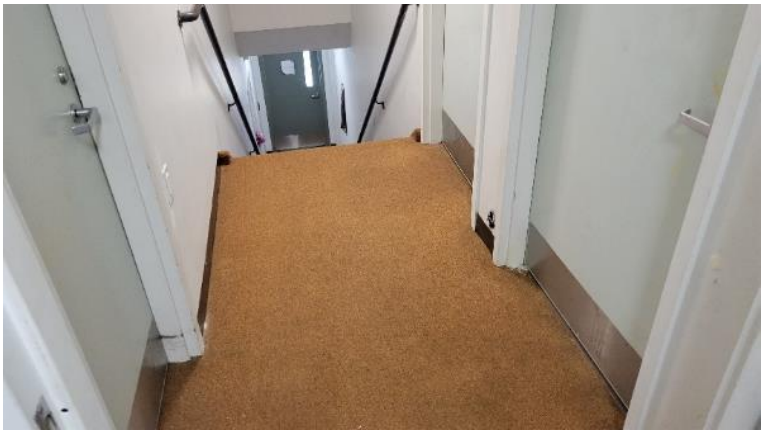

Figure 2.05.11: Upper landing at stairwell

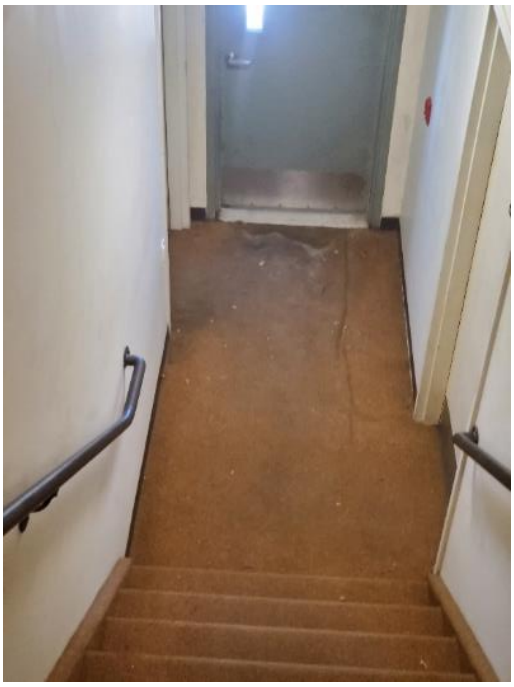

Figure 2.05.12: Carpet at stairwell

Figure 2.05.13: Steep risers at stairwell

Other Common Rooms:

The common laundry room and the nearby storage rooms is are in fair condition, with the exception of the flooring (See Figure 2.05.14). The 12x12 VCT tile in the laundry and storage rooms are badly stained and damaged, and need to be replaced (See Figure 2.05.15). The VCT tile adhesive in these rooms has tested positive for asbestos in the latest hazardous materials report. All VCT in these areas will require abatement when removed. As with all high-use locations, we recommend that the areas of VCT flooring in the common laundry and storage rooms be replaced with a more durable and easily cleaned LVT.

Figure 2.05.14: Laundry room

Figure 2.05.15: VCT at laundry room

Restrooms:

The common restrooms were originally designed to be accessible; however, they fall short of full MAAB compliance (See Figures 2.05.16 to 2.05.18). They lack handrails, pipe guards and clearances. In addition to code violations, the floor VCT is in poor condition. Both of the public restrooms need to be reconfigured for full accessibility and finishes refreshed. (See Section 2.01 Accessibility)

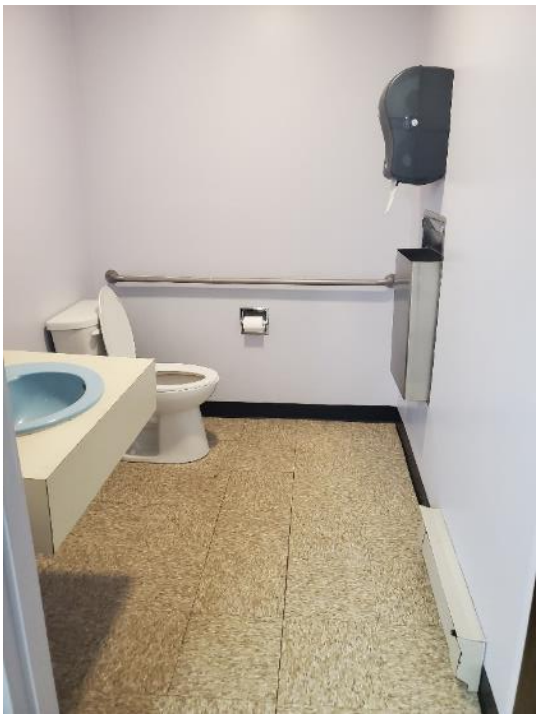

Figure 2.05.16: Public use restroom

Figure 2.05.17: Public use restroom

Figure 2.05.18: Sink drain lacks cover

Crawl Space:

At the crawl spaces of each building, the space is continuous and is not fire separated from units above (See Figure 2.05.19). Code requires 1-hour separations between spaces. A separation should be constructed under each unit from layers of GWB and sealed at all edges and penetrations. Also in the crawl space, the floor cavity is filled with exposed fiberglass insulation that is molding (See Figures 2.05.20 and 2.05.21). As part of the floor joist repair (See Section 2.03 Structure) and the space separation construction, we recommend that all of the fiberglass insulation be pulled from the damp crawl spaces and replaced with a closed-cell spray foam with ignition barrier that will help seal up the gaps and improve the thermal separation to units above.

Figure 2.05.19: Crawl space

Figure 2.05.20: Fiberglass at crawlspace

Figure 2.05.21: Fiberglass at crawlspace

Corridors and Lobby

The corridors, vestibule, and lobby that connect stairs and entries contain the same poor quality stained and damaged carpet as the stairs and landings (See Figure 2.05.22). All of the carpet needs replacement, ideally with a more durable and lower-maintenance material like LVT or ceramic tile that won't require frequent replacement. (See Figures 2.05.23 and 2.05.24).

Figure 2.05.22: Corridor

Figure 2.05.23: Entry lobby and mail boxes

Figure 2.05.24: Egress door at Entry Vestibule

Recommendations:

- Evidence of rodent infestation in the Community Room. Seal openings, engage pest control and maintain an environment inhospitable to vermin.

- 2" step at door threshold to basement storage room is a code violation. Remove, regrade, and replace concrete paving leading to door to eliminate 2" step.

- Signs of water damage to ceilings and finishes and potentially beam. Identify and correct source of leak; repair interior finishes. Clean/repair beam and any spray fireproofing that may have been damaged by leak.

- Buildings lack radon ventilation. Prep all basement slabs for radon ventilation.

- Crawl spaces are not fire separated from units above. After floor structure reinforcement, install 1-hour GWB fire separation at underside of crawl space.

- Common stair halls - Exposed fiberglass insulation at underside of first floor harbors mold. After reinforcement/repair of first floor framing,

insulate between crawl space and first floor. Install closed-cell spray foam with ignition barrier.

- Community Room carpet needs replacing. It is soiled and delaminating from subfloor (tripping hazard esp for elderly). Replace carpet with LVT for enhanced durability and ease of cleaning.

- Community Room lacks a vestibule at entry as required by energy code. Install a vestibule for improved energy efficiency if desired.

- Laundry room VCT flooring needs replacement; Abate and replace flooring with durable LVT.

- Storage room VCT is damaged and coming loose from substrate. Abate and replace VCT flooring (see hazmat report).

- Basement mechanical room is being used as file storage and inhibits access to DHW equipment. Authority needs secure area for file storage. Provide external storage space or addition to structure.

- Evidence of water infiltration at basement mechanical room. Identify and correct source of leaks: perform injection grouting at cracks, apply negative side waterproofing.

- Separation of Storage use (basement records room) is required from Community Room or dwelling units above. Piping (and valves) half-buried in rated floor-ceiling assembly. Provide 2-hour rated horizontal assembly and adjust plumbing if necessary to eliminate interference with membrane.

- Common Hall stair - Stairs and landings are worn carpet and need replacement with a more durable material such as rubber or LVT.

- Common stair halls - No means of controlling wind-driven rain at flush entries to prevent water entry. Install trench drains at all flush entries and connect to underground site storm drainage.

Part 2.06 – Unit Interiors

The buildings contain 45 one-bedroom, one bath units – most of which have interior finishes that are original to the building's construction. The units vary in condition from fair to poor. When units are vacated and turned-over, the finishes are generally refreshed and receive repairs, otherwise all finishes, fixtures, and equipment are from the original from 1980.

ADA Units

ADA unit bathrooms are in poor condition. Those investigated were replete with water damage in walls. On the ceilings there are cracks and water damage. In one unit, we found that the walls were separating and the joint to the ceiling. These issues should be investigated and repaired. Drywall throughout the ADA and other bathrooms needs repair and to be repainted. The VCT flooring is poor and damaged. The tiles are cracked and joints are opening up. We recommend that the ACM floor finishes be abated and replaced with a durable LVT flooring (see hazmat report).

Walls and Ceilings

Walls and ceilings are painted gypsum wallboard over wood stud framing. Wall and ceiling finishes in living rooms and bedrooms are in good condition, but deficiencies are present that need to be addressed. Many units have discolored ceilings, likely from smoke and water damage (See Figure 2.06.01). Other ceilings have holes that likely resulted from water damage caused by leaking roofs. The leaks appear to have been sealed with the application of the new roof shingles, but damaged ceilings and walls from the former leaks remain (See Figures 2.06.02 to 2.06.04).

Walls in 14-3 were found to be in mostly fair shape, with some exceptions where cracks were found around doorways. The majority of the ceiling and wall deficiencies found are in kitchens and baths and the repairs are included in the larger renovations of those spaces.

Figure 2.06.01: Ceiling discoloration – access panel at repair

Figure 2.06.02: Drywall cracking at racked door frame

Figure 2.06.03: Ceiling discoloration

Figure 2.06.04: Ceiling damage

Flooring

Flooring in 14-3 varies in each unit from VCT, wood parquet, sheet vinyl, and vinyl tile. Kitchens and laundry rooms are primarily VCT, while bathrooms are sheet vinyl. Living rooms and bedrooms are wood parquet. Flooring conditions are poor or very poor in most units. VCT in kitchens is cracking, discolored, scratched and in some cases the joints are opening. Sheet vinyl in bathrooms is old and tired and has permanent discoloration and wear. Parquet hardwood floors vary in condition based on the last time the unit was turned over, but most need refinishing at a minimum to address surface gouges and staining that's beneath the finish. (See Figures 2.06.05 to 2.06.11)

Hardwood flooring in living rooms and bedrooms is original to the construction of the units in 1980. The parquet oak floors are showing extensive wear and, in most cases, can be revitalized by sanding and refinishing, but in isolated areas, particularly at 2nd floor bedrooms, the floors are buckling. Areas that are damaged will require removal and replacement of damaged boards, replacement or refurbishment of substrate, and refinishing. We estimate that approximately 50% of unit hardwood flooring requires some amount of repair or refinishing.

VCT can be expected to last about 40 years with proper upkeep. At 43 years, the VCT here is past its useful life. We recommend replacing it within the next 3 years and should be included with the full kitchen modernization. When replacing the VCT flooring, a high quality LVT is recommended. A luxury vinyl tile (LVT) will be more durable and may pay for itself over the life cycle. Since the limited asbestos testing has found asbestos-containing flooring in 2 of 5-unit kitchens and baths, abatement or encapsulation of the flooring will be required.

Figure 2.06.05: Typical gas heater in units

Figure 2.06.06: Parquet wood floor, transition to sheet vinyl at bathroom

Figure 2.06.07: Worn parquet floor

Figure 2.06.08: Aging VCT tile at kitchen

Figure 2.06.09: Aging VCT tile at kitchen

Figure 2.06.10: Damaged VCT tile at kitchen

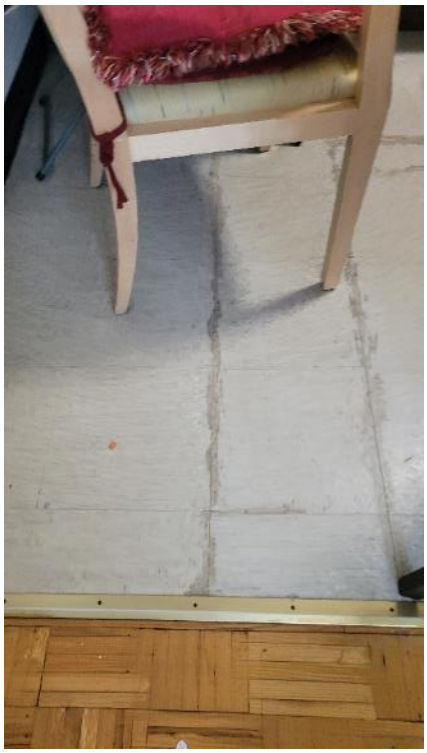

Figure 2.06.11: VCT tile transition to parquet wood floor at living room

Doors and Windows

Unit entry doors are solid core painted wood doors. In all cases, the corridor doors should be rated at least 20 minutes at a corridor and have a permanent tag indicating the fire rating. On the units observed no tags were found, indicating that the doors are either not properly rated, or have had a non-embossed tag removed or covered in paint; both are code violations that should be addressed (See Figures 2.06.12 and 2.06.13).

While it is possible to have doors in this condition assessed and re-certified, it is not usually a substantial cost savings. It is our recommendation that all doors

and hardware be replaced with the minimum 20-minute rating, or with a 1-hour rating which is usually less expensive. If renovation reconfigurations allow for the placement of the door frame to remain in place, then the hollow-metal frames be fine for reuse.

Figure 2.06.12: Typical interior unit doors and frames

Figure 2.06.13: Typical windows and sills

Figure 2.06.14: Typical interior unit closet and bedroom doors and hardware

Unit interior doors, frames, and hardware is original to the building. Doors are hollow core veneer wood doors. Knobs are round (See Figure 2.06.14). The condition of interior doors varies from good to poor and about 20% of the doors are estimated to be in poor condition and need to be repaired or replaced.

Kitchens

All the unit kitchen finishes and casework are original to the development and are in poor condition. Kitchen appliances include a refrigerator and a 24-inch-wide electric range or cooktop in the ADA units; none of the observed appliances are Energy Star compliant.
Kitchen hoods are recirculating and not exhausted to the exterior. All kitchens are in poor or very poor condition.

Kitchen cabinets and counters are in poor condition (See Figure 2.06.15). The cabinet door panels are MCP, and not a durable design. The aged kitchen cabinets have water damage, delamination, and are chipping. The door alignment is off and needs adjustment in all units. Sink bases are in very poor condition; they are discolored and damaged from water exposure. Countertops are plastic laminate in varying conditions. Some kitchens lack backsplashes at cooktops. The cabinets and countertops are damaged and failing. Lighting is poor, and overall, the finishes are poor. (See Figures 2.06.16 to 2.06.19).

All unit kitchens are in poor or very poor condition and require significant modernization, now. Full modernization to kitchens should include new sinks and water-sense faucets, LED lighting, and flooring. Appliances are aging and should be replaced at the time of renovation with Energy Star models for improved energy efficiency.

Recirculating hoods should be installed over cooktops and ranges connecting to the existing exhaust to the exterior (see HVAC). Switched under-cabinet lighting to light the work surface is also recommended.

Note that rough plumbing piping replacement that is recommended as part of the plumbing updates (section 2.11) will require cutting and patching of wet walls in unit kitchens. Walls at the plumbing replacement will need to be cut and patched and all wet wall finishes replaced.

Figure 2.06.15: Kitchen cabinets

Figure 2.06.16: Typical kitchen

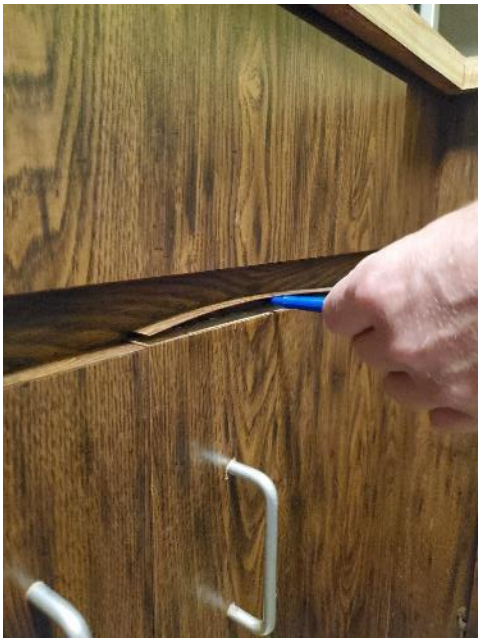

Figure 2.06.17: Kitchen cabinets delaminating

Figure 2.06.18: Kitchen countertops delaminating

Figure 2.06.19: Kitchen sink base

Bathrooms*:*

Bathrooms are in consistently poor condition, with many fixtures and finishes damaged or failing. Bathroom fixtures and finishes are all original to the development, and are in poor or very poor condition. Fixtures, porcelain, and accessories are damaged, deteriorated, or missing. (See Figure 2.06.20) Lavatories are separating from walls from residents leaning on them. Many bath lavatory fixture stops are frozen and do not close which precent the fixture from being isolated in the case of a leak.

Fiberglass tub enclosures are worn, stained, and in poor condition. Sanitary conditions are difficult to maintain when the surfaces are degraded, and should be replaced with new fiberglass enclosures, ideally with shower stalls. (See Figures 2.06.21 and 2.06.22).

Overall, the unit bathrooms are in poor or very poor condition and recommend that they be comprehensively modernized now, including all fixtures, flooring, accessories, and lighting. (See Figures 2.06.23 to 2.06.29).

Install new carriers for lavatories. When replacing flooring consider replacing sheet vinyl with a more durable ceramic tile on backer board subfloor. This comprehensive modernization of all standard unit and ADA bathrooms will include new rough Plumbing and wiring as well (see Section 2.09 Plumbing)

Figure 2.06.20: Wall mounted sink

Figure 2.06.21: Bathroom – fiberglass tub surrounds

Figure 2.06.22: Bathroom – fiberglass tub surrounds

Figure 2.06.23: Sheet linoleum at bathrooms

Figure 2.06.24: Accessible bathroom

Figure 2.06.25: Accessible tub

Figure 2.06.26: Typical bathroom accessories and flooring

Figure 2.06.27: Typical bath accessories

Figure 2.06.28: AC sleeve at Living Room – see section 2.04

Figure 2.06.29: AC sleeve at Living Room – see section 2.04

Lighting

Figure 2.0616: Typical unit overhead light fixture

See Electrical (Section 2.10) for light fixture descriptions and recommendations at unit interiors.

Recommendations:

- ADA Unit - Water damage to wall next to door at head and sill. Identify and correct source of damage, and repair drywall.
- ADA Unit - VCT flooring is damaged/cracked and aging. Abate as necessary and replace with a durable LVT flooring (see hazmat report).
- Second ADA Unit - Ceiling cracking and water stains; separation of wall from ceiling in some locations. Identify and correct source of damage, and repair drywall.
- Unit Bathrooms - Lavatories are original to the property and are in poor or very poor condition. They are separating from walls because residents lean on them. Install more robust lavatory carriers. (Include with comprehensive bathroom modernization.)
- All Units - Kitchen finishes and casework are original to the development, and are in poor or very poor condition. Provide new kitchen cabinetry, countertops, finishes, fixtures, and appliances.
- All Units - Bathroom floor finish is VCT instead of a sheet good. VCT is loose and allows water to contact subfloor. Replace bath flooring with ceramic tile or sheet good, threshold, and backer board. (Include with comprehensive bathroom modernization.)

- Fiberglass shower enclosures are worn, stained. Replace with new shower enclosure. Include with comprehensive bathroom modernization.

- Bathroom fixtures and finishes are all original to the development, and are in poor or very poor condition. Comprehensively modernize unit baths now; provide new finishes, accessories, wiring, plumbing fixtures and fittings, exhaust fans, and lighting. See related recommendations.

- Many bath lavatory fixture stops are frozen and do not close; fixture cannot be isolated in case of a leak. Replace fixture stops as part of bath modernization.

- Limited asbestos testing has found asbestos-containing flooring in 2 of 5-unit kitchens and bathrooms. Abate all ACMs as required. Assuming 40% of kitchen and bathroom floors are ACM.

- Wood floors need repair and refinishing. Repair damaged wood floors and refinish in 50% of units

- Replace 20% of unit interior doors, frames, and hardware.

- Replace all unit entry doors, frame, and hardware with minimum 20-minute UL-Rated solid core door.

Part 2.07 – Waste Handling

Waste at this site is handled individually by tenants who carry their trash to a dumpster located in the parking area. The dumpster is screened by a vinyl-slatted chain link enclosure and gate that is designed for a single dumpster. There is no opportunity for recycling in the existing enclosure. Oversized items are set outside the enclosure for pickup.

Figure 2.0616: Dumpster screen at west parking lot

Recommendations:

- Remodel a common area in each building to accommodate recycling bins.
- Expand the trash enclosure to include a recycling dumpster.

Part 2.08 – Fire Suppression Systems

No fire suppression system exists at the 14-3 property.

Code Issues and Triggers

- At the time of construction and renovation it was not code required to provide a fire suppression system for these buildings. Current codes require fire suppression systems for the buildings. Any major renovation will require installation of a fully sprinkler system.

Recommendations:

- Provide fire suppression systems to all buildings.

Requirements:

- If a major renovation occurs, provide NFPA-13 compliant fire suppression system.

Part 2.9 – Plumbing Systems

The buildings were constructed circa 1980. It is believed that the much of the systems and equipment is original to the buildings but some of the plumbing piping, fixtures and equipment has been replaced. Most of the electric hot water tanks have been replaced in the last 6 years with one currently being replaced. Most plumbing fixtures appear original to the building and in poor condition.

Waste, Vent and Rain Leaders

Waste piping is PVC and accessible in the basement and crawlspace of 2 Harris St and in the crawlspace of 30 Harris. It is unclear how old the PVC piping is and if it is original to the building or not. It is unclear if the PVC waste piping has been installed up through the building, however with visible PVC vent piping up through the building, we believe it is likely the entire system is PVC. The PVC piping that is observed in the basement and crawlspaces appears to be in fair condition with no signs of recent leaks or repairs. A new sidewalk was recently provided against the building in the parking lot. The sidewalk height blocks an end cleanout for the waste piping in the basement making the cleanout inaccessible. (Cleanouts are required to be accessible by code.)

Figure 2.91: PVC WASTE PIPING WITHIN BASEMENT

Vent piping is installed within the walls and not visible for observation. PVC vent piping is visible through the roof and is presumed to be of similar age to the waste piping.

The buildings have pitched roofs with gutters and downspouts down to the perimeter. There is no internal storm drain system within the buildings.

Figure 2.92: PVC WASTE PIPING AND POTABLE SUPPLY PIPING WITHIN BASEMENT

Supply Piping

The cold water, domestic hot water and domestic hot water return distribution piping is located in basement and crawlspace of 2 Harris St and the crawlspace of 30 Harris St. There is a crawlspace tunnel between buildings which contains distribution piping. It was reported that domestic recirculation piping in the crawlspaces and between buildings was replaced in 2017. All potable piping is copper with the age of the piping unknown however, appears to have been installed within the basement and crawlspaces within the last 10 years. The piping up through the building is of unknown age and condition but is assumed to be original. The visible piping in the basement and crawlspaces is insulated with fiberglass insulation.

A 4" water service enters the basement from Harris Street that serves both buildings. The size is reduced to 3" before the water meter. The water meter appears to have been installed recently. The cold water piping, water meter, check valve and shutoff valve are not insulated and are sweating significantly on the floor. Surface degradation of the equipment and piping is visible due to this condensation.

Figure 2.93: WATER SERVICE

Domestic Water Heating

Four 18.0 kW 119 gallon electric hot water tanks are located within the basement of 2 Harris St. The four tanks supply domestic hot water to both buildings on the site. Three of the tanks are Bradford White tanks and one is Rheem/Ruud. The two operating Bradford White tanks were installed in 2017 and 2022. The Rheem/Ruud tank was installed in 2018. The third Bradford White tank failed recently and is currently disconnected. A new replacement Bradford White tank is located within the basement waiting to be installed. The functioning tanks appear to be in good condition.

Figure 2.94: ELECTRIC WATER HEATERS

Behind the electric hot water tanks is a Leonard thermostatic high/low tempering valve to control domestic hot water temperature to both buildings. The valve appears to be in good condition. The outlet temperature is currently 120°F.

Figure 2.95: THERMOSTATIC TEMPERING VALVE

A bronze TACO 006-B4 cartridge circulator provides recirculation of domestic hot water from both buildings. The circulator appears to be enabled by an aquastat on the piping directly after the circulator. The circulator appears to be in good condition.

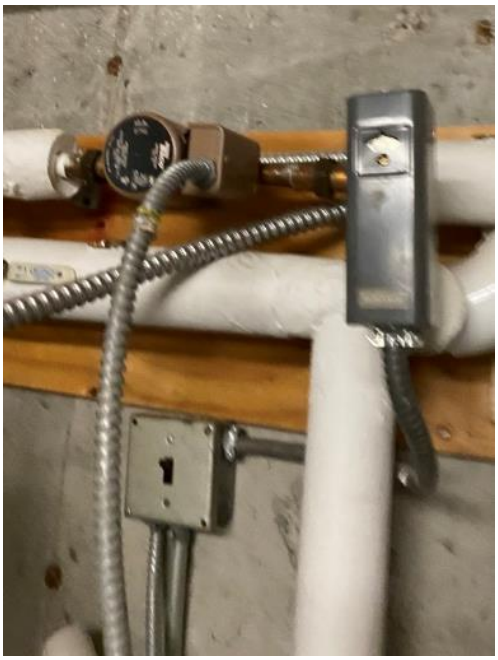

Figure 2.97: DOMESTIC HOT WATER RECIRCULATION PUMP

Potable piping behind the hot water tanks is missing large sections of insulation. The uninsulated piping is likely the result from replacing DHW tanks and equipment and not replacing insulation after piping replacement is complete. (Uninsulated DHW piping is a code violation.)

Gas Piping

The gas meter is exterior of the building and located on Harris St. The gas service supplies natural gas to two buildings on the site. The gas meter is against 2 Harris St which has apartments 1-29 and has 2" gas piping from the gas meter up the side of the building to distribution piping exterior of the building below the gutters. Gas piping enters between apartments with a riser in the apartments that serves the gas fired heaters on each floor. Gas piping enters the ground from the gas meter on Harris St to the 30 Harris St building housing apartments 30-45. 30 Harris St is approximately 40 feet away from the gas service before the gas piping exits the ground from the gas meter and rises to distribution piping exterior of the building similar to the adjacent building. Based on the appearance of the piping and no reported problems the gas piping is in good condition.

Figure 2.98: GAS METER AND PIPING

Plumbing Fixtures

Dwelling unit kitchen sinks are stainless steel single bowl with a single lever faucets and are in poor condition. They appear to be original to the building. Most apartments appear to have replacement aerators of multiple different types and styles. Traps are of varying materials and conditions. Shutoff valves are multi-turn and are in poor condition. Badger Insinkerator garbage disposals are located below the kitchen sinks and are reportedly issues for maintenance.

It should be noted, Apartment 3 is supposed to be ADA compliant however base cabinets have been installed under the electric stove and kitchen sink. The kitchen sink is also located in the corner adjacent to the refrigerator limiting accessibility.

Figure 2.99: TYPICAL APARTMENT KITCHEN SINK

Figure 2.910: UNIT 3 KITCHEN

Dwelling unit lavatories are original to the building and in poor condition. Some lavatories were observed stained to a point where it is unlikely they could be

cleaned. Some faucets were observed missing handles. Different aerators are present in most apartments. Traps are of varying materials and conditions. Shutoff valves are multi-turn and are in poor condition. Apartment 3 lavatory waste piping including the trap does not appear to be installed in compliance with ADA requirements and should be offset closer to the wall. The long length of waste piping from the wall to the trap could lead to damage of the waste piping. No pipe protection of the waste piping below the lavatories exists.

Figure 2.911: TYPICAL APARTMENT LAVATORY, TOILET AND TUB

Dwelling unit toilets are in poor condition and are of varying manufacturers and models. Most toilets are between 2.2 or 1.6 GPF but some may have higher GPF. Shutoff valves are multi-turn and are in poor condition. Toilets are not sealed to the floor.

Dwelling unit bathtubs are original to the building and in poor condition. Some bathtubs were observed stained with worn and failing enamel. Shower valves

were primarily a Symmons Temptrol and appeared in poor condition. Different shower heads are present in most apartments.

The first floor has a common kitchen the residents can access that is used infrequently. The kitchen sink is stainless steel single bowl with a single lever faucet. The kitchen sink has what appears to be a Badger insinkerator garbage disposal. There is a dishwasher connection on the top of the disposal that appears to be open and not capped. This likely leads to flooding issues at times. There is no dishwasher. With the kitchen used infrequently there is a potential for failures to go unnoticed and water damage to the kitchen and adjacent rooms. The kitchen is not ADA compliant.

Figure 2.912: COMMON KITCHEN SINK

The men's and woman's public bathrooms are located next to the laundry room on the first floor. The lavatory fixtures appear original and feature lavatories with paddle handles. The waste piping including trap does not appear to be installed to ADA requirements and should be offset closer to the wall. The long length of waste piping from the wall to the trap could lead to damage of the waste piping. No pipe protection of the waste piping below the lavatories exists. The lavatories and faucets appear in poor condition.

Gerber dual flush toilets are in fair condition in each bathroom. The toilets are capable of 1.28 or 1.6 GPF depending on the direction the handle is flushed. Toilets are not sealed to the floor.

Figure 2.913: COMMON BATHROOM LAVATORY

The laundry room has 2 standpipes and single lever washing machine valve connections. The laundry valves appear to be in poor condition. A laundry sink is located opposite of the washing machines and dryers and is in fair condition.

Code Issues and Triggers

- Apartment 3 is listed as an ADA apartment however is not ADA compliant. Modifications to the apartment will be required to comply with ADA standards.
- Providing DHW with uninsulated piping is a code violation. Insulation should be provided where missing.

Requirements:

- Per recent DPU ruling each building must have its own gas meter and service. Housing authorities and building owners are not allowed to serve multiple buildings from one meter without being regulated as a pipeline

provider. (Our understanding is that complying with pipeline provider standards are difficult and the authority runs the risk of significant fines. Most authorities appear to be eliminating underground gas piping between buildings and installing multiple gas services instead.) The buildings must be brought into compliance with these requirements as soon as possible or heavy fines may be incurred.

Recommendations:

- Break out concrete walk to provide access to the end cleanout for the waste piping.
- Insulate the cold water service piping, water meter body, check valve and shutoff valve to prevent sweating and water accumulation on the floor.
- With electric water tanks in good condition, they should function for an additional 5-7 years before failure. Follow tank manufacturer's yearly maintenance to maximize service life.
- Provide routine maintenance of the tempering valve per the manufacturer to ensure proper water temperature and reliability. Consider upgrading to a digital tempering valve that has improved temperature control.
- Provide insulation on all exposed piping, valves and pump bodies and equipment subject to energy loss.
- Remove underground gas piping between buildings as part of electric heat pump installation.
- As part of a comprehensive bathroom renovation, provide new kitchen sinks and faucets. Provide low flow 1.5 GPM or lower faucets. Consider vandal proof aerators to prevent residents from replacing aerators. Provide new brass traps with cleanouts. Connect to existing waste piping. Provide new shutoff valves.
- Provide new lavatories and faucets. Provide low flow 1.0 GPM or lower faucets. Consider vandal proof aerators to prevent residents from replacing aerators. Provide new chrome plated brass traps. Connect to existing waste piping. Provide new shutoff valves.
- Provide new toilets. Provide low flow 0.8 GPF toilets. Provide new shutoff valves. Seal toilets to the floor to prevent overflows from leaking into apartments, the basement and crawlspaces.
- Provide new bathtubs, shower valves and shower heads. Provide low flow 1.5 GPM showerheads. Consider vandal proof showerheads to prevent residents from replacing showerheads.
- Consider replacing the public bathroom lavatories and faucets with new lavatories, low flow faucets and stop valves. Provide new waste piping offset for ADA compliance. Provide pipe protection of waste piping.
- Seal public toilets to floor to prevent overflows from leaking into the basement below.
- Reconfigure the kitchen and/or removal of the base cabinets in will be required to be ADA compliant in accessible locations.
- Replace the laundry valves with valves that have leak detection sensors that will shut off the valve in the event water is detected on the floor.

Part 2.10 – HVAC Systems

All apartment heating is provided by individual gas fired heaters in each apartment living room and bedroom with electric resistance heating in the bathrooms. Common areas are heated using a number of different electric unit ventilators, unit heaters or electric resistance baseboard. Air conditioning is tenant provided window air conditioning. Bathrooms have exhaust fans that are in poor condition.

Dwelling Units Systems and Equipment

Each apartment has an Empire Natural Gas Direct Vent 10,000 BTU/Hr heater in the living room and bedroom. Most of the heaters appear to be in fair condition with no reported problems. Dirt and debris was observed within the units. Each unit has its own thermostat.

In one apartment the bedroom thermostat is missing and the resident has covered the wall opening with his own wooden cover. On the exterior of the building multiple direct vent exhaust caps were observed missing. In some cases, direct vent caps have been installed however window shutters have been modified or installed to allow the cap to fit and have been installed extremely close to the vent cap. What appears to be cable TV wiring and conduit is installed touching the direct vent cap. The shutters and the wiring touching the cap is a fire hazard and a violation of the manufacturer's installation instructions. All items touching the venting must be removed and relocated.

24" electric federal pacific baseboard is located within each apartment bathroom. A federal pacific thermostat is located on the wall.

Figure 2.101: TYPICAL APARTMENT GAS FIRED HEATER AND AIR CONDITIONING SLEEVE

Air conditioning wall sleeves are located below the windows of each living room and bedroom. In almost all apartments window style air conditioners have been provided by the tenants and installed within these sleeves. Some window air conditioners have been installed within windows instead of the sleeve. After

discussions with the RHA it was reported in some cases the window sleeves are not pitched towards the exterior and condensate generated from the window style air conditioner will leak back into the apartments. This can also happen when the window style air conditioners are not pitched towards the exterior when resting within the sleeve. In some locations the condensate draining from the air conditioner sleeves has caused staining of the brick and in some cases appears to have caused deterioration of the brick. Where window air conditioners have been installed within windows the condensate was observed dripping on the brick window sills splashing in many directions and deteriorating the brick. Typically air conditioning sleeves have a 1"-2" drain hose off the exterior of the sleeve to allow draining of condensate to grade and away from the exterior of the building. Only in one location was a drain hose observed and it was a custom hose allowing the sleeve to drain to the side of the windows. In some locations covers have been provided on the exterior where window sleeves are not being used. Apartment A/C is controlled by the controls integral to the A/C units.

Figure 2.102: WINDOW AIR CONDITIONER ON SECOND FLOOR DRIPPING ON WINDOWSILL BELOW. WINDOW AIR CONDITIONER WITHIN WALL SLEEVE AT FIRST FLOOR. GAS FIRED UNIT TERMINATIONS IMPACTING SHUTTERS

Bathrooms exhaust fans are in poor condition and are of varying make and model. Many of the covers are yellow with age and covered with dust. The insides of the exhaust fans are full of dust. Some of the exhaust fans were loud when operating and are enabled by a wall switch on/off. Exhaust fans are ducted to roof caps that were replaced with the roof in the past two years. With the exhaust fans operating on the wall switch and not continuous ventilation of the apartment is relying on operable windows.

Figure 2.103: TYPICAL BATHROOM EXHAUST FAN

Common Area Systems and Equipment:

Ceiling hung federal pacific electric unit heaters are provided in each room of the basement. A federal pacific recessed electric wall heater is provided within the entry lobby. The equipment is old and in poor condition.

Figure 2.104: FEDERAL PACIFIC RECESSED UNIT HEATER AT LOBBY

Two unit-ventilators are located against the large windows on the first floor of the multipurpose room. One is a Singer and the other a Friedrich. The Singer unit ventilator is older than the Friedrich based on appearance and rattles significantly when operating. Both unit ventilators are in poor condition. The unit ventilator louvers on the exterior appear to be in poor condition with some of the vanes damaged. The condensation from the air conditioning leaks onto the sidewalk and it appears the brick below the louvers has deteriorated from the moisture.

Figure 2.105: SINGER UNIT VENTILATOR IN MULTIPURPOSE ROOM

The two offices that are accessed from the multi-function room appear to be heated and cooled from one unit ventilator in one of the offices. There is what appears to be sheet metal ductwork from one of the unit ventilators that serves the adjacent office. No return ductwork was observed. One thermostat is located in the office with the unit ventilator. It is unlikely the second office has adequate heating, cooling and ventilation. Each office should have its own source of heating, cooling and ventilation. The offices do not appear to be used regularly.

Figure 2.106: UNUSED OFFICE UNIT VENTILATOR

At some point, the common kitchen was renovated and commercial equipment was removed and replaced with a residential style electric range and microwave. No range hood was provided. The wall mounted exhaust fan and louver remain in the wall and is operational. The louver is not insulated and the louver blades close via gravity when the fan is turned off. Significant infiltration at the louver is likely experienced and it is expected that the kitchen is cold during the winter.

Figure 2.107: WALL MOUNTED KITCHEN EXHAUST FAN

The laundry room has transfer grilles high on the wall for what we believe is a form of makeup air during dryer operation. The transfer grilles connect to an adjacent room that has a louvered door to the multipurpose room. This is inadequate makeup air for the laundry room.

The two electric dryers exhaust to the exterior wall near the entry lobby. The dryer terminations are full of lint.

Figure 2.108: DRYER EXHAUST TERMINATIONS

Recommendations:

- Demo the gas-fired cabinet heaters and replace with an electric heat pump system. This will require and upgrade to the main building power. See related electrical upgrade.
- Remove all Federal Pacific electric finned tube heaters and ceiling-hung electric unit heaters. Replace with central electric heat pump system. See related item.
- Provide or instruct residents to provide air conditioners intended to be installed within wall sleeves. Correct pitch of wall sleeve where sleeve is not pitching towards the exterior. Provide air conditioning sleeve drain hoses to allow condensate to drain away from the building. Provide gasketed and insulated covers for wall sleeves not being used.
- Louvers at community room should be removed and the penetrations patched to prevent unnecessary infiltration. Replace unit ventilators at Community Room with new electric heat pump system. See related item.
- Replace unit ventilator for each common office with electric heat pump system. See related item.
- Replace bathroom exhaust fans with a model that includes a humidity sensor that can be interlocked to the light switch. (Included as part of bathroom modernization.)

Part 2.11 – Electrical

Power Distribution

The power distribution appears to be original to the 1980 construction.

The site is served from a 300kVA pad mounted utility transformer located in front of building A on Winthrop Avenue. The top of the transformer foundation is below the elevation of grade. This appears to have been caused by years of landscaping around the transformer. The secondary service lateral serves a three section Square D 1,600 ampere 208Y/120 volt (V), 3 phase (PH) switchboard (See Figure 2.11.01).

Section one consists of a CT cabinet and a 1600A bolted pressure switch; section two is a distribution section consisting of (29) 100A/2P circuit breakers serving building A dwelling unit feeders; section three is a distribution section consisting of:

- (1)500A circuit breaker, serving building B distribution panelboard;
- (1)200A circuit breaker, serving community space panelboard;
- (4)150A circuit breakers, serving water heaters (one off);
- (1)100A circuit breaker serving “emergency” panelboard.

Figure 2.11.01: 1600A Main Switchboard

The building B feeder is run underground between the two buildings from the switchboard in building A to an exterior mounted 500A MLO distribution panelboard located on the side of building B. The distribution panelboard serves 16 apartments. A 100A MLO house panel appears to be tapped off the distribution panel bus. There is no main circuit breaker at building B distribution panelboard or house panel (See Figure 2.11.02).

The building B distribution panelboards is an FPE type NDP panelboard.

Figure 2.11.02: 500A Building B distribution panelboard

The “emergency” panelboard, building B house panelboard and community space panelboard are FPE Stab-Lok type (See Figure 2.11.03).

Panel E-1 is a Murray loadcenter and “water heater” panel is a Murray 3 phase 3 wire panelboard.

The dwelling unit loadcenters are FPE Stab-Lok type, with the exception of the accessible unit which has a Murray loadcenter.

There are no surge protection devices (SPDs) in the existing switchgear or at the building distribution panelboard.

Figure 2.11.03: Building B FPE stab-lok house panel

Standby and Emergency Power Supply Systems

There is a panel identified as an "emergency" panel. This panel is fed via a manual transfer switch from a 100A circuit breaker at the main switchboard (See Figure 2.11.04). The panel also serves a 12 circuit loadcenter, identified as "E-2." This equipment is located in the main electrical room. The manual transfer switch does not have a generator feed. The intent must be to provide a portable generator when power is out for an extended period time. This system is mislabeled as it is an optional standby power supply system, not a standby power supply system.

Emergency egress lighting is provided by emergency battery units and remote heads with incandescent.

Common Areas

Convenience receptacles are located throughout the community space. Equipment receptacles are located at the equipment served, i.e., kitchenette, laundry, mechanical equipment, etc.

Stairwells

No receptacles were observed in the stairwells.

Figure 2.11.04: (L to R) 100A MLO Loadcenter E-2, 100A manual transfer switch and edge of 100A MLO "Emergency" panelboard

Lighting

The common area lighting appears to have been recently replaced with LED fixtures or retrofit kits as part of a utility energy saving audit initiative.

Apartments

The apartment loadcenters are 30 circuit FPE, 100A main lug only loadcenters with up to eleven (11) 15 and 20 ampere 1 pole and one (1) 50 ampere 2 pole Stab-Lok type circuit breakers (See Figure 2.11.05).

There is no dedicated bathroom circuit.

There are no arc-fault circuit-interrupting (AFCI) protected circuit breakers in the loadcenters.

Dwelling unit lighting consists of:

- A surface mount LED cloud fixture in the kitchen;
- A surface mount combination fan/light with an LED retrofit lamp in the bathroom;

Figure 2.11.05: Dwelling Unit Loadcenter

The living room and bedroom has switched receptacles. Receptacle spacing within the apartments, for the most part, meets current code, a couple exceptions were noted where the spacing exceeds 12'.

The same condition exists with the kitchen counter receptacle spacing, where in a few instances, the spacing exceeds 2' from a kitchen counter receptacle. The ranges are electric.

Requirements:

- Item 1 – Replace/retrofit the apartment FPE Stab-Lok loadcenters. This item is a safety hazard to the tenants and property that should be rectified as soon as possible.
  As is well-known, FPE Stab-Lok circuit breakers are notoriously unreliable, and subject to failure. Several studies have shown that when a Stab-Lok circuit breaker sees an overload or short circuit (more than 10 times the circuit breaker rating) the trip mechanism has the potential to lock up, not allowing the breaker to ever trip again.

  This causes a potential for fire hazard. There is no way of testing a StabLok circuit breaker to determine if it is unsafe, without jeopardizing the integrity of the circuit breaker.

- Replace/retrofit the common area FPE Stab-Lok loadcenters/panelboards. Same issue as above. A main circuit breaker should be added to building B house panel.

- Perform preventative maintenance and repairs as required on the 1,600A main switchboard. The existing electrical distribution equipment is over 40 years old. NFPA 70B, "Recommended Practice for Electrical Equipment Maintenance" provides guidance on electrical equipment maintenance, as follows:

Item	Test Function (see below)	Interval	NFPA 70B Reference
Switchgear Assemblies	Infrared Scanning	Annually	11.17
Enclosures	Security/Operational Check	6 months	15.2.5
	Visual Inspection	6 months	15.2.6 - 15.2.7.2
Ventilation	Visual inspection	1-3 months	15.2.9
Space Heaters	Operational Check	Annually	15.2.8
Insulation	Visual Inspection/Clean	Annually	15.2.11 – 15.2.15.3
	Electrical Tests	2 years	11.9
Molded Case Circuit Breakers (MCCB)	Visual Inspection, Clean	3 years	17.7~11
	Mechanical Test	2 years	17.11
	Electrical Test	3-5 years	11.10.5
Fuses 1000V or Less	Visual Inspection	3 years	18.1.2
	Clip Contact Pressure	3 years	18.1.3
	Cleaning of Contact Surfaces	3 years	18.1.3
	Visual Inspection for Discoloration and damage	3 years	18.1.3

NFPA 70 B is not a 'code'; as the title states, it is a recommended practice. No test/inspection labels were observed on the switchboard.

Recommendations:

- Item 1 – Upgrade dwelling unit & building feeders and distribution equipment.

  If electrification of the site is desired, the dwelling unit & building feeders and distribution equipment would need to be evaluated to confirm if they are sufficiently sized to power electric heat/air conditioning

- Item 2 – Replace/retrofit FPE CDP building B distribution panelboard.

  Unlike the FPE Stab-Lok circuit breakers, the FPE bolt-on circuit breakers in this panelboard do not have the same reliability and safety issues discussed above. Due to its age and lack of replacement parts (equipment is no longer manufactured) this panelboard should be considered for replacement.

  A main circuit breaker should be added to this panelboard.

  In lieu of a main circuit breaker at the building B house panel, a 100-ampere circuit breaker can be added to the building B distribution panelboard to feed the building B house panel.

- Item 3 – Provide SPD at dwelling unit feeders.

  Per the MEC, feeders that serve dwelling units are required to have an SPD. An SPD should be provided at the main switchboard and building B distribution panelboard.

- Item 4 – Lower grade around utility transformer foundation, or raise the foundation.

  The transformer foundation top elevation is currently below grade. The elevation of the grass around the transformer foundation should be lowered 4-6”, or raise the pad to 4-6” above grade.

- Item 5 – Add ceiling mounted LED light fixtures to living room and bedrooms.

  If a unit renovation is performed, ceiling mounted LED lighting wiring and switching should be added to the living room and bedrooms.

- Item 6 – Provide AFCI protection for all new or extended 20A branch circuits within the dwelling units.

  Any 15 or 20 ampere branch circuit that is extended or added within a dwelling unit will be required to be AFCI-protected.

- Item 7 – Provide a code compliant dedicated bathroom branch circuit.

  If a bathroom renovation is performed, a dedicated 20A AFCI protected branch circuit should be provided to the bathroom, along with a duplex GFCI-protected receptacle.

- Item 8 – Correct Massachusetts Electrical Code (MEC) receptacle code spacing violations.
  If a unit renovation is performed, receptacle should be added to the following locations:
  - Where a wall space[1] is more than 6' from a receptacle;
  - Where a wall space is 24" or greater and does not have a receptacle;
  - Where a wall line of a kitchen counter is more than 24" from a receptacle.
- Item 9 – GFCI protection for refrigerator receptacle.

  If a kitchen renovation is performed, the circuit serving the refrigerator receptacle should be AFCI/GFCI protected if located within 6' of the edge of the sink.

- Item 10 – Provide GFCI protection for range receptacle.

  If a kitchen renovation is performed and the range receptacle is located within 6' of the edge of the sink, then the circuit serving the range receptacle should be GFCI protected, or MEC Rule 11 be invoked[2].

- Item 11 – Relabel "emergency panel" to "standby panel" at switchboard circuit breaker and on panelboard cover.

- Item 12 – Replace emergency egress lighting battery units, remote heads and exit signs with new LED units.

[1] Wall space as define by the MEC is any unbroken wall 2' or more in width along the floor line (including corners) by openings, doorways, fireplaces, and fixed appliances.

[2] MEC Rule 11 addresses the issue of incompatibility of certain equipment with GFCI protection, until a solution is provided by the equipment manufacturer. This equipment may be allowed to not be GFCI protected with provisions for future correction, requiring local wiring inspector approval.

Part 2.12 – Communications Systems

Communication systems have been added/updated through the years, it is unknown what wiring and outlets are currently operational.

Telephone System

Telephone services are provided underground to each building (See Figure 2.12.01). Several outlets were observed in the apartments in the kitchen, living room and bedroom. It is unknown which outlets are active.

Master Antenna System

In the basement of building A there is a cabinet labeled “TV amplifier. It is believed that this system is no longer operational. No antennas were observed on the buildings. The blank outlets in the living rooms may have been outlets for the master antenna system. It is unknown if the wiring infrastructure is still be in place.

Cable Television System

Cable television (CATV) infrastructure was added to the buildings at some point after they were built. CATV services are provided overhead to exterior mounted service equipment. Upgrades have been made through the years with several outlets and blank plates observed on the walls of the living room and bedroom of each dwelling unit. It is unknown which outlets are operational.

Some tenants have satellite dishes mounted to the exterior of the building.

Figure 2.12.01: Building B cable (Top), telephone (bottom right) service. Entrance equipment and distribution panelboard enclosure (bottom left).

Intercom/Door Entry

Door entry to the building is provided via a traditional push button intercom system with an entry unit located outside the door of each front stairwell and a three-button apartment unit located in each dwelling unit.

Emergency Call System

The emergency call (e-call) system is comprised of pull cords in the bedroom and bathroom of each dwelling unit, with a light located in the stairwell outside the dwelling unit door, and a door strike at the dwelling unit door. Emergency Call pull cords are also located in the bathrooms in the community space.

Video Surveillance System

A surveillance system control equipment cabinet was observed in a closet in the community space, but no video surveillance cameras were observed at this site.

Requirements:

None

Recommendations:

- Item 1 – Replace communication system infrastructure with new.
  The existing and abandoned communications systems (telephone and cable TV) should be removed and replaced with new. This should include demolition of all the abandoned cables and outlets throughout the building. The new communications infrastructure should include:
    - A dedicated space for local service provider (LSP) entry equipment and network interface components (NICs);
    - A media cabinet in each dwelling unit with a coaxial and category 6
    - (CAT6) cable homerun back to the NIC;
    - CATV jack (single gang plate with Type F connector) in the bedroom and living room with wiring back to media cabinet;
    - Telephone jack (single gang plate with (1) RJ45 jack) in the bedroom and living room with wiring back to media cabinet.

- Item 2 – Remove master antenna amplifier. Abandoned equipment should be removed.

- Item 3 – Remove emergency call systems in units.

Any project that includes electrical work in the dwelling units should include the demolition of the emergency call system devices and wiring, to fullest extent possible.
It has been found the emergency call systems provide tenant with a false sense of hope, since the notification does not go beyond the lights in the building.

- Item 4 – Upgrade/expand the existing video surveillance system.

  Video surveillance technology is rapidly evolving and improving. The anticipated lifespan of a video surveillance system is between 5 and 10 years. The existing video intercom system should be considered to be replaced with a new PoE enterprise video intercom system.

  The video surveillance system should monitor potential troubled areas such as the community space, common areas, stairwells, pathways, and parking areas.

Part 2.13 – Fire Alarm System

The fire alarm system is a conventional system that serves both buildings A and B. The main fire alarm control panel (FACP) is a conventional 12 zone FCI FACP, with six zones being used.

The FCI FACP monitors automatic and manual initiating devices such as smoke detectors, heat detectors, and pull stations, and controls notification devices (horn-lights in both buildings. The buildings are not sprinklered.

The FCI FACP and most of the peripheral devices throughout the building appear to be original to the building (See figure 2.13.01).

Figure 2.13.01: Existing FCI Conventional FACP

Initiating and notification device placement and locations, in many instances do not meet current code.

Fire protection is provided via individual household fire warning systems in the dwelling units, comprised of a smoke alarm in the living room. Current code however requires smoke alarms on each level, outside of sleeping areas and inside of each bedroom.

Each apartment has either a battery-operated carbon monoxide (CO) alarm or a combination smoke/CO alarm. There is fossil fuel burning equipment (FFBE) in the dwelling units, (i.e., gas fired heating unit).

Requirements:

- Item 1 – Add smoke alarms to bedrooms.

  The bedroom smoke alarms should be interconnected with the existing smoke alarm outside the bedroom.

- Item 2 - Due to its age and lack of current code compliant device layouts, the fire alarm system should be replaced with new.

  The fully addressable fire detection and alarm system should include a new FACP, power supplies, addressable initiating devices (smoke detectors, heat detectors, pull stations, control, and monitor modules), notification devices (sounder bases, horn/strobes, strobes, low frequency sounders, exterior beacons), layout in accordance with 527 CMR 1, The Massachusetts Comprehensive Fire Safety Code, 780 CMR, The Massachusetts State Building Code and all associated referenced codes.

Recommendations:

- Item 1 – Replace existing smoke alarms with new combination smoke/CO alarms.

  Smoke alarms should be replaced every 10 years. When the smoke alarms are added to the bedrooms, the existing smoke alarms should be replaced with new combination smoke/CO alarms so that all the devices are of the same year and manufacturer/compatible with each other.

- Item 2 – In lieu of household fire warning systems (interconnected 110V smoke alarms) in each apartment, system smoke detectors with sounder bases in the dwelling units to act as local smoke alarms should be used.
  The detector located outside of the bedroom should be a multi-criteria detector that senses smoke and CO. The smoke portion will act like local smoke alarms as discussed above, while the CO portion will send a distinct CO supervisory to the FACP.

Part 2.14 – Energy Conservation

There are some opportunities to improve the property's energy efficiency. Some of the items in the requirements below are going to be triggered when substantial renovations take place. The following list of recommendations includes energy efficiency recommendations mentioned elsewhere in this report.

Requirements*:*

- When kitchens and baths are modernized, install low-water use fixtures.
- When kitchen appliances are replaced, install Energy-Star rated appliances.
- Install efficient aerators on all plumbing fixtures as they are replaced.
- Install 0.8 gpf toilets as they are replaced.
- Replace old exterior and interior lighting fixtures with new energy efficient LED models.
- Replace existing gas fired heat and exterior gas pipe lines and install new energy efficient heat pumps.

Recommendations:

- Perform a solar study to identify potential use of photovoltaic panels on the sloped roofs.
- Provide electric vehicle changing stations in the parking lots for use by residents.

Part 2.15 – Hazardous Materials

A Hazardous Materials Survey was performed by UEC in August-September of 2023. The report found asbestos-containing material in several samples tested including the VCT and sheet linoleum mastic. The requirements for abatement of the ACM have been incorporated in this study's narrative and recommendations in the sections above.

A copy of the hazmat report is added to Section 4 – Appendix of this needs assessment.

Recommendations:

- All VCT and sheet vinyl floors is considered ACM and should be abated when removed for flooring replacement as part of the kitchen and bath renovations recommended in other sections of this report.

[redacted]

14-3 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
401	14-3	4 Common Interior	Community Room carpet needs replacing. It is soiled and delaminating from subfloor (tripping hazard esp for elderly).	Replace carpet with LVT for enhanced durability and ease of cleaning.	1	$38,400
402	14-3	4 Common Interior	VCT flooring at Laundry needs replacement.	Abate mastic and replace flooring with durable LVT.	1	$3,630
403	14-3	4 Common Interior	Restrooms do not meet MAAB clearance requirements and lack grab bars. Pull strings inactive.	Reconfigure restrooms to achieve required clearances. Install accessories and grab bars as required by 521 CMR. This work will be required by a substantial renovation.	1	$56,000
404	14-3	4 Common Interior	Community kitchen is not accessible, stove was disconnected and not usable. Missing smoke detectors.	Reconfigure Community Kitchen for accessibility per 521 CMR. Abate flooring (see hazmat report). This work will be required by a substantial renovation.	1	$45,000
405	14-3	4 Common Interior	VCT is damaged and coming loose from substrate; mastic is ACM.	Abate and replace VCT flooring and mastic. (see hazmat report)	1	$2,420
406	14-3	4 Common Interior	Resident mailboxes are not within ADA reach ranges. Mailboxes do not meet current USPS standards and will have to be replaced.	Install new mailboxes at accessible heights. Price includes new CBUs.	1	$27,396
407	14-3	4 Common Interior	Evidence of water infiltration at basement mechanical room.	Identify and correct source of leaks: perform injection grouting at cracks, apply negative side waterproofing	1	$8,400
408	14-3	4 Common Interior	Exposed fiberglass insulation at underside of first floor harbors mold.	After reinforcement/repair of first floor framing, insulate between crawl space and first floor. Install closed-cell spray foam with ignition barrier.	1	$170,100
409	14-3	4 Common Interior	Separation of Storage use (basement records room) is required from Community Room or dwelling units above. Piping (and valves) half-buried in rated floor-ceiling assembly	Provide 2-hour rated horizontal assembly and adjust plumbing if necessary to eliminate interference with membrane	1	$29,530
410	14-3	4 Common Interior	Steel supporting rated floor-ceiling assembly is not protected	Structural steel supporting one of the separated occupancies referenced above must be individually protected with GWB or SFRM to achieve a two-hour rating.	1	$11,040
411	14-3	4 Common Interior	Upper stair landings do no afford clear space outside of door swing. Nor room to stand on landing if door is opened. Stair and landings are worn carpet is in need of immediate replacement.	Replace all stairway carpet with durable rubber treads and landings.	1	$19,600
412	14-3	4 Common Interior	ADA unit kitchens do not meet MAAB dimensional requirements.	Reconfigure kitchen for accessibility per 521 CMR. Replace all appliances, fixtures, and cabinets. Abate flooring mastic.	1	$140,000
413	14-3	4 Common Interior	Evidence of rodent infestation in the Community Room.	Seal openings, engage pest control and maintain an environment inhospitable to vermin. Cost is an allowance for sealing only.	1	$2,500
414	14-3	4 Common Interior	Signage is not accessible	Provide accessible signage throughout building with braille and raised lettering meeting ADA and MAAB requirements. This work will be required by a substantial renovation.	1	$7,949
415	14-3	4 Common Interior	2" step at door threshold to basement storage room is a code violation.	Remove, regrade, and replace concrete paving leading to door to eliminate 2" step.	1	$1,500
416	14-3	4 Common Interior	Signs of water damage to ceilings and finishes and potentially beam	Identify and correct source of leak; repair interior finishes. Clean/repair beam and any spray fireproofing that may have been damaged by leak.	1	$2,211
417	14-3	4 Common Interior	Buildings lack radon ventilation	Test all crawl spaces for Radon. If present, install active removal system.	1	$44,512

14-3 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
418	14-3	4 Common Interior	Crawl spaces are not fire separated from units above.	After floor structure reinforcement, install 1-hour GWB fire separation at underside of crawl space.	1	$263,025
419	14-3	9 Unit Interior	ADA bathrooms do not meet all requirements for accessibility, and finishes are at the end of their useful life.	Demo and reconfigure bathroom for accessibility per 521 CMR. As part of a comprehensive ADA bathroom upgrade replace all fixtures, flooring, and accessories.	1	$112,000
420	14-3	9 Unit Interior	We observed evidence of water leaks in walls in multiple locations. Damage to finishes.	Identify and correct source of damage, and repair finishes as needed. See related recommendation to address leaking at masonry. Price assumes 25 locations	1	$55,275
421	14-3	9 Unit Interior	Lavatories are original to the property and are in poor or very poor condition. They are separating from walls because residents lean on them.	Install more robust lavatory carriers. (Cost included with comprehensive bathroom modernization.)	1	$0
422	14-3	9 Unit Interior	Kitchen finishes and casework are original to the development, beyond the end of their service life, and are in poor or very poor condition.	Provide new kitchen cabinetry, countertops, finishes, fixtures, and appliances.	1	$1,089,493
77	14-3	Building Envelope	Lack of flashing and poor sealant maintenance around AC sleeve opening.	AC sleeves to be infilled as described above. (Cost included with AC infill)	1	$0
423	14-3	9 Unit Interior	Bathroom floor finish is VCT instead of a sheet good. VCT is loose and allows water to contact subfloor	Replace bath flooring with ceramic tile or sheet good, threshold, and backer board. (Cost included with comprehensive bathroom modernization.)	1	$0
424	14-3	9 Unit Interior	Fiberglass shower enclosures are worn, stained, and well beyond end of service life.	Replace with new shower enclosure (Included as part of a comprehensive bathroom modernization.)	1	$0
425	14-3	9 Unit Interior	Bathroom fixtures and finishes are all orginal to the development, beyond the end of their service life, and are in poor or very poor condition.	Comprehensively modernize unit baths now; provide new finishes, accessories, wiring, plumbing fixtures and fittings, exhaust fans, and lighting. See related recommendations.	1	$1,011,019
426	14-3	9 Unit Interior	Many bath lavatory fixture stops are frozen and do not close; fixture cannot be isolated in case of a leak.	Replace fixture stops as part of bath modernization. Cost included with other recommendation.	1	$0
427	14-3	9 Unit Interior	Limited asbestos testing has found asbestos-containing flooring in 2 of 5 unit baths.	Abate all ACMs as required. Price is an allowance for abatement assuming 40% of bath floors are ACM.	1	$3,087
428	14-3	9 Unit Interior	Limited asbestos testing has found asbestos-containing flooring in 2 of 5 unit kitchens.	Abate all ACMs as required. Price is an allowance for abatement assuming 40% of kitchen floors are ACM.	1	$8,624
429	14-3	Building Envelope	Brick pilasters around entryway doors are no longer supported at grade (walkways were lowered)	Insert brick at base of pilasters to properly support existing veneer. If walkway (which used to support pilaster) is no longer wide enough to provide support due to recent replacement work, install stainless steel angle at grade for support of veneer.	1	$34,320
430	14-3	Building Envelope	Through-wall AC sleeves are not sealed. There are open mortar joints at window sills and failing sealant joints allowing unconditioned air to freely enter unit interiors. Condensate from units drains to interior in some locations and has damaged flooring. Evidence of water entry around AC sleeve.	Remove through-wall AC sleeves. Infill openings to match surrounding construction. Repair and replace damaged flooring areas. Assume residents will use window units or provide heat pumps in future heating system upgrade.	1	$263,200
431	14-3	Building Envelope	Insufficient slope of window sill/insufficient drip edge. Mortar cracking below window sill (separation of entire sill from rest of veneer). Window sealants are failing.	Repoint and caulk all sills	1	$128,968

14-3 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
432	14-3	Building Envelope	Water damage and deterioration at roof edge, likely due to blocked gutters (vegetation growing in gutters observed elsewhere)	Clean gutters and ensure that a maintenance plan is in place for continual upkeep. Remove and replace rotted wood fascia and install flashing.	1	$12,393
433	14-3	Building Envelope	Brick veneer is bowing and deflecting but not exhibiting distress. Leak are evident at interiors.	Perform misc. masonry repairs. Repoint, seal joints, etc. Price assumes 20% of brick veneer requires work.	1	$241,198
434	14-3	Building Envelope	Step cracking from AC sleeve at 2nd floor extending to lintel of 1st floor window	Repair isolated instances of step cracking.	1	$275
435	14-3	Building Envelope	Crawl space vents are covered up (areaways clogged with dirt/debris)	Infill crawl space vents with masonry; clear all areaways of debris.	1	$15,484
436	14-3	Building Envelope	Window is out of square and does not fully close. Cause appears to be due to faulty installation or misuse.	Repair all unit windows that are damaged or inoperable. Assumes 10% of windows require service.	1	$14,850
437	14-3	Electrical	Main electrical distribution panel is rusty and damaged.	Replace main panel; increase service size to allow for electric heat pump system.	1	$56,000
438	14-3	Electrical	FPE Stab-Lok breakers are prone to fuse in the closed position, providing no over current protection. Federal Pacific equipment linked to building fires.	Replace FPE load centers with new.	1	$169,200
439	14-3	Electrical	FPE Stab-Lok house panelboards in basement are a safety hazard.	Replace panelboards and breakers.	1	$12,240
440	14-3	Fire Protection	Current code requires smoke alarms on each level, inside and outside of each bedroom. No smoke alarm in bedrooms. No interconnects on the smoke alarms that exist.	Add smoke alarms to bedrooms; ensure all smokes sitewide are interconnected.	1	$41,472
441	14-3	Fire Protection	Existing FCI fire alarm system beyond its useful life. Smoke alarms to be replaced every 10 years	Install new addressable fire alarm systems throughout. Replace existing smoke alarms in bedrooms. This work will be required by a substantial alteration. Includes detectors in crawl spaces.	1	$244,496
442	14-3	Fire Protection	No fire suppression system present	At the time of construction and renovation it was not code required to provide a fire suppression system for these buildings. Current codes require fire suppression systems for the buildings. Major renovations trigger the requirement in buildings with 3 or more apartments.	1	$386,615
443	14-3	HVAC	Each apartment has gas-fired direct-vent heater in the living room and bedroom. These units are in poor condition, are not properly vented, and require constant maintenance. Thermostats are broken and missing.	Demo existing gas-fired cabinet heaters and replace electric heat pump system. This will require an upgrade to main building power. See related electrical upgrade.	1	$1,656,000
444	14-3	HVAC	Ceiling hung Federal Pacific electric unit heaters are provided in each room of the basement. A Federal Pacific electrical wall heater is provided within the entry lobby. Federal Pacific brand equipment is known for equipment failures, fire, is dangerous to maintain and parts are becoming increasing difficult to source.	Replace all Federal Pacific unit heaters.	1	$9,456
445	14-3	HVAC	24" electric Federal Pacific baseboard is located within each bedroom. A Federal Pacific thermostat is located on the wall. Federal Pacific brand equipment is known for equipment failures, fire, is dangerous to maintain and parts are becoming increasing difficult to source.	(See related recommendation to replace HVAC system with electric heat pumps.)	1	$0

14-3 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
446	14-3	Plumbing	Gas piping enters the property at a single meter location at 2 Harris St and is then piped underground to the other building. Underground gas piping is original to construction and past its useful life.	Remove gas piping as part of electric heat pump installation.	1	$0
447	14-3	Plumbing	Four 18.0 kW 119 gallon electric hot water tanks are located within the basement of 2 Harris St and supplies domestic hot water to both buildings on the site. RHA reports frequent failures. One tank was just replaced this month; remaining tanks appear to be in good condition.	With tanks in good condition they should function for an additional 5-10 years before failure. Routine maintenance should extend the life of the tanks. Follow tank manufacturers yearly maintenance.	1	$40,416
448	14-3	Plumbing	Behind the DHW tanks multiple sections of uninsulated piping was observed. The uninsulated piping is likely the result from replacing DHW tanks and not replacing insulation after complete.	Provide insulation on all exposed piping, valves and pump bodies and equipment subject to energy loss.	1	$2,560
449	14-3	Plumbing	A 4" water service enters the basement from Harris Ave. The size is reduced to 3" before the water meter. The water meter appears to have been installed recently. The cold water piping, water meter, check valve and shutoff valve are not insulated and are sweating significantly from the cold water use at the site.	Insulate the cold water service piping, water meter body, check valve and shutoff valve to prevent sweating and water accumulation on the floor. Consider a drip pan under the exposed piping and equipment if not providing insulation.	1	$1,280
450	14-3	Plumbing	The first floor has a kitchen the residents can access that is used infrequently. The kitchen sink is stainless steel single bowl with a single lever faucet. The kitchen sink has what appears to be a Badger insinkerator garbage disposal. There is a dishwasher connection on the top that appears to be open and not capped.	(See related recommendation to renovate the Community Kitchen)	1	$0
451	14-3	Plumbing	Gerber Dual flush toilets are in fair condition in each bathroom. The toilets are capable of 1.28 or 1.6 GPF depending on the direction the handle is flushed. Toilets are not sealed to the floor.	Seal toilets to floor to prevent overflows from leaking in into the basement below. (Included in Bathroom Modernization)	1	$0
452	14-3	Plumbing	Apartment 3 is supposed to be ADA compliant however base cabinets have been installed under the electric stove and kitchen sink. The kitchen sink is also located in the corner adjacent to the refrigerator limiting accessibility.	Reconfiguration of the kitchen and/or removal of the base cabinets will be required to be ADA compliant. (Included in ADA Kitchen modernization)	1	$0
453	14-3	Plumbing	The lavatory waste piping including trap does not appear to be installed to ADA requirements and should be offset closer to the wall. The long length of waste piping from the wall to the trap could lead to damage of the waste piping. No pipe protection of the waste piping below the lavatories exists. The lavatories and faucets appear in fair/poor condition.	As part of comprehensive bathroom renovation, replace lavatories and faucets with new lavatories, low flow faucets and stop valves. Provide new waste piping offset for ADA compliance. Provide pipe protection of waste piping. (Included in ADA bathroom Modernization)	1	$0
454	14-3	Plumbing	Kitchen sinks and faucets are in poor condition and show their age. Different aerators are present in most apartments. Traps are of varying materials and conditions. Shutoff valves are multi-turn and are in poor condition. Disposals are present. Piping experiences frequent problems with grease buildup.	Provide new kitchen sinks and faucets. Provide low flow 1.5 GPM or lower faucets. Consider vandal proof aerators to prevent residents from replacing aerators. Provide new brass traps with cleanouts. Connect to existing waste piping. Provide new shutoff valves. Remove disposals. (Included as part of Kitchen modernization)	1	$0

14-3 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
455	14-3	Plumbing	Lavatories are in poor condition and show their age. Some lavatories were observed stained. Some faucets were observed missing handles. Different aerators are present in most apartments. Traps are of varying materials and conditions. Shutoff valves are multi-turn and are in poor condition. Owner reports clogs are frequent.	Provide new lavatories and faucets as part of comprehensive bathroom renovation. Provide low flow 1.0 GPM or lower faucets. Consider vandal proof aerators to prevent residents from replacing aerators. Provide new chrome plated brass traps. Connect to existing waste piping. Provide new shutoff valves. (Included as part of bathroom modernization)	1	$0
505	14-3	HVAC	Bathroom exhaust fans are in poor condition, clogged with dust, loud and ineffective.	Replace exhaust fans with a model that includes a humidity sensor and that can be interlocked to the light switch. (Included as part of bathroom modernization)	1	$0
506	14-3	HVAC	Unit ventilators in the Community Room are in need of replacement.	(See related recommendation to replace HVAC system with electric heat pumps.)	1	$0
507	14-3	HVAC	The two offices that are accessed from the Community Room are heated and cooled from one unit ventilator in one of the offices and connected by sheet metal ductwork (there is no return ductwork). One thermostat controls both unit ventilators.	(See related recommendation to replace HVAC system with electric heat pumps.)	1	$0
225	14-3	HVAC	Unused through-wall louver and fan in Community Room kitchen allows unconditioned air into building. (Fan is no longer required after kitchen renovation.)	The louver and fan should be removed and the penetration patched to prevent unnecessary infiltration.	1	$2,764
456	14-3	Plumbing	Toilets are in fair to poor condition and are varying manufacturers. Most toilets are between 2.2 or 1.6 GPF. Shutoff valves are multi-turn and are in poor condition.	Provide new toilets as part of comprehensive bathroom renovation. Provide low flow 0.8 GPF toilets. Provide new shutoff valves. (Included as part of bathroom modernization)	1	$0
457	14-3	Plumbing	Bathtubs are in poor condition and show their age. Some bathtubs were observed stained with worn or failing enamel. Shower valves were primarily a Symmons Temptrol and appeared in fair to poor condition. Different shower heads are present in most apartments.	Provide new bathtubs, shower valves and shower heads as part of comprehensive bath renovation. Provide low flow 1.5 GPM shower heads. Consider vandal proof shower heads to prevent residents from replacing shower heads. (Included as part of the bathroom modernization)	1	$0
458	14-3	Plumbing	A new sidewalk was recently provided against the building in the parking lot. The sidewalk height blocks an end cleanout for the waste piping; this could be a significant issue if there is a blockage in the waste piping.	Demolish portion of sidewalk to provide access to cleanout. Review current codes before demolition to ensure required sidewalk dimensions are maintained.	1	$1,240
459	14-3	Structure	First floor truss joists are failing and require replacement. They are held together by pins, which are either corroding and failing or working loose, causing structural failure. Several floors are unacceptably deflected.	Reinforce existing truss joists with new framing throughout. This work will require cutting holes in first floor to allow access to the crawl space from the unit above. Cost includes unit restoration work.	1	$785,700
460	14-3	Structure	TJI joists observed under the first floor show signs of water damage, hangers appear to be undersized and some are missing fasteners. Several observed with pipe penetrations outside of acceptable coring zones.	Reinforce entire first floor framing system (TJIs and trusses). Cost included in other recommendation.	1	$0
661	14-3	9 Unit Interior	Parquet wood floors need repair and refinishing in living rooms	Repair damaged wood floors and refinish in 50% of units	1	$46,000
662	14-3	9 Unit Interior	Approximately 20% of unit interior doors were damaged and in poor condition.	Replace 20% of the unit interior doors, frames, and hardwware	1	$70,720
663	14-3	9 Unit Interior	Unit entry doors lack 20 minute rating - a code violation.	Replace all unit entry doors, frames, and hardware with minimum 20-minute UL rated solid core door.	1	$276,615

14-3 Priority 1

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
665	14-3	Electrical	Each Living Room has several MEC receptacle code spacing violations.	Add receptacles for code compliance. Replace devices with new. Price is to correct deficiencies only, but it may be more cost effective to rewire the entire unit when walls are open.	1	$220,500
667	14-3	Electrical	Transformer elevation is currenly below grade, and should be raised.	Regrade -6" around transformer or raise transformer pad +6". Price assumes regrading is possible.	1	$3,500
70				**Total Priority**	**1**	**$7,890,172**

14-3 Priority 2

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
501	14-3	Structure	Floor slab at common area basement exhibits cracking and some settlement.	Repair and patch slab cracks. Investigate settlement and monitor repairs.	2	$4,800
502	14-3	Site, Site walls	Efflorescence, missing bricks, biological growth at brick site walls. Walls feature brick copings and appear to lack flashings of any kind under the coping. Cracking brick observed at pilaster transitions.	Repoint brick, clean wall, and replace brick coping with precast coping and provide continuous flashing at top of wall to prevent water entry into top of wall.	2	$49,800
503	14-3	Electrical	MEC requires 2 dedicated small appliance circuits in kitchen, only one was observed. Kitchen counter receptacle spacing does not meet MEC requirements.	Provide second dedicated small appliance circuit. Add receptacles above counter so that no location is more than 12" from a receptacle. Combine with comprehensive kitchen renovation work	2	$45,900
504	14-3	Electrical	Lighting in community room is fluorescent.	As part of larger renovation, replace with LED lighting fixtures.	2	$11,880
4				**Total Priority**	**2**	**$112,380**

14-3 Priority 3

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
88	14-3	Building Envelope	Window sash sizes are large and difficult for residents to operate.	Windows were replaced in 2014 and should last for at least another 15 years. When windows are replaced, provide sash sizes that are easier for residents to operate.	3	$155,100
1				**Total Priority**	**3**	**$155,100**

14-3 Priority 4

Item Num	Dev	System	Issue Description	Recommendation	Priority	TOTAL $
51	14-3	4 Common Interior	Community Room lacks a vestibule at entry as required by energy code.	Install a vestibule for improved energy efficiency if desired.	4	$10,400
57	14-3	4 Common Interior	Basement mechanical room is being used as file storage and inhibits access to DHW equipment.	Authority needs secure area for file storage. Provide external storage space or addition to structure.	4	$80,000
66	14-3	4 Common Interior	No means of controlling wind-driven rain at flush entries to prevent water entry	Install trench drains at all flush entries and connect to underground site storm drainage.	4	$79,600
138	14-3	Electrical	Each bedroom has switched receptacles, not ceiling mounted lighting.	Add ceiling mounted lighting fixtures in bedrooms if desired.	4	$41,472
139	14-3	Electrical	Living room has switched receptacles, not ceiling mounted lighting.	Add ceiling mounted lighting fixtures in living rooms if desired.	4	$41,472
141	14-3	Electrical	No emergency or standby power onsite.	Provide emergency power generator if desired.	4	$250,000
664	14-3	Site	There is no opportunity for recycling in the dumpster enclosure.	Expand the trash enclosure to include a recycling dumpster.	4	$3,500
668	14-3	Electrical	Video surveilance system is limited in scope and needs expansion.	Replace video surveilance system to monitor community spaces, common areas, stairwells, pathways, and parking areas.	4	$50,000
669	14-3	Electrical	Master Antenna system is no longer operational	Remove unused equipment. Seal and patch openings that result.	4	$2,500
9				**Total Priority**	**4**	**$558,944**

Part 4 - Appendix

FINAL REPORT
FOR
ASBESTOS CONTAINING MATERIALS IDENTIFICATION SURVEY
AT
REVERE HOUSING AUTHORITY
REVERE, MASSACHUSETTS

PROJECT NO: 223 614.00

SURVEY DATES:
August 29 – September 5, 2023

SURVEY CONDUCTED BY:

UNIVERSAL ENVIRONMENTAL CONSULTANTS

UEC universal environmental consultants

September 7, 2023

Ms. Michele Auer
BWA Architecture
132 Lincoln Street
Boston, MA 02111

Reference: **Asbestos Containing Materials Identification Survey**
Revere Housing Authority, Revere, MA

Dear Ms. Auer:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

Enclosed please find the report for Asbestos Containing Materials Identification Survey at the Revere Housing Authority, Revere, Massachusetts.

Please do not hesitate to call should you have any questions.

Very truly yours,

Universal Environmental Consultants

_____
Ammar M. Dieb
President

UEC:\223 614.00\Report.DOC

Enclosure

INTRODUCTION:
Universal Environmental Consultants (UEC) has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of thirty-three year years of experience.

UEC was contracted by BWA Architecture to conduct a determination survey for accessible Asbestos Containing Materials (ACM) at Revere Housing Authority, Revere, MA. *No destructive or roof testing was performed, and the investigation was limited. This report should not be used to renovate or demolish the buildings.*

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos and determination of types of ACM found for remediation. Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with Environmental Protection Agency (EPA) standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. Leonard J. Busa (AI-034963). The samples were analyzed by a Massachusetts licensed laboratory Asbestos Identification Laboratory, Woburn, MA.

Samples results are attached.

FINDINGS:
The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed. All suspect materials were grouped into homogenous areas. By definition, a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. Per Massachusetts guidelines a homogeneous area shall be determined to be ACM based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount 1 percent or greater. However, per the Department of Environmental Protection (DEP) regulations 310CMR 7.15 all suspect materials that contain any amount of asbestos must be considered asbestos for proper disposal if it is scheduled to be removed.

The survey was limited and therefore, additional ACM may be found during any renovation or demolition activities.

Number of Samples Collected
August 29, 2021
Twenty-four (24) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. Joint compound at 18-24 Rose Street
2. Joint compound at 18-24 Rose Street
3. Exterior window framing caulking at 18-24 Rose Street
4. Exterior window framing caulking at 10-16 Rose Street
5. Exterior window framing caulking at 32-38 Rose Street
6. Roofing debris at 32-38 Rose Street
7. Joint compound at 40-44 Rose Street
8. Joint compound at 40-44 Rose Street
9. Exterior window framing caulking at 46-52 Rose Street
10. Exterior door framing caulking at 46-52 Rose Street
11. Exterior window framing caulking at 54-58 Rose Street
12. Joint compound at 76-82 Rose Street
13. Joint compound at 76-82 Rose Street
14. Exterior window framing caulking at 76-82 Rose Street
15. Exterior caulking at seams of bulkhead at 76-82 Rose Street
16. Exterior caulking at seams of bulkhead at 165-172 Pomona Street
17. Exterior window framing caulking at 165-172 Pomona Street
18. Exterior dark caulking at seams of bulkhead and foundation at 165-172 Pomona Street

19. Exterior door framing caulking at 148-154 Pomona Street
20. Exterior window framing caulking at 905-911 Broadway
21. Exterior door framing caulking at 915-917 Broadway
22. Exterior window framing caulking at 915-917 Broadway
23. Exterior window framing caulking at 921-927 Broadway
24. Exterior caulking at seams of bulkhead at 915-917 Broadway

Sample Results

Type and Location of Material	**Sample Result**
1. Joint compound at 18-24 Rose Street	No Asbestos Detected
2. Joint compound at 18-24 Rose Street	No Asbestos Detected
3. Exterior window framing caulking at 18-24 Rose Street	No Asbestos Detected
4. Exterior window framing caulking at 10-16 Rose Street	No Asbestos Detected
5. Exterior window framing caulking at 32-38 Rose Street	No Asbestos Detected
6. Roofing debris at 32-38 Rose Street	No Asbestos Detected
7. Joint compound at 40-44 Rose Street	No Asbestos Detected
8. Joint compound at 40-44 Rose Street	No Asbestos Detected
9. Exterior window framing caulking at 46-52 Rose Street	No Asbestos Detected
10. Exterior door framing caulking at 46-52 Rose Street	No Asbestos Detected
11. Exterior window framing caulking at 54-58 Rose Street	No Asbestos Detected
12. Joint compound at 76-82 Rose Street	No Asbestos Detected
13. Joint compound at 76-82 Rose Street	No Asbestos Detected
14. Exterior window framing caulking at 76-82 Rose Street	No Asbestos Detected
15. Exterior caulking at seams of bulkhead at 76-82 Rose Street	No Asbestos Detected
16. Exterior caulking at seams of bulkhead at 165-172 Pomona Street	No Asbestos Detected
17. Exterior window framing caulking at 165-172 Pomona Street	No Asbestos Detected
18. Exterior dark caulking at seams of bulkhead and foundation at 165-172 Pomona Street	No Asbestos Detected
19. Exterior door framing caulking at 148-154 Pomona Street	No Asbestos Detected
20. Exterior window framing caulking at 905-911 Broadway	No Asbestos Detected
21. Exterior door framing caulking at 915-917 Broadway	No Asbestos Detected
22. Exterior window framing caulking at 915-917 Broadway	No Asbestos Detected
23. Exterior window framing caulking at 921-927 Broadway	No Asbestos Detected
24. Exterior caulking at seams of bulkhead at 915-917 Broadway	No Asbestos Detected

August 30, 2023
Thirty-nine (39) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. Exterior window framing caulking at 266 Cushman Street
2. Exterior window framing caulking at 254 Cushman Street
3. Exterior door framing caulking at 255 Cushman Street
4. Exterior door framing caulking at 272 Cushman Street
5. Exterior door framing caulking at 2 Harris Street
6. Exterior door framing caulking at 2 Harris Street
7. Exterior window framing caulking at 2 Harris Street
8. Exterior caulking in brick sill at 2 Harris Street
9. Exterior unit vent grille caulking at 2 Harris Street
10. Exterior unit vent grille caulking at 2 Harris Street
11. Joint compound at 2 Harris Street center stairwell
12. Joint compound at 2 Harris Street community room
13. Joint compound at 2 Harris Street community room
14. Mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room
15. Mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room
16. Mastic for mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room

17. Light grey 12” x 12” vinyl floor tile at 2 Harris Street community room
18. Mastic for light grey 12” x 12” vinyl floor tile at 2 Harris Street community room
19. Popcorn ceiling at 2 Harris Street community room
20. Popcorn ceiling at 2 Harris Street community room
21. Popcorn ceiling at 2 Harris Street community room
22. Exterior window framing caulking at 15-21 Hutchinson Street
23. Exterior window framing caulking at 71-77 Hutchinson Street
24. Exterior window framing caulking at 57-63 Hutchinson Street
25. Exterior window framing caulking at 57-63 Hutchinson Street
26. Exterior window framing caulking at 57-63 Hutchinson Street
27. Exterior window framing caulking at 43-49 Hutchinson Street
28. Exterior door framing caulking at 57-63 Hutchinson Street
29. Exterior door framing caulking at 29-35 Hutchinson Street
30. Exterior caulking at seams of bulkhead at 71-77 Hutchinson Street
31. Joint compound at Cooledge Street heating room
32. Joint compound at Cooledge Street heating room
33. Exterior window framing caulking at 301 Coolidge Street
34. Exterior window framing caulking at 291 Coolidge Street
35. Exterior window framing caulking at 259 Coolidge Street
36. Exterior door framing caulking at 291 Coolidge Street
37. Exterior door framing caulking at 257 Coolidge Street
38. Exterior door framing caulking at 267 Coolidge Street
39. Exterior black paper behind vinyl siding at Coolidge Street

Sample Results

Type and Location of Material	**Sample Result**
1. Exterior window framing caulking at 266 Cushman Street	5% Asbestos
2. Exterior window framing caulking at 254 Cushman Street	5% Asbestos
3. Exterior door framing caulking at 255 Cushman Street	No Asbestos Detected
4. Exterior door framing caulking at 272 Cushman Street	5% Asbestos
5. Exterior door framing caulking at 2 Harris Street	No Asbestos Detected
6. Exterior door framing caulking at 2 Harris Street	No Asbestos Detected
7. Exterior window framing caulking at 2 Harris Street	No Asbestos Detected
8. Exterior caulking in brick sill at 2 Harris Street	No Asbestos Detected
9. Exterior unit vent grille caulking at 2 Harris Street	No Asbestos Detected
10. Exterior unit vent grille caulking at 2 Harris Street	No Asbestos Detected
11. Joint compound at 2 Harris Street center stairwell	No Asbestos Detected
12. Joint compound at 2 Harris Street community room	No Asbestos Detected
13. Joint compound at 2 Harris Street community room	No Asbestos Detected
14. Mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room	No Asbestos Detected
15. Mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room	No Asbestos Detected
16. Mastic for mottled brown 12” x 12” vinyl floor tile at 2 Harris Street community room	No Asbestos Detected
17. Light grey 12” x 12” vinyl floor tile at 2 Harris Street community room	4% Asbestos
18. Mastic for light grey 12” x 12” vinyl floor tile at 2 Harris Street community room	7% Asbestos
19. Popcorn ceiling at 2 Harris Street community room	No Asbestos Detected
20. Popcorn ceiling at 2 Harris Street community room	No Asbestos Detected
21. Popcorn ceiling at 2 Harris Street community room	No Asbestos Detected
22. Exterior window framing caulking at 15-21 Hutchinson Street	No Asbestos Detected
23. Exterior window framing caulking at 71-77 Hutchinson Street	No Asbestos Detected
24. Exterior window framing caulking at 57-63 Hutchinson Street	No Asbestos Detected
25. Exterior window framing caulking at 57-63 Hutchinson Street	No Asbestos Detected
26. Exterior window framing caulking at 57-63 Hutchinson Street	No Asbestos Detected
27. Exterior window framing caulking at 43-49 Hutchinson Street	No Asbestos Detected
28. Exterior door framing caulking at 57-63 Hutchinson Street	No Asbestos Detected
29. Exterior door framing caulking at 29-35 Hutchinson Street	2% Asbestos

30. Exterior caulking at seams of bulkhead at 71-77 Hutchinson Street	No Asbestos Detected
31. Joint compound at Cooledge Street heating room	No Asbestos Detected
32. Joint compound at Cooledge Street heating room	No Asbestos Detected
33. Exterior window framing caulking at 301 Coolidge Street	5% Asbestos
34. Exterior window framing caulking at 291 Coolidge Street	5% Asbestos
35. Exterior window framing caulking at 259 Coolidge Street	5% Asbestos
36. Exterior door framing caulking at 291 Coolidge Street	No Asbestos Detected
37. Exterior door framing caulking at 257 Coolidge Street	No Asbestos Detected
38. Exterior door framing caulking at 267 Coolidge Street	No Asbestos Detected
39. Exterior black paper behind vinyl siding at Coolidge Street	No Asbestos Detected

August 31, 2023
Twenty-nine (29) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. 2’ x 4’ Suspended acoustical ceiling tile at 1 Hutchinson Street second floor bathroom
2. Wall plaster at 1 Hutchinson Street second floor closet
3. Mottled grey 12” x 12” vinyl floor tile at 1 Hutchinson Street kitchen
4. Mastic for mottled grey 12” x 12” vinyl floor tile at 1 Hutchinson Street kitchen
5. Wall plaster at 1 Hutchinson Street stairs down to basement
6. Joint compound at 1 Hutchinson Street kitchen
7. 2’ x 4’ Suspended acoustical ceiling tile at 37 Hutchinson Street living room
8. Mottled grey 12” x 12” vinyl floor tile at 37 Hutchinson Street kitchen
9. Mottled grey 12” x 12” vinyl floor tile at 23 Hutchinson Street kitchen
10. Mastic for mottled grey 12” x 12” vinyl floor tile at 59 Hutchinson Street kitchen
11. Stick-on 12” x 12” vinyl floor tile at 59 Hutchinson Street kitchen
12. Joint compound at 59 Hutchinson Street kitchen
13. Joint compound/wall plaster at 59 Hutchinson Street kitchen
14. Wall plaster at 69 Hutchinson Street stairs down to basement
15. Old sink damproofing at 69 Hutchinson Street kitchen
16. Mottled grey 12” x 12” vinyl floor tile at 69 Hutchinson Street kitchen
17. Mastic for mottled grey 12” x 12” vinyl floor tile at 69 Hutchinson Street kitchen
18. Ceiling plaster at 59 Hutchinson Street living room
19. Old sink damproofing at 1 Hutchinson Street kitchen
20. Ceiling plaster at 37 Hutchinson Street hallway
21. Joint compound at 250 Cushman Avenue kitchen
22. Mottled grey 12” x 12” vinyl floor tile at 250 Cushman Avenue kitchen
23. Dark brown 12” x 12” vinyl floor tile at 252 Cushman Avenue laundry room
24. Mastic for dark brown 12” x 12” vinyl floor tile at 252 Cushman Avenue laundry room
25. Joint compound at 266 Cushman Avenue kitchen
26. Mottled brown 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen
27. Mastic for mottled brown 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen
28. Mottled beige 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen
29. Mastic for mottled beige 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen

Sample Results

Type and Location of Material	**Sample Result**
1. 2’ x 4’ Suspended acoustical ceiling tile at 1 Hutchinson Street second floor bathroom	No Asbestos Detected
2. Wall plaster at 1 Hutchinson Street second floor closet	No Asbestos Detected
3. Mottled grey 12” x 12” vinyl floor tile at 1 Hutchinson Street kitchen	No Asbestos Detected
4. Mastic for mottled grey 12” x 12” vinyl floor tile at 1 Hutchinson Street kitchen	No Asbestos Detected
5. Wall plaster at 1 Hutchinson Street stairs down to basement	No Asbestos Detected
6. Joint compound at 1 Hutchinson Street kitchen	No Asbestos Detected

7.	2’ x 4’ Suspended acoustical ceiling tile at 37 Hutchinson Street living room	No Asbestos Detected
8.	Mottled grey 12” x 12” vinyl floor tile at 37 Hutchinson Street kitchen	No Asbestos Detected
9.	Mottled grey 12” x 12” vinyl floor tile at 23 Hutchinson Street kitchen	No Asbestos Detected
10.	Mastic for mottled grey 12” x 12” vinyl floor tile at 59 Hutchinson Street kitchen	No Asbestos Detected
11.	Stick-on 12” x 12” vinyl floor tile at 59 Hutchinson Street kitchen	No Asbestos Detected
12.	Joint compound at 59 Hutchinson Street kitchen	No Asbestos Detected
13.	Joint compound/wall plaster at 59 Hutchinson Street kitchen	No Asbestos Detected
14.	Wall plaster at 69 Hutchinson Street stairs down to basement	No Asbestos Detected
15.	Old sink damproofing at 69 Hutchinson Street kitchen	No Asbestos Detected
16.	Mottled grey 12” x 12” vinyl floor tile at 69 Hutchinson Street kitchen	No Asbestos Detected
17.	Mastic for mottled grey 12” x 12” vinyl floor tile at 69 Hutchinson Street kitchen	No Asbestos Detected
18.	Ceiling plaster at 59 Hutchinson Street living room	No Asbestos Detected
19.	Old sink damproofing at 1 Hutchinson Street kitchen	No Asbestos Detected
20.	Ceiling plaster at 37 Hutchinson Street hallway	No Asbestos Detected
21.	Joint compound at 250 Cushman Avenue kitchen	2% Asbestos
22.	Mottled grey 12” x 12” vinyl floor tile at 250 Cushman Avenue kitchen	No Asbestos Detected
23.	Dark brown 12” x 12” vinyl floor tile at 252 Cushman Avenue laundry room	No Asbestos Detected
24.	Mastic for dark brown 12” x 12” vinyl floor tile at 252 Cushman Avenue laundry room	No Asbestos Detected
25.	Joint compound at 266 Cushman Avenue kitchen	2% Asbestos
26.	Mottled brown 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen	No Asbestos Detected
27.	Mastic for mottled brown 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen	No Asbestos Detected
28.	Mottled beige 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen	No Asbestos Detected
29.	Mastic for mottled beige 12” x 12” vinyl floor tile at 266 Cushman Avenue kitchen	No Asbestos Detected

September 1, 2023
Thirty-two (32) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. Joint compound at 22 Rose Street kitchen
2. Mottled grey 12” x 12” vinyl floor tile at 22 Rose Street kitchen
3. Mastic for mottled grey 12” x 12” vinyl floor tile at 22 Rose Street kitchen
4. White/grey 12” x 12” vinyl floor tile at 60 Rose Street kitchen
5. Mastic for white/grey 12” x 12” vinyl floor tile at 60 Rose Street kitchen
6. 2’ x 4’ Suspended acoustical ceiling tile at 60 Rose Street first floor bathroom
7. Gypsum ceiling at 70 Rose Street kitchen
8. Joint compound at 70 Rose Street kitchen
9. Stick-on floor tile at 70 Rose Street kitchen
10. Parge on foundation wall at 90 Rose Street basement
11. 2’ x 4’ Suspended acoustical ceiling tile at 90 Rose Street second floor bathroom
12. Wall plaster at 154 Pomona Street kitchen
13. Mottled brown 12” x 12” vinyl floor tile at 154 Pomona Street kitchen
14. Joint compound at 154 Pomona Street kitchen
15. Wall plaster at 154 Pomona Street stairs down to basement
16. Mottled brown 12” x 12” vinyl floor tile at 907 Broadway kitchen
17. Joint compound at 907 Broadway kitchen
18. 2’ x 4’ Suspended acoustical ceiling tile at 909 Broadway
19. Wall plaster at 909 Broadway stairs down to basement
20. Wall plaster at 909 Broadway kitchen
21. Ceiling plaster at 909 Broadway living room
22. Mottled brown 12” x 12” vinyl floor tile at 259 Cooledge Street hallway closet
23. Joint compound at 259 Cooledge Street hallway
24. Mottled grey 12” x 12” vinyl floor tile at 283 Cooledge Street hallway closet
25. Mastic for mottled grey 12” x 12” vinyl floor tile at 283 Cooledge Street hallway closet
26. Gypsum ceiling at 283 Cooledge Street living room
27. Joint compound at 283 Cooledge Street kitchen

28. Gypsum wall at 304 Cooledge Street kitchen
29. Textured joint compound at 304 Cooledge Street stairs up to second floor
30. Joint compound at 311 Cooledge Street stairs up to second floor
31. Mottled beige 12” x 12” vinyl floor tile at 311 Cooledge Street kitchen
32. Mastic for mottled beige 12” x 12” vinyl floor tile at 311 Cooledge Street kitchen

Sample Results

Type and Location of Material	**Sample Result**
1. Joint compound at 22 Rose Street kitchen	No Asbestos Detected
2. Mottled grey 12” x 12” vinyl floor tile at 22 Rose Street kitchen	No Asbestos Detected
3. Mastic for mottled grey 12” x 12” vinyl floor tile at 22 Rose Street kitchen	No Asbestos Detected
4. White/grey 12” x 12” vinyl floor tile at 60 Rose Street kitchen	No Asbestos Detected
5. Mastic for white/grey 12” x 12” vinyl floor tile at 60 Rose Street kitchen	No Asbestos Detected
6. 2’ x 4’ Suspended acoustical ceiling tile at 60 Rose Street first floor bathroom	No Asbestos Detected
7. Gypsum ceiling at 70 Rose Street kitchen	No Asbestos Detected
8. Joint compound at 70 Rose Street kitchen	No Asbestos Detected
9. Stick-on floor tile at 70 Rose Street kitchen	No Asbestos Detected
10. Parge on foundation wall at 90 Rose Street basement	No Asbestos Detected
11. 2’ x 4’ Suspended acoustical ceiling tile at 90 Rose Street second floor bathroom	No Asbestos Detected
12. Wall plaster at 154 Pomona Street kitchen	No Asbestos Detected
13. Mottled brown 12” x 12” vinyl floor tile at 154 Pomona Street kitchen	No Asbestos Detected
14. Joint compound at 154 Pomona Street kitchen	No Asbestos Detected
15. Wall plaster at 154 Pomona Street stairs down to basement	No Asbestos Detected
16. Mottled brown 12” x 12” vinyl floor tile at 907 Broadway kitchen	No Asbestos Detected
17. Joint compound at 907 Broadway kitchen	No Asbestos Detected
18. 2’ x 4’ Suspended acoustical ceiling tile at 909 Broadway	No Asbestos Detected
19. Wall plaster at 909 Broadway stairs down to basement	No Asbestos Detected
20. Wall plaster at 909 Broadway kitchen	No Asbestos Detected
21. Ceiling plaster at 909 Broadway living room	No Asbestos Detected
22. Mottled brown 12” x 12” vinyl floor tile at 259 Cooledge Street hallway closet	No Asbestos Detected
23. Joint compound at 259 Cooledge Street hallway	3% Asbestos
24. Mottled grey 12” x 12” vinyl floor tile at 283 Cooledge Street hallway closet	No Asbestos Detected
25. Mastic for mottled grey 12” x 12” vinyl floor tile at 283 Cooledge Street hallway closet	No Asbestos Detected
26. Gypsum ceiling at 283 Cooledge Street living room	No Asbestos Detected
27. Joint compound at 283 Cooledge Street kitchen	2% Asbestos
28. Gypsum wall at 304 Cooledge Street kitchen	No Asbestos Detected
29. Textured joint compound at 304 Cooledge Street stairs up to second floor	No Asbestos Detected
30. Joint compound at 311 Cooledge Street stairs up to second floor	3% Asbestos
31. Mottled beige 12” x 12” vinyl floor tile at 311 Cooledge Street kitchen	No Asbestos Detected
32. Mastic for mottled beige 12” x 12” vinyl floor tile at 311 Cooledge Street kitchen	No Asbestos Detected

September 5, 2023
Fourteen (14) bulk samples were collected from the following materials suspected of containing asbestos including:

Type and Location of Material

1. Mottled grey 12” x 12” vinyl floor tile at 3 Harris Street kitchen
2. Mastic for mottled grey 12” x 12” vinyl floor tile at 3 Harris Street kitchen
3. Mottled brown 12” x 12” vinyl floor tile at 4 Harris Street kitchen
4. Mottled grey 12” x 12” vinyl floor tile at 4 Harris Street bathroom
5. Mastic for mottled grey 12” x 12” vinyl floor tile at 4 Harris Street bathroom
6. Old brown linoleum floor covering at 14 Harris Street bathroom
7. Mastic for old brown linoleum floor covering at 14 Harris Street bathroom
8. Joint compound at 14 Harris Street kitchen
9. Joint compound at 16 Harris Street kitchen

10. Old brown linoleum floor covering at 21 Harris Street bathroom
11. Joint compound at 21 Harris Street kitchen
12. Mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen
13. Mastic for mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen
14. Joint compound at 40 Harris Street kitchen

Sample Results

Type and Location of Material	**Sample Result**
1. Mottled grey 12” x 12” vinyl floor tile at 3 Harris Street kitchen	No Asbestos Detected
2. Mastic for mottled grey 12” x 12” vinyl floor tile at 3 Harris Street kitchen	No Asbestos Detected
3. Mottled brown 12” x 12” vinyl floor tile at 4 Harris Street kitchen	No Asbestos Detected
4. Mottled grey 12” x 12” vinyl floor tile at 4 Harris Street bathroom	No Asbestos Detected
5. Mastic for mottled grey 12” x 12” vinyl floor tile at 4 Harris Street bathroom	No Asbestos Detected
6. Old brown linoleum floor covering at 14 Harris Street bathroom	20% Asbestos
7. Mastic for old brown linoleum floor covering at 14 Harris Street bathroom	N/A (No Sample)
8. Joint compound at 14 Harris Street kitchen	No Asbestos Detected
9. Joint compound at 16 Harris Street kitchen	No Asbestos Detected
10. Old brown linoleum floor covering at 21 Harris Street bathroom	20% Asbestos
11. Joint compound at 21 Harris Street kitchen	No Asbestos Detected
12. Mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen	2% Asbestos
13. Mastic for mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen	5% Asbestos
14. Joint compound at 40 Harris Street kitchen	No Asbestos Detected

Observations and Conclusions:
All ACM must be removed by a Massachusetts licensed asbestos abatement contractor under the supervision of a Massachusetts licensed project monitor prior to any renovation or demolition activities that might disturb the ACM.

1. Exterior window framing caulking at 266 Cushman Street was found to contain asbestos.
2. Exterior door framing caulking at 272 Cushman Street was found to contain asbestos.
3. Light grey 12” x 12” vinyl floor tile at 2 Harris Street community room was found to contain asbestos.
4. Mastic for light grey 12” x 12” vinyl floor tile at 2 Harris Street community room was found to contain asbestos.
5. Exterior door framing caulking at 29-35 Hutchinson Street was found to contain asbestos.
6. Exterior window framing caulking at 301 Coolidge Street was found to contain asbestos.
7. Exterior window framing caulking at 291 Coolidge Street was found to contain asbestos.
8. Exterior window framing caulking at 259 Coolidge Street was found to contain asbestos.
9. Joint compound at 250 Cushman Avenue was found to contain asbestos.
10. Joint compound at 266 Cushman Avenue was found to contain asbestos.
11. Joint compound at 259 Cooledge Street was found to contain asbestos.
12. Joint compound at 283 Cooledge Street was found to contain asbestos.
13. Joint compound at 311 Cooledge Street was found to contain asbestos.
14. Old brown linoleum floor covering at 14 Harris Street bathroom was found to contain asbestos.
15. Old brown linoleum floor covering at 21 Harris Street bathroom was found to contain asbestos.
16. Mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen was found to contain asbestos.
17. Mastic for mottled light lime 12” x 12” vinyl floor tile at 21 Harris Street kitchen was found to contain asbestos.
18. All remaining suspect materials were found not to contain asbestos.
19. The survey was limited and therefore, additional ACM may be found during any renovation or demolition activities.

DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:

Asbestos samples were collected using a method that prevents fiber release. Homogeneous sample areas were determined by criteria outlined in EPA document 560/5-85-030a. Bulk material samples were analyzed using PLM and dispersion staining techniques in accordance with EPA/600/R-93/116 method.

LIMITATIONS AND CONDITIONS:
This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state, and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied, or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Inspected By:

_____
Leonard J. Busa
Asbestos Inspector

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email: mikemanning@asbestosidentificationlab.com

NVLAP® Testing
Lab Code: 200919-0

Batch: 103115

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing ,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing ,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1130114	Joint Compound (JC)	18-24 Rose Front Hall	white	Non-Fibrous 100	None Detected
2 / 1130115	JC Clg	18-24 Rose Basement	white	Non-Fibrous 100	None Detected
3 / 1130116	Window Frame Caulk	18-24 Rose Exterior @ Brick	multi	Non-Fibrous 100	None Detected
4 / 1130117	Win Fr Caulk Seams	10-16 Rose Exterior	multi	Non-Fibrous 100	None Detected
5 / 1130118	Door Frame Caulk Seams	32-38 Rose Exterior	multi	Non-Fibrous 100	None Detected
6 / 1130119	Roofing Debris	32-38 Rose Exterior Front @ Soil	multi	Fiberglass 25 Non-Fibrous 75	None Detected
7 / 1130120	JC	40-44 Rose Basement	white	Non-Fibrous 100	None Detected
8 / 1130121	JC Clg	40-44 Rose Basement Clg	white	Non-Fibrous 100	None Detected
9 / 1130122	Window Fr	46-50 Rose Exterior	multi	Non-Fibrous 100	None Detected
10 / 1130123	Door Fr	46-50 Rose Exterior Front	multi	Non-Fibrous 100	None Detected
11 / 1130124	Win Fr @ Seams	54-58 Rose Exterior	multi	Non-Fibrous 100	None Detected
12 / 1130125	JC Clg	76-82 Rose Basement Rear Hall	white	Non-Fibrous 100	None Detected
13 / 1130126	JC	76-82 Rose Rear Hall	white	Non-Fibrous 100	None Detected
14 / 1130127	Win F	76-82 Rose Exterior	multi	Non-Fibrous 100	None Detected
15 / 1130128	Caulk @ Seams of Bulkhead	76-82 Rose Exterior	multi	Non-Fibrous 100	None Detected
16 / 1130129	Caulk @ Seams of Bulkhead	165-172 Pomona Exterior	multi	Non-Fibrous 100	None Detected

Sampled: August 29, 2023 **Received:** August 29, 2023 **Analyzed:** August 29, 2023

Wednesday 30 August

Analyzed by: Elai Maxwell **Batch:** 103115

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing ,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
17 / 1130130	Win Fr @ Seams	165-172 Pomona Exterior	multi	Non-Fibrous 100	None Detected
18 / 1130131	Dark Caulk Where Bulkhead Meets Foundation	165-172 Pomona Exterior	black	Non-Fibrous 100	None Detected
19 / 1130132	Door Fr	148-154 Pomona Exterior	multi	Non-Fibrous 100	None Detected
20 / 1130133	Win Fr @ Seams	905-911 Broadway	multi	Non-Fibrous 100	None Detected
21 / 1130134	Door Fr	915-917 Broadway Exterior (Brick)	multi	Non-Fibrous 100	None Detected
22 / 1130135	Win Fr	915-917 Broadway Exterior (Brick)	multi	Non-Fibrous 100	None Detected
23 / 1130136	Win Fr	921-927 Broadway Exterior (Vinyl)	multi	Non-Fibrous 100	None Detected
24 / 1130137	Caulk @ Seams of Bulkhead	921-927 Broadway Exterior	multi	Non-Fibrous 100	None Detected

Sampled: August 29, 2023 **Received:** August 29, 2023 **Analyzed:** August 29, 2023

Wednesday 30 August

Analyzed by: Elai Maxwell **Batch:** 103115

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, Ma Building Name Revere Housing

Sample	Description of Material	Sample Location	
1	Joint Compound (JC)	18-24 Rose	Foothall
2	JC clg		Bsmt
3	window frame caulk		Exterior c brick
4	win fr caulk - seams	10-16 Rose	Exterior
5	door frame caulk - seams	32-38 Rose	Exterior ~~c brick~~
6	roofing debris	32-38 Rose	Exterior Front c soil
7	JC	40-44 Rose	Bsmt
8	JC clg	40-44 Rose	Bsmt clg
9	window fr	46-52 Rose	Exterior
10	Door fr	46-52 Rose	Exterior Front
11	win fr c seams	54-58 Rose	Exterior
12	JC clg	76-82 Rose	Bsmt
13	JC	76-82 Rose	rear hall
14	win fr	76-82 Rose	Exterior
15	caulk c seams of bulkhead	76-82 Rose	Exterior
16	caulk c seams of bulkhead	165-172 Pomona	Exterior
17	win fr c seams	165-172 Pomona	
18	Dark Caulk where bulkhead meets foundation	165-172 Pomona	
19	Door fr	148-154 Pomona	
20	win fr c seams	905-911 Broadway	

Reported By: [signature] Date: 8/29/23 Due Date: **24-Hours**

Received By: [signature] Date: 8/29/23

202

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere ma Building Name Revere Housing

Sample	Description of Material	Sample Location
21	Roof fr	915-917 Broadway exterior (brick)
22	win fr	915-917 exterior (brick)
23	win fr	921-927 exterior (vinyl)
24	caulk e seams of bulkhead	915-917 exterior

Reported By: [signature] Date: 8/29/23 Due Date: **24-Hours**

Received By: Date:

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email:
mikemanning@asbestosidentificationlab.com

NVLAP Testing
Lab Code: 200919-0

Batch: 103244

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
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- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1131382	Window Frame Caulk	Exterior 266 Cushman (Rear)	multi	Non-Fibrous 95	Detected Chrysotile 5
2 / 1131383	Win Fr	Exterior 254 Cushman	multi	Non-Fibrous 95	Detected Chrysotile 5
3 / 1131384	Door Frame Caulk	Exterior 255 Cushman	white	Non-Fibrous 100	None Detected
4 / 1131385	Door Fr and Residue? Orig	Exterior 272 Cushman	multi	Non-Fibrous 95	Detected Chrysotile 5
5 / 1131386	Door Fr	Exterior 2 Harris Door #1	gray	Non-Fibrous 100	None Detected
6 / 1131387	Door Fr	Exterior 2 Harris Door #23	gray	Non-Fibrous 100	None Detected
7 / 1131388	Win Fr	Exterior 2 Harris by #2	multi	Non-Fibrous 100	None Detected
8 / 1131389	Caulk in Brick Sill #7	Exterior 2 Harris	multi	Non-Fibrous 100	None Detected
9 / 1131390	Grill Frame Caulk	Exterior 2 Harris	gray	Non-Fibrous 100	None Detected
10 / 1131391	Grill Fr	Exterior 2 Harris by #18	gray	Non-Fibrous 100	None Detected
11 / 1131392	Joint Compound (JC)	Interior Center Stairwell	white	Non-Fibrous 100	None Detected
12 / 1131393	JC (Clg)	Interior Community Room	white	Non-Fibrous 100	None Detected
13 / 1131394	JC	Interior Community Room	white	Non-Fibrous 100	None Detected
14 / 1131395	12" Mottled Brown VT	Interior Community Room Laundry Rm	brown	Non-Fibrous 100	None Detected
15 / 1131396	12" Mottled Brown	Interior Community Room Laundry Rm	brown	Non-Fibrous 100	None Detected
16 / 1131397	Adhesive #15	Interior Community Room Laundry Rm	yellow	Non-Fibrous 100	None Detected

Sampled: August 30, 2023 **Received:** August 31, 2023 **Analyzed:** August 31, 2023

Friday 01 September 2023

Analyzed by: Elai Maxwell **Batch:** 103244

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
17 / 1131398	12" Lt Gray	Interior Community Room Storage by Kitch	white	Non-Fibrous 96	Detected Chrysotile 4
18 / 1131399	Mastic #17	Interior Community Room Storage by Kitch	black	Non-Fibrous 93	Detected Chrysotile 7
19 / 1131400	Popcorn Ceiling (PC)	Ctr Interior Community Room Basement	white	Non-Fibrous 100	None Detected
20 / 1131401	PC	Exit Stairs Interior Community Room Basement	white	Non-Fibrous 100	None Detected
21 / 1131402	PC	Interior 2 Harris Community Rm (Bsmt)	white	Non-Fibrous 100	None Detected
22 / 1131403	Win Fr	Exterior 15-21 Hutchinson	multi	Non-Fibrous 100	None Detected
23 / 1131404	Win Fr	Exterior 71-77 Hutchinson	multi	Non-Fibrous 100	None Detected
24 / 1131405	Win Fr at Brick	Exterior 57-63 Hutchinson	multi	Non-Fibrous 100	None Detected
25 / 1131406	Win Fr at Brick	Exterior 57-63 Hutchinson	multi	Non-Fibrous 100	None Detected
26 / 1131407	Win Fr Bsmt/Foundation	Exterior 57-63 Hutchinson	multi	Non-Fibrous 100	None Detected
27 / 1131408	Win Fr	Exterior 43-49 Hutchinson	multi	Non-Fibrous 100	None Detected
28 / 1131409	Door Fr (Brick)	Exterior 57-63 Hutchinson	multi	Non-Fibrous 100	None Detected
29 / 1131410	Door Fr (Brick)	Exterior 29-35 Hutchinson	multi	Non-Fibrous 98	Detected Chrysotile 2
30 / 1131411	Caulk at Seams of Bulkhead	Exterior 71-77 Hutchinson	multi	Non-Fibrous 100	None Detected
31 / 1131412	JC	Interior at Typ Htg Rm-1 Cooledge St	white	Non-Fibrous 100	None Detected
32 / 1131413	JC	Interior at Typ Htg Rm-2 Cooledge St	white	Non-Fibrous 100	None Detected

Sampled: August 30, 2023 **Received:** August 31, 2023 **Analyzed:** August 31, 2023

Friday 01 September 2023

Analyzed by: Elai Maxwell **Batch:** 103244

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
33 / 1131414	Win Fr	Exterior 301 Cooledge Street	multi	Non-Fibrous 95	**Detected** **Chrysotile 5**
34 / 1131415	Win Fr	Exterior 291 Cooledge Street	multi	Non-Fibrous 95	**Detected** **Chrysotile 5**
35 / 1131416	Win Fr	Exterior 259 Cooledge Street	multi	Non-Fibrous 95	**Detected** **Chrysotile 5**
36 / 1131417	Door Fr	Exterior 291 Cooledge Street	multi	Non-Fibrous 100	None Detected
37 / 1131418	Door Fr	Exterior 257 Cooledge Street	multi	Non-Fibrous 100	None Detected
38 / 1131419	Door Fr	Exterior 267 (Rear) Cooledge Street	multi	Non-Fibrous 100	None Detected
39 / 1131420	Black Paper Behind Vinyl Siding at Htg Rm	Cooledge Street	black	Cellulose 75 Non-Fibrous 25	None Detected

Sampled: August 30, 2023 **Received:** August 31, 2023 **Analyzed:** August 31, 2023

Friday 01 September 2023

Analyzed by: Elai Maxwell **Batch:** 103244

1

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

2 → #2 Harris = #5 — #21

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location		
1	window frame caulk	exterior	266 Cushman (rear)	
2	win fr		254 Cushman	
3	door frame caulk		255	
4	door fr & residue? orig		272	
5	door fr	exterior	2 Harris	door #1
6	door fr			door #23
7	win fr			by #2
8	caulking brickwall & 7			
9	grille frame caulk			
10	grille fr			by #18
11	Joint Compound (JC)	interior	center stairwell	
12	JC (clg)		Community Room	
13	JC			
14	12" mottled Brown VT			Laundrym
15	12" mottled Brown			
16	adhesive #15			
17	12" Lt grey			storage bakita
18	mastic #17			storage bakita
19	Popcorn Ceiling (PC)	ceil		basement
20	PC	ceil/stairs		basement

Reported By: [signature] Date: 8-30-23 Due Date: **24-Hours**

Received By: [signature] Date: 8/31/23

2

CHAIN OF CUSTODY

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12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location
21	PC	interior 24 Harris Community Rm (Basmt)
22	wind fr	exterior 45-21 Hutchinson
23	wind fr	71-77
24	wind fr @ brick	57-63
25	wind fr @ brick	57-63
26	wind fr bsmt/foundation	57-63
27	wind fr	43-49
28	door fr (brick)	57-63
29	door fr (brick)	29-35
30	caulk @ seams of bulkhead	71-77
31	JC	interior @ Typ bfg rm-1 Coolidge St
32	JC	interior @ Typ bfg rm-2
33	wind fr	exterior 301 Coolidge Street
34	wind fr	291
35	wind fr	259
36	door fr	291
37	door fr	257
38	door fr	267 (rear)
39	Black paper behind vinyl siding @ bfg rm	

Reported By: Date: 8-30-23 Due Date: 24-Hours

Received By: Date:

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email:
mikemanning@asbestosidentificationlab.com

NVLAP Testing
Lab Code: 200919-0

Batch: 103305

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
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- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1131888	2x4 SAT-I (Older Side Fissures	2nd Fl Bathroom 1 Hutchinson	gray	Fiberglass 30 Cellulose 60 Non-Fibrous 10	None Detected
2 / 1131889	Wall Plaster (WP)	2nd Fl Closet 1 Hutchinson	gray	Non-Fibrous 100	None Detected
3 / 1131890	12" Mottled Gray VT	Kitchen 1 Hutchinson	gray	Non-Fibrous 100	None Detected
4 / 1131891	Adhesive #3	Kitchen1 Hutchinson	tan	Non-Fibrous 100	None Detected
5 / 1131892	WP	Stairs dn to Basement 1 Hutchinson	multi	Non-Fibrous 100	None Detected
6 / 1131893	Joint Compound (JC)	Kitchen1 Hutchinson	white	Non-Fibrous 100	None Detected
7 / 1131894	SAT-I	Liv Rm 37 Hutchinson	gray	Fiberglass 30 Cellulose 60 Non-Fibrous 10	None Detected
8 / 1131895	12" Mottled Brown VFT	Kitchen 37 Hutchinson	tan	Non-Fibrous 100	None Detected
9 / 1131896	12" Mottled Brown VFT	Kitchen 23 Hutchinson	tan	Non-Fibrous 100	None Detected
10 / 1131897	Adhesive #9	Kitchen 59 Hutchinson	yellow	Non-Fibrous 100	None Detected
11 / 1131898	12" Stick On Floor Tile	Kitchen 59 Hutchinson	multi	Non-Fibrous 100	None Detected
12 / 1131899	JC (Clg)	Kitchen 59 Hutchinson	white	Non-Fibrous 100	None Detected
13 / 1131900	Composite JC/WP	2nd Fl Wp Closet/Kitchen 59 Hutchinson	multi	Non-Fibrous 100	None Detected
14 / 1131901	WP	Stairs dn to Basement 69 Hutchinson	multi	Non-Fibrous 100	None Detected
15 / 1131902	(Old) Sink dp	Kitchen 69 Hutchinson	tan	Non-Fibrous 100	None Detected
16 / 1131903	12" Mottled Gray VT	Kitchen 69 Hutchinson	multi	Non-Fibrous 100	None Detected

Sampled: August 31, 2023 **Received:** September 01, 2023 **Analyzed:** September 01, 2023

Tuesday 05 September

Analyzed by: Michael Thomas

Batch: 103305

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
17 / 1131904	Adhesive #16	Kitchen 69 Hutchinson	tan	Non-Fibrous 100	None Detected
18 / 1131905	Ceiling Plaster (cp)	Liv Rm 59 Hutchinson	multi	Non-Fibrous 100	None Detected
19 / 1131906	(old) Sink dp	Kitchen 1 Hutchinson	tan	Non-Fibrous 100	None Detected
20 / 1131907	cp	Hall 37 Hutchinson	multi	Non-Fibrous 100	None Detected
21 / 1131908	JC	Kitchen 250 Cushman	tan	Non-Fibrous 98	**Detected** Chrysotile 2
22 / 1131909	12" Mottled Gray VT	Kitchen 250 Cushman	gray	Non-Fibrous 100	None Detected
23 / 1131910	12" Dk Brown VT	Kichten Laundry Rm 252 Cushman	brown	Non-Fibrous 100	None Detected
24 / 1131911	Adhesive #23	Kichten Laundry Rm 252 Cushman	multi	Non-Fibrous 100	None Detected
25 / 1131912	JC	Kitchen 266 Cushman	tan	Non-Fibrous 98	**Detected** Chrysotile 2
26 / 1131913	12" Mottled Brown	Hall 266 Cushman	brown	Non-Fibrous 100	None Detected
27 / 1131914	Adhesive #26	Hall 266 Cushman	multi	Non-Fibrous 100	None Detected
28 / 1131915	12" Mottled Beige	Kitchen 266 Cushman	tan	Non-Fibrous 100	None Detected
29 / 1131916	Adhesive #28	Kitchen 260 Cushman	multi	Non-Fibrous 100	None Detected

Sampled: August 31, 2023 **Received:** September 01, 2023 **Analyzed:** September 01, 2023

Tuesday 05 September

Analyzed by: Michael Manning

Batch: 103305

1 of 2

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Lynn, MA Building Name Lynn Housing

Sample	Description of Material	Sample Location	
1	2:4 SAT-I (older, side fissures)	2nd FL bathrm	1 Hutchinson
2	wall plaster (WP)	2nd FL closet	
3	12" mottled grey VT	Kitchen	
4	adhesive #3	Kitchen	
5	WP	stairs dn to bsmt	
6	Joint Compound (JC)	Kitchen	
7	SAT-I	Livrm	37 Hutchinson
8	12" mottled Brown VT	Kitchen	" " "
9	12" mottled Brown VT	Kitchen	23 Hutchinson
10	adhesive #9	Kitchen	59 Hutchinson
11	12" stick-on Floor Tile	Kitchen	
12	JC (old)	Kitchen	
13	composite JC/WP	2nd FL closet/Kitchen	
14	WP	stairs dn to bsmt	69 Hutchinson
15	(old) sink dp	Kitchen	
16	12" mottled grey VT	Kitchen	
17	adhesive #16	Kitchen	
18	ceiling plaster (CP)	Livrm	59 Hutchinson
19	(old) sink dp	Kitchen	1 Hutchinson
20	CP	hall	37 Hutchinson

Reported By: [signature] Date: 8/31/23 Due Date: **24-Hours**

Received By: [signature] Date: 9/1/23

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere ma Building Name Revere Housing

Sample	Description of Material	Sample Location
21	JC	Kitchen 250 Cushman
22	12" mottled grey vt	Kitchen 250 Cushman
23	12" Dk Brown vt	Kitchen Laundry rm 252 Cushman
24	Adhesive #23	" " " " "
25	JC	Kitchen 266 Cushman
26	12" mottled Brown	hall 266
27	adhesive #26	hall 266
28	12" mottled Beige	Kitchen 266
29	Adhesive #28	Kitchen 260

Reported By: [signature] Date: 8/31/23 Due Date: **24-Hours**

Received By: Date:

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email:
mikemanning@asbestosidentificationlab.com

NVLAP Testing
Lab Code: 200919-0

Batch: 103402

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
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- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1132862	Joint Compound (JC)	Kitchen 22 Rose	white	Non-Fibrous 100	None Detected
2 / 1132863	Mottled Gray 12" VT	Kitchen 22 Rose	gray	Non-Fibrous 100	None Detected
3 / 1132864	Adhesive #2	Kitchen 22 Rose	black	Non-Fibrous 100	None Detected
4 / 1132865	White w/ Gray Flecks 12: VT	Kitch 60 Rose	gray	Non-Fibrous 100	None Detected
5 / 1132866	Adhesive #4	Kitch 60 Rose	tan	Non-Fibrous 100	None Detected
6 / 1132867	2X4 SAT-I (Older, Side Fissures)	1st Fl Bathroom 60 Rose	gray	Fiberglass 15 Mineral Wool 15 Cellulose 55 Non-Fibrous 15	None Detected
7 / 1132868	Gyp Clg	Kitch 70 Rose	gray	Cellulose 5 Non-Fibrous 95	None Detected
8 / 1132869	JC	Kitch 70 Rose	white	Non-Fibrous 100	None Detected
9 / 1132870	Stick-on 12" VT	Kitch 70 Rose	black	Non-Fibrous 100	None Detected
10 / 1132871	Parge on Foundation Wall	Bsmt 70 Rose	gray	Non-Fibrous 100	None Detected
11 / 1132872	SAT-I	2nd Fl Bathrm 90 Rose	gray	Fiberglass 15 Mineral Wool 15 Cellulose 55 Non-Fibrous 15	None Detected
12 / 1132873	Wall Plaster (WP)	1st Fl Closet 90 Rose	gray	Cellulose 5 Non-Fibrous 95	None Detected
13 / 1132874	Mottled Brown 12" VT	Kitchen 154 Pomona	gray	Non-Fibrous 100	None Detected
14 / 1132875	JC	Kitchen 154 Pomona	white	Non-Fibrous 100	None Detected
15 / 1132876	WP	Stairs Dn to Bsmt 154 Pomona	gray	Cellulose 5 Non-Fibrous 95	None Detected
16 / 1132877	Mottled Brown 12" VT	Kitch 907 Broadway	gray	Non-Fibrous 100	None Detected

Sampled: September 01, 2023 **Received:** September 05, 2023 **Analyzed:** September 05, 2023

Wednesday 06 September

Analyzed by: **Batch:** 103402

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
17 / 1132878	JC	Kitch 907 Broadway	white	Non-Fibrous 100	None Detected
18 / 1132879	SAT-I	Liv. Rm 909 Browadway	gray	Fiberglass 15 Mineral Wool 15 Cellulose 55 Non-Fibrous 15	None Detected
19 / 1132880	WP	Stairs Dn to Bsmt 909 Broadway	gray	Cellulose 5 Non-Fibrous 95	None Detected
20 / 1132881	WP	Kitchen 909 Broadway	gray	Cellulose 5 Non-Fibrous 95	None Detected
21 / 1132882	Ceiling Plaster (CP)	Liv Rm 909 Broadway	multi	Cellulose 5 Non-Fibrous 95	None Detected
22 / 1132883	Mottled Brown 12" VT	Hall Closet 259 Cooledge	gray	Non-Fibrous 100	None Detected
23 / 1132884	JC	Hall 259 Colledge	tan	Non-Fibrous 97	**Detected** **Chrysotile 3**
24 / 1132885	Mottled Gray 12" VT	Hall Closet 283 Cooledge	gray	Non-Fibrous 100	None Detected
25 / 1132886	Mastic #24	Hall Closet 283 Cooledge	black	Non-Fibrous 100	None Detected
26 / 1132887	Gyp Clg ?	Liv Rm 283 Cooledge	gray	Cellulose 5 Non-Fibrous 95	None Detected
27 / 1132888	JC	Kitch 283 Cooledge	tan	Non-Fibrous 98	**Detected** **Chrysotile 2**
28 / 1132889	Gyp Wall	Kitch 304 Cooledge	gray	Cellulose 5 Non-Fibrous 95	None Detected
29 / 1132890	Textured JC Wall	Stairs up to 2nd Fl 304 Cooledge	white	Non-Fibrous 100	None Detected
30 / 1132891	JC (Clg)	Stairs up to 2nd Fl 311 Cooledge	tan	Non-Fibrous 97	**Detected** **Chrysotile 3**
31 / 1132892	Mottled Beige 12" VT	Kitchen 311 Cooledge	gray	Non-Fibrous 100	None Detected
32 / 1132893	Mastic #31	Kitchen 311 Cooledge	brown	Non-Fibrous 100	None Detected

Sampled: September 01, 2023 **Received:** September 05, 2023 **Analyzed:** September 05, 2023

Wednesday 06 September

Analyzed by: **Batch:** 103402

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location	
1	Joint Compound (JC)	Kitchen	22 ROSE
2	mottled grey 12" VT	/	/
3	adhesive of #2		
4	white w/ grey flecks 12" VT	Kitch	60 ROSE
5	adhesive of #4	"	
6	2.4 SAT-T (older, side fissures)	1st Fl bathrm	
7	Sp ceiling	Kitch	70 ROSE
8	JC	Kitch	
9	STUCK-on 12" VT	Kitch	
10	parge on foundation wall	bsmt	
11	SAT-T	2nd Fl bathrm	90 Rose
12	wall plaster (WP)	1st Fl closet	" "
13	mottled Brown 12" VT	Kitchen	154 Pomona
14	JC	Kitch	
15	WP	stairs dn to bsmt	
16	mottled Brown 12" VT	Kitch	907 Broadway
17	JC	Kitch	" "
18	SAT-T	Liv rm	909 Broadway
19	WP	stairs dn to Bsmt	/ /
20	WP	Kitchen	

Reported By: [signature] Date: 9-1-23 Due Date: **24-Hours**

Received By: Date: 9/5/23

2 of 2

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location	
21	ceiling plaster (CP)	Liv rm	909 Broadway
22	mottled beige 12" vt	hall closet	259 Coolidge
23	JC	hall	259 Coolidge
24	mottled grey 12" vt	hall closet	283 Coolidge
25	mastic #24	hall closet	
26	gyp clg ?	Liv rm	
27	JC	kitch	
28	gyp wall	Kitch	304 Coolidge
29	Textured JC wall	stains up to 2nd fl	" " "
30	JC (clg)	stains up to 2nd fl	311 Coolidge
31	mottled beige 12" vt	Kitchen	
32	mastic #31	" "	

Reported By: [signature] Date: 8-1-23 Due Date: **24-Hours**

Received By: Date:

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email:
mikemanning@asbestosidentificationlab.com

NVLAP Testing
Lab Code: 200919-0

Batch: 103443

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere Ma

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Information

Revere Housing,
Revere Ma

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 1133126	Mottled Grat VT-I	Kitchen 3 Harris	gray	Non-Fibrous 100	None Detected
2 / 1133127	Adhesive #1	Kitchen 3 Harris	yellow	Cellulose 10 Non-Fibrous 90	None Detected
3 / 1133128	Mottled Brown VT-II	Kitchen 4 Harris	brown	Non-Fibrous 100	None Detected
4 / 1133129	VT-I	Bathroom 4 Harris	gray	Non-Fibrous 100	None Detected
5 / 1133130	Adh #4	Bathroom 4 harris	yellow	Cellulose 10 Non-Fibrous 90	None Detected
6 / 1133131	Old Brown Lino	Bathroom 14 Harris	multi	Cellulose 10 Non-Fibrous 70	**Detected** **Chrysotile 20**
7 / 1133132	Adhesive #6 NO SAMPLE	Bathroom 14 Harris			Not Analyzed
8 / 1133133	Joint Compound (JC)	Kitchen 14 Harris	white	Non-Fibrous 100	None Detected
9 / 1133134	JC	Kitchen 16 Harris	white	Non-Fibrous 100	None Detected
10 / 1133135	Old Gray Lino	Bathroom 21 Harris	multi	Cellulose 10 Non-Fibrous 70	**Detected** **Chrysotile 20**
11 / 1133136	JC	Kitchen 21 Harris	white	Non-Fibrous 100	None Detected
12 / 1133137	Old Mottled Light Lime VT	Kitchen 21 Harris	multi	Non-Fibrous 98	**Detected** **Chrysotile 2**
13 / 1133138	Mastic #12	Kitchen 21 Harris	black	Cellulose 5 Non-Fibrous 90	**Detected** **Chrysotile 5**
14 / 1133139	JC	Kitchen 40 Harris	white	Non-Fibrous 100	None Detected

Sampled: September 05, 2023 **Received:** September 06, 2023 **Analyzed:** September 06, 2023

Thursday 07 September

Analyzed by: Jonathan Chann **Batch:** 103443

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Revere, MA Building Name Revere Housing

Sample	Description of Material	Sample Location	
1	mottled grey VT-I	Kitchen	3 Harris
2	adhesive #1	Kitch	3 Harris
3	mottled brown VT-II	Kitch	4 Harris
4	VT-I	bathroom	4 Harris
5	adh #4	bathroom	4 Harris
6	old Brown Line	bathroom	14 Harris
7	adhesive? #6	bathroom	14 Harris
8	Joint Compound (old JC)	Kitchen	14 Harris
9	JC	Kitch	16 Harris
10	old grey Line	bathrm	21 Harris
11	JC	Kitchen	21 Harris
12	old mottled Light Line VT	Kitchen	21 Harris
13	mastic #12	Kitch	21 Harris
14	JC	Kitch	40 Harris

Reported By: [signature] Date: 9/5/23 Due Date: **24-Hours**

Received By: [signature] Date: 9/6/23

APPENDIX II. ARCHITECTURE CONTRACT

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

OMB Approval No. 2577-0157 (exp. 3/31/2020)

Model Form of Agreement Between Owner and Design Professional

SAMPLE

Model Form of Agreement Between Owner and Design Professional

U. S. Department of Housing and Urban Development
Office of Public and Indian Housing

OMB Approval No. 2577-0157
(exp. 3/31/2020)

Public reporting burden for this collection of information is estimated to average 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless that collecton displays a valid OMB control number.

These contracts between a HUD grantee (housing agency (HA)) and an architect/engineer (A/E) for design and construction services do not require either party to submit any materials to HUD. The forms provide a contractual agreement for the services to be provided by the A/E and establishes responsibilities of both parties pursuant to the contract. The regulatory authority is 24 CFR 85.36. These contractual agreements are required by Federal law or regulation pursuant to 24 CFR Part 85.36. Signing of the contracts is required to obtain or retain benefits. The contracts do not lend themselves to confidentiality.

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SAMPLE

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SAMPLE

Introduction to Agreement

Agreement
made as of the _____ day of _____ in the year (yyyy) of _____

Between the **Owner** (Name & Address)

and the **Design Professional** (Name, Address and Discipline)

For the following **Project** (Include detailed description of Project, Location, Address, Scope and Program Designation)

SAMPLE

The Owner and Design Professional agree as set forth below.

Article A: Services

A 1.0 Design Professional's Basic Services

A. 1.1 Areas of Professional's Basic Services. Unless revised in a written addendum or amendment to this Agreement, in plan-ning, designing and administering construction or rehabilitation of the Project, the Design Professional shall provide the Owner with professional services in the following areas:

- Architecture
- Site Planning
- Structural Engineering
- Mechanical Engineering
- Electrical Engineering
- Civil Engineering
- Landscape Architecture
- Cost Estimating
- Construction Contract Administration

A 1.2 Phases and Descriptions of Basic Services.

A. 1.2.1 Schematic Design/Preliminary Study Phase. After receipt of a Notice to Proceed from the Owner, the Design Professional shall prepare and deliver Schematic Design/Preliminary Study Documents. These documents shall consist of a presentation of the complete concept of the Project, including all major elements of the building(s), and site design(s), planned to promote economy both in construction and in administration and to comply with current program and cost limitations. The Design Professional shall revise these documents consistent with the requirements and criteria established by the Owner to secure the Owner's written approval. Additionally, the Design Professional shall make an independent assessment of the accuracy of the information provided by the Owner concerning existing conditions. Documents in this phase shall include:

- Site plan(s)
- Schedule of building types, unit distribution and bedroom count
- Scale plan of all buildings, and typical dwelling units
- Wall sections and elevations
- Outline specifications
- Preliminary construction cost estimates
- Project specific analysis of codes, ordinances and
- regulations Three dimensional line drawings

A. 1.2.2 Design Development Phase. After receipt of written approval of Schematic Design/Preliminary Study Documents, the Design Professional shall prepare and submit to the Owner Design Development Documents. The Design Professional shall revise these documents consistent with the requirements and criteria established by the Owner to secure the Owner's written approval. These documents shall include the following:

- Drawings sufficient to fix and illustrate project scope and character in all essential design elements
- Outline specifications
- Cost estimates and analysis
- Recommendations for phasing of construction
- Site plan(s)
- Landscape plan
- Floor plans
- Elevations, building and wall sections
- Updated three dimensional line drawings
- Engineering drawings

A. 1.2.3 Bidding, Construction and Contract Document Phase. After receipt of the Owner's written approval of Design Development Documents, the Design Professional shall prepare Construction Documents. After consultation with the Owner and Owner's attorney, if requested by the owner, the Design Professional shall also prepare and assemble all bidding and contract documents. The Design Professional shall revise these Bidding, Construction and Contract documents consistent with the requirements and criteria established by the Owner to secure the Owner's written approval. They shall, include in a detailed, manner all work to be performed; all material; workmanship; finishes and equipment required for the architectural, structural, mechanical, electrical, and site work; survey maps furnished by Owner; and direct reproduction of any logs and subsurface soil investigations. These documents shall include:

- Solicitation for Bids
- Form of Contract
- Special Conditions
- General Conditions
- Technical Specifications
- Plans and drawings
- Updated cost estimates

A. 1.2.4 Bidding and Award Phase. After written approval of Bidding, Construction and Contract Documents from the Owner, the Design Professional shall assist in administering the bidding and award of the Construction Contract. This shall include:

- Responding to inquires
- Drafting and issuing addendum approved by Owner
- Attending prebid conference(s)
- Attending public bid openings
- Reviewing and tabulating bids
- Recommending list of eligible bids
- Recommending award
- Altering drawings and specifications as often as required to award within the Estimated Construction Contract Cost

SAMPLE

A. 1.2.5 Construction Phase. After execution of the Construction Contract, the Design Professional shall in a prompt and timely manner administer the Construction Contract and all work re-quired by the Bidding, Construction and Contract Documents. The Design Professional shall endeavor to protect the Owner against defects and deficiencies in the execution and performance of the work. The Design Professional shall:

- Administer the Construction Contract.
- Conduct pre-construction conference and attend dispute resolution conferences and other meetings when requested by the Owner.
- Review and approve contractor's shop drawings and other submittals for conformance to the requirements of the contract documents.
- At the Owner's written request, and as Additional Service, procure testing from qualified parties.
- Monitor the quality and progress of the work and furnish a written field report ☐ weekly, ☐ semi monthly, ☐ monthly, or ☐ _____ This service shall be limited to a period amounting to 110% of the construction period as originally established under the construction contract unless construction has been delayed due to the Design professional's failure to properly perform its duties and responsibilities. The Owner may direct additional monitoring but only as Additional Services.
- Require any sub-consultant to provide the services listed in this section where and as applicable and to visit the Project during the time that construction is occurring on the portion of the work related to its discipline and report in writing to the Design Professional.
- Review, approve and submit to Owner the Contractor Requests for Payment.
- Conduct all job meetings and record action in a set of minutes which are to be provided to the Owner.
- Make modifications to Construction Contract Documents to correct errors, clarify intent or to accommodate change orders.
- Make recommendations to Owner for solutions to special problems or changes necessitated by conditions encountered in the course of construction.
- Promptly notify Owner in writing of any defects or deficiencies in the work or of any matter of dispute with the Contractor.
- Negotiate, prepare cost or price analysis for and countersign change orders.
- Prepare written punch list, certificates of completion and other necessary construction close out documents.
- Prepare a set of reproducible record prints of Drawings showing significant changes in the work made during construction, including the locations of underground utilities and appurtenances referenced to permanent surface improvements, based on marked-up prints, drawings and other data furnished by the contractor to the Design Professional.

A. 1.2.6 Post Completion/Warranty Phase. After execution of the Certificate of Completion by the Owner, the Design Professional shall:

- Consult with and make recommendations to Owner during warranties regarding construction, and equipment warranties.
- Perform an inspection of construction work, material, systems and equipment no earlier than nine months and no later than ten months after completion of the construction contract and make a written report to the Owner. At the Owner's request, and by Amendment to the Additional Services section of this contract, conduct additional warranty inspections as Additional Services.
- Advise and assist Owner in construction matters for a period up to eighteen months after completion of the project, but such assistance is not to exceed forty hours of service and one nonwarranty trip away from the place of business of the Design Professional.

A. 1.3 Time of Performance. The Design Professional's sched-ule for preparing, delivering and obtaining Owner's approval for Basic Services shall be as follows:

- Schematic Design/Preliminary Study Documents within _____ calendar days for the date of the receipt of a Notice to Proceed.
- Design Development Documents within _____calendar days from the date of receipt of written approval by the Owner of Schematic Design/Preliminary Study documents.
- Bidding, Construction and Contract Documents within _____calendar days from the date of receipt of written approval by the Owner of Design Development Documents.

A. 2.0 Design Professional's Additional Services

A. 2.1 Description of Additional Services. Additional Services are all those services provided by the Design Professional on the Project for the Owner that are not defined as Basic Services in Article A, Section 1.2 or otherwise required to be performed by the Design Professional under this Agreement. They include major revisions in the scope of work of previously approved drawings, specifications and other documents due to causes beyond the control of the Design Professional and not due to any errors, omissions, or failures on the part of the Design Professional to carry out obligations otherwise set out in this Agreement.

A. 2.2 Written Addendum or Contract Amendment. All additional services not already expressly required by this agreement shall be agreed to through either a written addendum or amendment to this Agreement.

Article B: Compensation and Payment B.

1.0 Basic Services

B. 1.1 Fixed Fee for Basic Services. The Owner will pay the Design Professional for Basic Services performed as defined by A.1.2, a Fixed Fee (stipulated sum) of $ _____ plus Reimbursable Expenses identified in Article B.2.0. Such

SAMPLE

payment shall be compensation for all Basic Services required, performed, or accepted under this Contract.

B. 1.2 Payment Schedule. Progress payments for Basic Services for each phase of work shall be made in proportion to services performed as follows:

Phase	Amount
Schematic Design/Preliminary Study Phase	$ _____
Design Development Phase	$ _____
Bidding, Construction & Contract Document Phase	$ _____
Bidding & Award Phase	$ _____
Construction Phase	$ _____
Post Completion/ Warranty Phase	$ _____
Total Basic Services	$ _____

B. 2.0 Reimbursables

B. 2.1 Reimbursable Expenses. The Owner will pay the Design Professional for the Reimbursable Expenses listed below up to a Maximum Amount of $ _____ Reimbursable Expenses are in addition to the Fixed Fee for Basic Services and are for certain actual expenses incurred by the Design Professional in connection with the Project as enumerated below.

B. 2.1.1 Travel Costs. The reasonable expense of travel costs incurred by the Design Professional when requested by Owner to travel to a location that lies outside of a 45 mile radius of either the Project site, Design Professional's office (s), and Owner's office.

B. 2.1.2 Long Distance Telephone Costs. Long distance tele-phone calls and long distance telefax costs.

B. 2.1.3 Delivery Costs. Courier services and overnight delivery costs.

B. 2.1.4 Reproduction Costs. Reproduction and postage costs of required drawings, specifications, Bidding and Contract documents, excluding the cost of reproductions for the Design Professional or Subcontractor's own use.

B. 2.1.5 Additional Reimbursables. The Design Professional and Owner may agree in an addendum or amendment to this Agreement to include certain other expenses not enumerated above as Reimbursable Expenses. These Reimbursables shall not be limited by the Maximum Amount agreed to above. A separate Maximum Amount for these Reimbursables shall be established.

B .3.0 Additional Services

B. 3.1 Payment for Additional Services. The Owner will pay the Design Professional only for Additional Services agreed to in an addendum or amendment to this Agreement executed by the Owner and the Design Professional pursuant to A.2. Payment for all such Additional Services shall be in an amount and upon the terms set out in such amendment or addendum and agreed upon by the parties. Each such amendment or addendum shall provide for a fixed price or, where payment for such Additional Services is to be on an hourly basis or other unit pricing method, for a maximum amount; each such amendment or addendum shall also provide for a method of payment, including, at a minimum, whether payment will be made in partial payments or in lump sum and whether it will be based upon percentage of completion or services billed for.

B. 4.0 Invoicing and Payments

B. 4.1 Invoices. All payments shall require a written invoice from the Design Professional. Invoices shall be made no more frequently than on a monthly basis. Payments for Basic Services shall be in proportion to services completed within each phase of work. When requesting such payment, the invoice shall identify the phase and the portion completed. All invoices shall state the Agreement, name and address to which payment shall be made, the services completed and the dates of completion, and whether the invoice requests payment for Basic Services, Reimbursable or Additional Services. Invoices seeking payment for Reimbursable or Additional Services must provide detailed documentation.

B. 4.2 Time of Payment. Upon the Design Professional's proper submission of invoices for work performed or reimbursable expenses, the Owner shall review and, if the work is in conformance with the terms of the Agreement, make payment within thirty days of the Owner's receipt of the invoice.

Article C: Responsibilities

C. 1.0 Design Professional's Responsibilities

C. 1.1 Basic Services. The Design Professionals shall provide the Basic Service set out in Article A.1.0.

C. 1.2 Additional Services. When required under this Agree-ment or agreed to as set out in A.2.0, the Design Professional shall provide Additional Services on the Project.

C. 1.3 General Responsibilities. The Design Professional shall be responsible for the professional quality, technical accuracy, and coordination of all designs, drawings, specifications, and other services, furnished by the Design Professional under this Agreement. The Owner's review, approval, acceptance of, or payment for Design Professional services shall not be construed as a waiver of any rights under this Agreement or of any cause of action for damages caused by Design Professional's negligent performance under this Agreement. Furthermore, this Agree-ment does not restrict or limit any rights or remedies otherwise afforded the Owner or Design Professional by law.

C. 1.4 Designing Within Funding Limitations. The Design Professional shall perform services required under this Contract in such a manner so as to cause an award of a Construction Contract(s) that does not exceed (1) $ _____ or (2) an amount to be provided by the Owner in writing to the Design Professional prior to the commencement of Design Professional services. This fixed limit shall be called the Maximum Construction Contract Cost. The amount may be increased by the Owner, but only with written notice to the Design Professional. If the increase results in a change to the scope of work, an amendment to this Agreement will be required. The Design Professional and the Owner may mutually agree to decrease the Maximum Construction Contract Cost, but only by signing a written amendment to this Agreement. Should bids for the Construction Contract(s) exceed the Maximum Construction Contract Cost, the Owner has the right to require the Design Profes-

SAMPLE

sional to perform redesigns, rebids and other services necessary to cause an award of the Construction Contract within the Maximum Construction Contract Cost without additional compensation or reimbursement.

C. 1.5 Compliance with Laws, Codes, Ordinances and Regulations. The Design Professional shall perform services that conform to all applicable Federal, State and local laws, codes, ordinances and regulations except as modified by any waivers which may be obtained with the approval of the Owner. If the Project is within an Indian reservation, tribal laws, codes and regulations shall be substituted for state and local laws, codes, ordinances and regulations. However, on such a Native American Projects, the Owner may additionally designate that some or all state and local codes shall apply. In some of these circumstances, a model national building code may be selected by the Indian or Native American Owner. The Design Professional shall certify that Contract Documents will conform to all applicable laws, codes, ordinances and regulations. The Design Professional shall prepare all construction documents required for approval by all governmental agencies having jurisdiction over the project. The Design professional shall make all changes in the Bidding and Construction Documents necessary to obtain governmental approval without additional compensation or reim-bursement, except in the following situations. If subsequent to the date the Owner issues a notice to proceed, revisions are made to applicable codes or non-federal regulations, the Design Professional shall be entitled to additional compensation and reimbursements for any additional cost resulting from such changes. The Design Professional, however, is obligated to notify the Owner of all significant code or regulatory changes within sixty (60) days of their change, and such notification shall be required in order for the Design Professional to be entitled to any additional compensation or reimbursement.

C. 1.6 Seal. Licensed Design Professionals shall affix their seals and signatures to drawings and specifications produced under this Agreement when required by law or when the project is located on an Indian Reservation.

C. 1.7 Attendance at Conferences. The Design Professional or designated representative shall attend project conferences and meet-ings involving matters related to basic services covered under this contract. Attendance at community wide meetings shall be consid-ered an additional service.

C. 2.0 Owner's Responsibilities

C. 2.1 Information. The Owner shall provide information regard-ing requirements for the project, including a program that shall set forth the Owner's objectives and schedule. The Owner shall also establish and update the Maximum Construction Cost. This shall include the Owner's giving notice of work to be performed by the Owner or others and not included in the Construction Contract for the Project. The Design Professional, however, shall be responsible to ascertain and know federal requirements and limitations placed on the Project.

C. 2.2 Notice of Defects. If the Owner observes or otherwise becomes aware of any fault or defect in the construction of the project or nonconformance with the Construction Contract, the Owner shall give prompt written notice of those faults, defects or nonconfor-mance to the Design Professional.

C.2.3 Contract Officer. The Owner shall designate a Contract Officer authorized to act on its behalf with respect to the design and construction of the Project. The Contract Officer shall examine documents submitted by the Design Professional and shall promptly render decisions pertaining to those documents so as to avoid unreasonably delaying the progress of the Design Professional's work.

C. 2.4 Duties to Furnish. The Owner shall provide the Design Professional the items listed below.

C. 2.4.1 Survey and Property Restrictions. The Owner shall furnish topographic, property line and utility information as and where required. The Owner may at its election require the Design Professional to furnish any of these items as an Additional Service.

C. 2.4.2 Existing Conditions. The Owner shall provide the Design Professional any available "as-built" drawings of buildings or properties, architect surveys, test reports, and any other written information that it may have in its possession and that it might reasonably assume affects the work.

C. 2.4.3 Waivers. The Owner shall provide the Design Professional information it may have obtained on any waivers of local codes, ordinances, or regulations or standards affecting the de-sign of the Project.

C. 2.4.4 Minimum Wage Rates. The Owner shall furnish the Design Professional the schedule of minimum wage rates approved by the U.S. Secretary of Labor for inclusion in the solicitation and Contract Documents.

C. 2.4.5 Tests. When expressly agreed to in writing by both the Owner and the Design Professional, the Owner shall furnish the Design Professional all necessary structural, mechanical, chemi-cal or other laboratory tests, inspections and reports required for the Project.

C. 2.4.6 Contract Terms. The Owner or its legal counsel may provide the Design Professional text to be incorporated into Bidding and Construction Contract Documents.

Article D: Contract Administration

D. 1.0 Prohibition of Assignment. The Design Professional shall not assign, subcontract, or transfer any services, obligations, or interest in this Agreement without the prior written consent of the Owner. Such consent shall not unreasonably be withheld when such assignment is for financing the Design Professional's performance.

D. 1.1 Ownership of Documents. All drawings, specifications, studies and other materials prepared under this contract shall be the property of the Owner and at the termination or completion of the Design Professional's services shall be promptly delivered to the Owner. The Design Professional shall have no claim for further employment or additional compensation as a result of exercise by the Owner of its full rights of ownership. It is understood, however, that the Design Professional does not represent such data to be suitable for re-use on any other project or for any other purpose. If the Owner re-uses the subject data without the Design Professional's written verification, such re-use will be at the sole risk of the Owner without liability to the Design Professional.

SAMPLE

D. 1.2 Substitutions.

A. The Design Professional shall identify in writing principals and professional level employees and shall not substitute or replace principals or professional level employees without the prior approval of the Owner which shall not unreasonably be withheld.

B. The Design Professional's personnel identified below are considered to be essential to the work effort. Prior to diverting or substituting any of the specified individuals, the Design Professional shall notify the Owner reasonably in advance and shall submit justification, including proposed substitutions, in sufficient detail to permit evaluation of the impact on the contract. No diversion or substitution of such key personnel shall be made by the Design professional without the prior written consent of the Owner.

_____

_____

_____

_____

_____

D. 1.3 Suspension. The Owner may give written notice to the Design Professional to suspend work on the project or any part thereof. The Owner shall not be obligated to consider a claim for additional compensation if the Design Professional is given written notice to resume work within 120 calendar days. If notice to resume work is not given within 120 calendar days, the Design Professional shall be entitled to an equitable adjustment in compensation.

D. 1.4 Subcontracts. The Design Professional will cause all applicable provisions of this Agreement to be inserted in all its subcontracts.

D. 1.5 Disputes. In the event of a dispute arising under this Agreement, the Design Professional shall notify the Owner promptly in writing and submit its claim in a timely manner. The Owner shall respond to the claim in writing in a timely manner. The Design Professional shall proceed with its work hereunder in compliance with the instructions of the Owner, but such compliance shall not be a waiver of the Design Professional's rights to make such a claim. Any dispute not resolved by this procedure may be determined by a court of competent jurisdiction or by consent of the Owner and Design Professional by other dispute resolution methods.

D. 1.6 Termination. The Owner may terminate this Agreement for the Owner's convenience or for failure of the Design Profes-sional to fulfill contract obligations. The Owner shall terminate by delivering to the Design Professional a Notice of Termination specifying the reason therefore and the effective date of termination. Upon receipt of such notice, the Design Professional shall immediately discontinue all services affected and deliver to the Owner all information, reports, papers, and other materials accumulated or generated in performing this contract whether completed or in process. If the termination is for convenience of the Owner, the Owner shall be liable only for payment for accepted services rendered before the effective date of termination.

D. 1.7 Insurance. The Design professional shall carry Commercial or Comprehensive General Liability Insurance, Professional Liability Insurance (for a period extending two years past the date of completion of construction), and other insurance as are required by law, all in minimum amounts as set forth below. The Design Professional shall furnish the Owner certificates of insurance and they shall state that a thirty day notice of prior cancellation or change will be provided to the Owner. Additionally, the Owner shall be an additional insured on all Commercial or Comprehensive General liability policies.

Insurance	Limits or Amount

D. 1.8 Retention of Rights. Neither the Owner's review, ap-proval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Design Professional shall be and remain liable to the Owner in accordance with the applicable law for all damages to the Owner caused by the Design professional 's negligent performance of any of the services furnished under this contract.

Article E: Additional Requirements

E. 1.0 Contract Provisions Required by Federal Law or Owner Contract with the U.S. Department of Housing and Urban Development (HUD).

E. 1.1 Contract Adjustments. Notwithstanding any other term or condition of this Agreement, any settlement or equitable adjustment due to termination, suspension or delays by the Owner shall be negotiated based on the cost principles stated at 48 CFR Subpart 31.2 and conform to the Contract pricing provisions of 24 CFR 85.36 (f).

E. 1.2 Additional Services. The Owner shall perform a cost or price analysis as required by 24 CFR 85.36 (f) prior to the issuance of a contract modification/amendment for Additional Services. Such Additional Services shall be within the general scope of services covered by this Agreement. The Design Professional shall provide supporting cost information in sufficient detail to permit the Owner to perform the required cost or price analysis.

E. 1.3 Restrictive Drawings and Specifications. In accordance with 24 CFR 85.36(c)(3)(i) and contract agreements between the Owner and HUD, the Design Professional shall not require the use of materials, products, or services that unduly restrict competition.

E. 1.4 Design Certification. Where the Owner is required by federal regulations to provide HUD a Design Professional certification regarding the design of the Projects (24 CFR 968.235), the Design Professional shall provide such a certification to the Owner.

SAMPLE

E. 1.5 Retention and Inspection of Records. Pursuant to 24 CFR 85.26(i)(10) and (11), access shall be given by the Design Professional to the Owner, HUD, the Comptroller General of the United States, or any of their duly authorized representatives, to any books, documents, papers, and records of the Design Professional which are directly pertinent to that specific Contract for the purpose of making an audit, examination, excerpts, and transcriptions. All required records shall be retained for three years after the Owner or Design Professional and other subgrantees make final payments and all other pending matters are closed.

E. 1.6 Copyrights and Rights in Data. HUD has no regulations pertaining to copyrights or rights in data as provided in 24 CFR 85.36. HUD requirements, Article 45 of the General Conditions to the Contract for Construction (form HUD-5370) requires that contractors pay all royalties and license fees. All drawings and specifications prepared by the Design Professional pursuant to this contract will identify any applicable patents to enable the general contractor to fulfil the requirements of the construction contract.

E. 1.7 Conflicts of Interest. Based in part on federal regulations (24 CFR 85.36(b)) and Contract agreement between the Owner and HUD, no employee, officer, or agent of the Owner (HUD grantee) shall participate in selection, or in the award or administration of a contract supported by Federal funds if a conflict of interest, real or apparent, would be involved.

Such a conflict would arise when:

(i) The employee, officer or agent,

(ii) Any member of his or her immediate family,

(iii) His or her partner, or

(iv) An organization that employs, or is about to employ, any of the above, has a financial or other interest in the firm selected for award. The grantee's or subgrantee's officers, employees or agents will neither solicit nor accept gratuities, favors or anything of monetary value from Contractors, or parties to sub-agree-ments. Grantees and subgrantees may set minimum rules where the financial interest is not substantial or the gift is an unsolicited item of nominal intrinsic value. To the extent permitted by State or local law or regulations, such standards or conduct will provide for penalties, sanctions, or other disciplinary actions for viola-tions of such standards by the grantee's and subgrantee's officers, employees, or agents or by Contractors or their agents. The awarding agency may in regulation provide additional prohibi-tions relative to real, apparent, or potential conflicts of interest.

Neither the Owner nor any of its contractors or their subcontrac-tors shall enter into any Contract, subcontract, or agreement, in connection with any Project or any property included or planned to be included in any Project, in which any member, officer, or employee of the Owner, or any member of the governing body of the locality in which the Project is situated, or any member of the governing body of the locality in which the Owner was activated, or in any other public official of such locality or localities who exercises any responsibilities or functions with respect to the Project during his/her tenure or for one year thereafter has any interest, direct or indirect. If any such present or former member, officer, or employee of the Owner, or any such governing body member or such other public official of such locality or localities involuntarily acquires or had acquired prior to the beginning of his/her tenure any such interest, and if such interest is immedi-ately disclosed to the Owner and such disclosure is entered upon the minutes of the Owner, the Owner, with the prior approval of the Government, may waive the prohibition contained in this subsection: Provided, That any such present member, officer, or employee of the Owner shall not participate in any action by the Owner relating to such contract, subcontract, or arrangement.

No member, officer, or employee of the Owner, no member of the governing body of the locality in which the project is situated, no member of the governing body of the locality in which the Owner was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the project, during his/her tenure or for one year thereafter, shall have any interest, direct or indirect, in this contract or the proceeds thereof.

E. 1.8 Disputes. In part because of HUD regulations (24 CFR 85.36(i)(1)), this Design Professional Agreement, unless it is a small purchase contract, has administrative, contractual, or legal remedies for instances where the Design Professional violates or breaches Agreement terms, and provide for such sanctions and penalties as may be appropriate.

E. 1.9 Termination. In part because of HUD regulations (24 CFR 85.36(i)(2)), this Design Professional Agreement, unless it is for an amount of $10,000 or less, has requirements regarding termi-nation by the Owner when for cause or convenience. These include the manner by which the termination will be effected and basis for settlement.

E. 1.10 Interest of Members of Congress. Because of Contract agreement between the Owner and HUD, no member of or delegate to the Congress of the United States of America or Resident Commissioner shall be admitted to any share or part of this Contract or to any benefit to arise from it.

E. 1.11 Limitation of Payments to Influence Certain Federal Transaction. The Limitation on Use of Appropriated Funds to Influence Certain Federal Contracting and Financial Transac-tions Act, Section 1352 of Title 31 U.S.C., provides in part that no appropriated funds may be expended by recipient of a federal contract, grant, loan, or cooperative agreement to pay any person, including the Design Professional, for influencing or attempting to influence an officer or employee of Congress in connection with any of the following covered Federal actions: the awarding of any federal contract, the making of any Federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amend-ment, or modification of any federal contract, grant, loan, or cooperative agreement.

E. 1.12 Employment, Training, and Contracting Opportunities for Low-Income Persons, Section 3 of the Housing and Urban Development Act of 1968.

A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particu-larly persons who are recipients of HUD assistance for housing.

SAMPLE

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcon-tract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

G. Reserved.

H. Reserved.

E. 1.13 Reserved.

E. 1.14 Clean Air and Water. (Applicable to contracts in excess of $100,000). Because of 24 CFR 85.36(i)(12) and Federal law, the Design Professional shall comply with applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. § 1857h-4 transferred to 42 USC § 7607, section 508 of the Clean Water Act (33 U.S.C. § 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15), on all contracts, subcontracts, and subgrants of amounts in excess of $100,000.

E. 1.15 Energy Efficiency. Pursuant to Federal regulations (24 C.F.R 85.36(i)(13)) and Federal law, except when working on an Indian housing authority Project on an Indian reservation, the Design Professional shall comply with the mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163 codified at 42 U.S.C.A. § 6321 et. seq.).

E. 1.16 Prevailing Wages. In accordance with Section 12 of the U.S. Housing Act of 1937 (42 U.S.C. 1437j) the Design Professional shall pay not less than the wages prevailing in the locality, as determined by or adopted (subsequent to a determination under applicable State or local law) by the Secretary of HUD, to all architects, technical engineers, draftsmen, and technicians.

E. 1.17 Non-applicability of Fair Housing Requirements in In-dian Housing Authority Contracts. Pursuant to 24 CFR section 905.115(b) title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d-2000d-4), which prohibits discrimination on the basis of race, color or national origin in federally assisted programs, and the Fair Housing Act (42 U.S.C. 3601-3620), which prohibits discrimination based on race, color, religion, sex, national origin, handicap, or familial status in the sale or rental of housing do not apply to Indian Housing Authorities established by exercise of a Tribe's powers of self-government.

E. 1.18Prohibition Against Liens. The Design professional is Prohibited from placing a lien on the Owner's property. This prohibition shall be placed in all design professional subcontracts.

Article F: Other Owner Requirements (if any)

(Continue on additional pages as necessary)

SAMPLE

SAMPLE

This Agreement is entered into as of the day and year first written above.

Owner	Design Professional
_____	_____
(Housing Authority)	(Firm)
_____	_____
(Signature)	(Signature)
_____	_____
(Print Name)	(Print Name)
_____	_____
(Print Title)	(Print Title)

Addendum (If any)
(Additional Services and other modifications)

SAMPLE

This is an Addendum to a Standard Form of Agreement between Owner and Design Professional signed and dated the _____ day of _____ in the year (yyyy) of _____ between the Owner _____ and Design Professional _____ on Project _____ The parties to that Agreement agree to modify the Agreement by the above delineated Additional Services and modifications.

This Addendum is dated this _____ day of _____ in the year (yyyy) of _____

Owner	Design Professional
_____	_____
(Housing Authority)	(Firm)
_____	_____
(Signature)	(Signature)
_____	_____
(Print Name)	(Print Name)
_____	_____
(Print Title)	(Print Title)

APPENDIX III. REFERENCE FORM FOR PROPOSAL SUBMISSION

Reference Form for Proposal Submission

Please provide references from most relevant projects for each team member. Copy as many times as necessary. Be sure to include contact names and phone numbers which are current.

Project Title: _____

Client: _____ Funding Agency _____

Residential? Yes No Occupied during construction? Yes No

# of units _____ or Size (square feet) of project _____

Type of Job/Scope of Work: _____

_____

Were you a subconsultant? Yes No Was the project publicly bid? Yes No

Status of Work: In design In construction Completed (date): _____

Project Budget: _____ Project Cost Estimate: _____

Project Award: _____ Amount of Change Orders: _____

Please explain: _____

_____

Please indicate who worked on this project work that will work on the proposed project?

_____

Client Contact: _____ Phone: _____ E-mail: _____

Contractor Contact: _____ Phone: _____ E-mail: _____

Subcontractor Contact: _____ Phone: _____ E-mail: _____

Funding Source Contact: _____ Phone: _____ E-mail: _____

Tenant Organization Contact: _____ Phone: _____ E-mail: _____

ATTACHMENT 1. DEBARMENT AND CONFLICT OF INTEREST CERTIFICATION

EXHIBIT H - DEBARMENT AND CONFLICT OF INTEREST CERTIFICATION

The undersigned, a Respondent to the Request for Proposal ("RFP") issued by the Belmont Housing Authority ("BHA"), hereby certifies to the BHA on behalf of itself and each member of Respondent's team, as follows:

In accordance with 24 CFR 85.35, Respondent certifies that neither Respondent, nor any member of Respondent's team is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension"; and

In accordance with M.G.L. C. 30B, §10, the undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the work "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

_____

Respondent (Name of Firm)

_____

Authorized Signatory (Full Name)

_____

Title

_____

Date

ATTACHMENT 2. NON-COLLUSION AFFIDAVIT

FORM OF NON-COLLUSIVE AFFIDAVIT

State of _____)ss.

County of _____)

_____

being first sworn, deposes and says:

That he is _____

(a partner or officer of the firm of, etc.)

the party making the foregoing proposal or bid, that such proposal or bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed directly or indirectly, with any bidder or person, to put in a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or of any bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any other bidder, or to secure any advantage against the Belmont Housing Authority or any person interested in the proposed contact; and that all statements in said proposal or bid are true.

Signature of:

_____
Bidder, if the bidder is an individual

_____
Partner, if the bidder is a partnership

_____
Officer, if the bidder is a corporation

Subscribed and sworn to before me this _____ day of _____ , 20_____

_____ **SEAL**

Notary Public

My commission expires _____

ATTACHMENT 3. TAX COMPLIANCE CERTIFICATE

FORM OF TAX COMPLIANCE CERTIFICATE

STATE OF MASSACHUSETTS

COUNTY OF _____

_____

being first sworn, disposes and says:

That he is _____

(A Partner of Officer of the firm of, etc.)

Pursuant to M.G.L. c 62C, § 49A, I certify under penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the commonwealth relating to taxes.

Signature of _____

Bidder, if bidder is an individual

_____

Partner, if the bidder is a partnership

_____

Officer, if the bidder is a corporation

Subscribed and sworn to before me

this _____ day of _____ 20_____

_____

NOTARY PUBLIC

My commission expires: _____ **SEAL**

ATTACHMENT 4. CERTIFICATE OF AUTHORIZATION

CERTIFICATE OF VOTE OF AUTHORIZATION

`

_____ 20____

I hereby certify that a meeting of the Board of Directors of the

duly called and held at _____on the _____day of_____ 20

at which a quorum was present and acting, it was voted that _____of

the _____be and hereby is authorized to execute and deliver for and on behalf of the

Corporation a Contract with the Revere Housing Authority, for completion of

_____ in the City of Revere, which Contract was presented to and made a part

of the records of said meeting. I further certify that _____

is duly qualified and acting _____of the Corporation and that said

vote has not been repealed, rescinded or amended.

A true copy of the record,

Attest: _____

Corporate Seal

Subscribed and sworn to this _____ day of _____, 20_____ before me.

_____

Notary Public

My commission expires:_____

ATTACHMENT 5. HUD-5369B FORM

Instructions to Offerors Non-Construction

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

- 03291 -

1. Preparation of Offers

(a) Offerors are expected to examine the statement of work, the proposed contract terms and conditions, and all instructions. Failure to do so will be at the offeror's risk.

(b) Each offeror shall furnish the information required by the solicitation. The offeror shall sign the offer and print or type its name on the cover sheet and each continuation sheet on which it makes an entry. Erasures or other changes must be initialed by the person signing the offer. Offers signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the HA.

(c) Offers for services other than those specified will not be considered.

2. Submission of Offers

(a) Offers and modifications thereof shall be submitted in sealed envelopes or packages (1) addressed to the office specified in the solicitation, and (2) showing the time specified for receipt, the solicitation number, and the name and address of the offeror.

(b) Telegraphic offers will not be considered unless authorized by the solicitation; however, offers may be modified by written or telegraphic notice.

(c) Facsimile offers, modifications or withdrawals will not be considered unless authorized by the solicitation.

3. Amendments to Solicitations

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Offerors shall acknowledge receipt of any amendments to this solicitation by

(1) signing and returning the amendment;
(2) identifying the amendment number and date in the space provided for this purpose on the form for submitting an offer,
(3) letter or telegram, or
(4) facsimile, if facsimile offers are authorized in the solicitation. The HA/HUD must receive the acknowledgment by the time specified for receipt of offers.

4. Explanation to Prospective Offerors

Any prospective offeror desiring an explanation or interpretation of the solicitation, statement of work, etc., must request it in writing soon enough to allow a reply to reach all prospective offerors before the submission of their offers. Oral explanations or instructions given before the award of the contract will not be binding. Any information given to a prospective offeror concerning a solicitation will be furnished promptly to all other prospective offerors as an amendment of the solicitation, if that information is necessary in submitting offers or if the lack of it would be prejudicial to any other prospective offerors.

5. Responsibility of Prospective Contractor

(a) The HA shall award a contract only to a responsible prospective contractor who is able to perform successfully under the terms and conditions of the proposed contract. To be determined responsible, a prospective contractor must -

(1) Have adequate financial resources to perform the contract, or the ability to obtain them;
(2) Have a satisfactory performance record;
(3) Have a satisfactory record of integrity and business ethics;
(4) Have a satisfactory record of compliance with public policy (e.g., Equal Employment Opportunity); and
(5) Not have been suspended, debarred, or otherwise determined to be ineligible for award of contracts by the Department of Housing and Urban Development or any other agency of the U.S. Government. Current lists of ineligible contractors are available for inspection at the HA/HUD.

(b) Before an offer is considered for award, the offeror may be requested by the HA to submit a statement or other documentation regarding any of the foregoing requirements. Failure by the offeror to provide such additional information may render the offeror ineligible for award.

6. Late Submissions, Modifications, and Withdrawal of Offers

(a) Any offer received at the place designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it -

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);
(2) Was sent by mail, or if authorized by the solicitation, was sent by telegram or via facsimile, and it is determined by the HA/HUD that the late receipt was due solely to mishandling by the HA/HUD after receipt at the HA;
(3) Was sent by U.S. Postal Service Express Mail Next Day Service - Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and U.S. Federal holidays; or
(4) Is the only offer received.

(b) Any modification of an offer, except a modification resulting from the HA's request for "best and final" offer (if this solicitation is a request for proposals), is subject to the same conditions as in subparagraphs (a)(1), (2), and (3) of this provision.

(c) A modification resulting from the HA's request for "best and final" offer received after the time and date specified in the request will not be considered unless received before award and the late receipt is due solely to mishandling by the HA after receipt at the HA.

(d) The only acceptable evidence to establish the date of mailing of a late offer, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the offer, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, offerors should request the postal clerk to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(e) The only acceptable evidence to establish the time of receipt at the HA is the time/date stamp of HA on the offer wrapper or other documentary evidence of receipt maintained by the HA.

(f) The only acceptable evidence to establish the date of mailing of a late offer, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, offerors should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.

(g) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful offer that makes its terms more favorable to the HA will be considered at any time it is received and may be accepted.

(h) If this solicitation is a request for proposals, proposals may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before award. Proposals may be withdrawn in person by a offeror or its authorized representative if the identity of the person requesting withdrawal is established and the person signs a receipt for the offer before award. If this solicitation is an invitation for bids, bids may be withdrawn at any time prior to bid opening.

7. Contract Award

(a) The HA will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the HA, cost or price and other factors, specified elsewhere in this solicitation, considered.

(b) The HA may
(1) reject any or all offers if such action is in the HA's interest,
(2) accept other than the lowest offer,
(3) waive informalities and minor irregularities in offers received, and (4) award more than one contract for all or part of the requirements stated.

(c) If this solicitation is a request for proposals, the HA may award a contract on the basis of initial offers received, without discussions. Therefore, each initial offer should contain the offeror's best terms from a cost or price and technical standpoint.

(d) A written award or acceptance of offer mailed or otherwise furnished to the successful offeror within the time for acceptance specified in the offer shall result in a binding contract without further action by either party. If this solicitation is a request for proposals, before the offer's specified expiration time, the HA may accept an offer, whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award. Negotiations conducted after receipt of an offer do not constitute a rejection or counteroffer by the HA.

(e) Neither financial data submitted with an offer, nor representations concerning facilities or financing, will form a part of the resulting contract.

8. Service of Protest

Any protest against the award of a contract pursuant to this solicitation shall be served on the HA by obtaining written and dated acknowledgment of receipt from the HA at the address shown on the cover of this solicitation. The determination of the HA with regard to such protest or to proceed to award notwithstanding such protest shall be final unless appealed by the protestor.

9. Offer Submission

Offers shall be submitted as follows and shall be enclosed in a sealed envelope and addressed to the office specified in the solicitation. The proposal shall show **the hour and date specified in the solicitation for receipt, the solicitation number, and the name and address of the offeror, on the face of the envelope.**

It is very important that the offer be properly identified on the face of the envelope as set forth above in order to insure that the date and time of receipt is stamped on the face of the offer envelope. Receiving procedures are: date and time stamp those envelopes identified as proposals and deliver them immediately to the appropriate contracting official, and only date stamp those envelopes which do not contain identification of the contents and deliver them to the appropriate procuring activity only through the routine mail delivery procedure.

[Describe bid or proposal preparation instructions here:]

ATTACHMENT 6. HUD-5370C FORM

General Conditions for Non-Construction Contracts

Section I — (With or without Maintenance Work)

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing
Office of Labor Relations
OMB Approval No. 2577-0157 (exp. 1/31/2027)

Public Reporting Burden for this collection of information is estimated to average one hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. HUD may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB number. This form includes those clauses required by OMB's common rule on grantee procurement, implemented at HUD in 2 CFR 200, and those requirements set forth in Section 3 of the Housing and Urban Development Act of 1968 and its amendment by the Housing and Community Development Act of 1992, implemented by HUD at 24 CFR Part 75. The form is required for non-construction contracts awarded by Public Housing Agencies (PHAs). The form is used by PHAs in solicitations to provide necessary contract clauses and allows PHAs to enforce their contracts. Comments regarding the accuracy of this burden estimate and any suggestions for reducing this burden can be sent to the Reports Management Officer, Office of Policy Development and Research, REE, Department of Housing and Urban Development, 451 7th St SW, Room 4176, Washington, DC 20410-5000. When providing comments, please refer to OMB Approval No. 2577-0157. Do not send this completed form to either of these addressees. The information collected will not be held confidential.

Applicability. This form HUD-5370-C has 2 Sections. These Sections must be inserted into non-construction contracts as described below:

1) **Non-construction contracts** *(without* maintenance) **greater than $250,000 - use Section I;**
2) **Maintenance contracts** (including nonroutine maintenance as defined at 24 CFR 905.100) **greater than $2,000 but not more than $250,000 - use Section II;** and
3) **Maintenance contracts** (including nonroutine maintenance), **greater than $250,000 — use Sections I and II.**

Section I - Clauses for All Non-Construction Contracts greater than $250,000

1. Definitions

The following definitions are applicable to this contract:

(a) "Authority or Housing Authority (HA)" means the Housing Authority.
(b) "Contract" means the contract entered into between the Authority and the Contractor. It includes the contract form, the Certifications and Representations, these contract clauses, and the scope of work. It includes all formal changes to any of those documents by addendum, Change Order, or other modification.
(c) "Contractor" means the person or other entity entering into the contract with the Authority to perform all of the work required under the contract.
(d) "Day" means calendar days, unless otherwise stated.
(e) "HUD" means the Secretary of Housing and Urban development, his delegates, successors, and assigns, and the officers and employees of the United States Department of Housing and Urban Development acting for and on behalf of the Secretary.

2. Changes

(a) The HA may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in the services to be performed or supplies to be delivered.
(b) If any such change causes an increase or decrease in the hourly rate, the not-to-exceed amount of the contract, or the time required for performance of any part of the work under this contract, whether or not changed by the order, or otherwise affects the conditions of this contract, the HA shall make an equitable adjustment in the not-to-exceed amount, the hourly rate, the delivery schedule, or other affected terms, and shall modify the contract accordingly.
(c) The Contractor must assert its right to an equitable adjustment under this clause within 30 days from the date of receipt of the written order. However, if the HA decides that the facts justify it, the HA may receive and act upon a proposal submitted before final payment of the contract.
(d) Failure to agree to any adjustment shall be a dispute under clause Disputes, herein. However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.
(e) No services for which an additional cost or fee will be charged by the Contractor shall be furnished without the prior written consent of the HA.

3. Termination for Convenience and Default

(a) The HA may terminate this contract in whole, or from time to time in part, for the HA's convenience or the failure of the Contractor to fulfill the contract obligations (default). The HA shall terminate by delivering to the Contractor a written Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall: (i) immediately discontinue all services affected (unless the notice directs otherwise); and (ii) deliver to the HA all information, reports, papers, and other materials accumulated or generated in performing this contract, whether completed or in process.
(b) If the termination is for the convenience of the HA, the HA shall be liable only for payment for services rendered before the effective date of the termination.
(c) If the termination is due to the failure of the Contractor to fulfill its obligations under the contract (default), the HA may (i) require the Contractor to deliver to it, in the manner and to the extent directed by the HA, any work as described in subparagraph (a)(ii) above, and compensation be determined in accordance with the Changes clause, paragraph 2, above; (ii) take over the work and prosecute the same to completion by contract or otherwise, and the Contractor shall be liable for any additional cost incurred by the HA; (iii) withhold any payments to the Contractor, for the purpose of off-set or partial payment, as the case may be, of amounts owed to the HA by the Contractor.
(d) If, after termination for failure to fulfill contract obligations (default), it is determined that the Contractor had not failed, the termination shall be deemed to have been effected for the convenience of the HA, and the Contractor shall been titled to payment as described in paragraph (b) above.
(e) Any disputes with regard to this clause are expressly made subject to the terms of clause titled Disputes herein.

4. Examination and Retention of Contractor's Records

(a) The HA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

(b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders not exceeding $10,000.
(c) The periods of access and examination in paragraphs (a) and (b) above for records relating to:
(i) appeals under the clause titled Disputes;
(ii) litigation or settlement of claims arising from the performance of this contract; or,
(iii) costs and expenses of this contract to which the HA, HUD, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

5. Rights in Data (Ownership and Proprietary Interest)

The HA shall have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials and documents discovered or produced by Contractor pursuant to the terms of this Contract, including but not limited to reports, memoranda or letters concerning the research and reporting tasks of this Contract.

6. Energy Efficiency

The contractor shall comply with all mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under this contract is performed.

7. Disputes

(a) All disputes arising under or relating to this contract, *except for disputes arising under clauses contained in Section 111, Labor Standards Provisions,* including any claims for damages for the alleged breach there of which are not disposed of by agreement, shall be resolved under this clause.
(b) All claims by the Contractor shall be made in writing and submitted to the HA. A claim by the HA against the Contractor shall be subject to a written decision by the HA.
(c) The HA shall, with reasonable promptness, but in no event in no more than 60 days, render a decision concerning any claim hereunder. Unless the Contractor, within 30 days after receipt of the HA's decision, shall notify the HA in writing that it takes exception to such decision, the decision shall be final and conclusive.
(d) Provided the Contractor has (i) given the notice within the time stated in paragraph (c) above, and (ii) excepted its claim relating to such decision from the final release, and (iii) brought suit against the HA not later than one year after receipt of final payment, or if final payment has not been made, not later than one year after the Contractor has had a reasonable time to respond to a written request by the HA that it submit a final voucher and release, whichever is earlier, then the HA's decision shall not be final or conclusive, but the dispute shall be determined on the merits by a court of competent jurisdiction.
(e) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the HA.

8. Contract Termination; Debarment

A breach of these Contract clauses may be grounds for termination of the Contract and for debarment or denial of participation in HUD programs as a Contractor and a subcontractor as provided in 24 CFR Part 24.

9. Assignment of Contract

The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from the HA under the contract may be assigned to a bank, trust company, or other financial institution. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership approved by the HA.

10. Certificate and Release

Prior to final payment under this contract, or prior to settlement upon termination of this contract, and as a condition precedent thereto, the Contractor shall execute and deliver to the HA a certificate and release, in a form acceptable to the HA, of all claims against the HA by the Contractor under and by virtue of this contract, other than such claims, if any, as may be specifically excepted by the Contractor in stated amounts set forth therein.

11. Organizational Conflicts of Interest

(a) The Contractor warrants that to the best of its knowledge and belief and except as otherwise disclosed, it does not have any organizational conflict of interest which is defined as a situation in which the nature of work under this contract and a contractor's organizational, financial, contractual or other interests are such that:
(i) Award of the contract may result in an unfair competitive advantage; or
( ) The Contractor's objectivity in performing the contract work may be impaired.
(b) The Contractor agrees that if after award it discovers an organizational conflict of interest with respect to this contract or any task/delivery order under the contract, he or she shall make an immediate and full disclosure in writing to the Contracting Officer which shall include a description of the action which the Contractor has taken or intends to take to eliminate or neutralize the conflict. The HA may, however, terminate the contract or task/delivery order for the convenience of the HA if it would be in the best interest of the HA.
(c) In the event the Contractor was aware of an organizational conflict of interest before the award of this contract and intentionally did not disclose the conflict to the Contracting Officer, the HA may terminate the contract for default.
(d) The terms of this clause shall be included in all subcontracts and consulting agreements wherein the work to be performed is similar to the service provided by the prime Contractor. The Contractor shall include in such subcontracts and consulting agreements any necessary provisions to eliminate or neutralize conflicts of interest.

12. Inspection and Acceptance

(a) The HA has the right to review, require correction, if necessary, and accept the work products produced by the Contractor. Such review(s) shall be carried out within 30 days so as to not impede the work of the Contractor. Any

product of work shall be deemed accepted as submitted if the HA does not issue written comments and/or required corrections within 30 days from the date of receipt of such product from the Contractor.

(b) The Contractor shall make any required corrections promptly at no additional charge and return a revised copy of the product to the HA within 7 days of notification or a later date if extended by the HA.

(c) Failure by the Contractor to proceed with reasonable promptness to make necessary corrections shall be a default. If the Contractor's submission of corrected work remains unacceptable, the HA may terminate this contract (or the task order involved) or reduce the contract price or cost to reflect the reduced value of services received.

13. Interest of Members of Congress

No member of or delegate to the Congress of the United States of America or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit to arise there from, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

14. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees

No member, officer, or employee of the HA, no member of the governing body of the locality in which the project is situated, no member of the governing body in which the HA was activated, and no other pubic official of such locality or localities who exercises any functions or responsibilities with respect to the project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this contract or the proceeds thereof.

15. Limitation on Payments to Influence Certain Federal Transactions

(a) Definitions. As used in this clause:

"Agency", as defined in 5 U.S.C. 552(f), includes Federal executive departments and agencies as well as independent regulatory commissions and Government corporations, as defined in 31 U.S.C. 9101(1).

"Covered Federal Action" means any of the following Federal actions:

(i) The awarding of any Federal contract;
(ii) The making of any Federal grant;
(iii) The making of any Federal loan;
(iv) The entering into of any cooperative agreement; and,
(v) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

Covered Federal action does not include receiving from an agency a commitment providing for the United States to insure or guarantee a loan.

"Indian tribe" and "tribal organization" have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B). Alaskan Natives are included under the definitions of Indian tribes in that Act.

"Influencing or attempting to influence" means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government" means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government

"Officer or employee of an agency' includes the following individuals who are employed by an agency:

(i) An individual who is appointed to a position in the Government under title 5, U.S.C., including a position under a temporary appointment;
(ii) A member of the uniformed services as defined in section 202, title 18, U.S.C.;
(iii) A special Government employee as defined in section 202, title 18, U.S.C.; and,
(iv) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, appendix 2.

"Person" means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit or not for profit. This term excludes an Indian tribe, tribal organization, or other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Recipient" includes all contractors, subcontractors at any tier, and subgrantees at any tier of the recipient of funds received in connection with a Federal contract, grant, loan, or cooperative agreement. The term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed means, with respect to an officer or employee of a person requesting or receiving a Federal contract, grant, loan, or cooperative agreement, an officer or employee who is employed by such person for at least 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract, grant, loan, or cooperative agreement. An officer or employee who is employed by such person for less than 130 working days within one year immediately preceding the date of submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State" means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and a multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibition.

(i) Section 1352 of title 31, U.S.C. provides in part that no appropriated funds may be expended by the recipient of a Federal contract, grant, loan, or cooperative agreement to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(v) The prohibition does not apply as follows:

(1) Agency and legislative liaison by Own Employees.

(a) The prohibition on the use of appropriated funds, in paragraph (i) of this section, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a Federal contract, grant, loan, or cooperative agreement, if the payment is for agency and legislative activities not directly related to a covered Federal action.

(b) For purposes of paragraph (b)(i)(1)(a) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(c) The following agency and legislative liaison activities are permitted at any time only where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency (including individual demonstrations) the qualities and characteristics of the person's products or services, conditions or terms of sale, and service capabilities; and,

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(d) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action:

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Public Law 95-507 and other subsequent amendments.

(e) Only those activities expressly authorized by subdivision (b)(ii)(1)(a) of this clause are permitted under this clause.

(2) Professional and technical services.

(a) The prohibition on the use of appropriated funds, in subparagraph (b)(i) of this clause, does not apply in the case of-

(i) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(i) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(b) For purposes of subdivision (b)(ii)(2)(a) of clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline.

(c) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation, or reasonably expected to be required by law or regulation, and any other requirements in the actual award documents.

(d) Only those services expressly authorized by subdivisions (b)(ii)(2)(a)(i) and (ii) of this section are permitted under this clause.

(iii) Selling activities by independent sales representatives.

(c) The prohibition on the use of appropriated funds, in subparagraph (b)(i) of this clause, does not apply to the following selling activities before an agency by independent sales representatives, provided such activities are prior to formal solicitation by an agency and are specifically limited to the merits of the matter:

(i) Discussing with an agency (including individual demonstration) the qualities and characteristics of the person's products or services, conditions or terms of sale, and service capabilities; and

(ii) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(d) Agreement. In accepting any contract, grant, cooperative agreement, or loan resulting from this solicitation, the person submitting the offer agrees not to make any payment prohibited by this clause.

(e) Penalties. Any person who makes an expenditure prohibited under paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(f) Cost Allowability. Nothing in this clause is to be interpreted to make allowable or reasonable any costs which would be unallowable or unreasonable in accordance with Part 31 of the Federal Acquisition Regulation (FAR), or OMB Circulars dealing with cost allowability for recipients of assistance agreements. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any of the provisions of FAR Part 31 or the relevant OMB Circulars.

16. Equal Employment Opportunity

During the performance of this contract, the Contractor/Seller agrees as follows:

(a)The [contractor/seller] will not discriminate against any emplo yee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, disability, or national origin. The [contractor/seller] will take affirmative action to ensure that appli cants are employed, and that employees are treated during employm ent, without regard to their race, color, religion, sex, sexual orientation, gender identity, disability, or national origin. Such action shall in dude, but not be limited to the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The [contractor/seller] agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(b)The [contractor/seller] will, in all solicitations or advertisement s for employees placed by or on behalf of the [contractor/seller], state that all qualified applicants will receive consideration for employ ment without regard to race, color, religion, sex, sexual orientation, gender identity, disability, or national origin.

(c)The [contractor/seller] will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instance s in which an employee who has access to the compensation inform ation of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other em ployees or applicants to individuals who do not otherwise have acces s to such information, unless such disclosure is in response to a form al complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the emplo yer, or is consistent with the [contractor/seller]'s legal duty to furnish information.

(d)The [contractor/seller] will send to each labor union or representat ive of workers with which it has a collective bargaining agreement or oth er contract or understanding, a notice to be provided by the agency contr acting officer, advising the labor union or workers' representative of the [contractor/seller] 's commitments under section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in cons picuous places available to employees and applicants for employment.

(e)The [contractor/seller] will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

f)The [contractor/seller] will furnish all information and reports re quired by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(g)In the event of the [contractor/seller]'s non-compliance with the nondiscrimination clauses of this contract or with any of such rule s, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the [contractor/seller] may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies in yoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g)In the event of the [contractor/seller]'s non-compliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the [contractor/seller] may be declared ineligible for further Government contracts in acc ordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(h) The [contractor/seller] will include the provisions of paragraphs (a) through (h) in every subcontract or purchase order unless exe mpted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each sub[contractor/seller] or vendor. The [contractor/seller] will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the [contractor/seller] becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the [contractor/seller] may request the United States to enter into such litigation to protect the interests of the United States.

17. Equal Opportunity for Workers with Disabilities

1.The [contractor/seller] will not discriminate against any e mployee or applicant for employment because of physical or mental disability in regard to any position for which the employee or applican t for employment is qualified. The [contractor/seller] agrees to take aff irmative action to employ and advance in employment individuals wit h disabilities, and to treat qualified individuals without discrimination o n the basis of their physical or mental disability in all employment pra ctices, including the following:

i.Recruitment, advertising, and job application procedures;

ii.Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;

iii.Rates of pay or any other form of compensation and chan ges in compensation;

iv.Job assignments, job classifications, organizational struct ures, position descriptions, lines of progression, and seniority lists;

v.Leaves of absence, sick leave, or any other leave;

vi.Fringe benefits available by virtue of employment, whether or not administered by the [contractor/seller];

vii.Selection and financial support for training, including app renticeship, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

viii.Activities sponsored by the [contractor/seller] including social or recreational programs; and

ix.Any other term, condition, or privilege of employment.

2.The [contractor/seller] agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the act.

3.In the event of the [contractor/seller] noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the act.

4.The [contractor/seller] agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, Office of Federal Contract Compliance Programs, provided by or through the contracting officer. Such notices shall state the rights of applicants and employees as well as the [contractor/seller] 's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants with disabilities.

The [contractor/seller] must ensure that applicants or employees with disabilities are provided the notice in a form that is accessible and understandable to the individual applicant or employee (e.g., providing Brail or large print versions of the notice, or posting a copy of the notice at a lower height for easy viewing by a person using a wheelchair). With respect to employees who do not work at a physical location of the [contractor/seller] , a [contractor/seller] will satisfy its posting obligations by posting such notices in an electronic format, provided that the [contractor/seller] provides computers, or access to computers, that can access the electronic posting to such employees, or the [contractor/seller] has actual know ledge that such employees otherwise are able to access the electronically posted notices. Electronic notices for employees must be post ed in a conspicuous location and format on the company's intranet or sent by electronic mail to employees. An electronic posting must be used by the [contractor/seller] to notify job applicants of their rights if the [contractor/seller] utilizes an electronic application process. Such electronic applicant notice must be conspicuously stored with, or as part of, the electronic application.

5.The [contractor/seller] will notify each labor organization or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the [contractor/ seller] is bound by the terms of section 503 of the Rehabilitation Act of 1973, as amended, and is committed to take affirmative action to employ and advance in employment, and shall not discriminate against, individuals with physical or mental disabilities.

6.The [contractor/seller] will include the provisions of this clause in every subcontract or purchase order in excess of $ 10,000, unless exempted by the rules, regulations, or orders of the Secretary issued pursuant to section 503 of the act, as amended, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the Director, Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.

7.The [contractor/seller] must, in all solicitations or advertisements for employees placed by or on behalf of the [contractor/seller], state that all qualified applicants will receive consideration for employment and will not be discriminated against on the basis of disability.

18. Dissemination or Disclosure of Information

No information or material shall be disseminated or disclosed to the general public, the news media, or any person or organization without prior express written approval by the HA.

19. Contractor's Status

It is understood that the Contractor is an independent contractor and is not to be considered an employee of the HA, or assume any right, privilege or duties of an employee, and shall save harmless the HA and its employees from claims suits, actions and costs of every description resulting from the Contractor's activities on behalf of the HA in connection with this Agreement.

20. Other Contractors

HA may undertake or award other contracts for additional work at or near the site(s) of the work under this contract. The contractor shall fully cooperate with the other contractors and with HA and HUD employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or HA employee.

21. Liens

The Contractor is prohibited from placing a lien on HA's property. This prohibition shall apply to all subcontractors.

22. Training and Employment Opportunities for Residents in the Project Area (Section 3, HUD Act of 1968;
24 CFR 135)

(a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 75, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 75 regulations.

(c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 prioritization requirements, and shall state the minimum percentages of labor hour requirements established in the Benchmark Notice (FR-6085-N-04)..

(d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 75, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 75. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 75.

(e) Noncompliance with HUD's regulations in 24 CFR Part 75 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts

(f) Contracts, subcontracts, grants, or subgrants subject to Section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5307(b)) or subject to tribal preference requirements as authorized under 101(k) of the Native American Housing Assistance and Self-Determination Act (25 U.S.C. 4111(k)) must provide preferences in employment, training, and business opportunities to Indians and Indian organizations, and are therefore not subject to the requirements of 24 CFR Part 75.

23. Procurement of Recovered Materials

(a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered

materials practicable consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.

(b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of $10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of $10,000 of the item both under and outside that contract