

**VOLUME II**  
APPENDICES

## A. Statement of Interest



## Massachusetts School Building Authority

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### Next Steps to Finalize Submission of your FY 2021 Statement of Interest

Thank you for submitting your FY 2021 Statement of Interest (SOI) to the MSBA electronically. **Please note, the District's submission is not yet complete.** The District is required to mail all required supporting documentation, which is described below.

**VOTES: Each SOI must be submitted with the proper vote documentation.** This means that (1) the required governing bodies have voted to submit each SOI, (2) the specific vote language required by the MSBA has been used, and (3) the District has submitted a record of the vote in the format required by the MSBA.

**School Committee Vote:** Submittal of all SOIs must be approved by a vote of the School Committee.

For documentation of the vote of the School Committee, Minutes of the School Committee meeting at which the vote was taken must be submitted with the original signature of the Committee Chairperson. The Minutes must contain the actual text of the vote taken which should be substantially the same as the MSBA's SOI vote language.

**Municipal Body Vote:** SOIs that are submitted by cities and towns must be approved by a vote of the appropriate municipal body (e.g., City Council/ Aldermen/Board of Selectmen) in addition to a vote of the School Committee.

Regional School Districts do not need to submit a vote of the municipal body.

For the vote of the municipal governing body, a copy of the text of the vote, which shall be substantially the same as the MSBA's SOI vote language, must be submitted with a certification of the City/Town Clerk that the vote was taken and duly recorded, and the date of the vote must be provided.

**ADDITIONAL DOCUMENTATION FOR SOI PRIORITIES #1 AND #3:** If a District selects Priority #1 and/or Priority #3, the District is required to submit additional documentation with its SOI.

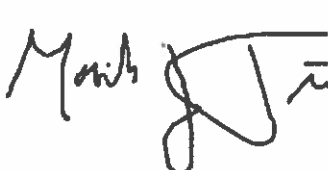
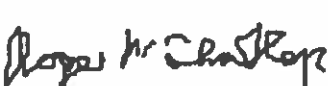

If a District selects Priority #1, Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of the school children, where no alternative exists, the MSBA requires a hard copy of the engineering or other report detailing the nature and severity of the problem and a written professional opinion of how imminent the system failure is likely to manifest itself. The District also must submit photographs of the problematic building area or system to the MSBA.

If a District selects Priority #3, Prevention of a loss of accreditation, the SOI will not be considered complete unless and until a summary of the accreditation report focused on the deficiency as stated in this SOI is provided.

**ADDITIONAL INFORMATION:** In addition to the information required above, the District may also provide any reports, pictures, or other information they feel will give the MSBA a better understanding of the issues identified at a facility.

If you have any questions about the SOI process please contact the MSBA at 617-720-4466 or [SOI@massschoolbuildings.org](mailto:SOI@massschoolbuildings.org).

**LOCAL CHIEF EXECUTIVE OFFICER/DISTRICT SUPERINTENDENT/SCHOOL COMMITTEE CHAIR  
(E.g., Mayor, Town Manager, Board of Selectmen)**

Chief Executive Officer *	School Committee Chair	Superintendent of Schools
Mark Purple	Roger Challen	Gregory L. Martineau
Town Administrator		
		
(signature)	(signature)	(signature)
Date	Date	Date
6/21/2021 2:52:32 PM	6/21/2021 3:10:36 PM	6/21/2021 2:54:05 PM

\* Local chief executive officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated to the chief executive office under the provisions of a local charter. Please note, in districts where the Superintendent is also the Local Chief Executive Officer, it is required for the same person to sign the Statement of Interest Certifications twice.

Is this part of a larger facilities plan? NO

If "YES", please provide the following:

Facilities Plan Date:

Planning Firm:

Please provide a brief summary of the plan including its goals and how the school facility that is the subject of this SOI fits into that plan:

Please provide the current student to teacher ratios at the school facility that is the subject of this SOI: 18 students per teacher

Please provide the originally planned student to teacher ratios at the school facility that is the subject of this SOI: 18 students per teacher

Does the District have a Master Educational Plan that includes facility goals for this building and all school buildings in District? YES

If "YES", please provide the author and date of the District's Master Educational Plan.

The Public Schools of Northborough and Southborough adopted a new Strategic Plan - 2026 in the spring of 2020. This plan highlights a pillar that is related to our facilities including exploring opportunities for renovation and enhancement when able. It has a priority with reviewing energy conversation, safety, and security as cornerstones of that goal area.

Is there overcrowding at the school facility? NO

If "YES", please describe in detail, including specific examples of the overcrowding.

Has the district had any recent teacher layoffs or reductions? NO

If "YES", how many teaching positions were affected? 0

At which schools in the district?

Please describe the types of teacher positions that were eliminated (e.g., art, math, science, physical education, etc.).

Has the district had any recent staff layoffs or reductions? NO

If "YES", how many staff positions were affected? 0

At which schools in the district?

Please describe the types of staff positions that were eliminated (e.g., guidance, administrative, maintenance, etc.).

Please provide a description of the program modifications as a consequence of these teacher and/or staff reductions, including the impact on district class sizes and curriculum.

Does not apply

Please provide a description of the local budget approval process for a potential capital project with the MSBA. Include schedule information (i.e. Town Meeting dates, city council/town council meetings dates, regional school committee meeting dates). Provide, if applicable, the District's most recent budget approval process that resulted in a budget reduction and the impact of the reduction to the school district (staff reductions, discontinued programs, consolidation of facilities).

The annual budget process begins in September each year. The steps in the budget process included preparation, submission, adoption, implementation and evaluation. Budget development was as follows: - Principals prepared their budget requests with the advice of team leaders and other staff. - Staff submitted program change proposals and/or other ideas. - Principals reviewed and compiled requests to address program needs. - Principals compiled staffing requests based on enrollment projections and changes - A justification sheet accompanied every request for new programs, additional staffing, and/or capital projects - Principals met with the Superintendent prior to including new programs or additional staffing in their budget - Principals brought any new items that affected the building and grounds to the Facilities Manager,

## General Description

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**BRIEF BUILDING HISTORY:** Please provide a detailed description of when the original building was built, and the date(s) and project scopes(s) of any additions and renovations (maximum of 5000 characters).

The Margaret A. Neary Elementary School was constructed in 1970 and encompasses an approximate area of 63,000 gross square feet on a single level and is located on a eighty-one (81) acre site. The site is separated by wetlands and the Margaret A. Neary Elementary School half of the lot is twenty-seven (27) acres. The building is a structural block construction with masonry in-fill walls and exterior face brick veneer. Steel roof joists support a flat Carlisle EDPM membrane roof.

### Modular Classrooms

There was an addition of two (2) modular classrooms added to the building in 2001, adding 2,744 square feet. The interior finishes include vinyl roll, vinyl asbestos tile, ceramic tile, vinyl gym flooring, and quarry tile as well as exposed concrete flooring and concrete block walls, and plaster, acoustic tile and lay-in acoustic tile (LAT) ceilings.

### Roof Replacement

A complete roof replacement occurred in 1990. Since then only repairs have occurred.

### Campus Expansion

In 1998, the land beyond the wetland became the location for the P. Brent Trotter Middle School, which was opened in 1998.

### Doors and Windows

Doors and windows are original construction. There has been no significant modification from the original design.

### Building Management System (BMS)

The BMS was upgraded in 2006-2007 to an Automated Logic Control System with remote access.

### Mechanical Systems

An upgrade of the HVAC equipment, generator, and electrical system completed in 2007. This upgrade also included new clocks and communication system. A new voice over IP phone system was installed in 2018.

### Asbestos

Asbestos containing building materials are present in the form of pipe fittings, vinyl asbestos tile flooring throughout the majority of the facility, and 12x12 acoustic wall tile in classrooms.

**TOTAL BUILDING SQUARE FOOTAGE:** Please provide the original building square footage PLUS the square footage of any additions.

62726

**SITE DESCRIPTION:** Please provide a detailed description of the current site and any known existing conditions that would impact a potential project at the site. Please note whether there are any other buildings, public or private, that share this current site with the school facility. What is the use(s) of this building(s)? (maximum of 5000 characters).

Margaret A. Neary Elementary School is a 62,736 square foot elementary school and is located on a eighty-one (81) acre site. There are conservation lands that bisect the full campus. The wetlands and 27 acres on for the current Margaret A. Neary Elementary School site comprise half of the full lot.

According to a recent facilities study done by Vertex, the parking lot is in desperate need of repair. The driveway and parking area provide ample access to the school, but the asphalt is in desperate need of replacement/repair. A resurfacing project is part of our latest Capital Plan. There are no existing site conditions to hinder an addition/renovation project and there is ample field space that can be considered for an addition or new building.

to the building at 208/120 volts. Heating and domestic hot water is supplied by two boilers fired by Gordon Piatt burners fueled by natural gas. Natural gas is supplied by Eversource. HVAC equipment serving the building includes various Air Handling Units (AHU's) with hot water heating. Terminal units for the building consist of unit ventilators, cabinet unit heaters, unit heaters, and finned tube radiation. These units receive hot water from the boiler plant in the winter months. Cooling units supply cool air during the warmer months to offices and larger assembly areas. Window air conditioners cool classroom areas. Water is supplied to the building by the Town of Southborough municipal utility.

#### Mechanical System

The heating system consists of a two zone hydronic system, with one 3 HP circulating pump servicing each zone. The system services all classroom and cafetorium unit ventilators, gymnasium air handling unit, baseboard radiation, convectors and unit heaters. A loss of either pump would leave that zone without heat as there is no redundancy to the system. The heating plant consists of two Buderus GE615/12 3,392,000 BTU/hr cast iron boilers installed in 2007. Both boilers were outfitted with dual fuel gas/oil fired Gordon Piatt S10.1-GO 3,389,000 BTU/hr burners. These burners were discontinued in 2009 which will make obtaining parts increasingly more difficult. The boilers are fired by natural gas. The original underground oil storage tank has been removed. Each classroom has a unit ventilator with operable outdoor air intake. The cafetorium has four unit ventilators with operable outdoor air intakes. The two gymnasiums each have their own air handlers with outdoor air intake and exhaust fan. The UV and AH were upgraded in 2007. The toilet rooms have ducted exhaust systems to roof mounted fans. The majority of the building's HVAC is controlled by Automated Logic EMS.

#### Plumbing and Kitchen Equipment

The plumbing system is original with the exception of the water main valve, meter and backflow preventer at the main, which were replaced in 2007. Water service is provided by the Town of Southborough utility. The plumbing is consistent with materials and fixtures commonly used at the time of construction. The building's DHW is generated by utilizing the boilers with an indirect tank with a water to water heat exchange during heating months. In May 2021, the tank began to leak. With the vessel being wrapped in asbestos we are investigating solutions to mitigate or remove the tank from service with an alternative. A gas fired 67 gallon hot water tank is used during non heating months. The building sanitary system consists of a FAST system within the septic tank which leads to the leaching field. The school kitchen is equipped with all electric appliances, dishwasher with booster heater and grease traps. The walk-in refrigerator and freezer are original to the building and have been out of service for over 10 years due to the significant investment needed for repairs. Student meals are prepared at another school and transported to Neary.

#### Electrical Systems

The existing power service is rated for 450A 208/120 Volt 3 Phase 4 Wire. Power is supplied by National Grid via exterior transformer. Secondary distribution is with panelboards. Circuitry for the complete power distribution system is maximized. Emergency lighting is powered by a Caterpillar C4.4 100 KW generator which is mainly every fourth hallway fixture and limited classroom spaces. Most other areas such as bathrooms and exits are on battery backup. The majority of the lights in the building are surface mounted fixtures with T-8 lamps and associated electric ballast with hallway and gym lights converted to LED (2019). There were electrical upgrades in 2011 to accommodate the generator and the upgraded HVAC systems but the rest of the building's service is original. The power outlet provision is inadequate for an elementary school application and not up to current building codes. All service panels have also been maxed out. The bell/clock systems were replaced (2007). The existing fire alarm system was updated in 2009 with a new control panel, horn/strobes and pull stations to meet minimal compliance. The building and kitchen are not equipped with fire suppression systems as they are not required due to the age of the building. The building also utilizes two modular classrooms installed in 2001. These units are separated from the building EMS and are operated by individual heat pumps.

#### Technology Infrastructure

The existing data network is CAT 5 and CAT 6 wiring. Neary was one of the first schools in the District to move to CAT 5 in 2006. It has not had any upgrades since installation. Each learning space is wired and intermittent are repaired. The building is mapped with access points that provide internet coverage.

#### Boiler Section 1

**Library/Technology:**

In response to the growing needs within our school and District and due to a grant awarded us by the Southboro Education Foundation, in 2017 the District developed a new experience and curriculum -Libratory. Libratory curriculum is a combination of Library, Instructional Technology, and 21st Century Skills. For 90 minutes each week, students gather in the Libratory for Library and Technology instruction, engage in collaborative activities that are focused on the Design Thinking Process, and participate in Science Technology Reading/Research Engineering Art Math (STREAM) activities. The library and technology space create one large learning classroom. The lighting and air flow are inadequate. Also, as the space was not designed as a technology classroom, the infrastructure is limited and wifi is often impacted.

**Professional Space:**

There is limited space for collaboration and meetings significantly impacting our ability to implement our professional learning communities initiative. The District enclosed a hallway alcove to create one space, but it does not hold the entire grade-level team nor does it have heat. As it abuts an outside wall it is extremely cold and uncomfortable in the colder months.

**Science Lab:**

In response to the new MA Science Standards and the adoption of a hands-on science program, the District uses a classroom as a science lab. As it was not originally designed for this use, it lacks adequate safety features of a traditional science lab as well as the technology infrastructure to support this type of learning. As space is at a premium, this is a multi-purpose space also used as a storage space as well as a small group intervention space as a direct result of the size and capacity of our special education classroom.

**Physical Education:**

The gymnasium is divided into two separate spaces. The PE teacher can't supervise both spaces at once. The storage space also functions as an office for the PE teacher (with a drop-down garage door for entry). This prevents investment in additional equipment that would be an asset to student health, physical education and learning. Larger equipment is stored in the gymnasium, limiting the capacity of the gym and presenting a potential safety hazard to students. This space is also used for large presentations which results in classes being canceled or moved to another location.

**ELL and Reading Specialist Space**

The reading specialist and ELL teacher classrooms are housed in modular units which were installed in 2001. The units were first erected in response to increased enrollment. There have been no updates since their erection and the space is showing age both visually and structurally. The modulares are in the playground area. This distractible environment is not conducive to the learning needs of our most at risk students.

**Parent/Teacher Preparation Space**

There is one area available for parents/teachers that functions as a prep/meeting room that house office machines, a laminator, a refrigerator, as well as the green screen room where students collaborate on projects.

**Rest Rooms**

There are three girls' and three boys' restrooms, three womens' and three mens' restrooms and one restroom in the nurse's office. None of the restrooms are ADA compliant. This was an identified area of concern with the March 2021 - Facilities Conditions Assessment conducted by Vertex Companies, Inc.

**EDUCATIONAL SPACES: Please provide a detailed description of the Educational Spaces within the facility, a description of the number and sizes (in square feet) of classrooms, a description of science rooms/labs including ages and most recent updates, a description of the cafeteria, gym and/or auditorium and a description of the media center/library (maximum of 5000 characters).**

16 classrooms – 14,960 square feet

Cafeteria – 3,150 square feet

2 gymnasiums – 5,336 square feet

### Priority 5

***Question 2: Please describe the measures the district has already taken to mitigate the problem/issues described in Question 1 above.***

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As funding is provided, the District has been able to replace equipment and has maintained all systems to the best of our ability. From HVAC, electrical capacity, and roof repairs, the District has maintained the building. However, there are some aspects that can't be maintained or repaired, only replaced. For example, the ADA compliance of restrooms and the amount of interior space without windows can not be changed without a significant project.

The District has repaired the roof as needed and has extended its life with other preventive measures. The District installed a redundant hot water system to offset the dependence on the primary tank. The boiler replacement in 2009 really supported the needs to maintain the heating system, subsequent control enhancements as improved its energy efficiency. However, the boiler and controls are due for a consideration for upgrades.

**Priority 5**

***Question 4: Please describe how addressing the school facility systems you identified in Question 1 above will extend the useful life of the facility that is the subject of this SOI and how it will improve your district's educational program.***

The Margaret A. Neary Elementary School's roofing, HVAC, and electrical systems thwart the District's ability to conduct educational programs. Allowing the District to focus on other capital projects will enhance the overall student experience. The Margaret A. Neary Elementary School has unlimited potential to provide a dynamic experience for students and teachers alike. This experience is hindered by the physical limitations of the building. The building does not have a community space for all students and staff can fit in one location comfortably.

**Please also provide the following:**

**Have the systems identified above been examined by an engineer or other trained building professional?:**

YES

**If "YES", please provide the name of the individual and his/her professional affiliation (maximum of 250 characters):**

The Vertex Companies, Inc.

**The date of the inspection:** 3/17/2021

**A summary of the findings (maximum of 5000 characters):**

The Vertex Report was consistent with the District's understanding of the building's qualities, limitations, and areas of needed improvement. Specifically, the report rated the roof, interior, and exterior as being in "poor" condition. The report also indicated that the mechanical and electrical systems were in "fair" condition. An area that draw interest of the District's administration was the lack of ADA compliance and accessibility for all students and staff. We have worked around the obstacles of the building and we would like to see them addressed in a more formidable manner.



**Priority 7**

***Question 2: Please describe the measures the district has taken or is planning to take in the immediate future to mitigate the problem(s) described above.***

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The District is seeking assistance for the repair, modernization and programmatic needs of the Margaret A. Neary Elementary School in order to continue uninterrupted educational services to students. The District continues to address immediate building related issues so the safety of students and staff is not at risk. The District has made adjustments to support operational needs. The principal in conjunction with faculty and staff have been creative with how they utilize the space. They make sure that the master schedule takes into consideration all aspects of the building. Decisions are made based on the space and the quality of space available at any given time. Creative scheduling and the use of technology to brings students together in different ways.

the gymnasium, limiting the capacity of the gym and presenting a potential safety hazard to students. This space is also used for large presentations which results in classes being canceled or moved to another location.

#### ELL and Reading Specialist Space

The reading specialist and ELL teacher classrooms are housed in modular units which were installed in 2001. The units were first erected in response to increased enrollment. There have been no updates since their erection and the space is showing age both visually and structurally. The modulars are in the playground area. This distractible environment is not conducive to the learning needs of our most at risk students.

#### Parent/Teacher Preparation Space

There is one area available for parents/teachers that functions as a prep/meeting room that house office machines, a laminator, a refrigerator, as well as the green screen room where students collaborate on projects.

## CERTIFICATIONS

The undersigned hereby certifies that, to the best of his/her knowledge, information and belief, the statements and information contained in this statement of Interest and attached hereto are true and accurate and that this Statement of Interest has been prepared under the direction of the district school committee and the undersigned is duly authorized to submit this Statement of Interest to the Massachusetts School Building Authority. The undersigned also hereby acknowledges and agrees to provide the Massachusetts School Building Authority, upon request by the Authority, any additional information relating to this Statement of Interest that may be required by the Authority.

**Chief Executive Officer \***

Mark Purple

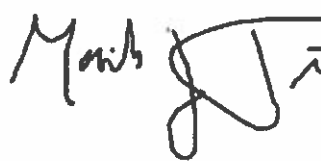
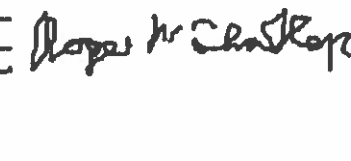
**School Committee Chair**

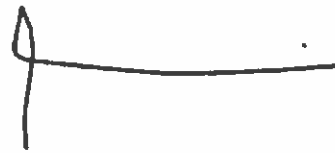
Roger Challen

**Superintendent of Schools**

Gregory L. Martineau

Town Administrator



(signature)

(signature)

(signature)

Date

Date

Date

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\* Local Chief Executive Officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated to the chief executive office under the provisions of a local charter. Please note, in districts where the Superintendent is also the Local Chief Executive Officer, it is required for the same person to sign the Statement of Interest Certifications twice.

## B. Feasibility Study Agreement



# Massachusetts School Building Authority

**Deborah B. Goldberg**  
*Chairman, State Treasurer*

**James A. MacDonald**  
*Chief Executive Officer*

**John K. McCarthy**  
*Executive Director / Deputy CEO*

June 2, 2023

Mr. Mark J. Purple, Town Administrator  
Southborough Town House  
17 Common Street  
Southborough, MA 01772

Re: Town of Southborough, Margaret A. Neary Elementary School

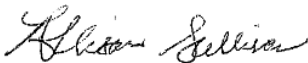
Dear Mr. Purple:

Enclosed for your records, please find a copy of the fully executed Feasibility Study Agreement and copies of Exhibits A-C for the Margaret A. Neary Elementary School project in the Town of Southborough (the "District").

Also, attached for your convenience, please find instructions for entering project budgets in the Massachusetts School Building Authority (the "MSBA") ProPay System, and the Feasibility Study Agreement Budget Revision Request Form. Please note the MSBA will not process reimbursement requests until the District has entered the budget and the budget has been accepted by the MSBA.

Please feel free to contact me if you have any questions.

Regards,



Allison Sullivan  
Senior Project Coordinator

Cc: Legislative Delegation  
Andrew R. Dennington II, Chair, Southborough Select Board  
Roger W. Challen, Chair, Southborough School Committee  
Gregory Martineau, Superintendent, Southborough Public Schools  
File: 10.2 Letters (Region 2)

District Name: Town of Southborough  
School Name: Margaret A. Neary Elementary School  
Project ID Number: 202102760020

## MASSACHUSETTS SCHOOL BUILDING AUTHORITY FEASIBILITY STUDY AGREEMENT

This Feasibility Study Agreement, dated the 1st day of June, 2023 (the “Agreement”) is between the Massachusetts School Building Authority (the “**Authority**”), a public instrumentality of the Commonwealth of Massachusetts established by Chapter 70B of the Massachusetts General Laws and Chapters 208 & 210 of the Acts of 2004 of the Commonwealth, in each case as amended from time to time, and the Town of Southborough (the “**District**”).

WHEREAS, the District submitted a Statement of Interest to the Authority for the Margaret A. Neary Elementary School (hereinafter “**School**”), and the District prioritized this Statement of Interest as its priority to receive any potential funding from the Authority;

WHEREAS, on March 2, 2022, the Board of Directors of the Authority voted to invite the District to the MSBA’s Eligibility Period, and the Board of Directors of the Authority voted to invite the District to commence the Eligibility Period on August 1, 2022, and the District has completed all applicable preliminary requirements to the satisfaction of the MSBA;

WHEREAS, on April 26, 2023, the Board of Directors of the Authority shall have voted to authorize the Parties to enter into this Agreement upon the terms and conditions stated herein.

WHEREAS, the Feasibility Study is one step in the multi-step process of the Authority’s grant program for school building construction and renovation projects, and the invitation to collaborate on conducting and/or reviewing a Feasibility Study is not approval of a project or any funding by the Authority, except as expressly provided in this Agreement;

WHEREAS, the Authority’s grant program for school building renovation and construction projects is a non-entitlement, discretionary program based on need, as determined by the Authority;

WHEREAS, the District has submitted a signed Initial Compliance Certification, as described in 963 CMR 2.02, 2.03 & 2.10(2), in the form prescribed by the Authority, and it has been accepted by the Authority;

WHEREAS, the District has formed a School Building Committee to monitor the Feasibility Study and advise the District during the study;

WHEREAS, the Authority may reimburse the District for a portion of eligible, approved costs incurred in connection with the Feasibility Study undertaken by the District for the School under certain terms and conditions, hereinafter provided, and subject to the provisions of M.G.L. c. 70B, 963 CMR 2.00 *et seq.* and all applicable policies and guidelines of the Authority.

NOW THEREFORE, in consideration of the promises and the agreements, provisions and covenants contained in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Authority and the District (together, the “Parties”) agree as follows:

## SECTION 1 DEFINITIONS

- 1.1 Capitalized terms not specifically defined in this Definitions section shall have the meanings ascribed to them in either M.G.L. c. 70B or 963 CMR 2.00 *et seq.*

“Budget” shall mean a complete and full enumeration of all costs, including both hard costs and soft costs, so-called, that the District reasonably estimates, to the best of its knowledge and belief, will be incurred in connection with the planning, development, and the completion of the Feasibility Study, which Budget shall be approved by the Authority and attached hereto as **Exhibit A**, as it may be updated from time to time.

“Design Contract” shall mean the standard design contract developed and prescribed by the Authority, as it may be amended by the Authority from time to time that shall be executed by the District and the Designer for design services related to the Proposed Project.

“Designer” shall mean the individual, corporation, partnership, sole proprietorship, joint stock company, joint venture, or other entity engaged in the practice of architecture, landscape architecture, or engineering that meets the requirements of M.G.L. c. 7C, § 44 and has been procured and contracted by the District to conduct a Feasibility Study, in accordance with the provisions of Sections 2.1(a)(i) and 2.1(a)(ii) of this Agreement.

“Excusable Delay” shall mean a delay of the Feasibility Study that either (a) is solely because of a natural event, such as flood, storms, or lightning, that is not preventable by any human agency, or (b) is reasonably determined by the Authority to be excusable, provided that the failure of the District to have exclusive ownership, control and use of site will not extend the “Term of the Agreement” established in Section 2.2.

“Feasibility Study” shall mean a study as described in 963 CMR 2.10(8) and in any applicable policies and guidelines of the Authority and, in relation to a Major Reconstruction Project or Repair Project, as described in M.G.L. c. 70B, 963 CMR 2.00 *et seq.* and any applicable policies and guidelines of the Authority, shall also include an engineering study, in a format prescribed by or otherwise acceptable to the Authority, to investigate potential options and solutions, including cost estimates, for the deficiencies and issues identified in the Statement of Interest or as otherwise determined by the Authority.

“Owner’s Project Manager” shall mean the individual corporation, partnership, sole proprietorship, joint stock company, joint venture, or other entity under contract with, designated, or assigned by the District and approved by the Authority, to fully and completely manage and coordinate administration of the Project to completion. The Owner’s Project Manager must meet the qualifications set forth in M.G.L. c. 149, § 44A ½, 963 CMR 2.00 *et seq.*, and all applicable policies and guidelines of the Authority.

“Scope” shall mean the scope of the Feasibility Study as described in 963 CMR 2.10(8) and any applicable policies and guidelines of the Authority or as otherwise determined in writing by the Authority and as more fully described in **Exhibit B** attached hereto, as it may be updated from time to time as mutually agreed upon by the District and the Authority.

“Schedule” shall mean the schedule for the Feasibility Study, which schedule shall be updated from time to time and approved by the Authority.

“School” shall mean the Margaret A. Neary Elementary School located in the District.

“Statement of Interest” shall mean the Statement of Interest, as defined in 963 CMR 2.09 and all applicable policies and guidelines of the Authority, submitted to the Authority by the District for the School.

## SECTION 2 FEASIBILITY STUDY

Subject to the terms and conditions of this Agreement, and in reliance on the representations, warranties and covenants contained herein, the Parties hereby agree as follows:

### 2.1 Feasibility Study.

- (a.) The Parties hereby agree that the District shall undertake a Feasibility Study to investigate potential options and solutions, including cost estimates, to the School’s deficiencies and issues as identified in the Statement of Interest or as otherwise determined by the Authority and in accordance with the Scope, Budget, and Schedule approved by the Authority, provided that the Authority has the unconditional unilateral right to alter that approved Scope, Budget, and/or Schedule for the Authority’s convenience and the Authority will not be liable to the District for any loss and/or damage that arises, in whole or in part, out of any such alteration. The adequacy, sufficiency and/or acceptability of a Feasibility Study or a Prior Study, as defined in Section 2.1(c) of this Agreement, for the purposes of the Authority’s grant program shall be determined by the



Authority within its sole discretion. Any determination by the Authority that a Feasibility Study or Prior Study is adequate, sufficient or acceptable for the Authority's purposes shall not be construed as a certification or approval by the Authority of the studies, plans, drawings, designs, cost estimates, specifications or any other information or materials contained therein and no MSBA requirement that the District study a particular Option shall constitute an MSBA approval of that Option, in whole or in part. The District, its officials, employees and agents are and shall remain responsible for the Feasibility Study and/or Prior Study and the building designs, site plans, drawings, cost estimates, specifications and other materials and information relative thereto that the District submits to the Authority. The Authority's review of the Feasibility Study and/or Prior Study and any studies, plans, drawings, designs, cost estimates, specifications or any other information or materials contained therein or related thereto is solely for the purpose of determining whether they meet the provisions of this Agreement and the Authority's regulations, standards, policies, guidelines and other requirements and whether the District will be eligible for potential funding from the Authority for the Proposed Project. Approval of a Proposed Project shall only be determined by a vote of the Authority's Board in accordance with 963 CMR 2.00 *et seq.* and the applicable policies and guidelines of the Authority.

- (i) The District shall procure a Designer to conduct the Feasibility Study pursuant to the provisions of M.G.L. c. 7C, § 44 through 58, 963 CMR 2.10(8), 963 CMR 2.12, and any other applicable laws and regulations; provided, however, that if the estimated construction cost of the Proposed Project is determined to be more than five million dollars (\$5,000,000), then the District shall select the Feasibility Study Designer using the Authority's Designer Selection Panel in accordance with 963 CMR 2.00 *et seq.* and all applicable policies and guidelines of the Authority. The District shall not use a Designer who was procured by the District prior to July 1, 2007, to conduct the Feasibility Study, unless the Designer is acceptable to the Authority. It is further provided that, if said Designer who was procured by the District prior to July 1, 2007, is unacceptable to the Authority, the District shall conduct a new procurement for a Feasibility Study Designer pursuant to the applicable provisions of M.G.L. c. 7C, § 44 through 58, 963 CMR 2.10(8), 963 CMR 2.12, and any

rules, regulations, policies and guidelines of the Authority.

- (ii.) The District shall use the Authority's Design Contract to contract with the Designer for the Feasibility Study. The District shall monitor the performance of the Designer and shall require the Designer to fully comply with all provisions of the Design Contract, including, but not limited to, all provisions affecting the interests of the Authority.
- (iii.) If, at any time, the construction cost of the Proposed Project is estimated to be more than one million five hundred thousand dollars (\$1,500,000), or if the construction cost of the Proposed Project is estimated to be equal to or less than one million five hundred thousand dollars (\$1,500,000) and the Authority so requires, at any time, as a condition to qualify for funding by the Authority, the District shall procure and maintain under contract, or otherwise assign, an Owner's Project Manager, pursuant to M.G.L. c. 149, § 44A ½, 963 CMR 2.00, *et seq.* and any applicable policies and guidelines of the Authority. The selection of an Owner's Project Manager shall be subject to the review and approval of the Authority as required by M.G.L. 70B, 963 CMR 2.00, *et seq.*, and any applicable policies and guidelines of the Authority. Any costs associated with an Owner's Project Manager who is not approved by the Authority shall not be eligible for reimbursement.
- (iv.) Where applicable, the District shall use the Authority's model request for services and standard contract to procure and contract with any Owner's Project Manager for the Proposed Project, including the Feasibility Study stage of the Proposed Project. The District shall monitor the performance of the Owner's Project Manager and shall require the Owner's Project Manager to fully comply with all provisions of the contract between the District and the Owner's Project Manager including, but not limited to, all provisions affecting the interests of the Authority.

- (b.) Subject to the satisfaction of or compliance with, as reasonably determined by the Authority, all of the terms and conditions of this Agreement, the applicable provisions of M.G.L. c. 70B, Chapters 208 and 210 of the Acts of 2004, and 963 CMR 2.00 *et seq.* and any other rule, regulation, policy or guideline of the Authority, and further subject to the Authority's approval of the Scope, Budget and Schedule and the District's approval, authorization and appropriation for the Feasibility Study using forms prescribed by or otherwise acceptable to the Authority, the Authority hereby agrees to pay to the District an amount that shall under no circumstances exceed the lesser of (i) 39.84% of the eligible, approved costs of the Feasibility Study, as determined by the Authority, or (ii) \$378,480.00. The Parties hereby acknowledge and agree that \$378,480.00 is the maximum amount of funding that the District may receive from the Authority for the Feasibility Study, and that the final amount of eligible Feasibility Study costs approved by the Authority may equal an amount less than \$378,480.00, as determined by an audit or audits conducted by the Authority. Any costs and expenditures that are determined by the Authority to be either in excess of the \$378,480.00 or ineligible for payment by the Authority shall be the sole responsibility of the District. The reimbursement rate set forth above, and as more fully described in the Reimbursement Rate Summary, attached hereto as **Exhibit "C"**, is the rate at which the District may be reimbursed for the eligible, approved costs of the Feasibility Study.

In the event that the Authority reasonably determines that the Feasibility Study is not in accordance or compliance with the Scope, Schedule, Budget, all of the terms and conditions of this Agreement, the provisions of M.G.L. c. 70B, Chapters 208 and 210 of the Acts of 2004, 963 CMR 2.00 *et seq.* and any other rule, regulation, policy or guideline of the Authority, or is delayed (other than an Excusable Delay) or is not duly authorized, approved and funded by the District in accordance with applicable law and as required by the Authority, then the Authority may temporarily and/or permanently withhold payments to the District for any eligible, approved costs of the Feasibility Study, provided that the Authority shall not unreasonably withhold any such payments and further provided that the Authority shall give written notice to the District of any such withholding. Notwithstanding the foregoing, failure by the Authority to provide such written notice timely shall not create or result in any entitlement to payment for the District. In the event that the Authority either temporarily or permanently withholds payment for the Feasibility Study, the District hereby agrees and acknowledges that the Authority shall have no liability for any such withholding of payment or any loss that may occur as a result of any such withholding of payment.

The District shall not be eligible to receive any funding for the Authority's share of the eligible, approved Feasibility Study costs, or any portion thereof, unless and until the Authority has approved the Scope, Budget,

and Schedule. The Authority shall reimburse the District only for costs incurred by the District in connection with the Feasibility Study that are timely submitted to the Authority, eligible for reimbursement pursuant to Authority policies, procedures, and guidelines, and audited and approved by the Authority.

- (c) Notwithstanding any provision of this Agreement, a District will not be eligible for reimbursement for costs that arise out of any study of the deficiencies and issues identified in the Statement of Interest to the extent that those costs were incurred by the District prior to the date of the Execution of this Agreement.

## 2.2 Term of Agreement.

No Project Scope and Budget Agreement for a Proposed Project, which arises out of the provisions of this Agreement will be approved by the Authority's Board until on or after July 1, 2023. Subject to that limitation, the Agreement will terminate upon (1) the approval of a Project Scope and Budget Agreement for a Proposed Project by the Authority's Board and the (2) execution of a Project Scope and Budget Agreement by the Authority and the District for that Proposed Project or (2) Nine Hundred and Thirteen (913) Days after the date upon which the Authority's Board votes to invite the District into Feasibility Study, whichever occurs sooner.

## SECTION 3 COVENANTS

The District covenants and agrees that as long as this Agreement is in effect, the District shall and shall cause its employees, officers, agents, and representatives to perform and comply with all covenants of this Agreement.

3.1 The District hereby agrees that it shall make available for inspection by, and submit to, the Authority any and all information and documentation related to the Feasibility Study, including, but not limited to budget information, progress reports, and draft copies that may be requested by the Authority, promptly and in no event later than the deadline stated in any such request.

3.2 The District hereby agrees that it shall work with the Authority in developing the Scope, Budget and Schedule for the Feasibility Study and it acknowledges and agrees that the Authority's funding for the Feasibility Study is subject to the Authority's approval of the Scope, Budget and Schedule.

3.3 The District hereby acknowledges and agrees that the Authority shall not provide any amounts in excess of the amount determined under Section 2.1(b) of this Agreement.

3.4 The District hereby acknowledges and agrees that the Authority may, in its sole discretion, determine that certain costs incurred by the District in connection with the

District Name: Town of Southborough  
School Name: Margaret A. Neary Elementary School  
Project ID Number: 202102760020

Feasibility Study are not eligible for reimbursement by the Authority, pursuant to any applicable provisions of M.G.L. c. 70B, 963 CMR 2.00 *et seq.*, including, but not limited to, sections 2.10 & 2.16(5), and any other policies and guidelines of the Authority.

3.5 The District shall comply with all provisions of this Agreement; the provisions of all other agreements between the Authority and the District that relate to the Feasibility Study; the provisions of M.G.L. c. 70B, 963 CMR 2.00 *et seq.*, and all policies and guidelines of the Authority; and all provisions of law applicable to the Feasibility Study, this Agreement, and any other agreements and documents related to the Feasibility Study, and shall take all action necessary to fulfill its obligations under this Agreement.

3.6 The District hereby acknowledges and agrees that the Authority shall not be required or obligated to make any payment for any eligible Feasibility Study costs while an Event of Default, as defined in section 8 of this Agreement, shall have occurred.

3.7 The District shall, and shall cause any Owner's Project Manager and Designer and their employees, subconsultants and agents to, keep adequate records of the Feasibility Study and make all Feasibility Study records and the Feasibility Study site(s) available to the Authority or representatives of the Authority for review during the course of the Feasibility Study.

3.8 The District hereby acknowledges and agrees that the duties of any Owner's Project Manager hired by and/or assigned to the Proposed Project by the District shall include, but not be limited to, fully and completely managing and coordinating on behalf of the District the administration of the Feasibility Study to completion. Any Owner's Project Manager hired by and/or assigned to the Proposed Project by the District shall be responsible for overseeing, tracking, and managing the Budget and Schedule. In the event that an Owner's Project Manager is not required for the Proposed Project, the District shall have the aforesaid duties and responsibilities in addition to any others imposed by M.G.L. c. 70B, 963 CMR, *et seq.*, the policies and guidelines of the Authority, and any other applicable provisions of law.

3.9 The District hereby agrees that the Authority shall have free access to, and open communication with, any Owner's Project Manager hired by and/or assigned to the Proposed Project by the District and that the Authority shall have full and complete access to all information and documentation relating to the Proposed Project to the same extent that the District has such access. The District agrees that it shall require any such Owner's Project Manager to fully cooperate with the Authority in all matters related to the Proposed Project; to promptly communicate, transmit, and/or make available for inspection and copying any and all information and documentation requested by the Authority; to fully, accurately and promptly complete all forms and writings requested by the Authority; and to give complete, accurate, and prompt responses to any and all questions, inquiries and requests for information posed by the Authority. The District agrees that it shall not in any way, directly or indirectly, limit, obstruct, censor, hinder or otherwise interfere with the free flow of communication and information between the Owner's Project Manager and the Authority in all matters related to the Proposed Project

and as provided herein; that it shall not suffer the same to occur by the act or omission of any other person or entity; and that it shall not retaliate against the Owner's Project Manager for communicating information to the Authority as provided herein. The District agrees to execute, deliver and/or communicate to the Owner's Project Manager any and all authorizations, approvals, waivers, agreements, directives, and actions that are necessary to fulfill its obligations under this paragraph. The District further agrees that the Authority shall bear no liability whatsoever arising out of the Authority's knowledge or receipt of information communicated to the Authority by the Owner's Project Manager and that the District shall remain responsible for the management and completion of the Proposed Project.

3.10 The District hereby acknowledges and agrees that the duties of the Designer shall include, but not be limited to, those described in this Agreement, including, but not limited to, the Scope attached hereto as Exhibit B; 963 CMR 2.10(8); any applicable rules, regulations, policies and guidelines of the Authority; and any standard scope of services and the Design Contract prescribed by the Authority.

3.11 The District hereby acknowledges and agrees that neither the District nor any of its employees, officials, agents, consultants or contractors shall submit any false or intentionally misleading information or documentation to the Authority in connection with this Feasibility Study Agreement or the Feasibility Study, and further acknowledges and agrees that the submission of any such information or documentation may cause the Authority to suspend, revoke or terminate any and all payments otherwise due to the District and/or recover any previous payments made to the District, and the District may be ineligible for any funding from the Authority. The District hereby further agrees that it shall have a continuing obligation to update and notify the Authority in writing when it knows or has any reason to know that any information or documentation submitted to the Authority contains false, misleading or incorrect information.

3.12 The District hereby acknowledges and agrees that the Authority shall bear no responsibility or liability of any sort for the results of any Feasibility Study, environmental assessment, geotechnical site testing, any necessary site remediation, clean-up, or other site remediation services.

3.13 The District hereby acknowledges and agrees that it shall provide a final Feasibility Study report to the Authority, which shall be in a format that is prescribed by or otherwise acceptable to the Authority.

3.14 The District hereby acknowledges and agrees that the Authority's grant program is a non-entitlement, discretionary program based on need, and the Feasibility Study may not result in a school construction, renovation or repair project that is eligible for funding by the Authority.

3.15 The District shall not combine, consolidate, or conjoin in any way the procurement, pre-qualification or selection of an Owner's Project Manager or Designer for the Proposed Project with the procurement, pre-qualification or selection of an

Owner's Project Manager or Designer for any other construction, repair or renovation project without the express prior written approval of a duly authorized representative of the Authority. Any costs incurred by the District that relate to, or arise out of, the use of a combined, consolidated or conjoined procurement, pre-qualification or selection process as proscribed above, including, but not limited to, the preparation of bid documents, requests for services, and requests for qualifications, without the express prior written approval of a duly authorized representative of the Authority shall not be eligible for reimbursement.

## SECTION 4 PAYMENTS AND AUDIT

4.1 Subject to the terms and conditions of the Agreement, the Authority shall reimburse the District for eligible, approved costs incurred in connection with the Feasibility Study in accordance with the following:

(a) Using the Authority's Pro-Pay system, the District shall submit requests for reimbursement on a monthly basis to the Authority in a format prescribed by the Authority. Each monthly request for reimbursement shall be approved locally by a duly authorized representative of the District, shall be in a form acceptable to the Authority, shall include reasonable detail, including, but not limited to (1) the amount of funding requested, (2) the nature of the materials or property or services received, (3) the total value of the work performed and materials furnished by the Owner's Project Manager, if any, the Designer, and each consultant, subconsultant or vendor to date, and (4) the value of the work completed during the Feasibility Study. The District agrees that each request for reimbursement shall be accompanied by the invoices for each of the amounts requisitioned and any other supporting documentation and information substantiating the District's request for reimbursement, as the Authority may request, in a form satisfactory to the Authority.

(b) Each request for reimbursement shall include a written certification signed by a duly authorized representative of the District stating that: (1) such request for reimbursement is solely for Feasibility Study costs, (2) the obligations itemized in the request for reimbursement have not been the basis for a prior request for reimbursement submitted by the District that has been paid or rejected by the Authority, (3) the reimbursement requested is due for work actually and properly performed or materials or property actually supplied prior to the date of the requisition, (4) the reimbursement requested is for costs that already have been duly paid by the District, and (5) such reimbursement requested is within the Budget approved by the Authority.

(c) The Authority shall review all requests for reimbursement properly submitted pursuant to this Agreement as soon as reasonably possible. The

Authority shall not consider requests for reimbursement that are not, as reasonably determined by the Authority, (1) timely and properly submitted, (2) in accordance with the most recent Budget approved by the Authority, and (3) for eligible Feasibility Study costs incurred by the District. The District understands and agrees that no reimbursement shall be made by the Authority unless the District has complied with all of the terms and conditions of this Agreement, the applicable provisions of M.G.L. c. 70B, chapters 208 and 210 of the Acts of 2004, 963 CMR 2.00 *et seq.*, and all policies and guidelines of the Authority.

(d) After receipt from the District of a timely and properly submitted request for reimbursement pursuant to this Agreement, the Authority shall make payment to the District of the Authority's share of approved, eligible Feasibility Study costs, subject to the terms and conditions of this Agreement. The District hereby agrees and acknowledges that the amount of approved, eligible Feasibility Study costs reimbursed by the Authority may be subject to change, pending audit, including but not limited to an audit pursuant to Section 4.2 of this Agreement and the final close-out audit pursuant to Section 4.3 of this Agreement.

4.2 The Authority may review and perform a preliminary audit on each request for reimbursement submitted pursuant to this Agreement to ensure that only eligible costs of the Feasibility Study are approved and paid by the Authority. Any such preliminary audits shall be conducted in accordance with 963 CMR 2.16 and other policies and guidelines of the Authority. In the event that the Authority determines that an item contained in a request for reimbursement submitted by the District pursuant to this Agreement is not eligible for reimbursement by the Authority, the Authority shall adjust a subsequent reimbursement to the District to account for the ineligible costs. The District hereby acknowledges and agrees that each audit conducted pursuant to this Section 4.2 is preliminary, and the Authority may further adjust and alter the results of a preliminary audit after it conducts subsequent audits or a final close-out audit of the Feasibility Study.

4.3 The District hereby acknowledges and agrees that a final, close-out audit of the Feasibility Study by the Authority shall include an audit of all requests for reimbursement submitted and all reimbursements made by the Authority. The final, close-out audit shall be conducted in accordance with 963 CMR 2.16 and any other applicable regulations, policies and guidelines of the Authority. The District shall make all documents and materials requested by the Authority or its representatives available in a timely manner. The District further acknowledges and agrees that the final, close-out audit of the Feasibility Study may not occur until such time as the Authority conducts its final, close-out audit of the project that may result from the Feasibility Study, should the District be approved for any such project. Any adjustments applicable as a result of the final, close-out audit may be made in the final amount of the Total Facilities Grant, as determined by the Authority.



## SECTION 5 REPRESENTATIONS AND WARRANTIES

The District hereby warrants and represents that each of the following statements is true, correct and complete:

5.1 The District is validly organized and existing under and by virtue of the laws of the Commonwealth, has full power and authority to own its properties and carry on its business as now conducted, and has full power and authority to execute, deliver and perform its obligations under this Agreement and all other documents related to the Feasibility Study.

5.2 The District is duly authorized to execute and deliver this Agreement and has taken all necessary steps to authorize the execution and delivery of this Agreement, to undertake the Feasibility Study and to perform and consummate all transactions contemplated by this Agreement.

5.3 The undersigned has the full legal authority to execute this Agreement on behalf of the District and to bind the District to its provisions.

5.4 This Agreement does not and will not, to any material extent, conflict with, or result in violation of any applicable provisions of law, including, but not limited to, any statute, charter, by-law, ordinance, rule or regulation, or any judgment, order, rule or regulation of any court or other agency of government.

5.5 The District has all requisite legal power and authority to own and operate the School that is the subject of the Feasibility Study and to undertake and oversee the Feasibility Study or, in the case of a school facility that is leased by the District, the District has all of the requisite legal power and authority to control and operate the School that is the subject of the Feasibility Study and to undertake and oversee the Feasibility Study pursuant to a lease which assures that the District has exclusive jurisdiction and control of the School and the land upon which it is situated for the anticipated useful life of the Proposed Project.

5.6 No information furnished by or on behalf of the District to the Authority in this Agreement, the Budget, the Initial Compliance Certification, or any other document, certificate or written statement furnished to the Authority in connection with the Feasibility Study contains any untrue statement of a material fact or omitted, omits or will omit to state a material fact necessary in order to make the statements contained in this Agreement or therein not misleading in light of the circumstances in which the same were made.

5.7 The District has duly obtained all necessary votes, resolutions, authorizations, appropriations and local approvals, in accordance with formats prescribed by or otherwise acceptable to the Authority, and has taken all actions necessary or required by law to enable it to enter into this Agreement and to fund and perform its obligations hereunder, in accordance with the Authority's guidelines, regulations, policies and

standards. This Agreement constitutes a valid and binding obligation of the District, enforceable in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, moratorium, reorganization or other laws heretofore or hereafter enacted and general equity principles.

5.8 No litigation before or by any court, public board or body is pending or threatened against the District or the Authority seeking to restrain or enjoin the execution and delivery of this Agreement or the Feasibility Study, or contesting or affecting the validity of this Agreement or the power of the District to pay its share of the Feasibility Study.

5.9 The District has implemented policies and procedures to prevent and eliminate fraud, waste and abuse of public funds in connection with the Feasibility Study and any future construction or renovation projects that may be forthcoming as a result of the Feasibility Study.

5.10 The District has submitted all audit materials requested by the Authority in connection with any project for which the District has received or anticipates receiving funding from the Authority.

5.11 All meetings of all public bodies in the District that relate in any way to the Proposed Project, including, but not limited to, the meetings of the District's school building committee, have been conducted, and shall be conducted, in compliance with the provisions of G.L. c. 30A, §§ 18 – 25, 940 CMR 29.00 *et seq.*, the so-called Open Meeting Law, and all other applicable law.

## SECTION 6 INSURANCE

6.1 The District shall obtain and maintain all insurance required by law and insurance of such types and limits and upon such terms and conditions as may be required by, or as may be acceptable to, the Authority.

6.2 The District shall require by contractual obligation, and shall also ensure by the exercise of due diligence, that any Designer hired by the District in connection with the Feasibility Study obtain and maintain, at a minimum, insurance of such types and limits and upon such terms and conditions as may be required by law and as may be prescribed by the Authority in the Design Contract between the Designer and the District.

6.3 Except where the Owner's Project Manager is an existing employee of the District, the District shall require by contractual obligation, and shall also ensure by the exercise of due diligence, that any Owner's Project Manager hired by the District obtain and maintain, at a minimum, insurance of such types and limits and upon such terms and conditions as may be required by law and as may be prescribed by the Authority in its standard contract for Owner's Project Manager services which is incorporated by reference herein.

## SECTION 7 COMPLIANCE WITH CONTRACT DOCUMENTS, PROJECT PERMITS AND OTHER APPLICABLE LAW

7.1 The District shall take all reasonable actions designed to ensure that the Feasibility Study complies with all applicable contract documents, building codes, laws, rules and regulations and to ensure that all necessary project permits have been obtained. Notwithstanding any right of approval or review held or exercised by the Authority in connection with this Agreement or the Feasibility Study, the District shall be responsible for the successful performance and completion of the Feasibility Study in accordance with this Agreement, the Design Contract, design documents and project permits, if any, and for the economical and efficient operation and administration of the Feasibility Study.

## SECTION 8 DEFAULTS AND REMEDIES

8.1 The occurrence of any of the following events shall constitute, and is herein defined to be, an Event of Default under this Agreement:

(a) If the District shall fail to perform and observe any covenant, agreement or condition on its part provided in this Agreement and such failure shall continue for a period of thirty (30) days after written notice thereof shall be given to the District by the Authority; provided if such failure cannot be remedied within such thirty (30) day period, it shall not constitute an Event of Default hereunder if corrective action satisfactory to the Authority, as determined by the Authority in writing, is instituted by the District within such period and diligently pursued until the failure is remedied. Any forbearance or failure of the Authority in giving such written notice shall not amount to any waiver of the Authority's rights under this Agreement as to the same or subsequent breaches and shall not preclude the Authority from pursuing any of its rights or remedies provided under this Agreement or as otherwise provided by law.

(b) If any representation or warranty made by the District in this Agreement or in any other agreement entered into by the District with the Authority shall prove to have been incorrect or to be misleading in any material respect.

8.2 If any Event of Default hereunder shall occur and be continuing, the Authority may proceed to protect its rights under this Agreement, and may: (a) terminate this Agreement, (b) permanently withhold or temporarily suspend payment of any eligible, approved costs to the District, (c) recover any payments of eligible, approved costs previously made to the District, and/or (d) exercise any other right or remedy upon such default as may be granted to the Authority under this Agreement or under any other applicable provision of law.

8.3 No remedy conferred upon or reserved to the Authority is intended to be exclusive and every such remedy shall be cumulative and shall be in addition to every

other remedy given under this Agreement or now or hereafter existing at law or in equity. No delay or omission to exercise any right, remedy or power accruing upon any Event of Default shall impair any such right, remedy or power or shall be construed to be a waiver thereof, but any such right, remedy or power may be exercised from time to time and as often as the Authority may deem expedient.

## SECTION 9 OTHER TERMS

9.1 Governing Law. This Agreement shall be governed by, construed, and enforced in accordance with, the laws of the Commonwealth of Massachusetts.

9.2 Venue. Any civil action brought against the Authority by the District, or any person or entity claiming by, through or under it, that arises out of the provisions of this Agreement, shall only be brought in the Superior Court for Suffolk County, Massachusetts. The District, for itself and for any person or entity claiming by, through or under it, hereby waives any defenses that it may have as to the venue to which it has agreed herein, including, but not limited to, any claim that this venue is improper or that the forum is inconvenient. The District for itself and for any person or entity claiming by, through or under it, hereby waives all rights, if any, to a jury trial in any such civil action that may arise out of the provisions of this Agreement.

9.3 Indemnification of the Authority by the District. To the fullest extent permitted by law, the District shall indemnify and hold harmless the Authority and its officers, agents and employees from and against any and all claims, actions, damages, liabilities, injuries, costs, fees, expenses, or losses, including, without limitation, reasonable attorney's fees and costs of investigation and litigation, whatsoever which may be incurred by, or for which liability may be asserted against, the Authority or any of its officers, agents or employees arising out of any activities undertaken by, for, or on behalf of the District in the execution or implementation of this Agreement or with respect to the Feasibility Study, including, but not limited to, the performance of any contract or obligation directly or indirectly related to the Feasibility Study. Such obligation shall not be construed to negate or abridge any other obligation of indemnification running to the Authority which would otherwise exist.

9.4 Members, Employees Not Liable. No member or employee of the Authority shall be charged or held personally or contractually liable by or to the District under any term or provision of this Agreement or because of any breach thereof or because of its execution or attempted execution.

9.5 Assignability. The District shall not assign any interest, in whole or in part, in this Agreement and shall not transfer any interest in the same, whether by assignment or novation, without the prior written approval of the Authority.

9.6 Payment Not A Waiver.

The Authority's payment(s) to the District under this Agreement or its review, approval or acceptance of any actions by the District under this Agreement shall not operate as a waiver of any rights under this Agreement and the District shall remain liable to the Authority for all damages incurred by the Authority as a result of the District's failure to perform in accordance with the terms and conditions of this Agreement.

The rights and remedies of the Authority provided for under this Agreement are in addition to any other rights or remedies provided by law. The Authority may assert a right to recover damages by any appropriate means, including, but not limited to, set-off, suit, withholding, recoupment, or counterclaim either during or after performance of this Agreement.

9.7 Notices. Any notices required or permitted to be given by either of the Parties hereunder shall be given in writing and shall be delivered to the addressee (a) in-hand (b) by certified mail, postage prepaid, return receipt requested; (c) by facsimile; or (d) by a commercial overnight courier that guarantees next day delivery and provides a receipt, and such notices shall be addressed as follows:

If to the Authority:

Massachusetts School Building Authority  
40 Broad Street, Suite 500  
Boston, MA 02109  
Attention: Director of Capital Planning  
Facsimile: (617) 720-8460

If to the District:

Town of Southborough  
53 Parkerville Road  
Southborough, MA 01772  
Attention: Superintendent  
Facsimile: 508-486-5102

or to such other address or addressee as the District and the Authority may from time to time specify in writing. Any notice shall be effective only upon receipt, which for any notice given by facsimile shall mean notice that has been received by the party to whom it is sent as evidenced by a confirmation slip that bears the time and date of receipt.

9.8 Severability. If any provisions of this Agreement shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such provision shall not affect any of the remaining provisions of this Agreement, and this Agreement shall be construed and enforced as if such invalid or unenforceable provision had not been contained herein.

District Name: Town of Southborough  
School Name: Margaret A. Neary Elementary School  
Project ID Number: 202102760020

9.9 Counterparts. This Agreement may be executed in one or more counterparts, any of which shall be regarded for all purposes as an original and all of which constitute but one and the same instrument. Each party agrees that it will execute any and all documents or other instruments, and take such other actions as may be necessary to give effect to the terms of this Agreement.

9.10 No Waiver. No waiver by either party of any term or conditions of this Agreement shall be deemed or construed as a waiver of any other terms or conditions, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach, whether of the same or of a different section, subsection, paragraph, clause, phrase, or other provision of this Agreement.


9.11 Integration. This Agreement merges and supersedes all prior negotiations, representations, and agreements between the Parties hereto relating to the Feasibility Study and constitutes the entire agreement between the Parties hereto with respect to the Feasibility Study and the Authority's funding of a portion of the eligible, approved costs of the Feasibility Study.

9.12 Amendments. This Feasibility Study Agreement may be amended only through a written amendment signed by duly authorized representatives of the District and the Authority.

IN WITNESS WHEREOF, the Parties have executed this Agreement on this 1st day of June, 2023.

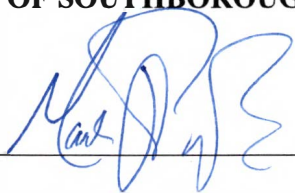
**MASSACHUSETTS SCHOOL BUILDING AUTHORITY**

By,

  
\_\_\_\_\_  
John K. McCarthy  
Executive Director

**TOWN OF SOUTHBOROUGH**

By,

  
\_\_\_\_\_

\_\_\_\_\_  
NAME (type or print)

\_\_\_\_\_  
TITLE (type or print)

**EXHIBIT A**

**FEASIBILITY STUDY BUDGET**

**Town of Southborough  
Margaret A. Neary Elementary School**

The total Budget for the Feasibility Study conducted pursuant to this Agreement, which is attached hereto and incorporated by reference herein, shall be no more than \$950,000 based upon the following estimates:

Owner's Project Manager:	\$200,000
Designer:	\$600,000
Environmental and Site Testing:	\$100,000
Other:	\$50,000

## **EXHIBIT B**

### **SCOPE OF THE FEASIBILITY STUDY**

#### **Town of Southborough Margaret A. Neary Elementary School**

The Scope of the Feasibility Study conducted under this Agreement, which is attached hereto and incorporated by reference herein, shall consist of the development of a Feasibility Study/Schematic Design for the evaluation of a renovation of the existing school, a renovation of and addition to the existing school and/or new construction for the Margaret A. Neary Elementary School (the “Proposed Project”) in the Town of Southborough (the “District”). Pursuant to the Massachusetts School Building Authority’s (the “MSBA”) regulations, 963 CMR 2.06, the space allowance for the Proposed Project shall meet all applicable MSBA regulations and guidelines.

The Feasibility Study shall contain all information required by 963 CMR 2.10(8) and any other applicable rules, regulations, policies, guidelines and directives of the MSBA including, but not limited to, a final design program, educational space summary, budget statement for preferred educational objectives, and a proposed total project budget. The Feasibility Study for this Proposed Project will examine the following enrollment options:

<b>Enrollment for Grades 4-5 at the Margaret A. Neary Elementary School</b>	<b>Enrollment for Grades 3-5 at a Consolidated Margaret A. Neary Elementary School and Woodward Elementary School</b>	<b>Enrollment for Grades 2-5 at a Consolidated Margaret A. Neary Elementary School and Woodward Elementary School</b>
305 students	450 students	610 students

The District will prepare and submit to the MSBA the educational space summaries for all options in the table above, for review and acceptance. Upon acceptance of the educational space summaries, the District will commence with the evaluation of alternatives. The Schematic Design that is developed pursuant to this Agreement shall be based upon the final design enrollment, which shall be subject to the written approval of the MSBA. The Schematic Design shall include, but not be limited to, the information required by the MSBA’s Feasibility Study Guidelines, including, but not limited to, a site development plan, environmental assessment, geotechnical assessment, geotechnical analysis, code analysis, utility analysis, schematic building floor plans, schematic exterior building elevations, narrative building systems descriptions, NE-CHPS scorecard or LEED for Schools checklist, outline specifications, cost estimates, project schedule and proposed total project budget.

In conducting the Feasibility Study and developing the Schematic Design, the District shall, in a sufficient and timely manner as determined by the MSBA, initiate such notification procedures, undertake such review processes, and obtain such determinations and approvals as may be required by 963 CMR 2.03(2)(h) & (i), including, but not limited to, such procedures, reviews, determinations, and approvals as may be required by the Massachusetts Historical Commission (the “MHC”) and/or the Massachusetts Environmental Policy Act. At its earliest opportunity, the



District shall seek a written determination from the MHC as to whether the MHC intends to undertake a review of the Proposed Project.

The District shall be responsible for conducting such geotechnical evaluations, site investigations, soils explorations and environmental assessments as are reasonable and necessary to determine whether any significant environmental, geotechnical or other physical conditions exist that may have an impact upon eventual construction on the proposed site. The MSBA may require the District to fully fund certain environmental or geotechnical site testing beyond initial investigatory costs. The MSBA shall bear no responsibility or liability of any sort for the results of any geotechnical evaluations or site testing, soils explorations, environmental assessments, nor for any site remediation, clean-up, or other site remediation services.

The development of the Schematic Design shall be subject to continuing review by the MSBA in accordance with the provisions of this Agreement, the MSBA's Feasibility Study guidelines and any other applicable rule, regulation, policy, guideline or directive of the MSBA. The District shall be responsible for submitting to the MSBA all documentation that is required to complete the Feasibility Study and Schematic Design and to support the preparation of a Project Scope and Budget Agreement.

# Exhibit C

Calendar Year 2023

Southborough

Margaret A. Neary Elementary School - 202102760020

## **MSBA Reimbursement Rate Calculationn**

Base Points	31.00
Income Factor	-
Property Wealth Factor	8.84
Poverty Factor	-
<i>Subtotal: Reimbursement Rate Before Incentives</i>	39.84
<b><u>Incentive Points</u></b>	
Maintenance (0-2)	-
CM @ Risk (0-1)	-
Only projects invited to Capital Pipeline prior to 1/2/17	
Newly Formed Regional District (0-6)	-
Major Reconstruction or Reno/Reuse (0-5)	-
Overlay Zoning 40R & 40S (0-1)	-
Overlay Zoning 100 units or 50% of units for 1, 2 or 3 family structures (0-0.5)	-
Energy Efficiency - "Green Schools" (0 or 2)	-
Model Schools (5)	-
Only projects invited to Capital Pipeline prior to 1/2/16	
<b>Total Incentive Points</b>	-
<b>MSBA Reimbursement Rate</b>	39.84

## C.Design Enrollment Certification



# Massachusetts School Building Authority

**Deborah B. Goldberg**  
*Chairman, State Treasurer*

**James A. MacDonald**  
*Chief Executive Officer*

**John K. McCarthy**  
*Executive Director / Deputy CEO*

March 15, 2023

Mr. Mark J. Purple, Town Administrator  
Southborough Town House  
17 Common Street  
Southborough, MA 01772

Re: Town of Southborough, Margaret A. Neary Elementary School

Dear Mr. Purple:

I would like to thank representatives of the Town of Southborough (the “District”) for meeting with Massachusetts School Building Authority (the “MSBA”) staff on January 19, 2023, to review enrollment projections and methodologies for the Margaret A. Neary Elementary School project (the “Proposed Project”). We also appreciate the additional information provided by the District on January 30, 2023, specific to local birth records. As discussed, the next critical step is for the MSBA and the District to agree on a study enrollment for the Proposed Project.

The MSBA works with local communities to create affordable, sustainable, and energy efficient schools across Massachusetts. A critical early component in achieving these objectives begins with an appropriate design enrollment that positions the District to efficiently meet space capacity needs throughout potential future enrollment variations.

The MSBA uses a data driven enrollment projection methodology based on the widely accepted modified grade-to-grade cohort survival methodology (the “enrollment methodology”). The MSBA’s enrollment methodology generates a baseline enrollment projection as discussed during the January 19, 2023, enrollment meeting, and as further described on the MSBA’s website found under the ‘Building With Us’, ‘MSBA Enrollment Methodology’ section. For specifics on how the MSBA’s methodology impacts the Proposed Project, please refer to the District’s Enrollment Projection package, provided to the District on January 17, 2023.

Based on information supplied by the District, data from sources such as the Department of Elementary and Secondary Education (“DESE”) and Department of Public Health, and discussion with the District, the MSBA has been able to create an enrollment projection for the Proposed Project, as follows.

The Margaret A. Neary Elementary School presently serves the District’s grades 4-5 enrollment. The MSBA understands that in order to reduce elementary school transitions the District would like the Feasibility Study to include options that consolidate the Margaret A. Neary Elementary School with the Woodward Elementary School to create a school serving students in grades 2-5.

Accordingly, this analysis will be focused on the enrollment projections for grades 2-5. The table below illustrates the District's K-8 enrollment during the most recent ten-year period, including enrollment for the most recent school year (2022-2023) as reported by DESE.

<b>School Year</b>	<b>K-1</b>	<b>2-3</b>	<b>4-5</b>	<b>6-8</b>	<b>Total</b>
2013-2014	216	275	320	522	1,333
2014-2015	226	282	294	494	1,296
2015-2016	249	241	296	479	1,265
2016-2017	250	245	298	459	1,252
2017-2018	250	266	258	460	1,234
2018-2019	244	258	258	431	1,191
2019-2020	257	258	268	415	1,198
2020-2021	246	253	252	381	1,132
2021-2022	231	269	260	383	1,143
2022-2023	260	268	267	385	1,180

A version of the above table with more detail regarding the District's historic enrollment may also be found on page 6 in the District's Enrollment Projection package.

The total grade 4-5 enrollment in the Town of Southborough as reported by the District for the 2022-2023 school year was 267 students, which reflects a decrease of 53 students (- 19.8%) from the grade 4-5 enrollment reported in the 2013-2014 school year, which was the maximum grade 4-5 enrollment reported in the preceding ten years. Additionally, the current year's grade 4-5 enrollment reflects a decrease of approximately ten students (- 3.8%) from the average grade 4-5 enrollment reported during the preceding ten-year period.

The MSBA understands that the District is proposing an enrollment of 556 students in grades 2-5 at a consolidated Margaret A. Neary and Woodward Elementary School to reduce elementary school transitions. The enrollment in grades 2-5 reported to DESE for the 2022-2023 school year was 535 students.

With respect to future enrollments, the MSBA's base enrollment projection indicates the District's grade 4-5 enrollment is projected to experience an increasing trend through the 2032-2033 school year. In accordance with the MSBA's Enrollment Methodology, the baseline enrollment is calculated using the ten-year average of projected enrollments. As such, the average grade 4-5 base enrollment projection for the Proposed Project through the 2032-2033 school year is as follows:

- The average grade 4-5 base enrollment projection is 285 students.
- The average grade 3-5 base enrollment projection is 430 students.
- The average grade 2-5 base enrollment projection is 580 students.

As a result of a sensitivity analysis performed by the MSBA on this base enrollment projection and further discussion with the District, the following adjustments have been made to the base enrollment projection:

- Out-of-District Enrollment
  - In order to adjust for fluctuations to the out-of-district enrollment patterns of the District's residents over time, the MSBA has made an additional adjustment to the base enrollment projection.
  - In order to make this adjustment, the MSBA adjusted the grade-to-grade survival ratios for grades 2-5 by a total of 3.3% throughout a four-year period in the projection.
  - This adjustment added the following totals to the projected averages for the District's proposed grade configurations as compared to the base enrollment projection:
    - For grades 4-5, the adjustment added approximately ten students.
    - For grades 3-5, the adjustment added approximately ten students.
    - For grades 2-5, the adjustment added approximately 15 students.
- Development
  - Based on the discussions between the District and the MSBA, and the anticipated development information provided by the District, the MSBA enrollment model has been adjusted to use the five-year 75th percentile cohort survival rate for fiscal year 2024 rather than the five-year average cohort survival rate, which is utilized throughout the base enrollment forecast.
  - This adjustment added the following totals to the projected averages for the District's proposed grade configurations as compared to the base enrollment projection:
    - For grades 4-5, the adjustment added approximately ten students.
    - For grades 3-5, the adjustment added approximately ten students.
    - For grades 2-5, the adjustment added approximately 15 students.

As a result of the analysis on the base enrollment forecast, the historical enrollment trends of the District, and the adjustments described above, the MSBA recommends for planning and study purposes only, study enrollments for the Proposed Project as follows:

- Grades 4-5: 305 students
- Grades 3-5: 450 students
- Grades 2-5: 610 students

Please note that these recommendations for multiple study enrollments do not represent an affirmation by the MSBA for approval and/or funding of any of these options and are intended only to provide a framework to inform the feasibility study to be conducted as a means of determining the most cost effective and educationally sound solution to be agreed upon by the District and the MSBA. The MSBA's study enrollment recommendations assume full utilization of all remaining school facilities.

March 15, 2023

Southborough, Margaret A. Neary Elementary School Enrollment Letter

If either the grade 3-5 or grade 2-5 enrollment configurations are determined to be the Preferred Solution, the District will be required to establish in the Preferred Schematic Report the proposed future use or disposition of any existing spaces vacated or otherwise reprogrammed by this Potential Project and that the Preferred Solution has been approved by the School Committee and other necessary District officials. Further, the MSBA will require a written plan from the District describing the process for determining local support for potential consolidation. Upon approval of the District's Preferred Solution, the MSBA will forward a design enrollment certification that is specific to the grade configuration associated with the approved Preferred Solution.

The MSBA believes that this study enrollment recommendation will position the District to efficiently meet space capacity needs throughout future enrollment variations. Please sign and return the attached certification within 21 calendar days to confirm agreement on this study enrollment. If the District feels that this enrollment does not meet the needs of the District, please respond to this letter via e-mail to Allison Sullivan and propose three meeting/conference call times for which the District can be available to discuss enrollment.

If you have any questions regarding this matter, please do not hesitate to contact me or (Allison. Sullivan(@MassSchoolBuildings.org) at 617-720-4466.

Sincerely,



Mary Pichetti  
Director of Capital Planning

Cc: Legislative Delegation  
Kathryn M. Cook, Chair, Southborough Select Board  
Roger W. Challen, Chair, Southborough School Committee  
Gregory Martineau, Superintendent, Southborough Public Schools  
File: 10.2 Letters (Region 2)

## E. Property Deeds



See Plan Book  
209, Plan 119

I, Eva B. Davis

of Southborough

Worcester County, Massachusetts,

being ~~un~~married, for consideration paid, grant to Inhabitants of the Town of South-

borough, a municipal corporation located in said county,

~~and~~

with quitclaim covenants

~~xxxxxxx~~ A certain parcel of land situated southerly of the southerly side of Main Street in said Southborough and bounded and described as follows:  
(Description and encumbrances, if any)

Beginning at the northeast corner of the granted premises at a stonewall on the southeast corner of the land of Pilgrim Congregational Society and at the westerly side of the land of Mary M. Bates this day conveyed to the grantee; thence south  $17^{\circ} 55' 40''$  west by said stonewall and land of said Bates, three hundred twenty-nine and  $50/100$  (329.50) feet to land of the Trustees under Clause Nine of the Will of Charles F. Choate, late of said Southborough (popularly known as Choate Memorial Park); thence north  $72^{\circ} 4' 20''$  west by land of said Trustees, two hundred twenty and  $18/100$  (220.18) feet to other land of said Trustees; thence north  $0^{\circ} 7'$  west by land of said Trustees, three hundred fifty-two and  $66/100$  (352.66) feet to the end of the stone wall at land of Southborough Village Society, Inc.; thence south  $71^{\circ} 3' 40''$  east by land of said Society, other land of the grantor, land of Elizabeth F. Staples, land of Pilgrim Congregational Society, partly by a stone wall bounding the southerly line of the land of said Davis, Staples and Pilgrim Congregational Society, three hundred twenty-nine and  $50/100$  (329.50) feet to the point of beginning.

Containing 2.09 acres, more or less, and being shown as Lot B on "Plan of Proposed Taking of Land in Southborough, Mass. by the Town of Southborough for Municipal Purposes", scale 40' to an inch, March 12, 1951, revised February 3, 1954, Francis B. Thompson, Registered Land Surveyor, Cert. #5163, 25 Foster Street, Worcester, Mass.



I, William N. Davis,

husband  
~~xxxx~~ of said grantor,

release to said grantee all rights of tenancy by the curtesy and other interests therein.  
~~xxxx and xxxxxxxx~~

Witness ~~our~~ hands and seals this 20<sup>th</sup> day of March, 1954.

*Eva B. Davis*  
*William N. Davis*

The Commonwealth of Massachusetts

Worcester,

ss.

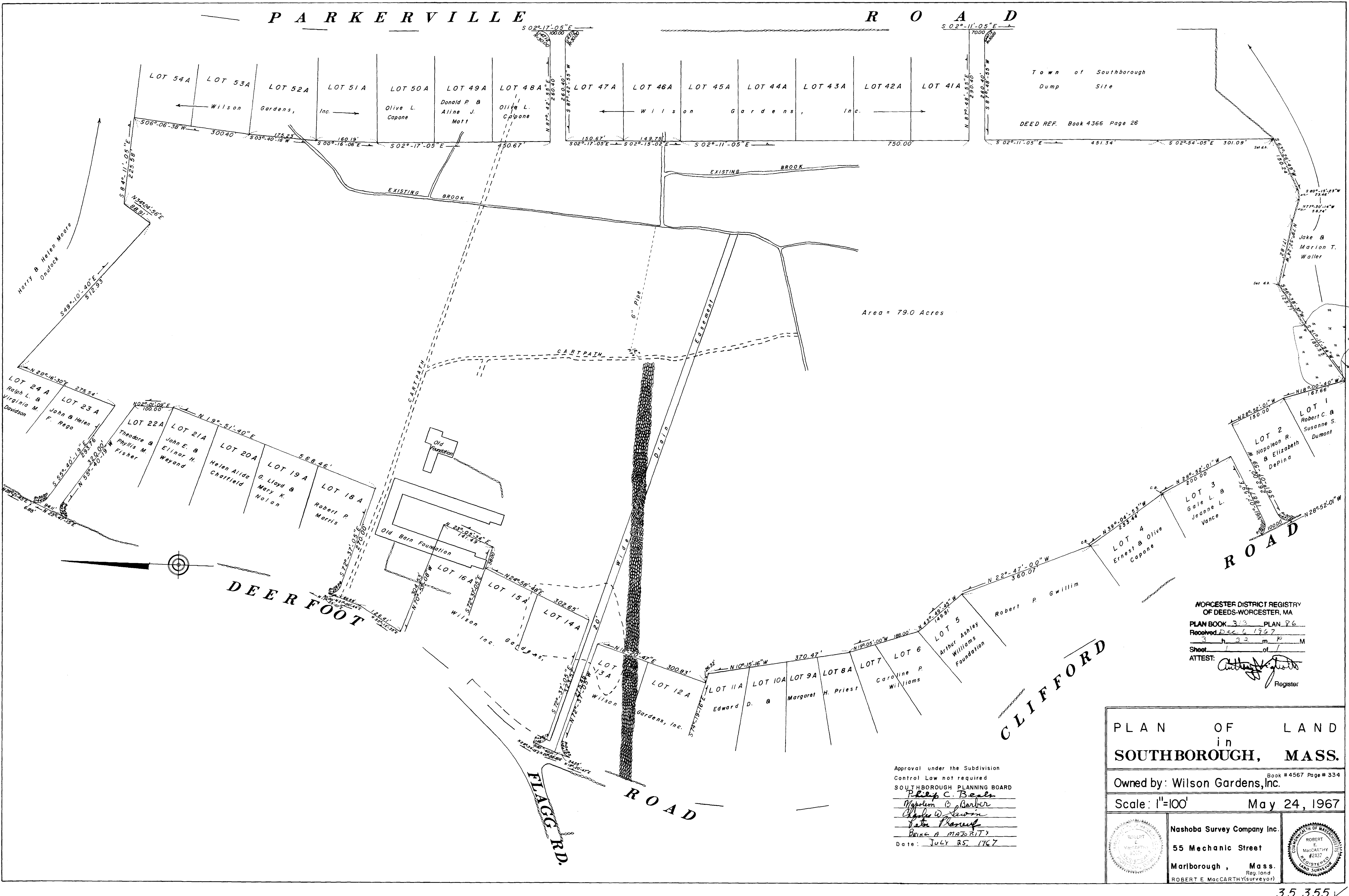
March 20, 1954.

Then personally appeared the above named Eva B. Davis and William N. Davis

and acknowledged the foregoing instrument to be their free act and deed, before me



*Alfred W. Howe*  
Notary Public — ~~xxxxxxx~~  
My commission expires May 2, 1958  
(ALFRED W. HOWE)



Area = 79.0 Acres

Town of Southborough  
Dump Site

DEED REF. Book 4366 Page 26

WORCESTER DISTRICT REGISTRY  
OF DEEDS-WORCESTER, MA  
PLAN BOOK 313 PLAN 86  
Received Dec 6 1967  
3 h 32 m P M  
Sheet of 1  
ATTEST: *Anthony V. [Signature]*  
Register

Approval under the Subdivision  
Control Law not required  
SOUTHBOROUGH PLANNING BOARD  
*Philip C. Beale*  
*Napoleon B. Barber*  
*Robert W. Lawton*  
*John P. [Signature]*  
BEING A MAJORITY  
Date: JULY 25, 1967

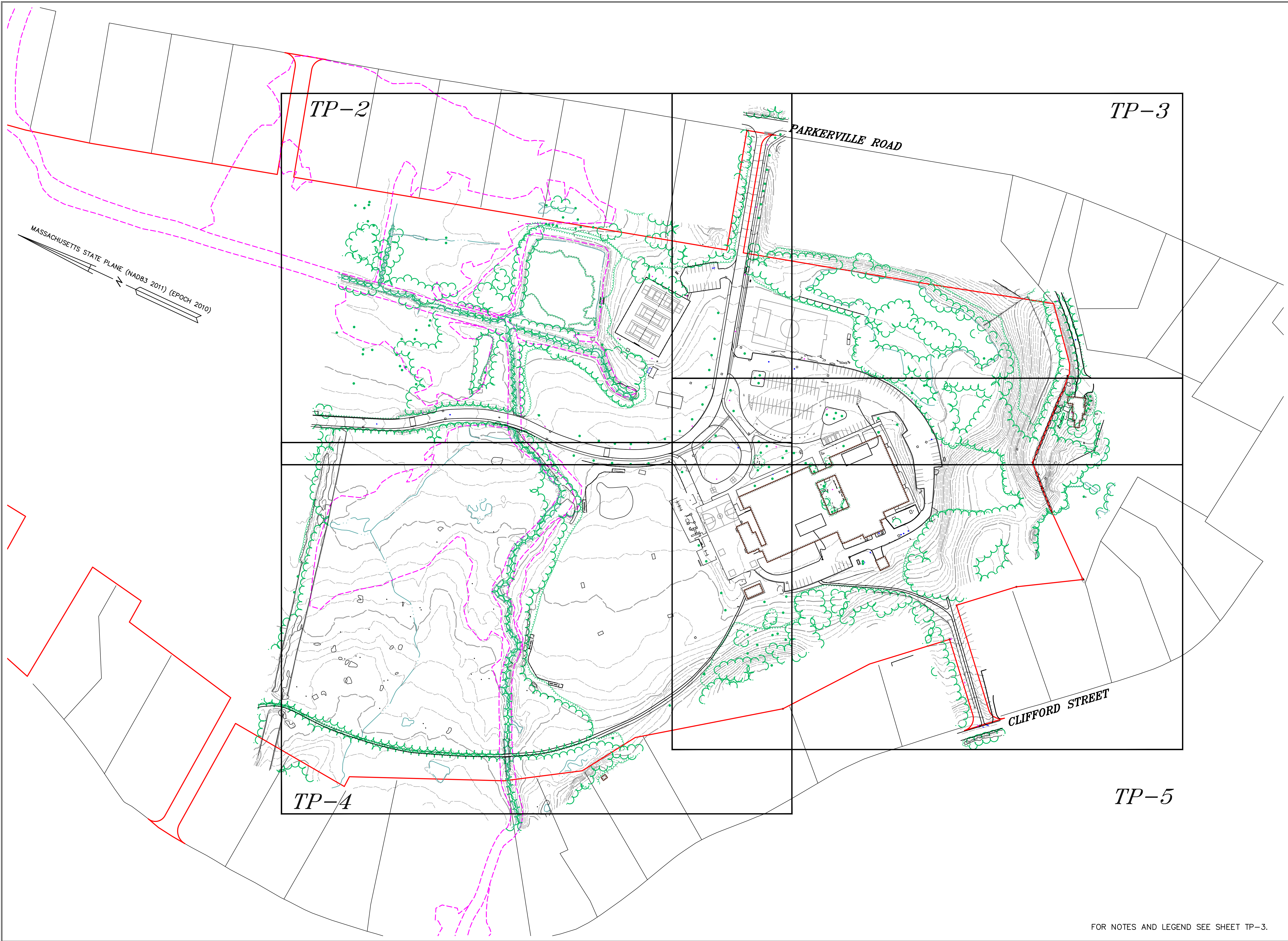
PLAN OF LAND  
in  
SOUTHBOROUGH, MASS.

Owned by: Wilson Gardens, Inc.  
Scale: 1"=100' May 24, 1967

Nashoba Survey Company Inc.  
55 Mechanic Street  
Marlborough, Mass.  
ROBERT E. MACCARTHY (Surveyor)

## F. Existing Conditions Site Survey





PREPARED FOR:

**ARROWSTREET,  
INC.**

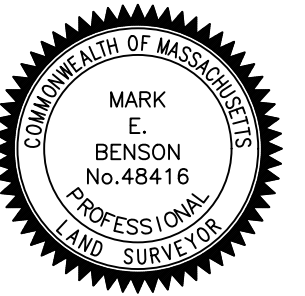
10 POST OFFICE SQUARE  
SUITE 700N  
BOSTON, MA 02109

RECORD OWNER:

**TOWN OF  
SOUTHBOROUGH**

4813/316  
PLAN BOOK 313 PLAN 86  
[45-18]

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	IMS	MEB
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*Mark E. Benson*  
3/22/2024

**TOPOGRAPHIC PLAN**

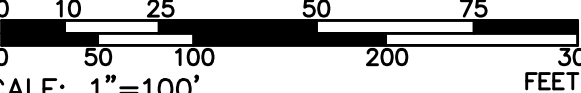
**NEARY ELEMENTARY  
SCHOOL**  
**SOUTHBOROUGH, MA**  
(WORCESTER COUNTY)

PREPARED BY:

**BEALS AND  
THOMAS**

BEALS AND THOMAS, INC.  
144 Turnpike Road, Suite 210  
Southborough, Massachusetts 01772-2104  
T 508.366.0560 | www.bealsandthomas.com

DATE: MARCH 22, 2024



SCALE: 1"=100'

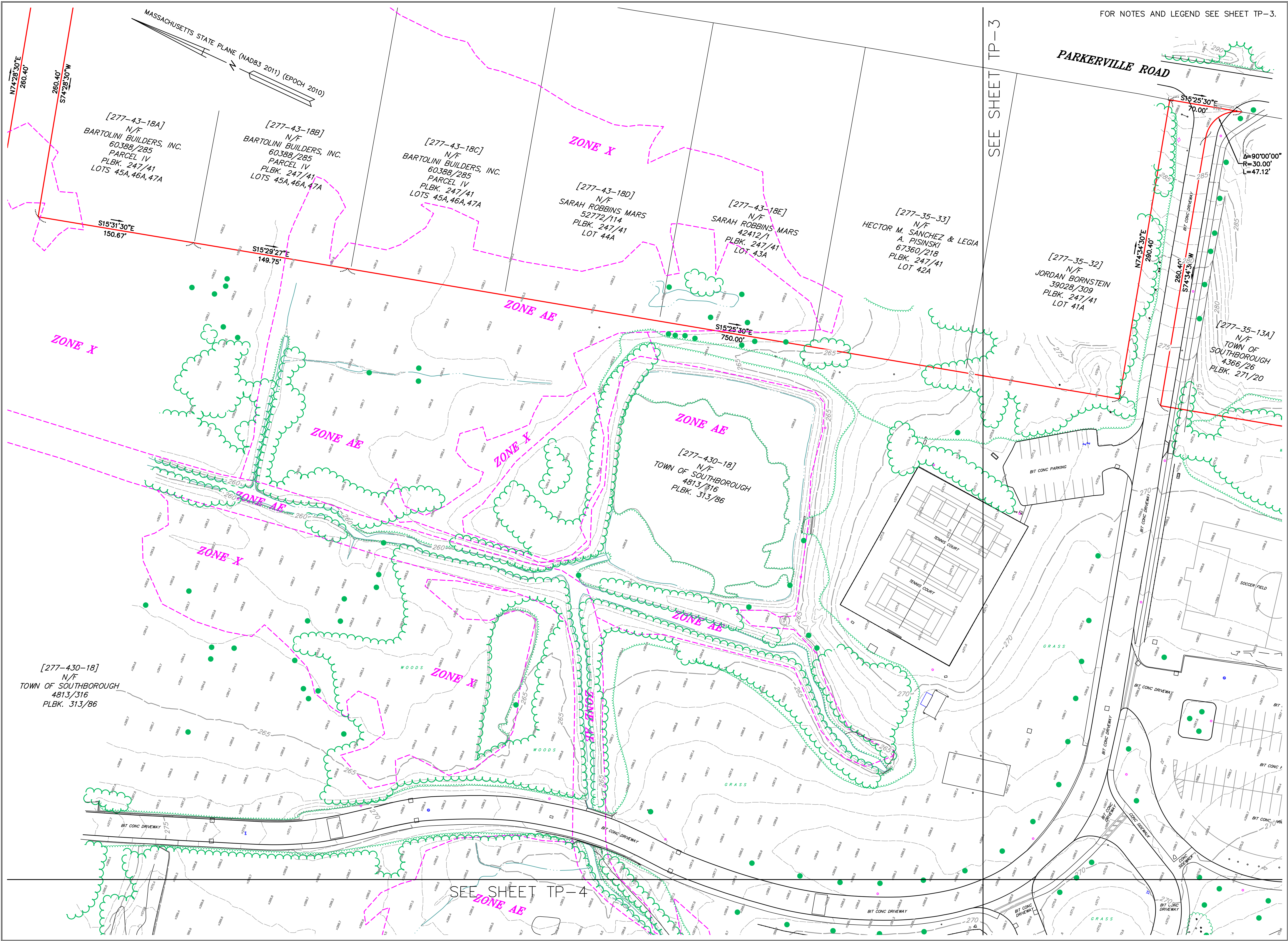
B+T JOB NO. 3506.00

B+T PLAN NO.  
350600P001A-001

SHEET No. 1 OF 5

**TP-1**





FOR NOTES AND LEGEND SEE SHEET TP-3.

PREPARED FOR:  
**ARROWSTREET, INC.**  
10 POST OFFICE SQUARE  
SUITE 700N  
BOSTON, MA 02109

RECORD OWNER:  
**TOWN OF SOUTHBOROUGH**  
4813/316  
PLAN BOOK 313 PLAN 86  
[45-18]

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Mark E. Benson  
3/22/2024

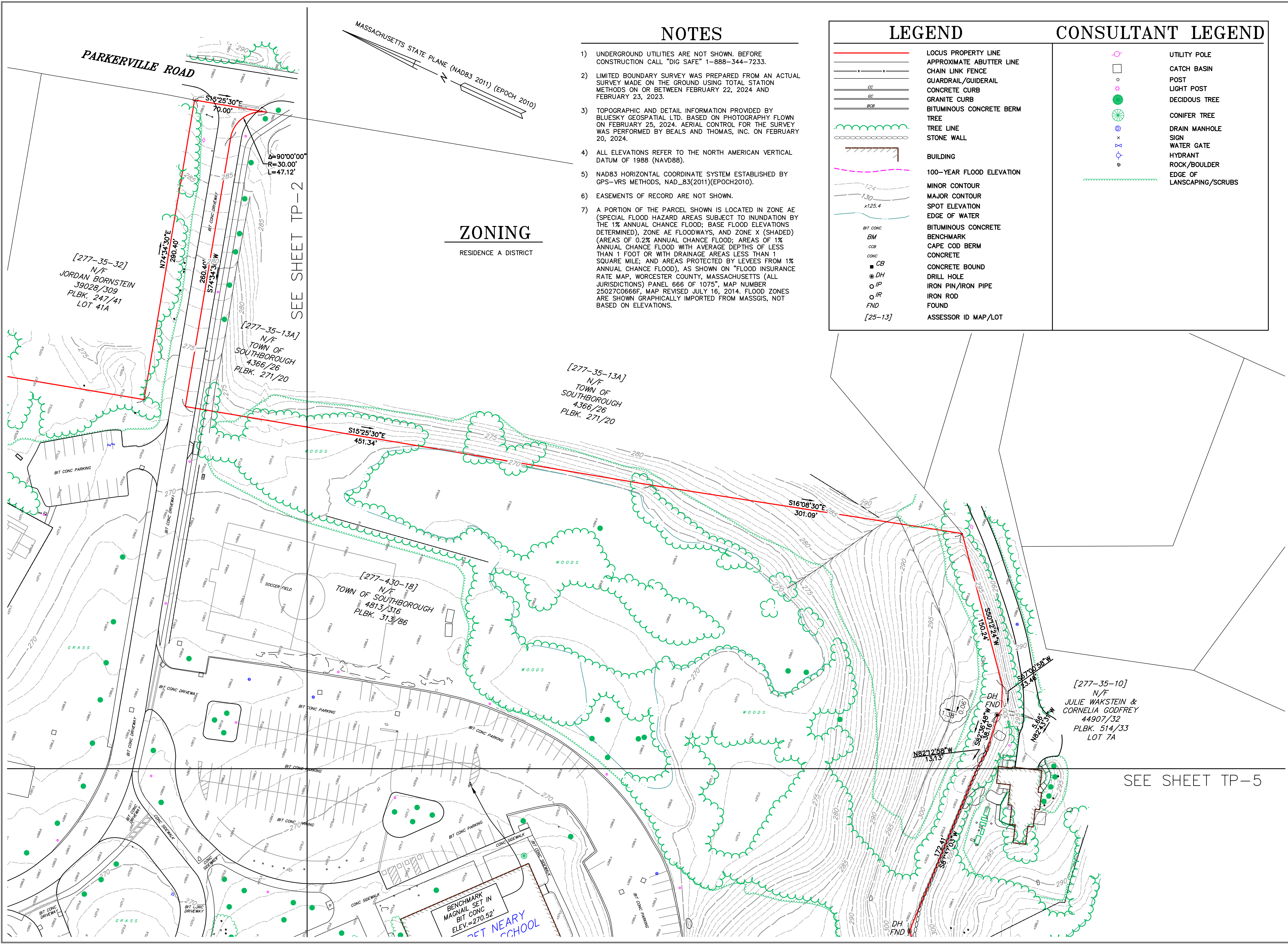
**TOPOGRAPHIC PLAN**  
**NEARY ELEMENTARY SCHOOL**  
**SOUTHBOROUGH, MA**  
(WORCESTER COUNTY)

PREPARED BY:  
**BEALS AND THOMAS**  
BEALS AND THOMAS, INC.  
144 Turnpike Road, Suite 210  
Southborough, Massachusetts 01772-2104  
T 508.366.0560 | www.bealsandthomas.com

DATE: MARCH 22, 2024  
SCALE: 1"=40'  
B+T JOB NO. 3506.00  
B+T PLAN NO. 350600P001A-002  
SHEET No. 2 OF 5

**TP-2**





## NOTES

- 1) UNDERGROUND UTILITIES ARE NOT SHOWN. BEFORE CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233.
- 2) LIMITED BOUNDARY SURVEY WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND USING TOTAL STATION METHODS ON OR BETWEEN FEBRUARY 22, 2024 AND FEBRUARY 23, 2023.
- 3) TOPOGRAPHIC AND DETAIL INFORMATION PROVIDED BY BLUESKY GEOSPATIAL LTD. BASED ON PHOTOGRAPHY FLOWN ON FEBRUARY 25, 2024. AERIAL CONTROL FOR THE SURVEY WAS PERFORMED BY BEALS AND THOMAS, INC. ON FEBRUARY 20, 2024.
- 4) ALL ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 5) NAD83 HORIZONTAL COORDINATE SYSTEM ESTABLISHED BY GPS-VRS METHODS, NAD\_83(2011)(EPOCH2010).
- 6) EASEMENTS OF RECORD ARE NOT SHOWN.
- 7) A PORTION OF THE PARCEL SHOWN IS LOCATED IN ZONE AE (SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD; BASE FLOOD ELEVATIONS DETERMINED), ZONE AE FLOODWAYS, AND ZONE X (SHADED) (AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD), AS SHOWN ON "FLOOD INSURANCE RATE MAP, WORCESTER COUNTY, MASSACHUSETTS (ALL JURISDICTIONS) PANEL 666 OF 1075", MAP NUMBER 25027C0666F, MAP REVISED JULY 16, 2014. FLOOD ZONES ARE SHOWN GRAPHICALLY IMPORTED FROM MASSGIS, NOT BASED ON ELEVATIONS.

## ZONING

RESIDENCE A DISTRICT

## LEGEND

- LOCUS PROPERTY LINE
- APPROXIMATE ABUTTER LINE
- CHAIN LINK FENCE
- GUARDRAIL/GUIDERAIL
- CONCRETE CURB
- GRANITE CURB
- BITUMINOUS CONCRETE BERM
- TREE
- TREE LINE
- STONE WALL
- BUILDING
- 100-YEAR FLOOD ELEVATION
- MINOR CONTOUR
- MAJOR CONTOUR
- SPOT ELEVATION
- EDGE OF WATER
- BITUMINOUS CONCRETE
- BENCHMARK
- CAPE COD BERM
- CONCRETE
- CONCRETE BOUND
- DRILL HOLE
- IRON PIN/IRON PIPE
- IRON ROD
- FOUND
- ASSESSOR ID MAP/LOT

## CONSULTANT LEGEND

- UTILITY POLE
- CATCH BASIN
- POST
- LIGHT POST
- DECIDUOUS TREE
- CONIFER TREE
- DRAIN MANHOLE
- SIGN
- WATER GATE
- HYDRANT
- ROCK/BOULDER
- EDGE OF LANDSCAPING/SCRUBS

PREPARED FOR:

**ARROWSTREET, INC.**

10 POST OFFICE SQUARE  
SUITE 700N  
BOSTON, MA 02109

RECORD OWNER:

**TOWN OF SOUTHBOROUGH**

4813/316  
PLAN BOOK 313 PLAN 86  
[45-18]

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		DWN
		CHK'D



Mark E. Benson  
3/22/2024

## TOPOGRAPHIC PLAN

**NEARY ELEMENTARY SCHOOL**  
**SOUTHBOROUGH, MA**  
(WORCESTER COUNTY)

PREPARED BY:



BEALS AND THOMAS, INC.  
144 Turnpike Road, Suite 210  
Southborough, Massachusetts 01772-2104  
T 508.366.0560 | www.bealsandthomas.com

DATE: MARCH 22, 2024  
SCALE: 1"=40'

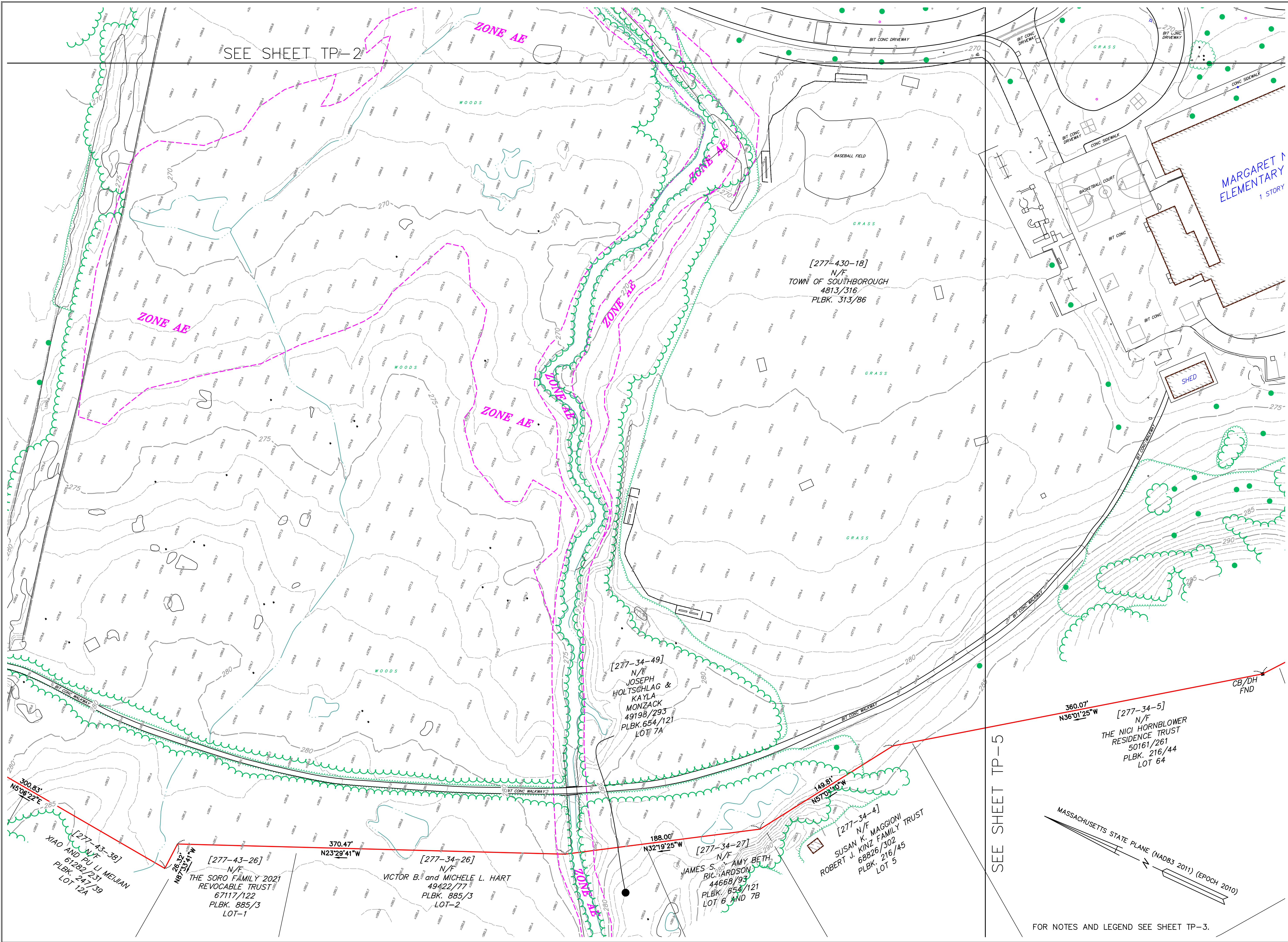
B+T JOB NO. 3506.00

B+T PLAN NO. 350600P01A-003

SHEET No. 3 OF 5

**TP-3**





PREPARED FOR:

**ARROWSTREET, INC.**

10 POST OFFICE SQUARE  
SUITE 700N  
BOSTON, MA 02109

RECORD OWNER:

**TOWN OF SOUTHBOROUGH**

4813/316  
PLAN BOOK 313 PLAN 86  
[45-18]

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		CHK'D




*Mark E. Benson*  
3/22/2024

**TOPOGRAPHIC PLAN**

**NEARY ELEMENTARY SCHOOL**  
**SOUTHBOROUGH, MA**  
(WORCESTER COUNTY)

PREPARED BY:

 **BEALS AND THOMAS**

BEALS AND THOMAS, INC.  
144 Turnpike Road, Suite 210  
Southborough, Massachusetts 01772-2104  
T 508.366.0560 | www.bealsandthomas.com

DATE: MARCH 22, 2024

SCALE: 1"=40'

B+T JOB NO. 3506.00

B+T PLAN NO. 350600P001A-004

SHEET No. 4 OF 5

**TP-4**







## H. Accessibility Evaluation - Itemized Deficiencies

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# ACCESSIBILITY AUDIT REPORT

March 8, 2024

To: Katy Lillich, Arrowstreet  
From: J George  
Cc: Josh Safdie

## Re: Neary Elementary School – Accessibility Audit



ARCHITECTURE  
+ ACCESSIBILITY  
ONE BRIDGE ST  
NEWTON MA  
02458-1132  
KMACCESS.COM  
617.641.2802

On Friday, February 23, 2024, KMA auditors J George and Juan Gomez Velasquez performed a comprehensive accessibility audit of the immediate site, entrances, and all public and employee spaces at Neary Elementary School, located at 53 Parkerville Rd, Southborough, MA. The purpose of this audit was to identify conditions that do not comply with either the Americans with Disabilities Act (ADA) or 521 CMR: the Rules and Regulations of the MA Architectural Access Board (MAAB).

Renovations are planned for this building that are expected to exceed 30% of the full and fair cash value of the building, which will trigger full compliance with 521 CMR. Arrowstreet has been hired as the architect of record and understand that any existing architectural barriers within the project area will need to be mitigated, or a variance from the MAAB sought. The architects will use the findings of this report as a basis for their work.

## Building Description

Neary Elementary School is a one-story school serving students in Grades 4-5. It was originally built in 1968 and underwent minor renovations in 2009. The building includes various classrooms and offices, two gymnasiums, a cafeteria, library, music room, and toilet rooms. Exterior elements include a playground area, multipurpose sports field, soccer field, and courtyard. There is a parking lot serving the building that consists of four designated accessible parking spaces.

## Jurisdictional Overview

Neary Elementary School is defined under the Americans with Disabilities Act as a *place of public accommodation* and under 521 CMR as a *public building*. As such, it will be subject to certain accessibility requirements when the planned alterations are made to the building.

## 521 CMR

521 CMR: the Rules and Regulations of the MAAB is a section of 780 CMR: the MA Amendments to the International Building Code. 521 CMR governs the “design, construction, and renovation of public buildings to make them accessible to, functional for, and safe for use by persons with disabilities.” The specific scoping provisions for renovations are reproduced in part here:

### 3.3 EXISTING BUILDINGS

All additions to, reconstruction, remodeling, and alterations or repairs of existing public buildings or facilities, which require a building permit, or which are so defined by a state or local inspector, shall be governed by all applicable subsections in 521 CMR 3.00: JURISDICTION.

- 3.3.1 If the work being performed amounts to less than 30% of the *full and fair cash value of the building* and
  - a. if the work costs less than \$100,000, then only the work being performed is required to comply with 521 CMR; or
  - b. if the work costs \$100,000 or more, then the work being performed is required to comply with 521 CMR. In addition, an accessible public entrance and an accessible toilet room, telephone, drinking fountain (if toilets, telephones and drinking fountains are provided) shall also be provided in compliance with 521 CMR.
- 3.3.2 If the work performed, including the exempted work, amounts to 30% or more of the full and fair cash value of the building (see definitions in 521 CMR 5.00), the entire building is required to comply with 521 CMR.
- 3.3.3 Alterations by a tenant do not trigger the requirements of 521 CMR 3.3.1b and 3.3.2 for other tenants. However, alterations, reconstruction, remodeling, repairs, construction, and changes in use falling within 521 CMR 3.3.1b and 3.3.2, will trigger compliance with 521 CMR in areas of public use, for the owner of the building.

KMA understands that the Town is considering a renovation to the entire building. Because this renovation is expected to cost greater than 30% of the full and fair cash value of the building, Section 3.3.2 will apply. This means that the Town will have to bring the entire building into compliance with 521 CMR – or request variances not to do so on an issue-by-issue basis, on the basis of *impracticability*.

## 2010 ADA Standards

Title II of the Americans with Disabilities Act (ADA) prohibits discrimination on the basis of disability in State and Local Government Services. It further requires buildings and facilities providing these services to be designed, constructed, and altered in compliance with the accessibility standards established under the ADA.

There are two requirements under Title II of the ADA that require a public entity such as the Town to remove existing barriers to bring an end to and to prevent discrimination against a person or people with disabilities. These two requirements are:

1. **Program Access:** requires that individuals with disabilities be provided an equally effective opportunity to participate in or benefit from a public entity's programs and services. The ADA requires that public entities provide physical and communication access to each program service or activity. The Town needs to identify and correct policies and practices that have the effect of discriminating against individuals with disabilities.
2. **Alterations:** Any alterations that are performed must conform to the version of the ADA Standards in force at the time of the alterations. Alterations may trigger an obligation to perform additional barrier removal outside the planned scope of work. The ADA accessible path of travel requirement states: "When alterations are made to a primary function area that affect the usability of that area, alterations to provide an accessible path of travel to the altered area must also be made unless the cost is disproportionate." Further, the Town is required to maintain its existing facilities to ensure continued, unfettered, and uninterrupted access to persons with disabilities.

**Program Access:** To provide Program Access, the Town's fundamental obligation is to consider who uses their programs and services, and to ensure that individuals with disabilities are afforded an equally effective opportunity to participate in, or benefit from, these programs and services, subject only to the limitations of fundamental alteration and/or undue burden. Therefore, the Town will need to implement policy changes, if necessary, so that persons with disabilities can have full access. Further, the Town will need to continue to make changes to prevent discrimination and continually work to increase accessibility.

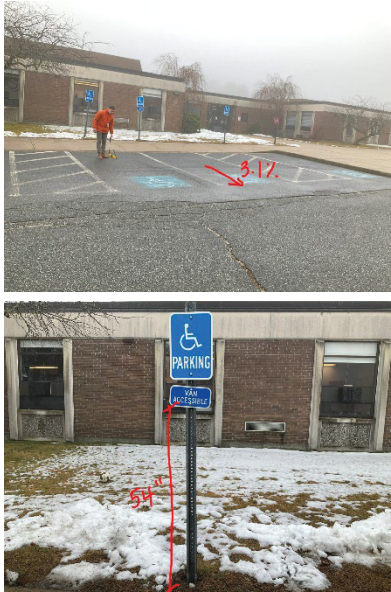


Alterations: Alterations to a primary function area require an accessible path of travel to (entrance) and through (route) the area. Buildings and elements altered after January 23rd, 1993 were required to comply with the 1991 ADA Accessibility Guidelines (“ADAAG”). Buildings and elements altered after March 15, 2012 are required to comply with the 2010 ADA Standards, with the exception that anything altered prior to March 15, 2012 that complies with the 1991 ADA Standards is not required to proactively be brought into compliance with the 2010 ADA Standards.

The alteration requirements under Section 202.4 state in part that “an *alteration* that affects or could affect the usability of or access to an area containing a primary function shall be made so as to ensure that, to the maximum extent feasible, the path of travel to the *altered* area, including the rest rooms, telephones, and drinking fountains serving the *altered* area, are readily *accessible* to and usable by individuals with disabilities.” This means that the Town must establish an accessible entrance to the building and eliminate any instances of non-compliance along the path of travel leading to or within the building.



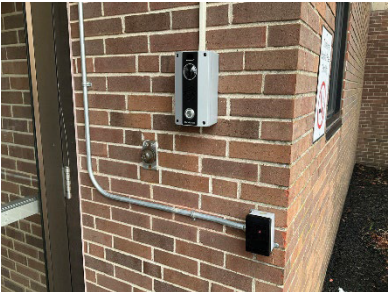
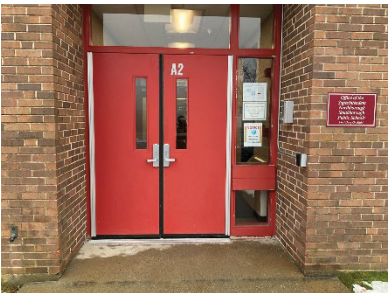
### Summary of Findings

The following table details the barriers noted during our audit that would need to be mitigated in order to satisfy the above requirements under the ADA and 521 CMR. Please note that this was a comprehensive audit, and so any items within the project area that are not mentioned may be assumed to fully comply with 521 CMR and the ADA Standards.





## EXTERIOR & ENTRANCE ISSUES


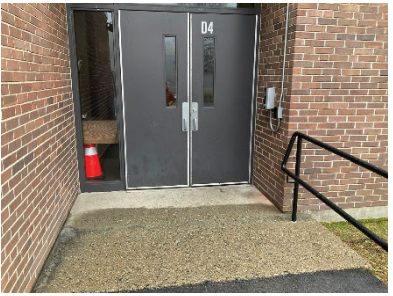


#	Barrier	Photo
1.	<p><b>Accessible Parking Spaces</b></p> <p>There is an insufficient number of accessible parking spaces provided. For a parking lot with 151-200 total spaces, six accessible parking spaces are required, one of which must be van accessible. Currently, one van and three standard accessible parking spaces are provided.</p> <p><i>Quantity: 3 (2 spaces, 1 aisle)</i></p> <p>The designated accessible parking spaces are not distributed between the two accessible entrances.</p> <p><i>Quantity: 6 (4 spaces, 2 aisles)</i></p> <p>The designated accessible parking spaces have slopes &gt;2%, @ 3.1%.</p> <p><i>Quantity: 6 (4 spaces, 2 aisles)</i></p> <p>The bottom of the van accessible parking sign is &lt;60" AFF, @ 54".</p>	
2.	<p><b>Curb Ramp near Accessible Parking</b></p> <p>The landing at the top of the curb ramp is &lt;48" long, @ 24".</p> <p>The curb ramp has running slopes &gt;8.3%, @ 9.6%, and creates cross-slopes &gt;2% along the accessible path of travel.</p>	
3.	<p><b>Bus Drop-off &amp; Passenger Loading Zones</b></p> <p>There are no curb ramps provided at the passenger loading zones and bus drop-off area.</p> <p><i>Quantity: 2</i></p> <p>There is no accessible passenger loading zone provided in every continuous 100 LF of loading zone space.</p> <p><i>Est. Quantity: 4</i></p>	







4.	<p><b>Walkways around Building (Typical)</b></p> <p>The walkways have cross-slopes &gt;2%, @ 2.8%, running slopes &gt;5%, @ up to 10.7%, and/or abrupt changes in level &gt;½” due to material deterioration.</p> <p><i>Est. Quantity: 960 SF</i></p>	
5.	<p><b>Exterior Door Thresholds</b></p> <p>The threshold is &gt;½” high, @ 1”-1 ¼”.</p> <p><i>Observed at the main entrance (Door A1), entrance near the Superintendent’s office (Door A2), Egress B3, Egress C1, and doors to courtyard.</i></p> <p><i>Quantity: 7</i></p>	
6.	<p><b>Entrance Intercoms</b></p> <p>The intercom is mounted &gt;48” AFF to the highest operable part, @ 56” and 57”.</p> <p><i>Observed at the main entrance (Door A1) and the entrance near the Superintendent’s office (Door A2).</i></p> <p><i>Quantity: 2</i></p>	
7.	<p><b>Entrance near Superintendent’s Office (Door A2)</b></p> <p>The double doors lack at least one leaf that provides the required 32” minimum clearance, @ 31”.</p> <p>The exterior doors require &gt;15lbs of force to open.</p>	



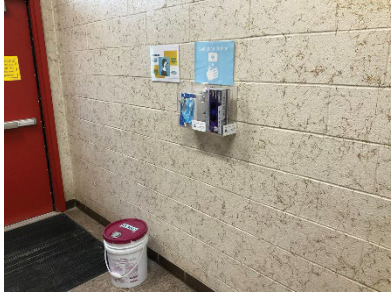







8.	<p><b>Egress Doors B1, B2, C5, D2, &amp; D3</b></p> <p>Many egress doors are not accessible due to steps at the landing or stairs.</p> <p><i>Quantity: 5</i></p>	
9.	<p><b>Egress Door B3</b></p> <p>The double doors lack at least one leaf that provides the required 32" minimum clearance, @ 31 ½".</p> <p>The door landing has abrupt changes in level &gt;½" due to the change in surface materials.</p>	
10.	<p><b>Egress Door C1</b></p> <p>The door lacks a level landing, @ 8%.</p>	
11.	<p><b>Gated Area near Egress Door C1</b></p> <p>The picnic tables are not located on an accessible route, due to the grass.</p> <p>The gate lacks the required minimum 10" of smooth surface along the bottom of the push side.</p> <p>The gate lacks a level landing.</p>	




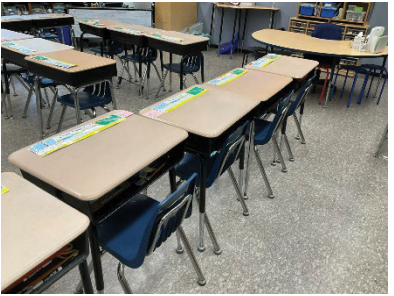

12.	<p><b>Egress Door D1</b></p> <p>The door lacks a level landing, @ 5.5%.</p> <p>The ramp lacks a level landing at the top of the run.</p> <p>The ramp has running slopes &gt;8.3%, @ 8.5%.</p> <p>The ramp lacks the required edge protection.</p> <p>The handrail on the wall lacks the required gripping surface diameter, lower portion, and extensions.</p>	
13.	<p><b>Egress Door D4</b></p> <p>The door lacks a level landing, @ 2.3%.</p> <p>The door landing has abrupt changes in level &gt;½” due to the change in surface materials.</p>	
14.	<p><b>Covered Picnic Area</b></p> <p>There is no accessible route to the covered picnic area, due to the grass.</p> <p>A drinking fountain for standing persons is not provided.</p>	
15.	<p><b>Multipurpose Sports Field</b></p> <p>The bleachers are not located on an accessible route, due to the grass.</p> <p>There is no level 30” x 48” clear floor space adjacent to the bleachers.</p>	

16.	<p><b>Playground Area</b></p> <p>The plaza has slopes &gt;2%, @ 2.2%.</p> <p><i>Est. Quantity: 1,800 SF</i></p> <p>The playground lacks the required number of ground-level play components and an accessible route between elements due to the woodchip surface.</p> <p>There is no accessible route to the swing set and playground due to the woodchip surfaces.</p>	
17.	<p><b>Courtyard</b></p> <p>The route to the courtyard is not stable, firm, or slip resistant due to the gravel surface.</p>	
<b>INTERIOR ISSUES</b>		
18.	<p><b>Illuminated Exit Signage (Typical)</b></p> <p>The illuminated exit signs at all accessible means of egress are not identified with the International Symbol of Accessibility (ISA).</p> <p><i>Est. Quantity: 5</i></p>	
19.	<p><b>Tactile/Braille Signage (Typical)</b></p> <p>All rooms lack the required tactile/Braille signage mounted on the latch side of the door.</p> <p><i>Est. Quantity: 120</i></p>	


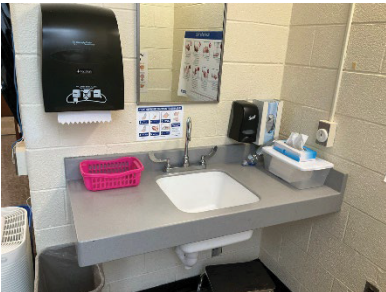




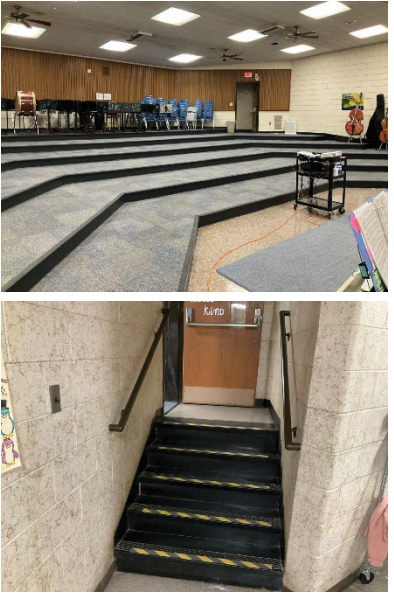

20.	<p><b>AED</b></p> <p>The AED protrudes &gt;4" into the circulation space, @ 7", and is mounted &gt;48" AFF measured to the highest operable control, @ 57".</p> <p><i>Observed in the corridor near the main entrance.</i></p>	
21.	<p><b>Emergency Fire Pull Station</b></p> <p>The emergency fire pull station protrudes &gt;4" into the circulation space, @ 5", due to the plastic covering.</p> <p><i>Observed in the gymnasium.</i></p>	
22.	<p><b>Sanitation Stations</b></p> <p>The sanitation stations protrude &gt;4" into the circulation space, @ 4 1/2".</p> <p><i>Observed in the vestibule near the Superintendent's Office and the nurse's office.</i></p> <p><i>Quantity: 2</i></p>	
23.	<p><b>Hand Sanitizer Dispensers</b></p> <p>The hand sanitizer dispenser protrudes &gt;4" into the circulation space, @ 5 1/2".</p> <p><i>Observed throughout the building.</i></p> <p><i>Est. Quantity: 10</i></p>	
24.	<p><b>Double Doors in Corridors (Typical)</b></p> <p>The double doors lack at least one leaf that provides the required 32" minimum clearance, @ 31".</p> <p><i>Observed in all corridors throughout the building.</i></p> <p><i>Quantity: 12</i></p>	

25.	<p><b>Light Switches (Typical)</b></p> <p>The light switch control is mounted &lt;18" from an interior corner, @ 4 ¼" or less.</p> <p>The light switch control is mounted &gt;48" AFF measured to the highest operable part when switched to the 'on' position, @ 49 ½".</p> <p><i>Observed throughout the building.</i></p> <p><i>Est. Quantity: 110</i></p>	
26.	<p><b>Drinking Fountains (Typical)</b></p> <p>At least 50% of the total drinking fountains provided are not for standing persons.</p> <p><i>Observed in corridors, between classrooms B111 &amp; B112, and in the cafeteria.</i></p> <p><i>Est. Quantity: 5</i></p> <p>The drinking fountains for seated persons lack the required knee clearance for a forward approach.</p> <p><i>Observed in corridors and between B111 &amp; B112.</i></p> <p><i>Est. Quantity: 10</i></p> <p>The knee clearance at the cafeteria drinking fountain is &lt;27" AFF, @ 24 ½".</p> <p><i>Note: ADA 602.2 Exception permits a parallel approach for drinking fountains primarily used by children when the spout is 30" AFF maximum. However, 521 CMR does not distinguish between adult and children's dimensions for drinking fountains.</i></p>	
27.	<p><b>Door Hardware (Typical)</b></p> <p>The door hardware requires tight grasping, pinching, and/or twisting of the wrist to operate.</p> <p><i>Observed throughout the building.</i></p> <p><i>Est. Quantity: 90</i></p>	






28.	<p><b>Door Maneuvering Clearances (Typical)</b></p> <p>Some doors with both latch and closers are located in recesses &gt;6" deep, @ 7 ½", and do not provide the required push side maneuvering clearance.</p> <p><i>Observed in some admin areas and offices.</i></p> <p><i>Est. Quantity: 6</i></p> <p>Most doors lack the required 18" minimum pull side maneuvering clearance, @ 2"-17".</p> <p><i>Observed in most classrooms, the nurse's office, admin areas, faculty lounge, library, and music room.</i></p> <p><i>Est. Quantity: 30</i></p>	 
29.	<p><b>Classroom Intercoms (Typical)</b></p> <p>The intercom controls are &gt;48" AFF, @ 50"-58 ½".</p> <p><i>Observed in all classrooms.</i></p> <p><i>Quantity: 21</i></p>	
30.	<p><b>Classroom Desks (Typical)</b></p> <p>Some of the children's desks lack the required 25" AFF minimum knee/toe clearance, @ 22", and are &lt;30" wide, @ 18".</p> <p><i>Observed in most classrooms.</i></p> <p><i>Est. Quantity: 12</i></p>	
31.	<p><b>Library Computer Station</b></p> <p>The computer station lacks the required knee/toe clearance for a forward approach and is &gt;34" AFF, @ 37 ¾".</p>	


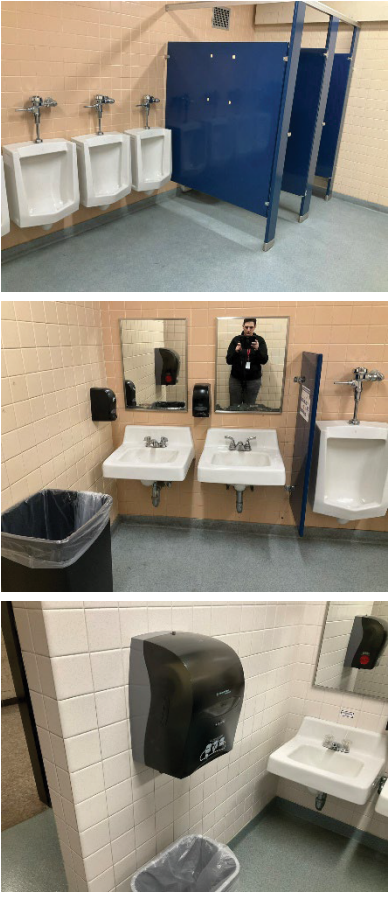




<p>32.</p>	<p><b>Classroom Sinks &amp; Bubblers (Typical)</b></p> <p>The sink lacks the required knee and toe clearance for a forward approach due to the cabinetry.</p> <p>The drinking fountain lacks the required knee and toe clearance for a forward approach due to the cabinetry, and some spouts are &gt;30" AFF, @ 40".</p> <p><i>Observed in all classrooms and the library.</i></p> <p><i>Quantity: 22</i></p> <p>Some sinks are &gt;34" AFF, @ 36 ¼".</p> <p><i>Observed in Classrooms A100 &amp; B112, and the library.</i></p> <p><i>Quantity: 3</i></p> <p><i>Note: ADA 606.2 Exception 4 permits children's sinks to provide 24" AFF minimum knee clearance and Exception 5 permits a parallel approach for sinks primarily used by children 5 years and younger. Similarly, ADA 602.2 Exception permits a parallel approach for drinking fountains primarily used by children when the spout is 30" AFF maximum. However, 521 CMR does not distinguish between adult and children's dimensions for classroom sinks nor drinking fountains.</i></p>	
<p>33.</p>	<p><b>Nurse's Office</b></p> <p>The sink knee clearance is &lt;27" AFF, @ 25 ¼".</p> <p>The mirror is mounted &gt;40" AFF measured to the bottom of the reflective surface, @ 48 ½".</p>	
<p>34.</p>	<p><b>Admin Areas near Superintendent's Office</b></p> <p>The tables lack the required knee/toe clearance due to the pedestal below.</p> <p><i>Quantity: 2</i></p>	

35.	<p><b>Staff Lounge near Cafeteria</b></p> <p>The sink is &gt;34" AFF, @ 36".</p> <p>The paper towel and soap dispensers are mounted &gt;46" AFF for an obstructed side reach measured to the highest operable control, @ 49" and 54 ½".</p> <p><i>Quantity: 2</i></p> <p>The phone controls are mounted &gt;48" AFF measured to the highest operable control, @ 58".</p>	
36.	<p><b>Music Room</b></p> <p>Two of the music room doors are not on an accessible route, due to the stairs.</p> <p>Two accessible means of egress are not provided in the room where more than two egress doors are provided.</p> <p>The stair handrails lack the required extensions.</p> <p>There is no accessible route to the seating area due to the risers.</p>	
37.	<p><b>Cafeteria Servery</b></p> <p>The servery doors lack the required pull side maneuvering clearance depth, @ 37 ½".</p> <p><i>Quantity: 4</i></p> <p>The accessible route through the servery lacks the required 48" minimum turning clearance, @ 37 ½" measured from the wall to the tray slide.</p> <p><i>Quantity: 2</i></p>	





38.	<p><b>Cafeteria Seating</b></p> <p>The tables lack the required 19" minimum knee/ toe clearance depth, @ 14 ½".</p>	
39.	<p><b>Teacher's Lounge</b></p> <p>The sink is &gt;34" AFF, @ 36", and lacks the required knee clearance for a forward approach.</p> <p>The paper towel and soap dispensers are mounted &gt;48" AFF measured to the highest operable control, @ 51".</p> <p><i>Quantity: 2</i></p> <p>The vending machine controls are &gt;48" AFF measured to the highest operable control, @ 55".</p> <p><i>Quantity: 2</i></p> <p>The oven controls are mounted behind the burners.</p>	  
40.	<p><b>Ramp to Modular Classrooms</b></p> <p>The ramp has running slopes &gt;8.3%, @ 8.6%-9.1%.</p>	

<p>41.</p>	<p><b>Toilet Room Doors (Typical)</b></p> <p>The door provides &lt;32" of clear width, @ 21"-30".  <i>Observed in all student and staff toilet rooms.</i>  <i>Quantity: 16</i></p> <p>The pull side door maneuvering clearance is &lt;60" deep, @ 42"-48", and &lt;18" on the latch side, @ 5 ½".  <i>Observed in all girls' &amp; boys' multiuser toilet rooms.</i>  <i>Quantity: 6</i></p>	
<p>42.</p>	<p><b>Girls' &amp; Boys' Multiuser Toilet Rooms (Typical)</b></p> <p>There is no accessible toilet stall provided.</p> <p>For a toilet room with six or more toilets/ urinals, there is no ambulatory stall provided.</p> <p>The paper towel dispenser protrudes &gt;4" into the circulation space, @ 9".</p> <p>The mirror is mounted &gt;31" AFF measured to the bottom of the reflective surface, @ 37 ½".</p> <p>The knee clearance at the sink is &lt;25" AFF, @ 17".</p> <p>The pipes underneath the sink are not insulated.</p> <p>The sink faucet requires tight grasping, pinching, and/or twisting of the wrist to operate.</p> <p><i>Observed in all girls' and boys' multiuser toilet rooms, except one near Classroom A111.</i>  <i>Quantity: 5</i></p> <p><i>Note: These toilet rooms appear to be utilized by students in Grades 4-5, therefore KMA audited based on the relevant children's dimensional requirements. KMA has received guidance from the MAAB stating that these toilet rooms must meet either adult dimensions or the dimensions for the user group with the highest population using these facilities.</i></p>	

<p>43.</p>	<p><b>Girls' Multiuser Toilet Room near Classroom A111</b></p> <p>The paper towel dispenser protrudes &gt;4" into the circulation space, @ 9".</p> <p>The pipes underneath the sink are not insulated.</p> <p>The soap dispenser is &gt;36" AFF, @ 38".</p> <p>The mirror is mounted &gt;31" AFF measured to the bottom of the reflective surface, @ 40 ¾". <i>Note: There is no mirror provided at the designated accessible sink.</i></p> <p>The coat hook is &gt;48" AFF, @ 52".</p> <p>The flush control is not located on the open side of the toilet.</p> <p>The toilet centerline is not located 15"-18" from the adjacent wall, @ 19".</p> <p>The toilet seat height is not 15"-17" AFF, @ 14 ½".</p> <p>The toilet paper dispenser is not located 7"-9" from the rim, @ 5 ½".</p> <p>The toilet paper dispenser is mounted &lt;1 ½" below the side grab bar, @ 1 ¼".</p> <p>The toilet flush valve is &lt;1 ½" below the rear grab bar, @ ½".</p> <p>The trash receptacle in the accessible toilet stall is &gt;36" AFF, @ 52 ½".</p> <p>The grab bars are not 25"-27" AFF, @ 30".</p> <p><i>Note: This toilet room appears to be utilized by students in Grades 4-5, therefore KMA audited based on the relevant children's dimensional requirements. KMA has received guidance from the MAAB stating that these toilet rooms must meet either adult dimensions or the dimensions for the user group with the highest population using these facilities.</i></p>	
<p>44.</p>	<p><b>Toilet Room in Nurse's Office</b></p> <p>The room lacks the required footprint and elements for an accessible toilet room.</p>	



45.	<p><b>Toilet Rooms in Classrooms B111, B112, &amp; D110</b></p> <p>The room lacks the required footprint and elements for an accessible toilet room.</p> <p><i>Quantity: 3</i></p>	
46.	<p><b>Staff Toilet Rooms (Typical)</b></p> <p>The room lacks the required footprint and elements for an accessible toilet room.</p> <p><i>Observed in corridors and the facilities and kitchen staff areas.</i></p> <p><i>Quantity: 6</i></p>	

End of report.

## I. Preliminary Review of Environmental Permitting Requirements

# J. Geotechnical Preliminary Desktop Review

May 1, 2024

Ms. Katy Lillich, AIA, LEED AP, MCPPO  
Arrowstreet  
10 Post Office Square  
Suite 700N  
Boston, MA 02109  
Phone: (617) 623-5555  
Direct: (617) 666-7019  
E-mail: Lillich@Arrowstreet.com

Re: **Preliminary Geotechnical Report  
Proposed Neary Elementary School  
Southborough, Massachusetts  
LGCI Project No. 2404**

Dear Ms. Lillich:

Lahlaf Geotechnical Consulting, Inc. (LGCI) has completed a preliminary geotechnical study for the proposed Neary Elementary School in Southborough, Massachusetts. We are submitting our preliminary geotechnical report electronically.

The soil samples from our explorations are currently stored at LGCI for further analysis, if requested. Unless notified otherwise, we will dispose of the soil samples after three (3) months.

Thank you for choosing LGCI as your geotechnical engineer.

Very truly yours,

**Lahlaf Geotechnical Consulting, Inc.**



Abdelmadjid M. Lahlaf, Ph.D., P.E.  
Principal Engineer



# LGCI

Lahlaf Geotechnical Consulting, Inc.

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**PRELIMINARY GEOTECHNICAL REPORT  
PROPOSED NEARY ELEMENTARY SCHOOL  
SOUTHBOROUGH, MASSACHUSETTS**

LGCI Project No. 2404

May 1, 2024

Prepared for:

**Arrowstreet**

10 Post Office Square

Suite 700N

Boston, MA 02109

Phone: (617) 623-5555



**PRELIMINARY GEOTECHNICAL REPORT  
PROPOSED NEARY ELEMENTARY SCHOOL  
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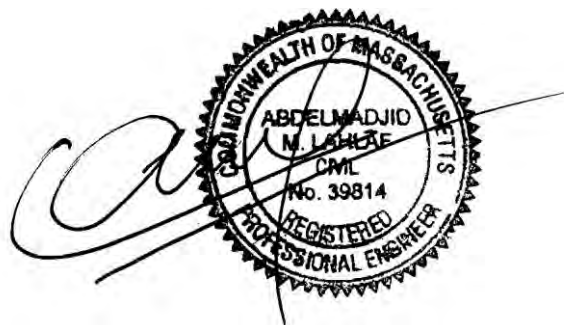
Prepared for:

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Prepared by:

**LAHLAF GEOTECHNICAL CONSULTING, INC.**

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Billerica, Massachusetts 01862  
Phone: (978) 330-5912  
Fax: (978) 330-5056



Abdelmadjid M. Lahlaf, Ph.D., P.E.  
Principal Engineer

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**Preliminary Geotechnical Report  
Proposed Neary Elementary School  
Southborough, Massachusetts  
LGCI Project No. 2404**

## **1. PROJECT INFORMATION**

### **1.1 Project Authorization**

This geotechnical report presents the results of the subsurface explorations and a geotechnical evaluation performed by Lahlaf Geotechnical Consulting, Inc. (LGCI) for the proposed Neary Elementary School in Southborough, Massachusetts. We performed our services in general accordance with our proposal No. 23152-Rev. 2 dated December 27, 2023, revised on February 9, 2024. Ms. Katy Lillich of Arrowstreet authorized our services by signing our proposal on February 16, 2024.

### **1.2 Purpose and Scope of Services**

The purpose of our geotechnical services was to perform subsurface explorations at the site for the proposed Neary Elementary School, and to provide foundation design and construction recommendations. LGCI performed the following services:

- Coordinated our exploration locations with Arrowstreet.
- Marked the exploration locations at the site and notified Dig Safe Systems Inc. (Dig Safe) and the City of Southborough for utility clearance.
- Engaged a drilling subcontractor for one (1) day to advance four (4) soil borings at the site.
- Provided an LGCI geotechnical field representative at the site to coordinate and observe the borings, describe the soil samples, and prepare field logs.
- Submitted four (4) soil samples collected from the borings for laboratory testing.
- Prepared this preliminary geotechnical report containing the results of our preliminary subsurface explorations and our preliminary recommendations for foundation design and construction.

Our scope does not include preparing specifications, reviewing contract documents, attending meetings, or providing construction services. LGCI would be pleased to perform these services when needed. Recommendations for unsupported slopes, stormwater management, erosion control, pavement design, slope stability analyses, liquefaction and/or site-specific seismic analysis, pile analysis and design, and detailed cost or quantity estimates are not included in our scope of work.

LGCI's scope of services does not include an environmental assessment for the presence or absence of wetlands or analytical testing for hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site, or mold in the soil or in any structure



at the site. Any statements regarding odors, colors, or unusual or suspicious items or conditions are strictly for the information of the client.

### **1.3 Site Description**

Our understanding of the site is based on our field observations and our discussions with Arrowstreet.

The site is located at 53 Parkerville Road in Southborough, MA. The site is bordered by Clifford Street and private properties on the southern side, by Deerfoot Road on the western side, and by Trottier Middle School on the northern side. The site is currently occupied by the existing school building, paved parking lots, and athletic fields, including a baseball field, a soccer field, a practice field, tennis courts, and grass and landscaped areas. A portion of the site is wooded. We understand that an existing leach field is present at the site. Based information provided to us by Arrowstreet, we understand that there may be a capped landfill within a portion of the site.

### **1.4 Project Description**

We understand that the City of Southborough has engaged Arrowstreet to design the new Neary Elementary School. At this time, the extent of the additions, if any, or the layout, the size, and location of a new building have not been established. However, we understand that the proposed school may consist of a new building constructed in the athletic fields northwest of the existing building.



## 2. SITE AND SUBSURFACE CONDITIONS

### 2.1 Surficial Geology

LGCI reviewed a surficial geologic map titled: “Surficial Materials Map of the Marlborough Quadrangle, Massachusetts,” prepared by Stone, J.R., and Stone, B.D., Scientific Investigation Map 3402, Quadrangle 92 – Marlborough, 2018.

The surficial geologic map of the site indicates that the natural soils in the general vicinity of the site consist of coarse deposits and swamp deposits.

**Sand Deposits** – The sand deposits are comprised mostly of fine to coarse sand. Coarser layers may contain up to 25 percent gravel. Finer layers may contain very fine sand, silt, and clay.

**Sand and Gravel Deposits** – The sand and gravel deposits occur as a mixture of gravel and sand within individual layers and as alternating layers of sand and gravel. The sand and gravel layers range between 25 to 50 percent gravel and 50 to 75 percent sand.

**Gravel Deposits** – The gravel deposits are comprised of at least 50 percent gravel, cobbles, and boulders. Sand occurs within gravel beds and as separate layers within the gravel.

The swamp deposits are described as organic muck and peat that contain minor amounts of sand, silt, and clay, are stratified and are poorly sorted, and occur in swamps and freshwater marshes, in kettle depressions, or in poorly drained areas.

The Surficial Geologic Map is shown in Figure 2.

### 2.2 LGCI’s Explorations

#### 2.2.1 General

LGCI coordinated our exploration locations with Arrowstreet and marked the exploration locations in the field. LGCI notified Dig Safe and the City of Southborough for utility clearance prior to starting our explorations at the site.

Unless notified otherwise, we will dispose of the soil samples obtained during our explorations after three (3) months.

#### 2.2.2 LGCI’s Soil Borings

LGCI engaged Soil Exploration, Corp. (Soil X) of Leominster, Massachusetts to advance four (4) soil borings (B-1 to B-4) at the site on April 15, 2024. The borings were advanced with a Diedrich D-70 Turbo ATV drill rig using 4-¼-inch inner-diameter hollow stem augers. The borings extended to depths ranging between 15.0 and 21.3 feet beneath the ground surface. Upon completion, the boreholes were backfilled with the drill cuttings.



Soil X performed Standard Penetration Tests (SPT) and obtained split spoon samples with an automatic hammer at typical depth intervals of 2 feet or 5 feet as noted on the boring logs in general accordance with ASTM D-1586.

An LGCI geotechnical field representative observed and logged the borings in the field.

### **2.2.3 Exploration Logs and Locations**

The boring locations are shown in Figure 3. Appendix A contains LGCI's boring logs and Table 1 includes a summary of LGCI's borings.

## **2.3 Subsurface Conditions**

The subsurface description in this report is based on a limited number of borings and is intended to highlight the major soil strata encountered during our explorations. The subsurface conditions are known only at the actual boring locations. Variations may occur and should be expected between boring locations. The boring logs represent conditions that we observed at the time of our explorations and were edited, as appropriate, based on the results of the laboratory test data and inspection of the soil samples in the laboratory. The strata boundaries shown in our boring logs are based on our interpretations and the actual transitions may be gradual. Graphic soil symbols are for illustration only.

The soil strata encountered in LGCI's borings were as follows, starting at the ground surface.

Topsoil – A layer of surficial organic topsoil was encountered at the ground surface in all borings. The thickness of the topsoil ranged between 0.8 and 1.2 feet.

Fill – A layer of fill was encountered beneath the topsoil in borings B-1 and B-2. The fill extended to depths of about 6.0 feet beneath the ground surface. The samples in this layer were mostly described as silty sand. One (1) sample was described as well graded gravel with silt, one (1) sample was described as poorly graded gravel, and one (1) sample was described as well graded sand with silt. The fines content in the fill ranged between 5 and 40 percent, and the gravel content ranged between 15 and 30 percent. When described as gravel, the sand content in the fill ranged between 30 and 35 percent. One (1) sample in the fill contained traces of organic soil and weathered rock.

The SPT N-values in this layer ranged between 19 blows per foot (bpf) and 91 bpf, with most values ranging between 19 bpf and 34 bpf, indicating mostly medium dense to dense material. Please note that the high SPT N-values recorded in the fill may be due to obstructions such as cobbles and boulders present in the fill and may not represent the true density of the fill.

Subsoil – A layer of subsoil was encountered beneath the topsoil in boring B-4. The subsoil extended to a depth of 2 feet beneath the ground surface. The sample in this layer was described as a poorly graded sand with silt. The fines content in the subsoil ranged between 10 and 15 percent, and the gravel content ranged between 10 and 15 percent.



Sand and Gravel – A layer of sand and gravel was encountered beneath the layer of topsoil, fill, or subsoil in all borings. The sand and gravel extended to the termination depths in the borings. The samples in this layer were described mostly as silty sand. Four (4) samples were described as poorly graded sand, three (3) samples were described as well graded sand, and one (1) sample was described as silty gravel. The fines content in this layer ranged between 5 and 40 percent, and the gravel content ranged between 0 and 40 percent. When described as a gravel, the sand content ranged between 25 and 30 percent. The sand and gravel contained traces of weathered rock.

The SPT N-values in this layer ranged between 9 bpf and refusal, with most values higher than 30 bpf, indicating mostly dense to very dense material. Please note that the high SPT N-values in the sand and gravel may be due to obstructions such as cobbles and boulders in the sand and gravel and may not represent the true density of the sand and gravel.

## **2.4 Groundwater**

Groundwater was encountered in all borings at depths ranging between 2.0 feet and 4.2 feet beneath the ground surface, as shown in Table 1 and in the boring logs. The groundwater information reported herein is based on observations made during or shortly after the completion of drilling. Therefore, the reported groundwater levels may not represent the actual groundwater conditions, as additional time may be required for the groundwater levels to stabilize. The groundwater information presented in this report only represents the conditions encountered at the time and location of the explorations. Seasonal fluctuation should be anticipated.

## **2.5 Laboratory Test Data**

LGCI submitted four (4) soil samples collected from the borings for grain-size analysis. The results of the grain-size analyses are provided in the test data sheets included in Appendix B and are summarized in the table below:

### *Grain-Size Analysis Test Results*

Boring No.	Sample No.	Stratum	Sample Depth (ft.)	Percent Gravel	Percent Sand	Percent Fines
B-1	S2	Fill	2 - 4	19.8	43.2	37.0
B-2	S3	Fill	4 - 6	20.9	48.8	30.3
B-3	S2 Bot. 13"	Natural Soil	2 - 4	37.6	54.0	8.4
B-4	S2	Natural Soil	2 - 4	34.5	50.3	15.2





### 3. EVALUATION AND RECOMMENDATIONS

#### 3.1 General

Based on our understanding of the proposed construction, our observation of our borings, and the results of our laboratory testing, there are a few issues that we would like to highlight for consideration and discussion.

##### 3.1.1 Surficial Topsoil, Subsoil, and Existing Fill

- Surficial topsoil, subsoil, and existing fill were encountered in the borings. These materials are not suitable to support foundations.
- The topsoil should be removed from within the entire construction area, including the proposed building footprint and the paved areas.
- The existing fill was observed to be variable in composition and density. In addition, the existing fill contained traces of organic soil. Existing fill that was not placed with strict moisture, density, and gradation control presents risk of unpredictable settlement that may result in poor performance of floor slabs and foundations. Due to these risks, the existing fill should be entirely removed from within the proposed building footprint and replaced with Structural Fill. We anticipate that the removal will extend up to depths of about 6 feet. The removal may extend to greater depths at locations not explored by LGCI. Laterally, the removal should extend beyond the proposed building footprint a distance equal to the distance between the bottom of the proposed footings and the top of the natural sand and gravel, or 5 feet, whichever is greater.
- The subgrade of footings should be prepared in accordance with the recommendations in Section 4.1.
- Within paved areas, the existing fill and subsoil should be removed to the top of the natural sand and gravel or to a depth of 18 inches beneath the bottom of the proposed pavement, whichever occurs first. Where organic soil is exposed, the organic soil should be removed. The existing fill and subsoil deeper than 18 inches beneath the bottom of the proposed pavement can remain in place provided these materials are firm and unyielding following proofrolling as described in Section 4.1.

##### 3.1.2 Shallow Footings and Slabs-on-Grade

Based on the results of the borings, the subsurface conditions are suitable to support shallow spread and continuous footings bearing on Structural Fill placed directly on top of the sand and gravel layer after entirely removing the topsoil, subsoil, and the existing fill. The proposed slabs may be designed as slabs-on-grade. Our recommendation for net allowable bearing capacity in the sand and gravel is presented in Section 3.2.1. Our recommendations for slabs-on-grade are presented in Section 3.3. Our recommendations for lateral pressures



for the proposed basement walls and other retaining walls, if any, are presented in Section 3.5. Section 4.1 provides recommendations for preparation of subgrades.

### **3.1.3 Additional Explorations**

We recommend performing additional explorations at the site. We recommend performing soil borings and test pits. We also recommend installing at least two (2) groundwater observation wells at the site. LGCI will provide a proposal for the additional services after the proposed building layout, size, and locations are established.

## **3.2 Foundation Recommendations**

### **3.2.1 Footing Design**

- We recommend entirely removing the surficial topsoil, the subsoil, and the existing fill from within the proposed building footprint as described in Section 3.1.1.
- We recommend supporting the proposed building on spread footings bearing on Structural Fill placed directly on the natural sand and gravel.
- We recommend designing the proposed footings using a net allowable bearing pressure of 5 kips per square foot (ksf). We recommend that the footings bear on a minimum of 12 inches of Structural Fill placed directly on top of the natural sand and gravel or on weathered rock. The Structural Fill should extend at least 1 foot laterally beyond the limits of the footings.
- Footing subgrades should be prepared in accordance with the recommendations in Section 4.1.
- Foundations should be designed in accordance with The Commonwealth of Massachusetts State Building Code 780 CMR, Ninth Edition (MSBC 9<sup>th</sup> Edition).
- Exterior footings and footings in unheated areas should be placed at a minimum depth of 4 feet below the final exterior grade to provide adequate frost protection. Interior footings in heated areas may be designed and constructed at a minimum depth of 2 feet below finished floor grades.
- Wall footings should be designed and constructed with continuous, longitudinal steel reinforcement for greater bending strength to span across small areas of loose or soft soils that may go undetected during construction.
- A representative of LGCI should be engaged to observe that the subgrade has been prepared in accordance with our recommendations.



### 3.2.2 Settlement Estimates

Based on our experience with similar soils and designs using a net allowable bearing pressure of 5 ksf, we anticipate that the total settlement will be approximately 1 inch, and that the differential settlement of the footings will be 3/4 inch or less over a distance of 25 feet. We believe that total and differential settlements of this magnitude are tolerable for a similar structure. However, the tolerance of the proposed structure to the predicted total and differential settlements should be assessed by the structural engineer.

### 3.3 Concrete Slab Considerations

#### 3.3.1 Slabs-on-Grade

- Floor slabs should be constructed as a slabs-on-grade bearing on a minimum of 12 inches of Structural Fill placed directly on top of the sand and gravel. The subgrade of the slabs should be prepared as described in Section 4.1.
- To reduce the potential for dampness in the proposed floor slab, the project architect may consider placing a vapor barrier beneath the floor slab. The vapor barrier should be protected from puncture during the placement of the proposed slab reinforcement.
- For the design of the floor slab bearing on the materials described above, we recommend using a modulus of subgrade reaction,  $k_{s1}$ , of 100 tons per cubic foot (pcf). Please note that the values of  $k_{s1}$  are for a 1 x 1 square foot area. These values should be adjusted for larger areas using the following expression:

$$\text{Modulus of Subgrade Reaction } (k_s) = k_{s1} * \left( \frac{B+1}{2B} \right)^2$$

where:

$k_s$  = Coefficient of vertical subgrade reaction for loaded area;

$k_{s1}$  = Coefficient of vertical subgrade reaction for a 1 x 1 square foot area; and

$B$  = Width of area loaded, in feet.

Please note that cracking of slabs-on-grade can occur as a result of heaving or compression of the underlying soil, but also as a result of concrete curing stresses. To reduce the potential for cracking, the precautions listed below should be closely followed during the construction of all slabs-on-grade:

- Construction joints should be provided between the floor slab and the walls and columns in accordance with the American Concrete Institute (ACI) requirements, or other applicable code.



- The backfill in interior utility trenches should be properly compacted.
- In order for the movement of exterior slabs not to be transmitted to foundations or superstructures, exterior slabs, such as approach slabs and sidewalks, should be isolated from the superstructure.

### **3.3.2 Under-slab Drains and Waterproofing**

The finished floor elevation (FFE) of the proposed ground floor was not provided to us. LGCI will make a recommendation about the need of an under-slab drainage system after additional explorations are performed and the proposed FFE is established.

## **3.4 Seismic Design**

Based on the SPT N-values from the borings, we estimate that the seismic criteria for the site are as follows:

- |   |        |
|---|--------|
| • Site Class:   | D      |
| • Spectral Response Acceleration at short period ( $S_s$ ): | 0.191g |
| • Spectral Response Acceleration at 1 sec. ( $S_1$ ):       | 0.067g |
| • Site Coefficient $F_a$ (Table 1613.5.3(1)):               | 1.6    |
| • Site Coefficient $F_v$ (Table 1613.5.3(2)):               | 2.4    |
| • Adjusted spectral response $S_{MS}$ :                     | 0.306g |
| • Adjusted spectral response $S_{M1}$ :                     | 0.161g |

Based on the SPT data from the borings, the site soils are not susceptible to liquefaction.

## **3.5 Lateral Pressures for Wall Design**

### **3.5.1 Lateral Earth Pressures**

Lateral earth pressures for the design of below-grade walls, and site retaining walls, if any, are provided below.

Coefficient of Active Earth Pressure, $K_A$ :	0.31
Coefficient of At-Rest Earth Pressure, $K_o$ :	0.47
Coefficient of Passive Earth Pressure, $K_p$ :	3.25
Total Unit Weight $\gamma$ :	125 pcf

Note: The values in the table are based on a friction angle for the backfill of 32 degrees and neglecting friction between the backfill and the wall. The design active and passive coefficients are based on horizontal surfaces (non-sloping backfill) on both the active and passive sides, and on a vertical wall face.

- Exterior walls of below-ground spaces and other retaining walls braced at the top to restrain movement/rotation, should be designed using the “at-rest” pressure coefficient.



- We recommend placing free-draining material within the 3 feet immediately behind retaining walls.
- We recommend providing weep holes at the bottom of site retaining walls, including temporary SOE systems, to promote drainage where possible. Alternatively, a pipe should be placed at the base of the wall to collect the water. Groundwater collected by the wall drains should be discharged into a lower area if gravity flow is possible.
- Passive earth pressures should only be used at the toe of the wall where special measures or provisions are taken to prevent the disturbance or future removal of the soil on the passive side of the wall, or in areas where the wall design includes a key. In any case, the passive pressures should be neglected in the top 4 feet.
- Where a permanent vertical uniform load will be applied to the active side immediately adjacent to the wall, a horizontal surcharge load equal to half of the uniform vertical load should be applied over the height of the wall. At a minimum, a temporary lateral construction surcharge load of 100 pounds per square foot (psf) should be applied uniformly over the height of the wall.
- We recommend using an ultimate friction factor of 0.5 between the weathered rock and the bottom of the wall. Below-grade walls should be designed for minimum factors of safety of 1.5 for sliding and 2.0 for overturning.

### **3.5.2 Seismic Pressures**

In accordance with the Massachusetts State Building Code, 9<sup>th</sup> Edition (MSBC 9<sup>th</sup> Edition), Section 1610, a lateral earthquake force equal to  $0.100 \cdot (S_s) \cdot (F_a) \cdot \gamma \cdot H^2$  should be included in the design of the walls (for horizontal backfill), where  $S_s$  is the maximum considered earthquake spectral response acceleration (defined in Section 3.4),  $F_a$  is the site coefficient (defined in Section 3.4),  $\gamma$  is the total unit weight of the soil backfill, and  $H$  is the height of the wall.

The earthquake force should be distributed as an inverted triangle over the height of the wall. In accordance with MSBC 9<sup>th</sup> Edition, Section 1610.2, a load factor of 1.43 should be applied to the earthquake force for wall strength design.

Temporary surcharges should not be included when designing for earthquake loads. Surcharge loads applied for extended periods of time should be included in the total static lateral soil pressure, and their earthquake lateral force should be computed and added to the force determined above.



### **3.5.3 Perimeter Drains**

- We recommend that free-draining material be placed within 3 feet of the exterior of walls of below-ground spaces, if any. To reduce the potential for dampness in below-ground spaces, proposed below-ground walls should be damp-proofed.
- We recommend that drains be provided behind the exterior of walls of below-ground spaces. The drains should consist of 4-inch perforated PVC pipes installed with the slots facing down. Perimeter drains should be installed at the bottom of the wall in 18 inches of crushed stone wrapped in a geotextile for separation and filtration.
- To the extent possible, groundwater collected by the wall drains should be discharged in a lower area if gravity flow is possible. In any case, the groundwater collected by the wall drains should be discharged in accordance with municipal, state, and other applicable standards.

## **3.6 Parking Lots, Driveways, and Sidewalks**

### **3.6.1 General**

The subsurface conditions encountered at the site are generally suitable to support the proposed driveways, parking lots, and sidewalks after preparation of the subgrade as described in Section 4.1.

- We recommend entirely removing the topsoil from within the footprint of the proposed driveways and parking lots.
- The existing fill and subsoil should be improved in accordance with the recommendations in Section 4.1.
- Cobbles and boulders should be removed to at least 18 inches below the bottom of the pavement.

### **3.6.2 Sidewalks**

- Sidewalks should be placed on a minimum of 12 inches of Structural Fill with less than 5 percent fines.
- To reduce the potential for heave caused by surface water penetrating under the sidewalk, the joints between sidewalk concrete sections should be sealed with a waterproof compound. The sidewalks should be sloped away from the building or other vertical surfaces to promote flow of water. To the extent possible, roof leaders should not discharge onto sidewalk surfaces.



### **3.6.3 Pavement Sections**

A typical, minimum, standard-duty pavement section that could be used for parking areas is as follows:

- 1.5" Asphalt "Top Course"
- 2.0" Asphalt "Base Course"
- 8" Processed Gravel for Sub-Base (MassDOT M1.03.1)

A typical, minimum, heavy-duty pavement section that could be used for areas of heavy truck traffic is as follows:

- 2.0" Asphalt "Top Course"
- 2.5" Asphalt "Base Course"
- 12" Processed Gravel for Sub-Base (MassDOT M1.03.1)

The pavement sections shown above represent minimum thicknesses representative of typical local construction practices for similar use. Periodic maintenance should be anticipated.

Pavement material types and construction procedures should conform to specifications of the "Standard Specifications for Highways and Bridges," prepared by the Commonwealth of Massachusetts Department of Transportation dated 2023.

Areas to receive relatively highly concentrated, sustained loads such as dumpsters, loading areas, and storage bins are typically installed over a rigid pavement section to distribute concentrated loads and reduce the possibility of high stress concentrations on the subgrade. Typical rigid pavement sections consist of 6 inches of concrete placed over a minimum of 12 inches of subbase material.

### **3.7 Underground Utilities**

Boulders at the bottom of utility trenches should be removed to at least 12 inches below the pipe invert and the resulting excavation should be backfilled with suitable backfill. Utilities should be placed on suitable bedding material in accordance with the manufacturer's recommendations. "Cushion" material should be placed, by hand, above the utility pipe in maximum 6-inch lifts. The lift should be compacted by hand to avoid damage to the utility. Where the bedding/cushion material consists of crushed stone, it should be wrapped in a geotextile fabric.

Compaction of fill in utility trenches should be in accordance with our recommendations in Section 4.3. To reduce the potential for damage to utilities, placement and compaction of fill immediately above the utilities should be performed in accordance with the manufacturer's recommendations.



## **4. CONSTRUCTION CONSIDERATIONS**

### **4.1 Subgrade Preparation**

- Asphalt, topsoil, organic materials, existing fill, buried organic soil, buried subsoil, abandoned utilities, buried foundations, and other below-ground structures should be entirely removed from within the footprints of the proposed buildings and site structures, including site retaining walls, and exterior stairs, if any, before the start of foundation work.
- Tree stumps, root balls, and roots larger than ½ inch in diameter should be removed and the cavities filled with suitable material and compacted per Section 4.3 of this report.
- Cobbles and boulders should be removed at least 6 inches from beneath footings and 18 inches beneath the bottom of slabs and paved areas. The resulting excavations should be backfilled with compacted Structural Fill under the building and with Ordinary Fill under the subbase of paved areas.
- The bottom of the excavation resulting from the removal of the existing fill and subsoil or natural soil should be compacted with a dynamic vibratory compactor imparting a minimum of 40 kips of force to the subgrade.
- The base of the footing excavations in granular soil should be compacted with a dynamic vibratory compactor weighing at least 200 pounds and imparting a minimum of 4 kips of force to the subgrade.
- After the surficial materials are removed to a depth of 18 inches within the proposed paved areas and walkways in accordance with the recommendations in Section 3.1, the exposed existing fill and subsoil deeper than 18 inches beneath the bottom of the proposed pavement should be improved by compacting the exposed surface with at least six (6) passes of a vibratory roller compactor imparting a dynamic effort of at least 40 kips. Where soft zones of soil are observed, the soft soil should be removed, and the grade should be restored using Ordinary Fill to the bottom of the proposed subbase layer. If pumping of the existing fill deeper than 18 inches beneath the bottom of the proposed pavement is observed, the soft and/or pumping material should be removed and replaced.
- Fill placed within the footprint of the proposed buildings should meet the gradation and compaction requirements of Structural Fill, shown in Section 4.3.1.
- Fill placed under the subbase of paved areas should meet the gradation and compaction requirements of Ordinary Fill, shown in Section 4.3.2.
- Fill placed in the top 12 inches beneath sidewalks should consist of Structural Fill with less than 5 percent fines.





- Loose or soft soils identified during the compaction of the footing or floor slab subgrades should be excavated to a suitable bearing stratum, as determined by the representative of LGCI. Grades should be restored by backfilling with Structural Fill or crushed stone.
- When crushed stone is required in the drawings or is used for the convenience of the contractor, it should be wrapped in a geotextile fabric for separation except where introduction of the geotextile fabric promotes sliding. A geotextile fabric should not be placed between the bottoms of the footings and the crushed stone.
- An LGCI representative should observe the exposed subgrades prior to fill and concrete placement to verify that the exposed bearing materials are suitable for the design soil bearing pressure. If soft or loose pockets are encountered in the footing excavations, the soft or loose materials should be removed and the bottom of the footing should be placed at a lower elevation on firm soil, or the resulting excavation should be backfilled with Structural Fill, or crushed stone wrapped in a filter fabric.

## **4.2 Subgrade Protection**

The onsite fill and natural soils are frost susceptible. If construction takes place during freezing weather, special measures should be taken to prevent the subgrade from freezing. Such measures should include the use of heat blankets or excavating the final 6 inches of soil just before pouring the concrete. Footings should be backfilled as soon as possible after footing construction. Soil used as backfill should be free of frozen material, as should the ground on which it is placed. Filling operations should be halted during freezing weather.

Materials with high fines contents are typically difficult to handle when wet, as they are sensitive to moisture content variations. Subgrade support capacities may deteriorate when such soils become wet and/or disturbed. The contractor should keep exposed subgrades properly drained and free of ponded water. Subgrades should be protected from machine and foot traffic to reduce disturbance.

## **4.3 Fill Materials**

Structural Fill and Ordinary Fill should consist of inert, hard, durable sand and gravel free from organic matter, clay, surface coatings, and deleterious materials, and should conform to the gradation requirements shown below.

### **4.3.1 Structural Fill**

The Structural Fill should have a plasticity index of less than 6 and should meet the gradation requirements shown below. Structural Fill should be compacted in maximum 9-inch loose lifts to at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557), with moisture contents within  $\pm 2$  percentage points of the optimum moisture content.



Sieve Size Percent	Passing by Weight
3 inches	100
1 ½ inch	80-100
½ inch	50-100
No. 4	30-85
No. 20	15-60
No. 60	5-35
No. 200*	0-10

\* 0 – 5 for the top 12 inches under sidewalks, exterior slabs, pads, and walkways

### **4.3.2 Ordinary Fill**

Ordinary Fill should have a plasticity index of less than 6 and should meet the gradation requirements shown below. Ordinary Fill should be compacted in maximum 9-inch loose lifts to at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557), with moisture contents within  $\pm 2$  percentage points of the optimum moisture content.

Sieve Size Percent	Passing by Weight
6 inches	100
1 inch	50-100
No. 4	20-100
No. 20	10-70
No. 60	5-45
No. 200	0-20

### **4.4 Reuse of Onsite Materials**

Based on our field observations and the results of the grain-size analyses, the onsite fill is too silty and does not meet the gradation requirements for Ordinary Fill or Structural Fill. The existing fill can be used in landscaped areas. The natural sand and gravel may be used as Ordinary Fill.

The contractor should avoid mixing the reusable soils with fine-grained and/or organic soils. The soils to be reused should be excavated and stockpiled separately for compliance testing. Soils with 20 percent or greater fines contents are generally very sensitive to moisture content variations and are susceptible to frost. Such soils are very difficult to compact at moisture contents that are much higher or much lower than the optimum moisture content determined from the laboratory compaction test. Therefore, strict moisture control should be implemented during the compaction of onsite soils with fines contents of 20 percent or greater. The contractor should be prepared to remove and replace such soils if pumping occurs.

Suitable imported material and amended/improved onsite materials should be stockpiled separately from unimproved onsite soils.



Materials to be used as fill should first be tested for compliance with the applicable gradation specifications.

#### **4.5 Groundwater Control Procedures**

Based on the groundwater levels measured in our borings, we anticipate that groundwater control procedures will be needed during construction. We anticipate that filtered deep sump pumps and sump pumps installed in a series of pits located at least 3 feet below the bottom of planned excavations may be sufficient to handle groundwater and surface runoff that may enter the excavation during wet weather. The contractor should be prepared to use multiple sump pumps to maintain a dry excavation during the removal of the existing fill.

The contractor should be permitted to employ whatever commonly accepted means and practices are necessary to maintain the groundwater level below the bottom of the excavation and to maintain a dry excavation during wet weather. Groundwater levels should be maintained at a minimum of 1 foot below the bottom of the excavations during construction. The placement of reinforcing steel or concrete in standing water should not be permitted.

To reduce the potential for sinkholes developing over sump pump pits after the sump pumps are removed, the crushed stone placed in the sump pump pits should be wrapped in a geotextile fabric. Alternatively, the crushed stone should be entirely removed after the sump pump is no longer in use, and the sump pump pit should be restored with suitable backfill.

#### **4.6 Temporary Excavations**

All excavations to receive human traffic should be constructed in accordance with OSHA guidelines.

The site soils should generally be considered Type “C” and should have a maximum allowable slope of 1.5 Horizontal to 1 Vertical (1.5H:1V) for excavations less than 20 feet deep. Deeper excavations, if needed, should have shoring designed by a professional engineer.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain the stability of the excavation sides and bottom.



## **5. RECOMMENDATIONS FOR FUTURE WORK**

We recommend engaging LGCI to perform the following services:

- Perform additional explorations at the site and update our geotechnical report.
- Prepare Earth Moving Specifications and review the geotechnical aspect of contract drawings.
- Review contractor submittals and Request for Information (RFIs);
- Provide a field representative during construction to observe the removal of the unsuitable soil, and to observe the subgrade of footings and slabs.



## **6. REPORT LIMITATIONS**

Our analyses and recommendations are based on project information provided to us at the time of this report. If changes to the type, size, and location of the proposed structures or to the site grading are made, the recommendations contained in this report shall not be considered valid unless the changes are reviewed, and the conclusions and recommendations modified in writing by LGCI. LGCI cannot accept responsibility for designs based on our recommendations unless we are engaged to review the final plans and specifications to determine whether any changes in the project affect the validity of our recommendations, and whether our recommendations have been properly implemented in the design.

It is not part of our scope to perform a more detailed site history; therefore, we have not explored for or researched the locations of buried utilities or other structures in the area of the proposed construction. Our scope did not include environmental services or services related to moisture, mold, or other biological contaminants in or around the site.

The recommendations in this report are based in part on the data obtained from the subsurface explorations. The nature and extent of variations between explorations may not become evident until construction. If variations from anticipated conditions are encountered, it may be necessary to revise the recommendations in this report. We cannot accept responsibility for designs based on recommendations in this report unless we are engaged to 1) make site visits during construction to check that the subsurface conditions exposed during construction are in general conformance with our design assumptions and 2) ascertain that, in general, the work is being performed in compliance with the contract documents.

Our report has been prepared in accordance with generally accepted engineering practices and in accordance with the terms and conditions set forth in our agreement. No other warranty, expressed or implied, is made. This report has been prepared for the exclusive use of Arrowstreet for the Proposed Neary Elementary School in Southborough, Massachusetts as conceived at this time.



## **7. REFERENCES**

In addition to the references included in the text of the report, we used the following references:

American Society of Civil Engineers, “Minimum Design Loads and Associated Criteria for Buildings and Other Structures,” ASCE/SEI 7-16, 2017.

The Commonwealth of Massachusetts (2017), “The Massachusetts State Building Code, Ninth (9<sup>th</sup>) Edition.”

The Department of Labor, Occupational Safety and Health Administration (1989), “Occupational Safety and Health Standards - Excavations; Final Rule,” 20 CFR Part 1926, Subpart P.

USGS Southborough, MA topographic map from <http://mapserver.mytopo.com>.



**Table 1 - Summary of LGCI's Borings**  
**Proposed Neary Elementary School**  
**Southborough, MA**  
**LGCI Project No. 2404**

Boring No.	Groundwater <sup>2</sup> Depth / El. (ft.)	Bottom of Topsoil Depth / El. (ft.)	Bottom of Fill Depth / El. (ft.)	Bottom of Subsoil Depth / El. (ft.)	Bottom of Sand and Gravel Depth / El. (ft.)	Bottom of Boring Depth / El. (ft.)
B-1	4.2	1.0	6.0	-	21.3 <sup>3</sup>	21.3
B-2	2.9	1.0	6.2	-	15.0 <sup>4</sup>	15.0
B-3	2.0	1.2	-	-	17.0 <sup>3</sup>	17.0
B-4	3.1	0.8	-	2.0	19.0 <sup>3</sup>	19.0

1. "-" means groundwater or layer was not encountered.

2. Groundwater was measured during drilling, at the end of drilling, after drilling, or based on sample moisture whichever is shallower.

3. Boring terminated in the sand and gravel layer.

4. Boring terminated on refusal in the sand and gravel layer.






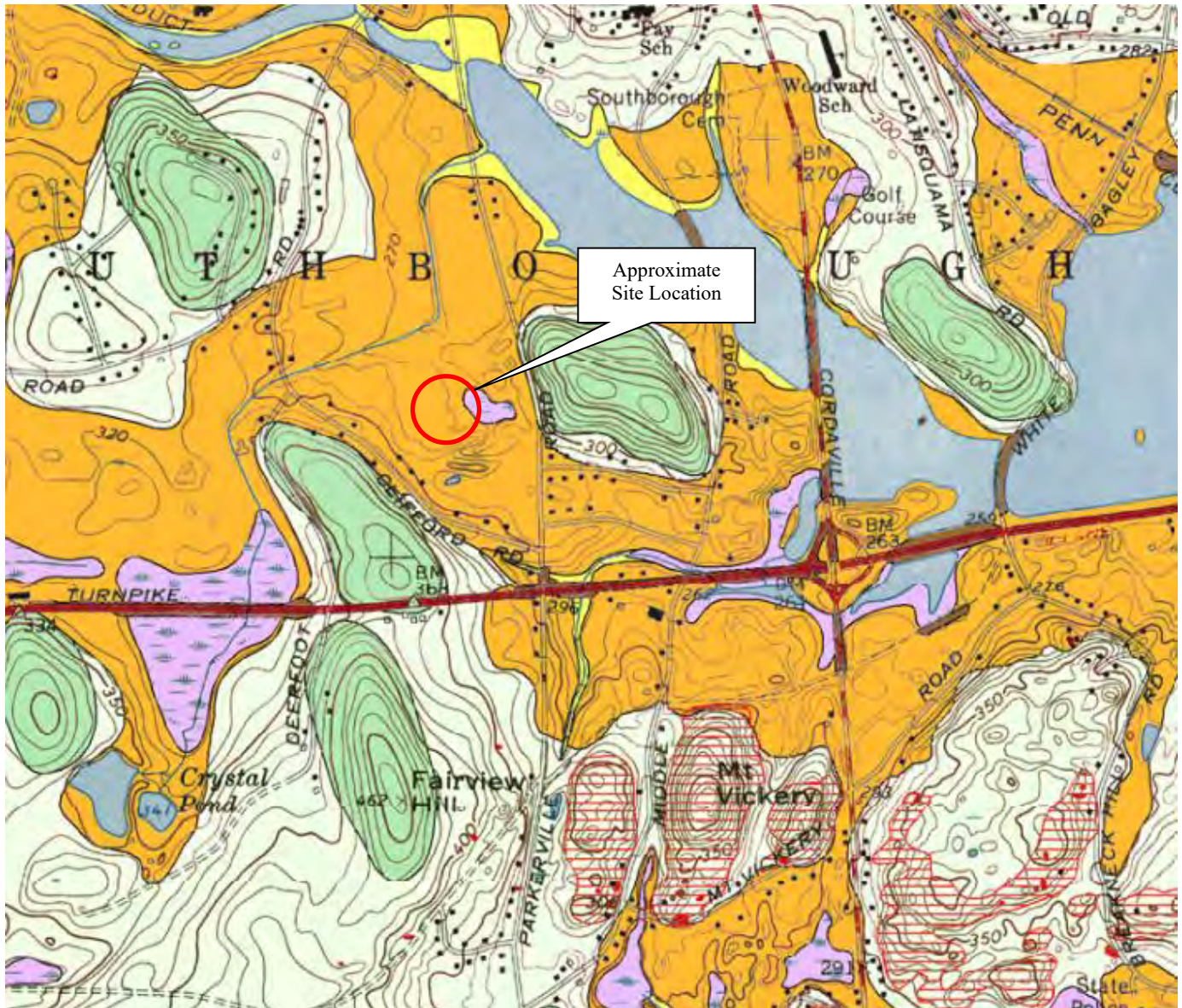
Contour Intervals: 3 meters

0.4 mi

Note: Figure based on USA Topo Maps of Southborough, MA [ngmdb.usgs.gov/topoview/viewer](https://ngmdb.usgs.gov/topoview/viewer)

Client:  Arrowstreet	Project: Proposed Neary Elementary School	Figure 1 – Site Location Map	
 <b>LGCI</b> Lahlaf Geotechnical Consulting, Inc.	Project Location: Southborough, MA	LGCI Project No.: 2404	Date: May 2024





**Coarse deposits** consist of gravel deposits, sand and gravel deposits, and sand deposits, not differentiated in this report. *Gravel deposits* are composed of at least 50 percent gravel-size clasts; cobbles and boulders predominate; minor amounts of sand occur within gravel beds, and sand comprises a few separate layers. Gravel layers generally are poorly sorted, and bedding commonly is distorted and faulted due to postdepositional collapse related to melting of ice. *Sand and gravel deposits* occur as mixtures of gravel and sand within individual layers and as layers of sand alternating with layers of gravel. Sand and gravel layers generally between 25 and 50 percent gravel particles and between 50 and 75 percent sand particles. Layers are well sorted to poorly sorted; bedding may be distorted and faulted due to postdepositional collapse. *Sand deposits* are composed mainly of very coarse to fine sand, commonly in well-sorted layers. Coarser layers may contain up to 25 percent gravel particles, generally granules and pebbles; finer layers may contain some very fine sand, silt, and clay



**Swamp deposits**—Organic muck and peat that contain minor amounts of sand, silt, and clay, are stratified and poorly sorted, and occur in swamps and freshwater marshes, in kettle depressions, or in poorly drained areas. Unit is shown only where deposits are estimated to be at least 3 ft thick; most deposits are less than 10 ft thick. Swamp deposits overlie glacial deposits or bedrock. They locally overlie glacial till even where they occur within thin glacial meltwater deposits

Note: Figure based on map titled: "Surficial Materials Map of the Marlborough Quadrangle, Massachusetts," prepared by Stone J.R. and Stone, B.D., Scientific Investigation Map 3402, Quadrangle 92 – Marlborough, 2018.

Client:

Arrowstreet

Project:

Proposed Neary Elementary School

Figure 2 – Surficial Geologic Map



**LGCI**

Lahlaf Geotechnical Consulting, Inc.

Project Location:

Southborough, MA

LGCI Project No.:


2404

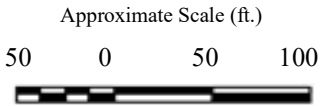
Date:

May 2024




**Legend**

 Approximate location of borings advanced by Soil X Corporation of Leominster, MA on April 15, 2024, and observed by Lahlaf Geotechnical Consulting, Inc. (LGCI).



Note  
Figure based on Margaret A. Neary Elementary School satellite view obtained from Microsoft Bing Maps.

Client:  Arrowstreet		Project:  Proposed Neary Elementary School		Figure 3 – Boring Location Plan	
 <b>LGCI</b> Lahlaf Geotechnical Consulting, Inc.	Project Location:  Southborough, MA	LGCI Project No.:  2404		Date:  May 2024	

## **Appendix A – LGCI’s Boring Logs**

<b>CLIENT:</b> <u>Arrowstreet</u> <b>LGCI PROJECT NUMBER:</b> <u>2404</u> <b>DATE STARTED:</b> <u>4/15/24</u> <b>DATE COMPLETED:</b> <u>4/15/24</u> <b>BORING LOCATION:</b> <u>Near center of site</u> <b>COORDINATES:</b> <u>NA</u> <b>SURFACE EL.:</b> <u>NA (see note 1)</u> <b>TOTAL DEPTH:</b> <u>21.3 ft.</u> <b>WEATHER:</b> <u>40's / Sunny</u> <b>GROUNDWATER LEVELS:</b> ▽ <b>DURING DRILLING:</b> <u>10.0 ft. Based on sample moisture</u> ▼ <b>AT END OF DRILLING:</b> <u>4.2 ft.</u> ▽ <b>OTHER:</b> <u>-</u>	<b>PROJECT NAME:</b> <u>Proposed Neary Elementary School</u> <b>PROJECT LOCATION:</b> <u>Southborough, MA</u> <b>DRILLING SUBCONTRACTOR:</b> <u>Soil X, Corp.</u> <b>DRILLING FOREMAN:</b> <u>Edwin Fajardo</u> <b>DRILLING METHOD:</b> <u>Hollow Stem Auger (4-1/4" I.D.)</u> <b>DRILL RIG TYPE/MODEL:</b> <u>Diedrich D-70 turbo</u> <b>HAMMER TYPE:</b> <u>Automatic</u> <b>HAMMER WEIGHT:</b> <u>140 lb.</u> <b>HAMMER DROP:</b> <u>30 in.</u> <b>SPLIT SPOON DIA.:</b> <u>1.375 in. I.D., 2 in. O.D.</u> <b>CORE BARREL SIZE:</b> <u>NA</u> <b>LOGGED BY:</b> <u>SG</u> <b>CHECKED BY:</b> <u>AS</u>
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Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Material Description
		0					Topsoil	S1 - Top 12": Topsoil
		2	S1	3-3-31-39 (34)	24/17		Fill	Bot. 5": Poorly Graded Gravel with Sand (GP), fine to coarse, subangular, ~30% fine to coarse sand, ~5% fines, brown and white, moist
			S2	34-35-56-39 (91)	24/16			S2 - Silty SAND with Gravel (SM), fine to coarse, 35-40% fines, ~20% fine subangular gravel, brown grey, moist
5		4	S3	26-24-21-12 (45)	24/15			▼ S3 - Similar to S2
		6	S4	19-81/2" (81/2")	8/8			S4 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine subrounded gravel, brown grey, moist
		6.7				1	Sand and Gravel	REMARK 1: SS bouncing on possible boulder at depth of 6.7 feet.
		8	S5	13-15-21-19 (36)	24/8	2		REMARK 2: HSA grinding on possible boulder from depths between 6.7 and 8 feet.
10		10	S6	13-19-95/3" (114/9")	15/15			▼ S6 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 20-25% fine to coarse subangular gravel, brown grey, wet
		11.3				3		REMARK 3: HSA grinding on possible boulder from depths between 11.5 and 15 feet.
15		15	S7	17-28-14-13 (42)	24/17			S7 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse subangular gravel, brown grey, wet
		17						
20		20	S8	19-85-60/3" (145/9")	15/15			S8 - Similar to S7
		21.3						Bottom of borehole at 21.3 feet. Backfilled borehole with drill cuttings.
25								

**GENERAL NOTES:**

1. The ground surface elevation is not available.

<b>CLIENT:</b> <u>Arrowstreet</u> <b>LGCI PROJECT NUMBER:</b> <u>2404</u> <b>DATE STARTED:</b> <u>4/15/24</u> <b>DATE COMPLETED:</b> <u>4/15/24</u> <b>BORING LOCATION:</b> <u>Near eastern side of site</u> <b>COORDINATES:</b> <u>NA</u> <b>SURFACE EL.:</b> <u>NA (see note 1)</u> <b>TOTAL DEPTH:</b> <u>15.01 ft.</u> <b>WEATHER:</b> <u>50's / Sunny</u> <b>GROUNDWATER LEVELS:</b> ▽ <b>DURING DRILLING:</b> <u>4.0 ft. Based on sample moisture</u> ▼ <b>AT END OF DRILLING:</b> <u>2.9 ft.</u> ▽ <b>OTHER:</b> <u>-</u>	<b>PROJECT NAME:</b> <u>Proposed Neary Elementary School</u> <b>PROJECT LOCATION:</b> <u>Southborough, MA</u> <b>DRILLING SUBCONTRACTOR:</b> <u>Soil X, Corp.</u> <b>DRILLING FOREMAN:</b> <u>Edwin Fajardo</u> <b>DRILLING METHOD:</b> <u>Hollow Stem Auger (4-1/4" I.D.)</u> <b>DRILL RIG TYPE/MODEL:</b> <u>Diedrich D-70 turbo</u> <b>HAMMER TYPE:</b> <u>Automatic</u> <b>HAMMER WEIGHT:</b> <u>140 lb.</u> <b>HAMMER DROP:</b> <u>30 in.</u> <b>SPLIT SPOON DIA.:</b> <u>1.375 in. I.D., 2 in. O.D.</u> <b>CORE BARREL SIZE:</b> <u>NA</u> <b>LOGGED BY:</b> <u>SG</u> <b>CHECKED BY:</b> <u>AS</u>
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Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Material Description
		0					Topsoil	S1 - Top 12": Topsoil
		2	S1	2-6-13-18 (19)	24/20		Fill	Bot. 8": Well Graded GRAVEL with Silt and Sand (GW-GM), fine to coarse, subangular, ~5% fines, 30-35% fine to coarse sand, grey and white, moist
		3.8	S2	20-20-22-80/3" (42)	21/13			S2 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 15-20% fine to coarse subangular gravel, grey, moist
5		4	S3	10-10-9-7 (19)	24/12			▽ S3 - Silty SAND with Gravel (SM), fine to coarse, ~30% fines, ~20% fine subangular gravel, grey, wet
		6	S4	8-17-28-27 (45)	24/17			S4 - Top 1": Buried Organic Soil
		8					Sand and Gravel	Bot. 16": Silty SAND with Gravel (SM), fine to coarse, ~30% fines, ~20% fine subangular gravel, trace of weathered rock, grey, wet
10		10	S5	17-20-20-31 (40)	24/12			REMARK 1: HSA grinding on possible boulder at depth of 9 feet.
		12						S5 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 10-15% fines, 20-25% fine to coarse subrounded gravel, brown, wet
		15	S6	100/0"	0/0			REMARK 2: HSA grinding on possible boulder/cobbles at depths between 12 and 15 feet.
		15						S6 - No Recovery
								Bottom of borehole at 15.0 feet. Backfilled borehole with drill cuttings.
20								
25								

**GENERAL NOTES:**

1. The ground surface elevation is not available.

<b>CLIENT:</b> <u>Arrowstreet</u> <b>LGCI PROJECT NUMBER:</b> <u>2404</u> <b>DATE STARTED:</b> <u>4/15/24</u> <b>DATE COMPLETED:</b> <u>4/15/24</u> <b>BORING LOCATION:</b> <u>Near weastern side of site</u> <b>COORDINATES:</b> <u>NA</u> <b>SURFACE EI.: NA (see note 1)</b> <b>TOTAL DEPTH:</b> <u>17 ft.</u> <b>WEATHER:</b> <u>50's / Sunny</u> <b>GROUNDWATER LEVELS:</b> ▽ <b>DURING DRILLING:</b> <u>2.0 ft. Based on sample moisture</u> ▽ <b>AT END OF DRILLING:</b> <u>2.5 ft.</u> ▽ <b>OTHER:</b> <u>-</u>	<b>PROJECT NAME:</b> <u>Proposed Neary Elementary School</u> <b>PROJECT LOCATION:</b> <u>Southborough, MA</u> <b>DRILLING SUBCONTRACTOR:</b> <u>Soil X, Corp.</u> <b>DRILLING FOREMAN:</b> <u>Edwin Fajardo</u> <b>DRILLING METHOD:</b> <u>Hollow Stem Auger (4-1/4" I.D.)</u> <b>DRILL RIG TYPE/MODEL:</b> <u>Diedrich D-70 turbo</u> <b>HAMMER TYPE:</b> <u>Automatic</u> <b>HAMMER WEIGHT:</b> <u>140 lb.</u> <b>HAMMER DROP:</b> <u>30 in.</u> <b>SPLIT SPOON DIA.:</b> <u>1.375 in. I.D., 2 in. O.D.</u> <b>CORE BARREL SIZE:</b> <u>NA</u> <b>LOGGED BY:</b> <u>SG</u> <b>CHECKED BY:</b> <u>AS</u>
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Depth (ft.)	EI. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Material Description
		0						Depth El. (ft.)
			S1	1-2-7-12 (9)	24/19		Topsoil	S1 - Top 14": Topsoil
		2	S2	28-26-33-31 (59)	24/17			Bot. 5": Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, 0-5% fine gravel, grey with orange stripes, moist S2 - Top 4": Similar to S1, Bot. 5"
		4	S3	15-20-21-13 (41)	24/16			Bot. 13": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 35-40% mostly fine subangular gravel, brown grey, wet
5		6	S4	15-13-18-19 (31)	24/4			S3 - Top 7": Similar to S2, Bot. 13" Bot. 9": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subrounded to subangular gravel, brown, wet
		8						S4 - Similar to S3, Bot. 9", fine to coarse
10		10	S5	25-31-61-50 (92)	24/14		Sand and Gravel	S5 - Silty GRAVEL with Sand (GM), fine to coarse, angular, 15-20% fines, 25-30% fine to coarse sand, grey, wet
		12						
15		15	S6	20-25-26-25 (51)	24/12			S6 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subangular gravel, grey, wet
		17						Bottom of borehole at 17.0 feet. Backfilled borehole with drill cuttings.
20								
25								

**GENERAL NOTES:**

1. The ground surface elevation is not available.

<b>CLIENT:</b> <u>Arrowstreet</u> <b>LGCI PROJECT NUMBER:</b> <u>2404</u> <b>DATE STARTED:</b> <u>4/15/24</u> <b>DATE COMPLETED:</b> <u>4/15/24</u> <b>BORING LOCATION:</b> <u>Near southern center of site</u> <b>COORDINATES:</b> <u>NA</u> <b>SURFACE EL.:</b> <u>NA (see note 1)</u> <b>TOTAL DEPTH:</b> <u>19 ft.</u> <b>WEATHER:</b> <u>50's / Sunny</u> <b>GROUNDWATER LEVELS:</b> ▽ <b>DURING DRILLING:</b> <u>4.0 ft. Based on sample moisture</u> ▽ <b>AT END OF DRILLING:</b> <u>3.1 ft.</u> ▽ <b>OTHER:</b> <u>-</u>	<b>PROJECT NAME:</b> <u>Proposed Neary Elementary School</u> <b>PROJECT LOCATION:</b> <u>Southborough, MA</u> <b>DRILLING SUBCONTRACTOR:</b> <u>Soil X, Corp.</u> <b>DRILLING FOREMAN:</b> <u>Edwin Fajardo</u> <b>DRILLING METHOD:</b> <u>Hollow Stem Auger (4-1/4" I.D.)</u> <b>DRILL RIG TYPE/MODEL:</b> <u>Diedrich D-70 turbo</u> <b>HAMMER TYPE:</b> <u>Automatic</u> <b>HAMMER WEIGHT:</b> <u>140 lb.</u> <b>HAMMER DROP:</b> <u>30 in.</u> <b>SPLIT SPOON DIA.:</b> <u>1.375 in. I.D., 2 in. O.D.</u> <b>CORE BARREL SIZE:</b> <u>NA</u> <b>LOGGED BY:</b> <u>SG</u> <b>CHECKED BY:</b> <u>AS</u>
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Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Material Description
		0					Topsoil	S1 - Top 10": Topsoil
			S1	1-4-12-10 (16)	24/17		Subsoil	Bot. 7": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 10-15% fine subrounded gravel, light brown, moist
		2						
			S2	11-14-15-17 (29)	24/13			S2 - Silty SAND (SM), fine to coarse, ~15% fines, ~35% fine to coarse subrounded gravel, brown, moist
		4						
5			S3	14-13-9-8 (22)	24/9			S3 - Silty SAND (SM), fine to medium, 20-25% fines, 5-10% fine subrounded gravel, trace of weathered rock, brown grey, wet
		6						
			S4	8-7-8-12 (15)	24/8			S4 - Similar to S3
		8				1		REMARK 1: HSA grinding on possible boulder/cobbles at depth of 8 feet.
10								
		10					Sand and Gravel	S5 - Silty SAND with Gravel (SM), fine to coarse, ~15% fines, 15-20% fine to coarse gravel, trace of weathered rock, brown grey, wet
		12						
15								
		15						S6 - Silty SAND (SM), fine to medium, trace of coarse, 35-40% fines, 5-10% fine to coarse subrounded gravel, grey, wet
		17						
			S7	7-13-17-26 (30)	24/14			S7 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, ~10% fines, 15-20% fine to coarse subangular gravel, trace of weathered rock, grey with red, wet
		19						
20								Bottom of borehole at 19.0 feet. Backfilled borehole with drill cuttings.
25								

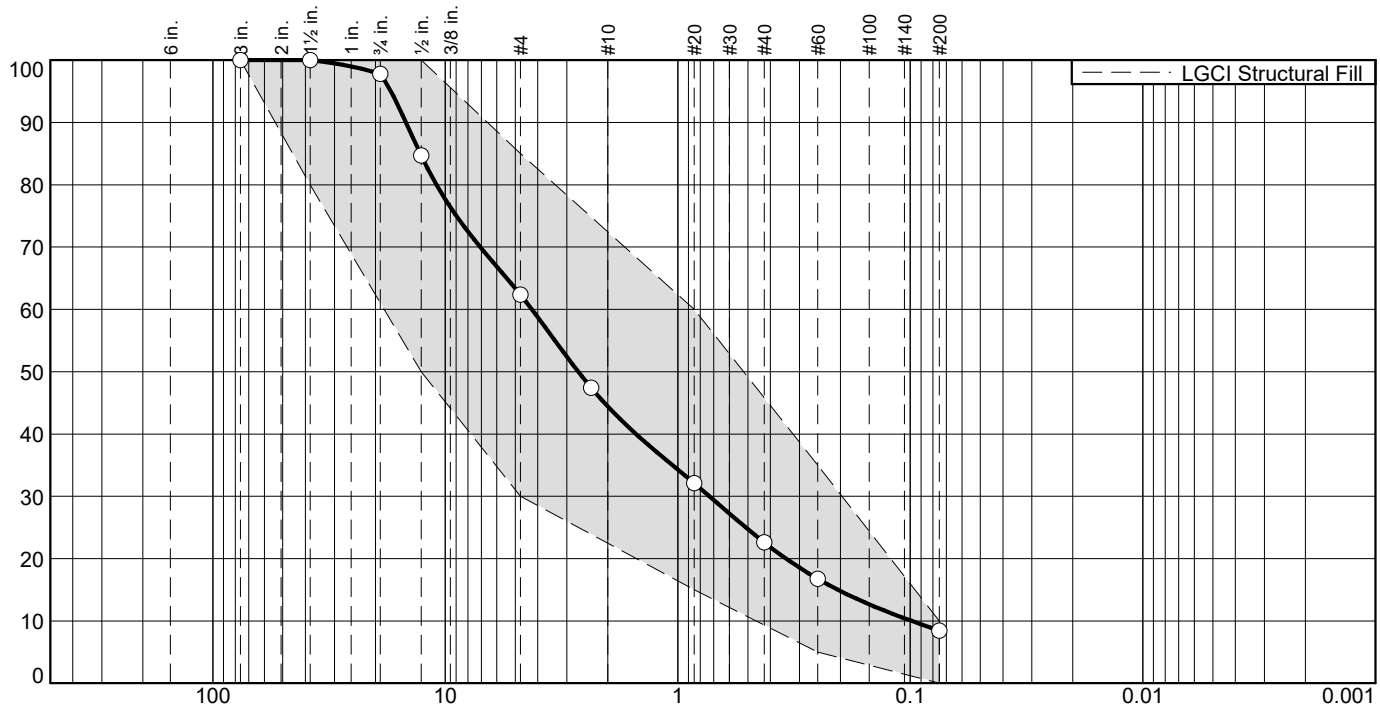
**GENERAL NOTES:**

1. The ground surface elevation is not available.

## **Appendix B – Laboratory Test Results**



## PERCENT FINER



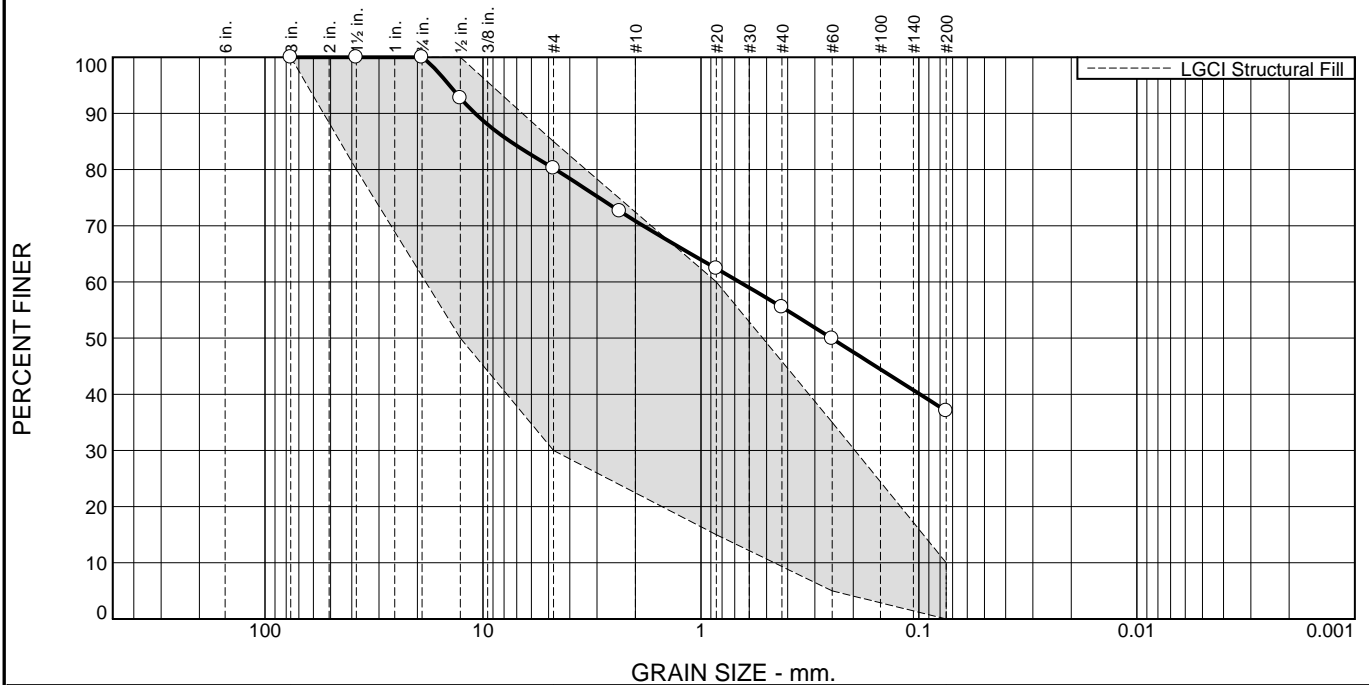
% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.2	35.4	18.0	21.8	14.2	8.4	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	97.8		
0.5"	84.7	50.0 - 100.0	
#4	62.4	30.0 - 85.0	
#8	47.4		
#20	32.1	15.0 - 60.0	
#40	22.6		
#60	16.8	5.0 - 35.0	
#200	8.4	0.0 - 10.0	

<b><u>Material Description</u></b>		
ASTM (D 2488) Classification: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 35-40% mostly fine gravel		
<b><u>Atterberg Limits (ASTM D 4318)</u></b>		
PL=	LL=	PI=
<b><u>Classification</u></b>		
USCS (D 2487)=	AASHTO (M 145)=	
<b><u>Coefficients</u></b>		
D <sub>90</sub> = 14.7722	D <sub>85</sub> = 12.8177	D <sub>60</sub> = 4.2431
D <sub>50</sub> = 2.6797	D <sub>30</sub> = 0.7306	D <sub>15</sub> = 0.2046
D <sub>10</sub> = 0.0986	C <sub>u</sub> = 43.05	C <sub>c</sub> = 1.28
<b>Remarks</b>		
Natural Soil Material		
<b>Date Received:</b> <u>4/15/24</u>		<b>Date Tested:</b> <u>4/30/24</u>
<b>Tested By:</b> <u>SG</u>		
<b>Checked By:</b> <u>SL</u>		

### Figure

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	19.8	9.3	15.4	18.5	37.0	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	100.0		
0.5"	92.7	50.0 - 100.0	
#4	80.2	30.0 - 85.0	
#8	72.6		
#20	62.4	15.0 - 60.0	X
#40	55.5		
#60	49.9	5.0 - 35.0	X
#200	37.0	0.0 - 10.0	X

\* LGCI Structural Fill

## Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 35-40% fines, 20% fine gravel

## Atterberg Limits (ASTM D 4318)

PL= LL= PI=

## Classification

USCS (D 2487)= AASHTO (M 145)=

## Coefficients

D<sub>90</sub>= 10.8651 D<sub>85</sub>= 7.4884 D<sub>60</sub>= 0.6656  
D<sub>50</sub>= 0.2525 D<sub>30</sub>= D<sub>15</sub>=  
D<sub>10</sub>= C<sub>u</sub>= C<sub>c</sub>=

## Remarks

Fill Material

Date Received: 4/15/24 Date Tested: 4/30/24

Tested By: SG

Checked By: \_\_\_\_\_

Location: B-1

Sample Number: S2

Depth: 2'-4'

Date Sampled: 4/15/24



**LGCI**

Lahlaf Geotechnical Consulting, Inc.

Client: Arrowstreet

Project: Proposed Neary Elementary School  
Southborough, Massachusetts

Project No: 2404

Figure

## K . Environmental Site Assessment



10 Mall Road, Suite 301 • Burlington, MA 01803  
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Engineers • Scientists • Planners

May 3, 2024

Katy Lillich, AIA, LEED AP, MCPPO  
Associate Principal  
Arrowstreet  
10 Post Office Square, Suite 700N  
Boston MA 02109

Re: MARGARET A. NEARY ELEMENTARY SCHOOL  
55 Parkerville Road, Southborough, MA 01772  
Limited Subsurface Soil Investigation Memorandum

Dear Ms. Lillich:

PEER Consultants P.C. (PEER) completed an initial review of the environmental laboratory analytical results for the initial four (4) combined geotechnical/geo-environmental borings completed at Margaret A. Neary Elementary School on April 15, 2024. The weather on this date was sunny, and 44°F. PEER understands that Soil X was the drilling contractor on the project site, and utilized a Diedrich D70 Turbo Drill Rig, with hollow stem augers (and no drive and wash) to complete the borings. Soil X was represented by a driller, and driller's assistance. Lahlaf Geotechnical Consulting, Inc., the geotechnical contractor, was represented by Ms. Sharon Guan. PEER was represented by Mr. Dave Gorden, Board Certified Environmental Scientist and Certified Professional Soil Scientist.

During the limited subsurface soil investigation at the Margaret A. Neary Elementary School, PEER collected two (2) separate, composited soil samples from specific boring depths, to be analyzed for the following parameter: Volatile Organic Compounds (VOCs).

In addition, during the limited subsurface soil investigation, PEER collected four (4) separate, composited soil samples from specific boring depths, to be analyzed for the following parameters: Semivolatile Organic Compounds (SVOCs), Metals, Polychlorinated Biphenyls (PCBs), Total Petroleum Hydrocarbons (TPH) DRO, and TPH GRO, and for General Chemistry parameters such as Percent Solids, Conductivity, Corrosivity (pH), Flashpoint/Ignitability, Reactive Cyanide, and Reactive Sulfide.

Finally, during the limited subsurface soil investigation, PEER collected one (1) composited soil sample from specific boring depths, to be analyzed for the following parameters: Pesticides and Herbicides. PEER also collected one (1) composited soil sample from the specific boring depths, to be analyzed for the following

---

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008404 – Margaret A. Neary Elementary School – Southborough, MA

*Limited Subsurface Soil Investigation Memorandum (5/3/24)*  
*Margaret A. Neary Elementary School – Southborough, MA*

parameters: Chloride, Fecal Coliforms, Nitrite as Nitrogen, Nitrate as Nitrogen, Phosphorus, Total as Phosphate.

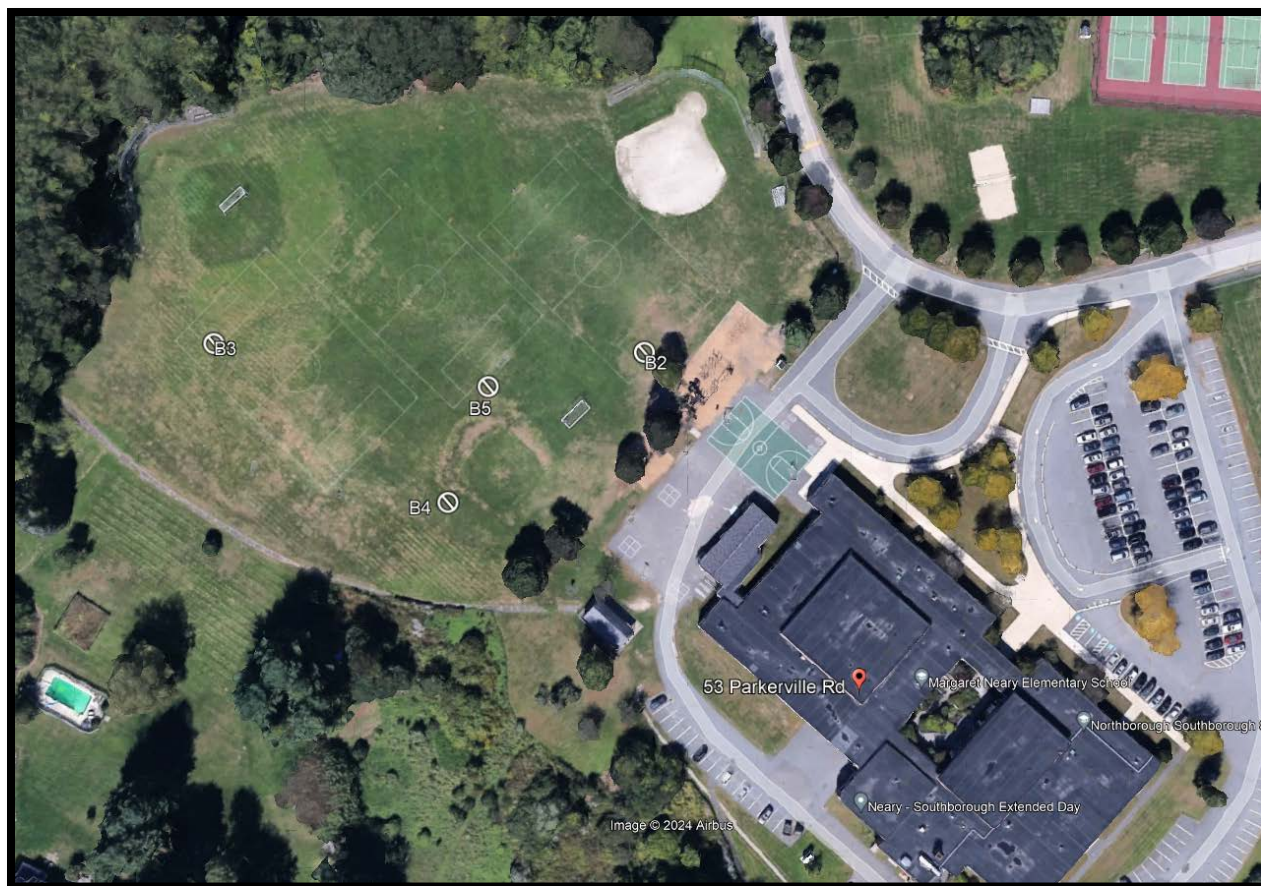
PEER compared the laboratory analytical results to Massachusetts Department of Environmental Protection (MADEP) Policy # COMM-97-001, Reuse and Disposal of Contaminated Soil at Massachusetts Landfills, August 1997. PEER also compared the laboratory analytical results to 310 CMR 40.00, the Massachusetts Contingency Plan (MCP) reporting category RCS-1 and reporting category RCS-2. General chemistry laboratory results were separately compared with RCRA Characteristics under 40 CFR 261. Additional discussions pertaining to the comparison of results may be read below.

Due to the predominance of gravel and split spoon fractured gravel/till and/or other coarse material within the soil borings, and considering that in general, soil material beneath the top soil layer appeared similar to the boring termination depth, PEER collected samples based on the following depth intervals:

- **B2 Full** included soil from soil boring B2 at depths of 2-4', 4-6', 6-8', and 10-12'.
- **B3 Full** included soil from soil boring B3 at depths of 2-4', 4-6', 10-12', and 15-17'.
- **B4 Full** included soil from soil boring B4 at depths of 2-4', 4-6', 6-8', 10-12', 15-17', and 17-19'.
- **B5 Full** included soil from soil boring B5 at depths of 2-4', 4-6', 6-8', 8-10', 10-12', 15-17', and 20-22'.
- **B2-B5 0-2'** included soil from soil borings B2, B3, B4, and B5 from a depth of 0'-2'.
- **B2-B5 WT** included soil which was moist to wet, and was assumed to be from within the groundwater table from soil borings B2 (10-12'), B3 (10-12', 15-17'), B4 (10-12', 15-17'), and B5 (15-17', 20-22').

PEER estimated and documented a global positioning system (GPS) point for each boring based on an open source electronic application; therefore, the location of each soil boring, as estimated in the below Google Earth image is considered approximate only.

*Limited Subsurface Soil Investigation Memorandum (5/3/24)*  
*Margaret A. Neary Elementary School – Southborough, MA*



53 Parkerville Rd., Southborough, MA  
(North is Up)



The following information provides a summary of the analytical results from soil samples collected by PEER on April 15, 2024. The samples were kept under chain of custody by PEER, and in a cooler with ice, until Phoenix Environmental Laboratories, Inc. (Phoenix), of Manchester, CT couriered the samples back to their office on April 16, 2024. PEER received the Analysis Report from Phoenix with the results on April 25, 2024.

### **VOCs**

For Sample B2-B5 (0-2') and Sample B2-B5 WT, there were no detections of individual VOCs. In addition, there were no exceedances of the MCP RCS-1 Criteria for an individual VOC, and there were no exceedances of the MCP RCS-2 Criteria for an individual VOC. Furthermore, there were no exceedances of Total VOCs for acceptance at a lined landfill, and there were no exceedances of Total VOCs for acceptance at an unlined landfill. VOCs were not detected. **Refer to Table 1A.**



### **SVOCs**

For Sample B2 Full, Sample B3 Full, Sample B4 Full, and Sample B5 Full, there were no detections of individual SVOCs. In addition, there were no exceedances of the MCP RCS-1 Criteria for an individual SVOC, and there were no exceedances of the MCP RCS-2 Criteria for an individual SVOC. Furthermore, there were no exceedances of Total SVOCs for acceptance at a lined landfill, and there were no exceedances of Total SVOCs for acceptance at an unlined landfill. SVOCs were not detected. **Refer to Table 1B.**

### **Metals**

For Sample B2 Full, Sample B3 Full, Sample B4 Full, and Sample B5 Full, there were neither exceedances of the MCP RCS-1 Criteria for individual Metals nor exceedances of the MCP RCS-2 Criteria for individual Metals. There were neither exceedances of Metals for acceptance at a lined landfill nor exceedances of Metals for acceptance at an unlined landfill. **Refer to Table 1C.**

### **PCBs**

For Sample B2 Full, Sample B3 Full, Sample B4 Full, and Sample B5 Full, there were neither exceedances of the MCP RCS-1 Criteria for individual Aroclors nor exceedances of the MCP RCS-2 Criteria for individual Aroclors. There were neither exceedances of Total PCBs for acceptance at a lined landfill nor exceedances of Total PCBs for acceptance at an unlined landfill. PCBs were not detected. **Refer to Table 1D.**

### **TPHs**

For Sample B2 Full, Sample B3 Full, Sample B4 Full, and Sample B5 Full, there were neither exceedances of the MCP RCS-1 Criteria for TPH DRO nor exceedances of the MCP RCS-2 Criteria for TPH DRO. There were neither exceedances of TPH DRO for acceptance at a lined landfill nor exceedances of TPH DRO for acceptance at an unlined landfill. Individual DRO were not detected. There are no comparison parameters for TPH GRO; however, TPH GRO was also not detected. **Refer to Table 1E.**

### **Pesticides**

For Sample B2-B5 0-2', there were neither exceedances of MCP RCS-1 criteria for individual pesticides nor exceedances of MCP RCS-2 criteria for individual pesticides. COMM-97-001 does not provide regulatory criteria for pesticides. **Refer to Table 1F.**

### **Herbicides**

For Sample B2-B5 0-2', there were neither exceedances of MCP RCS-1 criteria for individual herbicides nor exceedances of MCP RCS-2 criteria for individual herbicides. COMM-97-001 does not provide regulatory criteria for herbicides. **Refer to Table 1G.**

### **Miscellaneous/Biological**

For Sample B2-B5 WT, there were no detections of chloride, fecal coliforms, and nitrite as nitrogen for the soil sample (B2-B5 WT) analyzed, where "WT" refers to within the groundwater table. The MCP and COMM-97-001 do not provide regulatory criteria for these parameters. PEER understands that the location of the

potential septic system leach field was misrepresented to the Architect by Others, and that therefore this lack of the presence of a septic system leach field at the assumed location may be indicated in the laboratory results for these parameters.

In addition, Nitrate as Nitrogen was only detected at concentrations slightly above the laboratory reporting limit in soil Sample B2-B5 WT (0.93 mg/Kg). According to the Soil and Plant Nutrient Testing Laboratory at the UMass Extension (the Extension), in Amherst, MA, in general, a soil Nitrate Nitrogen concentration of 30 ppm (mg/Kg) or higher during the active growing season is sufficient for most plants. The Extension believes that interpretation of soil Nitrate Nitrogen levels below 30 ppm (mg/Kg) is somewhat nebulous because soil nitrogen is so dynamic. The Extension continues that when the concentration of soil Nitrate Nitrogen is less than 30 ppm (mg/Kg), additional fertilizer may or may not be needed. The soil borings which comprised B2-B5 WT are located in a grassed field northwest of the Margaret A. Neary Elementary School building. The presence of Nitrate Nitrogen may be due to applications of fertilizer to the grassed field; however, since the concentration at the sampled location is considered to be approximately 31 times lower than what the Extension may consider “sufficient for most plants”, no additional discussion related to Nitrate Nitrogen as a contaminant appears warranted.

Furthermore, Total Phosphate was detected at Sample B2-B5 WT. According to an article from the Eleventh Annual on-Site Wastewater Treatment Conference Minimizing Impacts, Maximizing Resource Potential Soil Based Wastewater Treatment, titled “Soil Based Wastewater Treatment”, by George W. Loomis, Soil Scientist, Dept. of Natural Resources Science, Director of the Cooperative Extension On-Site Wastewater Training Center at the University of Rhode Island (the “Article”), Phosphate is not a toxic compound, but it is the limiting nutrient in freshwater lakes and ponds responsible for eutrophication.

The Article continues that Phosphate anions are negatively charged ions capable of being strongly adsorbed to hydrous oxides of iron, aluminum, and manganese and carbonate surfaces on soil particles. It is also taken up by plant roots and incorporated into microbial cell material and organic matter. Most soils have the ability to adsorb phosphate loads from septic systems fairly well, so the concern is minimal. However, coarse textured soils with limited surface areas (due to low hydrous oxide or carbonate contents) can eventually reach their phosphate adsorptive capacity and not provide sufficient treatment to protect adjacent water bodies. Phosphate removals are also limited in saturated soils, and in situations where localized channel-type wastewater flow occurs.

PEER notes that concentration of total phosphate in soil within the groundwater table is approximately 26 times higher than the laboratory reporting limit. Whereas the Article indicates that “Phosphate removals are also limited in saturated soils,” PEER notes that these soil sample locations were specifically collected at depths associated with saturated soils. Though the presence of total Phosphate occurs in the soil samples, with the understanding that the septic system leach field is not located in this grassed field, no additional discussion related to total Phosphate as a contaminant appears warranted. However, PEER recommends



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that a consideration of excavation dewatering activities, if needed, in these soil types near or associated with wetlands be further reviewed. **Refer to Table 1H.**

**General Chemistry**

For Sample B2 Full, Sample B3 Full, Sample B4 Full, and Sample B5 Full, there were neither exceedances of Conductivity for acceptance at a lined landfill nor exceedances of Conductivity for acceptance at an unlined landfill. There were no exceedances of RCRA Characteristics for flashpoint/ignitability. Flashpoint/ignitability passed. There were no exceedances of RCRA Characteristics for pH. There were no exceedances of RCRA Characteristics for reactivity. Reactivity was Negative. **Refer to Table 1I.**

**Initial Recommendations**

PEER recommends that additional pre-characterization sampling of the subsurface soil in borings and/or test pits be completed once the exact proposed building or utility excavations or other site infrastructure depths and locations are known.

In addition, as it relates to the potential need for dewatering activities (as detailed in the Lahlaf Geotechnical Consulting, Inc. Preliminary Geotechnical Report), PEER understands that Lahlaf Geotechnical Consulting, Inc. is anticipating “that groundwater control procedures will be needed during construction.” Should a construction general permit be required for this activity, PEER recommends considering the implementation of a sampling and analysis program for groundwater through the installation of temporary groundwater monitoring wells during any additional subsurface soil investigation, and prior to site redevelopment.

Please find directly included an excel spreadsheet (as a PDF) summarizing the results of the limited subsurface soil investigation at the Margaret A. Neary Elementary School, and including an Analysis Report by Phoenix Environmental Laboratories (dated April 25, 2024).

Please contact us directly at 781.238.8880, should you have any questions or require any clarification on this Limited Subsurface Soil Investigation Memorandum at the Margaret A. Neary Elementary School.

Sincerely,

**PEER Consultants, P.C.**

David Gorden, BCES  
*Senior Environmental Scientist*

**Table 1A - Volatile Organic Compounds**  
 (Detected Analytes)  
**Margaret A. Neary Elementary School**  
**53 Parkerville Road**  
**Southborough, Massachusetts**

Lab Sample Id  
 Collection Date  
 Client Id  
 Matrix  
 Units

				CQ52307	CQ52308	CQ52309	CQ52310	CQ52312	CQ52313
				4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024
				B2 FULL	B3 FULL	B4 FULL	B5 FULL	B2-B5 0-2'	B2-B5 WT
				Soil	Soil	Soil	Soil	Soil	Soil
2020 MCP	2020 MCP	COMM-97-001	COMM-97-001	Result	RL	Result	RL	Result	RL
RCS-1	RCS-2	Lined	Unlined						
		Landfill	Landfill						

Volatiles By SW8260D
Total VOCs

ug/Kg	NL	NL	10,000	4,000	--		--		--		--		NS		NS	
-------	----	----	--------	-------	----	--	----	--	----	--	----	--	----	--	----	--

-- = Analyte not detected in soil sample.  
 NS = VOCs were not sampled for in this sample.  
 NL = The MCP does not list a standard for this.  
 There were no detections of individual VOCs.  
 There were no exceedances of the MCP RCS-1 Criteria for an individual VOC.  
 There were no exceedances of the MCP RCS-2 Criteria for an individual VOC.  
 There were no exceedances of Total VOCs for acceptance at a lined landfill.  
 There were no exceedances of Total VOCs for acceptance at an unlined landfill.

**Table 1B - Semivolatile Organic Compounds**  
 (Detected Analytes)  
**Margaret A. Neary Elementary School**  
**53 Parkerville Road**  
**Southborough, Massachusetts**

Lab Sample Id  
 Collection Date  
 Client Id  
 Matrix  
 Units

				CQ52307		CQ52308		CQ52309		CQ52310		CQ52312		CQ52313	
				4/15/2024		4/15/2024		4/15/2024		4/15/2024		4/15/2024		4/15/2024	
				B2 FULL		B3 FULL		B4 FULL		B5 FULL		B2-B5 0-2`		B2-B5 WT	
				Soil		Soil		Soil		Soil		Soil		Soil	
2020 MCP RCS-1	2020 MCP RCS-2	COMM-97-001 Lined Landfill	COMM-97-001 Unlined Landfill	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL

Semivolatiles By SW8270E														
Total SVOCs	ug/Kg	NL	NL	100,000	100,000	--	--	--	--	NS	NS			

-- = Analyte not detected in soil sample.

NS = SVOCs were not sampled for in this sample.

NL = The MCP does not list a standard for this.

There were no detections of individual SVOCs.

There were no exceedances of the MCP RCS-1 Criteria for an individual SVOC.

There were no exceedances of the MCP RCS-2 Criteria for an individual SVOC.

There were no exceedances of Total SVOCs for acceptance at a lined landfill.

There were no exceedances of Total SVOCs for acceptance at an unlined landfill.

**Table 1C - Metals**  
 (Detected Analytes)  
**Margaret A. Neary Elementary School**  
**53 Parkerville Road**  
**Southborough, Massachusetts**

Lab Sample Id  
 Collection Date  
 Client Id  
 Matrix  
 Units

				CQ52307		CQ52308		CQ52309		CQ52310		CQ52312		CQ52313	
				4/15/2024		4/15/2024		4/15/2024		4/15/2024		4/15/2024		4/15/2024	
				B2 FULL Soil		B3 FULL Soil		B4 FULL Soil		B5 FULL Soil		B2-B5 0-2` Soil		B2-B5 WT Soil	
2020 MCP RCS-1	2020 MCP RCS-2	COMM-97-001 Lined Landfill	COMM-97-001 Unlined Landfill	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL

Metals, Total															
Arsenic	mg/Kg	20	20	40	40	3.95	0.66	3.71	0.75	2.82	0.72	3.78	0.70	NS	NS
Barium	mg/Kg	1,000	3,000	NL	NL	35.4	0.33	46.9	0.38	32.7	0.36	48.3	0.35	NS	NS
Beryllium	mg/Kg	100	200	80	30	--		0.34	0.30	--		0.35	0.28	NS	NS
Cadmium	mg/Kg	80	80	1,000	1,000	--		--		0.4	0.36	--		NS	NS
Chromium	mg/Kg	100	200	NL	NL	12.1	0.33	17.9	0.38	13.1	0.36	13.8	0.35	NS	NS
Lead	mg/Kg	200	600	2,000	1,000	3.6	0.33	3.77	0.38	3.42	0.36	3.64	0.35	NS	NS
Nickel	mg/Kg	700	1,000	NL	NL	8.46	0.33	11	0.38	10.3	0.36	9.65	0.35	NS	NS
Vanadium	mg/Kg	500	800	NL	NL	17.8	0.33	24.1	0.38	20.8	0.36	22.3	0.35	NS	NS
Zinc	mg/Kg	1,000	3,000	NL	NL	22.1	0.7	26.9	0.8	23.4	0.7	27.3	0.7	NS	NS

-- = Analyte not detected in soil sample.

NS = Metals were not sampled for in this sample.

NL = COMM-97-001 does not list a standard for this metal.

There were neither exceedances of the MCP RCS-1 Criteria for individual Metals nor exceedances of the MCP RCS-2 Criteria for individual Metals.

There were neither exceedances of Metals for acceptance at a lined landfill nor exceedances of Metals for acceptance at an unlined landfill.

**Table 1D - Polychlorinated Biphenyls**  
 (Detected Analytes)  
**Margaret A. Neary Elementary School**  
**53 Parkerville Road**  
**Southborough, Massachusetts**

Lab Sample Id  
 Collection Date  
 Client Id  
 Matrix  
 Units

				CQ52307	CQ52308	CQ52309	CQ52310	CQ52312	CQ52313
				4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024
				B2 FULL	B3 FULL	B4 FULL	B5 FULL	B2-B5 0-2'	B2-B5 WT
				Soil	Soil	Soil	Soil	Soil	Soil
2020 MCP RCS-1	2020 MCP RCS-2	COMM-97-001 Lined Landfill	COMM-97-001 Unlined Landfill	Result	RL	Result	RL	Result	RL

**PCBs By SW8082A**

Total PCBs		NL	NL	<2,000	<2,000	--		--		--		--		NS		NS	
------------	--	----	----	--------	--------	----	--	----	--	----	--	----	--	----	--	----	--

-- = Analyte not detected in soil sample.  
 NS = PCBs were not sampled for in this sample.  
 NL = The MCP does not list a standard for this.  
 There were neither exceedances of the MCP RCS-1 Criteria for individual Aroclors nor exceedances of the MCP RCS-2 Criteria for individual Aroclors.  
 There were neither exceedances of Total PCBs for acceptance at a lined landfill nor exceedances of Total PCBs for acceptance at an unlined landfill.

<b>Table 1E - Total Petroleum Hydrocarbons</b> (Detected Analytes) <b>Margaret A. Neary Elementary School</b> <b>53 Parkerville Road</b> <b>Southborough, Massachusetts</b>															
Lab Sample Id				CQ52307		CQ52308		CQ52309		CQ52310		CQ52312		CQ52313	
Collection Date				4/15/2024		4/15/2024		4/15/2024		4/15/2024		4/15/2024		4/15/2024	
Client Id				B2 FULL		B3 FULL		B4 FULL		B5 FULL		B2-B5 0-2'		B2-B5 WT	
Matrix				Soil		Soil		Soil		Soil		Soil		Soil	
Units				2020 MCP RCS-1	2020 MCP RCS-2	COMM-97-001 Lined Landfill	COMM-97-001 Unlined Landfill	Result	RL	Result	RL	Result	RL	Result	RL

TPH By SW8015D DRO															
Total TPH	mg/kg	1,000	3,000	5,000	2,000	--		--		--		--		NS	NS

Gasoline Range Hydrocarbons (C6-C10) By SW8015D GRO															
GRO (C6-C10)	mg/Kg	NL	NL	NL	NL	--		--		--		--		NS	NS

-- = Analyte not detected in soil sample.

NS = TPHs were not sampled for in this sample.

NL = The MCP and COMM-97-001 do not list a standard for this.

TPH DRO included Fuel Oil #2/Diesel Fuel, Fuel Oil #4, Fuel Oil #6, Kerosene, Motor Oil, Unidentified

GRO included gasoline range organics (C6-C10).

There were neither exceedances of the MCP RCS-1 Criteria for Total TPH DRO nor exceedances of the MCP RCS-2 Criteria for Total TPH DRO.

There were neither exceedances of TPH DRO for acceptance at a lined landfill nor exceedances of TPH DRO for acceptance at an unlined landfill.

Table 1F - Pesticides  
(Detected Analytes)  
Margaret A. Neary Elementary School  
53 Parkerville Road  
Southborough, Massachusetts

Lab Sample Id

Collection Date

Client Id

Matrix

Units

		COMM-97-001	COMM-97-001	CQ52307	CQ52308	CQ52309	CQ52310	CQ52312	CQ52313
				4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024
				B2 FULL	B3 FULL	B4 FULL	B5 FULL	B2-B5 0-2'	B2-B5 WT
				Soil	Soil	Soil	Soil	Soil	Soil
2020 MCP RCS-1	2020 MCP RCS-2	Lined Landfill	Unlined Landfill	Result	RL	Result	RL	Result	RL

Pesticides By SW8081B

There were no detections of Pesticides for the soil sample (B2-B5 0-2') analyzed.  
There were neither exceedances of MCP RCS-1 criteria for individual pesticides nor exceedances of MCP RCS-2 criteria for individual pesticides.  
COMM-97-001 does not provide regulatory criteria for pesticides.

Table 1G - Herbicides  
(Detected Analytes)  
Margaret A. Neary Elementary School  
53 Parkerville Road  
Southborough, Massachusetts

Lab Sample Id

Collection Date

Client Id

Matrix

Units

		COMM-97-001	COMM-97-001	CQ52307	CQ52308	CQ52309	CQ52310	CQ52312	CQ52313
				4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024
				B2 FULL	B3 FULL	B4 FULL	B5 FULL	B2-B5 0-2'	B2-B5 WT
				Soil	Soil	Soil	Soil	Soil	Soil
2020 MCP RCS-1	2020 MCP RCS-2	Lined Landfill	Unlined Landfill	Result	RL	Result	RL	Result	RL

Chlorinated Herbicides By SW8151A

There were no detections of Herbicides for the soil sample (B2-B5 0-2') analyzed.

There were neither exceedances of MCP RCS-1 criteria for individual herbicides nor exceedances of MCP RCS-2 criteria for individual herbicides.

COMM-97-001 does not provide regulatory criteria for herbicides.



**Table 1H - Miscellaneous / Biological**  
 (Detected Analytes)  
**Margaret A. Neary Elementary School**  
**53 Parkerville Road**  
**Southborough, Massachusetts**

Lab Sample Id  
 Collection Date  
 Client Id  
 Matrix  
 Units

				CQ52307	CQ52308	CQ52309	CQ52310	CQ52312	CQ52313
				4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024	4/15/2024
				B2 FULL	B3 FULL	B4 FULL	B5 FULL	B2-B5 0-2'	B2-B5 WT
				Soil	Soil	Soil	Soil	Soil	Soil
2020 MCP	2020 MCP	COMM-97-001	COMM-97-001	Result	RL	Result	RL	Result	RL
RCS-1	RCS-2	Lined Landfill	Unlined Landfill						

Miscellaneous/Biological																	
Chloride	mg/kg	NL	NL	NL	NL	NS		NS		NS		NS		NS		--	
Fecal Coliforms	cfu/g	NL	NL	NL	NL	NS		NS		NS		NS		NS		--	
Nitrite as N	mg/kg	NL	NL	NL	NL	NS		NS		NS		NS		NS		--	
Nitrate as N	mg/kg	NL	NL	NL	NL	NS		NS		NS		NS		NS		0.93	0.56
Phosphorus, Total as P	mg/Kg	NL	NL	NL	NL	NS		NS		NS		NS		NS		365	14

There were no detections of chloride, fecal coliforms, and nitrite as nitrogen for the soil sample (B2-B5 WT) analyzed, where "WT" refers to within the groundwater table.

-- = Analyte not detected in soil sample.

NL = The MCP and COMM-97-001 do not list a standard for this constituent.

NS = Constituent was not sampled for in this sample.

(Detected Analytes)

Lab Sample Id

2020 MCP RCS-1	2020 MCP RCS-2	RCRA Characteristics 40 CFR 261	COMM-97-001 Lined Landfill	COMM-97-001 Unlined Landfill	Soil		Soil		Soil		Soil		Soil		Soil	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL

[illegible]

NL = The MCP and COMM-97-001 do not list a standard for this constituent.



Thursday, April 25, 2024

Attn: Mr Dave Gorden  
PEER Consultants  
10 Mall Road, Suite 301  
Burlington, MA 01803

Project ID: M.A.N. SCHOOL  
SDG ID: GCQ52307  
Sample ID#s: CQ52307 - CQ52314

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Phyllis Shiller".

Phyllis Shiller

Laboratory Director

NELAC - #NY11301  
CT Lab Registration #PH-0618  
MA Lab Registration #M-CT007  
ME Lab Registration #CT-007  
NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003  
NY Lab Registration #11301  
PA Lab Registration #68-03530  
RI Lab Registration #63  
VT Lab Registration #VT11301



Environmental Laboratories, Inc.  
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823

## Sample Id Cross Reference

April 25, 2024

SDG I.D.: GCQ52307

Project ID: M.A.N. SCHOOL

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Client Id	Lab Id	Matrix
B2 FULL	CQ52307	SOIL
B3 FULL	CQ52308	SOIL
B4 FULL	CQ52309	SOIL
B5 FULL	CQ52310	SOIL
TB041524 LL	CQ52311	SOIL
B2-B5 0-2`	CQ52312	SOIL
B2-B5 WT	CQ52313	SOIL
TB041524 HL	CQ52314	SOIL



## Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

April 25, 2024

FOR: Attn: Mr Dave Gorden  
PEER Consultants  
10 Mall Road, Suite 301  
Burlington, MA 01803

### Sample Information

Matrix: SOIL  
Location Code: PEER  
Rush Request: Standard  
P.O.#: 8404

### Custody Information

Collected by:  
Received by: CP  
Analyzed by: see "By" below

### Date

04/15/24  
04/16/24

### Time

14:37  
14:45

## Laboratory Data

SDG ID: GCQ52307  
Phoenix ID: CQ52307

Project ID: M.A.N. SCHOOL  
Client ID: B2 FULL

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.33	0.33	mg/Kg	1	04/17/24	TH	SW6010D
Arsenic	3.95	0.66	mg/Kg	1	04/17/24	TH	SW6010D
Barium	35.4	0.33	mg/Kg	1	04/17/24	TH	SW6010D
Beryllium	< 0.26	0.26	mg/Kg	1	04/17/24	TH	SW6010D
Cadmium	< 0.33	0.33	mg/Kg	1	04/17/24	TH	SW6010D
Chromium	12.1	0.33	mg/Kg	1	04/17/24	TH	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	04/17/24	ZT	SW7471B
Nickel	8.46	0.33	mg/Kg	1	04/17/24	TH	SW6010D
Lead	3.60	0.33	mg/Kg	1	04/17/24	PS	SW6010D
Antimony	< 3.3	3.3	mg/Kg	1	04/17/24	TH	SW6010D
Selenium	< 1.3	1.3	mg/Kg	1	04/17/24	TH	SW6010D
Thallium	< 3.0	3.0	mg/Kg	1	04/17/24	TH	SW6010D
Vanadium	17.8	0.33	mg/Kg	1	04/17/24	TH	SW6010D
Zinc	22.1	0.7	mg/Kg	1	04/17/24	TH	SW6010D
Percent Solid	94		%		04/16/24	CV	SW846-%Solid
Conductivity - Soil Matrix	24	5	umhos/cm	1	04/17/24	JY	SW9050A
Corrosivity	Negative		Pos/Neg	1	04/16/24	MW	SW846-Corr
Flash Point	>200	200	Degree F	1	04/19/24	G	SW1010B
Ignitability	Passed	140	degree F	1	04/19/24	G	SW846-Ignit
pH at 25C - Soil	7.22	1.00	pH Units	1	04/16/24 23:31	MW	SW846 9045D
Reactivity Cyanide	< 5	5	mg/Kg	1	04/19/24	EG/GD	SW846 7.3.3.1/90
Reactivity Sulfide	< 20	20	mg/Kg	1	04/22/24	EG/GD	SW846 CH7
Reactivity	Negative		Pos/Neg	1	04/22/24	EG/GD	SW846-React
Field Extraction	Completed				04/15/24		SW5035A
Mercury Digestion	Completed				04/17/24	MQ/HL	SW7471B
Extraction of ETPH	Completed				04/19/24	HL/H/U	SW3546
Soil Extraction for PCB	Completed				04/22/24	H/A	SW3546

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Soil Extraction for SVOA	Completed				04/19/24	C/A	SW3546
Total Metals Digest	Completed				04/16/24	J/AG	SW3050B

**Gasoline Range Hydrocarbons (C6-C10)**

GRO (C6-C10)	ND	5.1	mg/Kg	50	04/17/24	V	SW8015D GRO
<b><u>QA/QC Surrogates</u></b>							
% 2,5-Dibromotoluene (FID)	90		%	50	04/17/24	V	70 - 130 %

**Polychlorinated Biphenyls**

PCB-1016	ND	70	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1221	ND	70	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1232	ND	70	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1242	ND	70	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1248	ND	70	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1254	ND	70	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1260	ND	70	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1262	ND	70	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1268	ND	70	ug/Kg	2	04/23/24	SC	SW8082A

**QA/QC Surrogates**

% DCBP	91		%	2	04/23/24	SC	30 - 150 %
% DCBP (Confirmation)	90		%	2	04/23/24	SC	30 - 150 %
% TCMX	80		%	2	04/23/24	SC	30 - 150 %
% TCMX (Confirmation)	78		%	2	04/23/24	SC	30 - 150 %

**TPH by GC (Extractable (C9-C36))**

Fuel Oil #2 / Diesel Fuel	ND	52	mg/kg	1	04/20/24	JRB	SW8015D DRO
Fuel Oil #4	ND	52	mg/kg	1	04/20/24	JRB	SW8015D DRO
Fuel Oil #6	ND	52	mg/kg	1	04/20/24	JRB	SW8015D DRO
Kerosene	ND	52	mg/kg	1	04/20/24	JRB	SW8015D DRO
Motor Oil	ND	52	mg/kg	1	04/20/24	JRB	SW8015D DRO
Total TPH	ND	52	mg/kg	1	04/20/24	JRB	SW8015D DRO
Unidentified	ND	52	mg/kg	1	04/20/24	JRB	SW8015D DRO

**QA/QC Surrogates**

% COD (surr)	73		%	1	04/20/24	JRB	50 - 150 %
% Terphenyl (surr)	80		%	1	04/20/24	JRB	50 - 150 %

**Volatiles**

1,1,1,2-Tetrachloroethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	3.2	ug/Kg	1	04/16/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,1-Dichloroethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,1-Dichloroethene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,1-Dichloropropene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,4-Trichlorobenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.53	ug/Kg	1	04/16/24	JLI	SW8260D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dichlorobenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dichloroethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dichloropropane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,3-Dichloropropane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
2,2-Dichloropropane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
2-Chlorotoluene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
2-Hexanone	ND	27	ug/Kg	1	04/16/24	JLI	SW8260D
2-Isopropyltoluene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
4-Chlorotoluene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	27	ug/Kg	1	04/16/24	JLI	SW8260D
Acetone	ND	270	ug/Kg	1	04/16/24	JLI	SW8260D
Acrylonitrile	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Benzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Bromobenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Bromochloromethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Bromodichloromethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Bromoform	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Bromomethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Carbon Disulfide	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Carbon tetrachloride	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Chlorobenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Chloroethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Chloroform	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Chloromethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Dibromochloromethane	ND	3.2	ug/Kg	1	04/16/24	JLI	SW8260D
Dibromomethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Dichlorodifluoromethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Ethylbenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Hexachlorobutadiene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Isopropylbenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
m&p-Xylene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	32	ug/Kg	1	04/16/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	11	ug/Kg	1	04/16/24	JLI	SW8260D
Methylene chloride	ND	11	ug/Kg	1	04/16/24	JLI	SW8260D
Naphthalene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
n-Butylbenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
n-Propylbenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
o-Xylene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
p-Isopropyltoluene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
sec-Butylbenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Styrene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
tert-Butylbenzene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Tetrachloroethene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	11	ug/Kg	1	04/16/24	JLI	SW8260D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Toluene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Total Xylenes	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	11	ug/Kg	1	04/16/24	JLI	SW8260D
Trichloroethene	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Trichlorofluoromethane	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	11	ug/Kg	1	04/16/24	JLI	SW8260D
Vinyl chloride	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D
<b><u>QA/QC Surrogates</u></b>							
% 1,2-dichlorobenzene-d4	100		%	1	04/16/24	JLI	70 - 130 %
% Bromofluorobenzene	95		%	1	04/16/24	JLI	70 - 130 %
% Dibromofluoromethane	94		%	1	04/16/24	JLI	70 - 130 %
% Toluene-d8	99		%	1	04/16/24	JLI	70 - 130 %
<b><u>Oxygenates &amp; Dioxane</u></b>							
1,4-Dioxane	ND	110	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
Diethyl ether	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	5.3	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
<b><u>Semivolatiles</u></b>							
1,1-Biphenyl	ND	50	ug/Kg	1	04/20/24	MR	SW8270E
1,2,4,5-Tetrachlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
1,2,4-Trichlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
1,2-Dichlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
1,2-Diphenylhydrazine	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
1,3-Dichlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
1,4-Dichlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,2'-Oxybis(1-Chloropropane)	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4,5-Trichlorophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4,6-Trichlorophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dichlorophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dimethylphenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dinitrophenol	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dinitrotoluene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,6-Dinitrotoluene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Chloronaphthalene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Chlorophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Methylnaphthalene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Methylphenol (o-cresol)	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Nitroaniline	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
2-Nitrophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
3&4-Methylphenol (m&p-cresol)	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
3,3'-Dichlorobenzidine	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
3-Nitroaniline	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
4,6-Dinitro-2-methylphenol	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
4-Bromophenyl phenyl ether	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
4-Chloro-3-methylphenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E



Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
4-Chloroaniline	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
4-Chlorophenyl phenyl ether	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
4-Nitroaniline	ND	560	ug/Kg	1	04/20/24	MR	SW8270E
4-Nitrophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Acenaphthene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Acenaphthylene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Acetophenone	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Aniline	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
Anthracene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benz(a)anthracene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzidine	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(a)pyrene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(b)fluoranthene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(ghi)perylene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(k)fluoranthene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzoic acid	ND	700	ug/Kg	1	04/20/24	MR	SW8270E
Benzyl butyl phthalate	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-chloroethoxy)methane	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-chloroethyl)ether	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-ethylhexyl)phthalate	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
Carbazole	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
Chrysene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Dibenz(a,h)anthracene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Dibenzofuran	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Diethyl phthalate	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Dimethylphthalate	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Di-n-butylphthalate	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
Di-n-octylphthalate	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Fluoranthene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Fluorene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorobutadiene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorocyclopentadiene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Hexachloroethane	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Isophorone	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Naphthalene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Nitrobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodimethylamine	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodi-n-propylamine	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodiphenylamine	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
Pentachloronitrobenzene	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
Pentachlorophenol	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
Phenanthrene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Phenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Pyrene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Pyridine	ND	350	ug/Kg	1	04/20/24	MR	SW8270E
<b><u>QA/QC Surrogates</u></b>							
% 2,4,6-Tribromophenol	73		%	1	04/20/24	MR	30 - 130 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
% 2-Fluorobiphenyl	64		%	1	04/20/24	MR	30 - 130 %
% 2-Fluorophenol	64		%	1	04/20/24	MR	30 - 130 %
% Nitrobenzene-d5	63		%	1	04/20/24	MR	30 - 130 %
% Phenol-d5	65		%	1	04/20/24	MR	30 - 130 %
% Terphenyl-d14	72		%	1	04/20/24	MR	30 - 130 %

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

### **Comments:**

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Corrosivity is based solely on the pH analysis performed above.

The GRO (C6-C10) is quantitated using an gasoline standard.

Ignitability is based solely on the results of the closed cup flashpoint analysis performed above. Passed is >140 degree F.


The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The reactivity, reported above, is based only on the EPA Interim Guidance for Reactive Cyanide. This method is no longer listed in the current version of SW-846.

The reactivity, reported above, is based only on the EPA Interim Guidance for Reactive Sulfide. This method is no longer listed in the current version of SW-846.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



**Phyllis Shiller, Laboratory Director**

**April 25, 2024**

**Reviewed and Released by: Greg Lawrence, Assistant Lab Director**



## Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

April 25, 2024

FOR: Attn: Mr Dave Gorden  
PEER Consultants  
10 Mall Road, Suite 301  
Burlington, MA 01803

### Sample Information

Matrix: SOIL  
Location Code: PEER  
Rush Request: Standard  
P.O.#: 8404

### Custody Information

Collected by:  
Received by: CP  
Analyzed by: see "By" below

### Date

04/15/24  
04/16/24

### Time

11:39  
14:45

## Laboratory Data

SDG ID: GCQ52307  
Phoenix ID: CQ52308

Project ID: M.A.N. SCHOOL  
Client ID: B3 FULL

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.38	0.38	mg/Kg	1	04/17/24	TH	SW6010D
Arsenic	3.71	0.75	mg/Kg	1	04/17/24	TH	SW6010D
Barium	46.9	0.38	mg/Kg	1	04/17/24	TH	SW6010D
Beryllium	0.34	0.30	mg/Kg	1	04/17/24	TH	SW6010D
Cadmium	< 0.38	0.38	mg/Kg	1	04/17/24	TH	SW6010D
Chromium	17.9	0.38	mg/Kg	1	04/17/24	TH	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	04/17/24	ZT	SW7471B
Nickel	11.0	0.38	mg/Kg	1	04/17/24	TH	SW6010D
Lead	3.77	0.38	mg/Kg	1	04/17/24	PS	SW6010D
Antimony	< 3.8	3.8	mg/Kg	1	04/17/24	TH	SW6010D
Selenium	< 1.5	1.5	mg/Kg	1	04/17/24	TH	SW6010D
Thallium	< 3.4	3.4	mg/Kg	1	04/17/24	TH	SW6010D
Vanadium	24.1	0.38	mg/Kg	1	04/17/24	TH	SW6010D
Zinc	26.9	0.8	mg/Kg	1	04/17/24	TH	SW6010D
Percent Solid	90		%		04/16/24	CV	SW846-%Solid
Conductivity - Soil Matrix	20	5	umhos/cm	1	04/17/24	JY	SW9050A
Corrosivity	Negative		Pos/Neg	1	04/16/24	MW	SW846-Corr
Flash Point	>200	200	Degree F	1	04/19/24	G	SW1010B
Ignitability	Passed	140	degree F	1	04/19/24	G	SW846-Ignit
pH at 25C - Soil	7.40	1.00	pH Units	1	04/16/24 23:31	MW	SW846 9045D
Reactivity Cyanide	< 5	5	mg/Kg	1	04/19/24	EG/GD	SW846 7.3.3.1/90
Reactivity Sulfide	< 20	20	mg/Kg	1	04/22/24	EG/GD	SW846 CH7
Reactivity	Negative		Pos/Neg	1	04/22/24	EG/GD	SW846-React
Field Extraction	Completed				04/15/24		SW5035A
Mercury Digestion	Completed				04/17/24	MQ/HL	SW7471B
Extraction of ETPH	Completed				04/19/24	HL/H/U	SW3546
Soil Extraction for PCB	Completed				04/22/24	H/A	SW3546

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Soil Extraction for SVOA	Completed				04/19/24	C/A	SW3546
Total Metals Digest	Completed				04/16/24	J/AG	SW3050B

**Gasoline Range Hydrocarbons (C6-C10)**

GRO (C6-C10)	ND	5.0	mg/Kg	50	04/17/24	V	SW8015D GRO
<b><u>QA/QC Surrogates</u></b>							
% 2,5-Dibromotoluene (FID)	94		%	50	04/17/24	V	70 - 130 %

**Polychlorinated Biphenyls**

PCB-1016	ND	73	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1221	ND	73	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1232	ND	73	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1242	ND	73	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1248	ND	73	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1254	ND	73	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1260	ND	73	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1262	ND	73	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1268	ND	73	ug/Kg	2	04/23/24	SC	SW8082A

**QA/QC Surrogates**

% DCBP	86		%	2	04/23/24	SC	30 - 150 %
% DCBP (Confirmation)	85		%	2	04/23/24	SC	30 - 150 %
% TCMX	79		%	2	04/23/24	SC	30 - 150 %
% TCMX (Confirmation)	76		%	2	04/23/24	SC	30 - 150 %

**TPH by GC (Extractable (C9-C36))**

Fuel Oil #2 / Diesel Fuel	ND	55	mg/kg	1	04/20/24	JRB	SW8015D DRO
Fuel Oil #4	ND	55	mg/kg	1	04/20/24	JRB	SW8015D DRO
Fuel Oil #6	ND	55	mg/kg	1	04/20/24	JRB	SW8015D DRO
Kerosene	ND	55	mg/kg	1	04/20/24	JRB	SW8015D DRO
Motor Oil	ND	55	mg/kg	1	04/20/24	JRB	SW8015D DRO
Total TPH	ND	55	mg/kg	1	04/20/24	JRB	SW8015D DRO
Unidentified	ND	55	mg/kg	1	04/20/24	JRB	SW8015D DRO

**QA/QC Surrogates**

% COD (surr)	66		%	1	04/20/24	JRB	50 - 150 %
% Terphenyl (surr)	73		%	1	04/20/24	JRB	50 - 150 %

**Volatiles**

1,1,1,2-Tetrachloroethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	2.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,1-Dichloroethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,1-Dichloroethene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,1-Dichloropropene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,4-Trichlorobenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.49	ug/Kg	1	04/16/24	JLI	SW8260D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dichlorobenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dichloroethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dichloropropane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,3-Dichloropropane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
2,2-Dichloropropane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
2-Chlorotoluene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
2-Hexanone	ND	24	ug/Kg	1	04/16/24	JLI	SW8260D
2-Isopropyltoluene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
4-Chlorotoluene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	24	ug/Kg	1	04/16/24	JLI	SW8260D
Acetone	ND	240	ug/Kg	1	04/16/24	JLI	SW8260D
Acrylonitrile	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Benzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Bromobenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Bromochloromethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Bromodichloromethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Bromoform	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Bromomethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Carbon Disulfide	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Carbon tetrachloride	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Chlorobenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Chloroethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Chloroform	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Chloromethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Dibromochloromethane	ND	2.9	ug/Kg	1	04/16/24	JLI	SW8260D
Dibromomethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Dichlorodifluoromethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Ethylbenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Hexachlorobutadiene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Isopropylbenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
m&p-Xylene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	29	ug/Kg	1	04/16/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	9.8	ug/Kg	1	04/16/24	JLI	SW8260D
Methylene chloride	ND	9.8	ug/Kg	1	04/16/24	JLI	SW8260D
Naphthalene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
n-Butylbenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
n-Propylbenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
o-Xylene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
p-Isopropyltoluene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
sec-Butylbenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Styrene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
tert-Butylbenzene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Tetrachloroethene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	9.8	ug/Kg	1	04/16/24	JLI	SW8260D



Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Toluene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Total Xylenes	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	9.8	ug/Kg	1	04/16/24	JLI	SW8260D
Trichloroethene	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Trichlorofluoromethane	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	9.8	ug/Kg	1	04/16/24	JLI	SW8260D
Vinyl chloride	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D
<b><u>QA/QC Surrogates</u></b>							
% 1,2-dichlorobenzene-d4	100		%	1	04/16/24	JLI	70 - 130 %
% Bromofluorobenzene	96		%	1	04/16/24	JLI	70 - 130 %
% Dibromofluoromethane	92		%	1	04/16/24	JLI	70 - 130 %
% Toluene-d8	99		%	1	04/16/24	JLI	70 - 130 %
<b><u>Oxygenates &amp; Dioxane</u></b>							
1,4-Dioxane	ND	98	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
Diethyl ether	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	4.9	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
<b><u>Semivolatiles</u></b>							
1,1-Biphenyl	ND	50	ug/Kg	1	04/20/24	MR	SW8270E
1,2,4,5-Tetrachlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
1,2,4-Trichlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
1,2-Dichlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
1,2-Diphenylhydrazine	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
1,3-Dichlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
1,4-Dichlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,2'-Oxybis(1-Chloropropane)	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4,5-Trichlorophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4,6-Trichlorophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dichlorophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dimethylphenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dinitrophenol	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dinitrotoluene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2,6-Dinitrotoluene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Chloronaphthalene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Chlorophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Methylnaphthalene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Methylphenol (o-cresol)	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
2-Nitroaniline	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
2-Nitrophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
3&4-Methylphenol (m&p-cresol)	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
3,3'-Dichlorobenzidine	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
3-Nitroaniline	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
4,6-Dinitro-2-methylphenol	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
4-Bromophenyl phenyl ether	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
4-Chloro-3-methylphenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
4-Chloroaniline	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
4-Chlorophenyl phenyl ether	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
4-Nitroaniline	ND	580	ug/Kg	1	04/20/24	MR	SW8270E
4-Nitrophenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Acenaphthene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Acenaphthylene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Acetophenone	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Aniline	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
Anthracene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benz(a)anthracene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzidine	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(a)pyrene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(b)fluoranthene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(ghi)perylene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(k)fluoranthene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Benzoic acid	ND	720	ug/Kg	1	04/20/24	MR	SW8270E
Benzyl butyl phthalate	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-chloroethoxy)methane	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-chloroethyl)ether	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-ethylhexyl)phthalate	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
Carbazole	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
Chrysene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Dibenz(a,h)anthracene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Dibenzofuran	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Diethyl phthalate	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Dimethylphthalate	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Di-n-butylphthalate	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
Di-n-octylphthalate	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Fluoranthene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Fluorene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorobutadiene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorocyclopentadiene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Hexachloroethane	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Isophorone	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Naphthalene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Nitrobenzene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodimethylamine	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodi-n-propylamine	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodiphenylamine	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
Pentachloronitrobenzene	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
Pentachlorophenol	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
Phenanthrene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Phenol	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Pyrene	ND	250	ug/Kg	1	04/20/24	MR	SW8270E
Pyridine	ND	360	ug/Kg	1	04/20/24	MR	SW8270E
<b><u>QA/QC Surrogates</u></b>							
% 2,4,6-Tribromophenol	73		%	1	04/20/24	MR	30 - 130 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
% 2-Fluorobiphenyl	65		%	1	04/20/24	MR	30 - 130 %
% 2-Fluorophenol	66		%	1	04/20/24	MR	30 - 130 %
% Nitrobenzene-d5	64		%	1	04/20/24	MR	30 - 130 %
% Phenol-d5	66		%	1	04/20/24	MR	30 - 130 %
% Terphenyl-d14	72		%	1	04/20/24	MR	30 - 130 %

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

### **Comments:**

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Corrosivity is based solely on the pH analysis performed above.

The GRO (C6-C10) is quantitated using an gasoline standard.

Ignitability is based solely on the results of the closed cup flashpoint analysis performed above. Passed is >140 degree F.


The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The reactivity, reported above, is based only on the EPA Interim Guidance for Reactive Cyanide. This method is no longer listed in the current version of SW-846.

The reactivity, reported above, is based only on the EPA Interim Guidance for Reactive Sulfide. This method is no longer listed in the current version of SW-846.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



**Phyllis Shiller, Laboratory Director**

**April 25, 2024**

**Reviewed and Released by: Greg Lawrence, Assistant Lab Director**



## Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

April 25, 2024

FOR: Attn: Mr Dave Gorden  
PEER Consultants  
10 Mall Road, Suite 301  
Burlington, MA 01803

### Sample Information

Matrix: SOIL  
Location Code: PEER  
Rush Request: Standard  
P.O.#: 8404

### Custody Information

Collected by:  
Received by: CP  
Analyzed by: see "By" below

### Date

04/15/24  
04/16/24

### Time

13:16  
14:45

## Laboratory Data

SDG ID: GCQ52307  
Phoenix ID: CQ52309

Project ID: M.A.N. SCHOOL  
Client ID: B4 FULL

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.36	0.36	mg/Kg	1	04/17/24	PM	SW6010D
Arsenic	2.82	0.72	mg/Kg	1	04/17/24	PM	SW6010D
Barium	32.7	0.36	mg/Kg	1	04/17/24	PM	SW6010D
Beryllium	< 0.29	0.29	mg/Kg	1	04/17/24	PM	SW6010D
Cadmium	0.40	0.36	mg/Kg	1	04/17/24	PM	SW6010D
Chromium	13.1	0.36	mg/Kg	1	04/17/24	PM	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	04/17/24	ZT	SW7471B
Nickel	10.3	0.36	mg/Kg	1	04/17/24	PM	SW6010D
Lead	3.42	0.36	mg/Kg	1	04/17/24	PM	SW6010D
Antimony	< 3.6	3.6	mg/Kg	1	04/17/24	PM	SW6010D
Selenium	< 1.4	1.4	mg/Kg	1	04/17/24	PM	SW6010D
Thallium	< 3.2	3.2	mg/Kg	1	04/17/24	PM	SW6010D
Vanadium	20.8	0.36	mg/Kg	1	04/17/24	PM	SW6010D
Zinc	23.4	0.7	mg/Kg	1	04/17/24	PM	SW6010D
Percent Solid	90		%		04/16/24	CV	SW846-%Solid
Conductivity - Soil Matrix	23	5	umhos/cm	1	04/17/24	JY	SW9050A
Corrosivity	Negative		Pos/Neg	1	04/16/24	MW	SW846-Corr
Flash Point	>200	200	Degree F	1	04/19/24	G	SW1010B
Ignitability	Passed	140	degree F	1	04/19/24	G	SW846-Ignit
pH at 25C - Soil	7.12	1.00	pH Units	1	04/16/24 23:31	MW	SW846 9045D
Reactivity Cyanide	< 5	5	mg/Kg	1	04/19/24	EG/GD	SW846 7.3.3.1/90
Reactivity Sulfide	< 20	20	mg/Kg	1	04/22/24	EG/GD	SW846 CH7
Reactivity	Negative		Pos/Neg	1	04/22/24	EG/GD	SW846-React
Field Extraction	Completed				04/15/24		SW5035A
Mercury Digestion	Completed				04/17/24	MQ/HL	SW7471B
Extraction of ETPH	Completed				04/19/24	HL/H/U	SW3546
Soil Extraction for PCB	Completed				04/22/24	C/U	SW3546

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Soil Extraction for SVOA	Completed				04/19/24	C/A	SW3546
Total Metals Digest	Completed				04/16/24	J/AG	SW3050B

**Gasoline Range Hydrocarbons (C6-C10)**

GRO (C6-C10)	ND	4.8	mg/Kg	50	04/17/24	V	SW8015D GRO
<b><u>QA/QC Surrogates</u></b>							
% 2,5-Dibromotoluene (FID)	92		%	50	04/17/24	V	70 - 130 %

**Polychlorinated Biphenyls**

PCB-1016	ND	72	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1221	ND	72	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1232	ND	72	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1242	ND	72	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1248	ND	72	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1254	ND	72	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1260	ND	72	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1262	ND	72	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1268	ND	72	ug/Kg	2	04/23/24	SC	SW8082A

**QA/QC Surrogates**

% DCBP	86		%	2	04/23/24	SC	30 - 150 %
% DCBP (Confirmation)	77		%	2	04/23/24	SC	30 - 150 %
% TCMX	77		%	2	04/23/24	SC	30 - 150 %
% TCMX (Confirmation)	70		%	2	04/23/24	SC	30 - 150 %

**TPH by GC (Extractable (C9-C36))**

Fuel Oil #2 / Diesel Fuel	ND	54	mg/kg	1	04/20/24	JRB	SW8015D DRO
Fuel Oil #4	ND	54	mg/kg	1	04/20/24	JRB	SW8015D DRO
Fuel Oil #6	ND	54	mg/kg	1	04/20/24	JRB	SW8015D DRO
Kerosene	ND	54	mg/kg	1	04/20/24	JRB	SW8015D DRO
Motor Oil	ND	54	mg/kg	1	04/20/24	JRB	SW8015D DRO
Total TPH	ND	54	mg/kg	1	04/20/24	JRB	SW8015D DRO
Unidentified	ND	54	mg/kg	1	04/20/24	JRB	SW8015D DRO

**QA/QC Surrogates**

% COD (surr)	49		%	1	04/20/24	JRB	50 - 150 %
% Terphenyl (surr)	60		%	1	04/20/24	JRB	50 - 150 %

**Volatiles**

1,1,1,2-Tetrachloroethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	2.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,2,4-Trichlorobenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.42	ug/Kg	1	04/17/24	JLI	SW8260D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dichlorobenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
2-Chlorotoluene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
2-Hexanone	ND	21	ug/Kg	1	04/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
4-Chlorotoluene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	21	ug/Kg	1	04/17/24	JLI	SW8260D
Acetone	ND	210	ug/Kg	1	04/17/24	JLI	SW8260D
Acrylonitrile	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Benzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Bromobenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Bromochloromethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Bromodichloromethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Bromoform	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Bromomethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Carbon Disulfide	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Carbon tetrachloride	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Chlorobenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Chloroethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Chloroform	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Chloromethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Dibromochloromethane	ND	2.5	ug/Kg	1	04/17/24	JLI	SW8260D
Dibromomethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Ethylbenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Isopropylbenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
m&p-Xylene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	25	ug/Kg	1	04/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	8.4	ug/Kg	1	04/17/24	JLI	SW8260D
Methylene chloride	ND	8.4	ug/Kg	1	04/17/24	JLI	SW8260D
Naphthalene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
n-Butylbenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
n-Propylbenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
o-Xylene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
sec-Butylbenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Styrene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
tert-Butylbenzene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Tetrachloroethene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	8.4	ug/Kg	1	04/17/24	JLI	SW8260D



Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Toluene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Total Xylenes	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	8.4	ug/Kg	1	04/17/24	JLI	SW8260D
Trichloroethene	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	8.4	ug/Kg	1	04/17/24	JLI	SW8260D
Vinyl chloride	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D
<b><u>QA/QC Surrogates</u></b>							
% 1,2-dichlorobenzene-d4	99		%	1	04/17/24	JLI	70 - 130 %
% Bromofluorobenzene	95		%	1	04/17/24	JLI	70 - 130 %
% Dibromofluoromethane	96		%	1	04/17/24	JLI	70 - 130 %
% Toluene-d8	100		%	1	04/17/24	JLI	70 - 130 %
<b><u>Oxygenates &amp; Dioxane</u></b>							
1,4-Dioxane	ND	84	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	4.2	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
<b><u>Semivolatiles</u></b>							
1,1-Biphenyl	ND	50	ug/Kg	1	04/20/24	MR	SW8270E
1,2,4,5-Tetrachlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
1,2,4-Trichlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
1,2-Dichlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
1,2-Diphenylhydrazine	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
1,3-Dichlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
1,4-Dichlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,2'-Oxybis(1-Chloropropane)	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4,5-Trichlorophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4,6-Trichlorophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dichlorophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dimethylphenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dinitrophenol	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dinitrotoluene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,6-Dinitrotoluene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Chloronaphthalene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Chlorophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Methylnaphthalene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Methylphenol (o-cresol)	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Nitroaniline	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
2-Nitrophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
3&4-Methylphenol (m&p-cresol)	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
3,3'-Dichlorobenzidine	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
3-Nitroaniline	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
4,6-Dinitro-2-methylphenol	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
4-Bromophenyl phenyl ether	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
4-Chloro-3-methylphenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
4-Chloroaniline	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
4-Chlorophenyl phenyl ether	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
4-Nitroaniline	ND	590	ug/Kg	1	04/20/24	MR	SW8270E
4-Nitrophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Acenaphthene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Acenaphthylene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Acetophenone	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Aniline	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Anthracene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benz(a)anthracene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzidine	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(a)pyrene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(b)fluoranthene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(ghi)perylene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(k)fluoranthene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzoic acid	ND	730	ug/Kg	1	04/20/24	MR	SW8270E
Benzyl butyl phthalate	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-chloroethoxy)methane	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-chloroethyl)ether	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-ethylhexyl)phthalate	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Carbazole	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Chrysene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Dibenz(a,h)anthracene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Dibenzofuran	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Diethyl phthalate	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Dimethylphthalate	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Di-n-butylphthalate	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Di-n-octylphthalate	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Fluoranthene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Fluorene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorobutadiene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorocyclopentadiene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Hexachloroethane	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Isophorone	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Naphthalene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Nitrobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodimethylamine	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodi-n-propylamine	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodiphenylamine	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Pentachloronitrobenzene	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Pentachlorophenol	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Phenanthrene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Phenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Pyrene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Pyridine	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
<b><u>QA/QC Surrogates</u></b>							
% 2,4,6-Tribromophenol	78		%	1	04/20/24	MR	30 - 130 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
% 2-Fluorobiphenyl	67		%	1	04/20/24	MR	30 - 130 %
% 2-Fluorophenol	70		%	1	04/20/24	MR	30 - 130 %
% Nitrobenzene-d5	68		%	1	04/20/24	MR	30 - 130 %
% Phenol-d5	70		%	1	04/20/24	MR	30 - 130 %
% Terphenyl-d14	74		%	1	04/20/24	MR	30 - 130 %

3 = This parameter exceeds laboratory specified limits.  
Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level  
QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

### **Comments:**

The GRO (C6-C10) is quantitated using an gasoline standard.

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Corrosivity is based solely on the pH analysis performed above.

Ignitability is based solely on the results of the closed cup flashpoint analysis performed above. Passed is >140 degree F.

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The reactivity, reported above, is based only on the EPA Interim Guidance for Reactive Cyanide. This method is no longer listed in the current version of SW-846.

The reactivity, reported above, is based only on the EPA Interim Guidance for Reactive Sulfide. This method is no longer listed in the current version of SW-846.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



**Phyllis Shiller, Laboratory Director**

**April 25, 2024**

**Reviewed and Released by: Greg Lawrence, Assistant Lab Director**



## Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

April 25, 2024

FOR: Attn: Mr Dave Gorden  
PEER Consultants  
10 Mall Road, Suite 301  
Burlington, MA 01803

### Sample Information

Matrix: SOIL  
Location Code: PEER  
Rush Request: Standard  
P.O.#: 8404

### Custody Information

Collected by:  
Received by: CP  
Analyzed by: see "By" below

### Date

04/15/24  
04/16/24

### Time

9:42  
14:45

## Laboratory Data

SDG ID: GCQ52307  
Phoenix ID: CQ52310

Project ID: M.A.N. SCHOOL  
Client ID: B5 FULL

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.35	0.35	mg/Kg	1	04/18/24	CPP	SW6010D
Arsenic	3.78	0.70	mg/Kg	1	04/18/24	CPP	SW6010D
Barium	48.3	0.35	mg/Kg	1	04/18/24	CPP	SW6010D
Beryllium	0.35	0.28	mg/Kg	1	04/18/24	CPP	SW6010D
Cadmium	< 0.35	0.35	mg/Kg	1	04/18/24	CPP	SW6010D
Chromium	13.8	0.35	mg/Kg	1	04/18/24	CPP	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	04/17/24	ZT	SW7471B
Nickel	9.65	0.35	mg/Kg	1	04/18/24	CPP	SW6010D
Lead	3.64	0.35	mg/Kg	1	04/18/24	CPP	SW6010D
Antimony	< 3.5	3.5	mg/Kg	1	04/18/24	CPP	SW6010D
Selenium	< 1.4	1.4	mg/Kg	1	04/18/24	CPP	SW6010D
Thallium	< 3.2	3.2	mg/Kg	1	04/18/24	CPP	SW6010D
Vanadium	22.3	0.35	mg/Kg	1	04/18/24	CPP	SW6010D
Zinc	27.3	0.7	mg/Kg	1	04/18/24	CPP	SW6010D
Percent Solid	89		%		04/16/24	CV	SW846-%Solid
Conductivity - Soil Matrix	25	5	umhos/cm	1	04/17/24	JY	SW9050A
Corrosivity	Negative		Pos/Neg	1	04/16/24	MW	SW846-Corr
Flash Point	>200	200	Degree F	1	04/19/24	G	SW1010B
Ignitability	Passed	140	degree F	1	04/19/24	G	SW846-Ignit
pH at 25C - Soil	7.32	1.00	pH Units	1	04/16/24 23:31	MW	SW846 9045D
Reactivity Cyanide	< 5	5	mg/Kg	1	04/19/24	EG/GD	SW846 7.3.3.1/90
Reactivity Sulfide	< 20	20	mg/Kg	1	04/22/24	EG/GD	SW846 CH7
Reactivity	Negative		Pos/Neg	1	04/22/24	EG/GD	SW846-React
Field Extraction	Completed				04/15/24		SW5035A
Mercury Digestion	Completed				04/17/24	MQ/HL	SW7471B
Extraction of ETPH	Completed				04/19/24	HL/H/U	SW3546
Soil Extraction for PCB	Completed				04/22/24	C/U	SW3546

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Soil Extraction for SVOA	Completed				04/19/24	C/A	SW3546
Total Metals Digest	Completed				04/17/24	J/AG	SW3050B

**Gasoline Range Hydrocarbons (C6-C10)**

GRO (C6-C10)	ND	5.6	mg/Kg	50	04/17/24	V	SW8015D GRO
<b><u>QA/QC Surrogates</u></b>							
% 2,5-Dibromotoluene (FID)	94		%	50	04/17/24	V	70 - 130 %

**Polychlorinated Biphenyls**

PCB-1016	ND	74	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1221	ND	74	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1232	ND	74	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1242	ND	74	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1248	ND	74	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1254	ND	74	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1260	ND	74	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1262	ND	74	ug/Kg	2	04/23/24	SC	SW8082A
PCB-1268	ND	74	ug/Kg	2	04/23/24	SC	SW8082A

**QA/QC Surrogates**

% DCBP	95		%	2	04/23/24	SC	30 - 150 %
% DCBP (Confirmation)	91		%	2	04/23/24	SC	30 - 150 %
% TCMX	83		%	2	04/23/24	SC	30 - 150 %
% TCMX (Confirmation)	80		%	2	04/23/24	SC	30 - 150 %

**TPH by GC (Extractable (C9-C36))**

Fuel Oil #2 / Diesel Fuel	ND	56	mg/kg	1	04/20/24	JRB	SW8015D DRO
Fuel Oil #4	ND	56	mg/kg	1	04/20/24	JRB	SW8015D DRO
Fuel Oil #6	ND	56	mg/kg	1	04/20/24	JRB	SW8015D DRO
Kerosene	ND	56	mg/kg	1	04/20/24	JRB	SW8015D DRO
Motor Oil	ND	56	mg/kg	1	04/20/24	JRB	SW8015D DRO
Total TPH	ND	56	mg/kg	1	04/20/24	JRB	SW8015D DRO
Unidentified	ND	56	mg/kg	1	04/20/24	JRB	SW8015D DRO

**QA/QC Surrogates**

% COD (surr)	67		%	1	04/20/24	JRB	50 - 150 %
% Terphenyl (surr)	81		%	1	04/20/24	JRB	50 - 150 %

**Volatiles**

1,1,1,2-Tetrachloroethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	2.7	ug/Kg	1	04/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,2,4-Trichlorobenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.45	ug/Kg	1	04/17/24	JLI	SW8260D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dichlorobenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
2-Chlorotoluene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
2-Hexanone	ND	22	ug/Kg	1	04/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
4-Chlorotoluene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	22	ug/Kg	1	04/17/24	JLI	SW8260D
Acetone	ND	220	ug/Kg	1	04/17/24	JLI	SW8260D
Acrylonitrile	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Benzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Bromobenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Bromochloromethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Bromodichloromethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Bromoform	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Bromomethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Carbon Disulfide	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Carbon tetrachloride	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Chlorobenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Chloroethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Chloroform	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Chloromethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Dibromochloromethane	ND	2.7	ug/Kg	1	04/17/24	JLI	SW8260D
Dibromomethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Ethylbenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Isopropylbenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
m&p-Xylene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	27	ug/Kg	1	04/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	9.0	ug/Kg	1	04/17/24	JLI	SW8260D
Methylene chloride	ND	9.0	ug/Kg	1	04/17/24	JLI	SW8260D
Naphthalene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
n-Butylbenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
n-Propylbenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
o-Xylene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
sec-Butylbenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Styrene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
tert-Butylbenzene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Tetrachloroethene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	9.0	ug/Kg	1	04/17/24	JLI	SW8260D



Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Toluene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Total Xylenes	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	9.0	ug/Kg	1	04/17/24	JLI	SW8260D
Trichloroethene	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	9.0	ug/Kg	1	04/17/24	JLI	SW8260D
Vinyl chloride	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D
<b><u>QA/QC Surrogates</u></b>							
% 1,2-dichlorobenzene-d4	99		%	1	04/17/24	JLI	70 - 130 %
% Bromofluorobenzene	96		%	1	04/17/24	JLI	70 - 130 %
% Dibromofluoromethane	95		%	1	04/17/24	JLI	70 - 130 %
% Toluene-d8	100		%	1	04/17/24	JLI	70 - 130 %
<b><u>Oxygenates &amp; Dioxane</u></b>							
1,4-Dioxane	ND	90	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	4.5	ug/Kg	1	04/17/24	JLI	SW8260D (OXY)
<b><u>Semivolatiles</u></b>							
1,1-Biphenyl	ND	50	ug/Kg	1	04/20/24	MR	SW8270E
1,2,4,5-Tetrachlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
1,2,4-Trichlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
1,2-Dichlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
1,2-Diphenylhydrazine	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
1,3-Dichlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
1,4-Dichlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,2'-Oxybis(1-Chloropropane)	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4,5-Trichlorophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4,6-Trichlorophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dichlorophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dimethylphenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dinitrophenol	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
2,4-Dinitrotoluene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2,6-Dinitrotoluene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Chloronaphthalene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Chlorophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Methylnaphthalene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Methylphenol (o-cresol)	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
2-Nitroaniline	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
2-Nitrophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
3&4-Methylphenol (m&p-cresol)	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
3,3'-Dichlorobenzidine	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
3-Nitroaniline	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
4,6-Dinitro-2-methylphenol	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
4-Bromophenyl phenyl ether	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
4-Chloro-3-methylphenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
4-Chloroaniline	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
4-Chlorophenyl phenyl ether	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
4-Nitroaniline	ND	590	ug/Kg	1	04/20/24	MR	SW8270E
4-Nitrophenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Acenaphthene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Acenaphthylene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Acetophenone	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Aniline	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Anthracene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benz(a)anthracene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzidine	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(a)pyrene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(b)fluoranthene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(ghi)perylene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzo(k)fluoranthene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Benzoic acid	ND	740	ug/Kg	1	04/20/24	MR	SW8270E
Benzyl butyl phthalate	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-chloroethoxy)methane	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-chloroethyl)ether	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Bis(2-ethylhexyl)phthalate	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Carbazole	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Chrysene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Dibenz(a,h)anthracene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Dibenzofuran	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Diethyl phthalate	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Dimethylphthalate	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Di-n-butylphthalate	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Di-n-octylphthalate	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Fluoranthene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Fluorene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorobutadiene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Hexachlorocyclopentadiene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Hexachloroethane	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Isophorone	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Naphthalene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Nitrobenzene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodimethylamine	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodi-n-propylamine	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
N-Nitrosodiphenylamine	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Pentachloronitrobenzene	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Pentachlorophenol	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
Phenanthrene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Phenol	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Pyrene	ND	260	ug/Kg	1	04/20/24	MR	SW8270E
Pyridine	ND	370	ug/Kg	1	04/20/24	MR	SW8270E
<b>QA/QC Surrogates</b>							
% 2,4,6-Tribromophenol	74		%	1	04/20/24	MR	30 - 130 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
% 2-Fluorobiphenyl	67		%	1	04/20/24	MR	30 - 130 %
% 2-Fluorophenol	69		%	1	04/20/24	MR	30 - 130 %
% Nitrobenzene-d5	68		%	1	04/20/24	MR	30 - 130 %
% Phenol-d5	69		%	1	04/20/24	MR	30 - 130 %
% Terphenyl-d14	72		%	1	04/20/24	MR	30 - 130 %

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

### **Comments:**

The GRO (C6-C10) is quantitated using an gasoline standard.

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Corrosivity is based solely on the pH analysis performed above.

Ignitability is based solely on the results of the closed cup flashpoint analysis performed above. Passed is >140 degree F.


The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The reactivity, reported above, is based only on the EPA Interim Guidance for Reactive Cyanide. This method is no longer listed in the current version of SW-846.

The reactivity, reported above, is based only on the EPA Interim Guidance for Reactive Sulfide. This method is no longer listed in the current version of SW-846.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



**Phyllis Shiller, Laboratory Director**

**April 25, 2024**

**Reviewed and Released by: Greg Lawrence, Assistant Lab Director**



## Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

April 25, 2024

FOR: Attn: Mr Dave Gorden  
PEER Consultants  
10 Mall Road, Suite 301  
Burlington, MA 01803

### Sample Information

Matrix: SOIL  
Location Code: PEER  
Rush Request: Standard  
P.O.#: 8404

### Custody Information

Collected by:  
Received by: CP  
Analyzed by: see "By" below

### Date

04/10/24

### Time

14:45

## Laboratory Data

SDG ID: GCQ52307  
Phoenix ID: CQ52311

Project ID: M.A.N. SCHOOL  
Client ID: TB041524 LL

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Field Extraction	Completed				04/15/24		SW5035A
<b><u>Volatiles</u></b>							
1,1,1,2-Tetrachloroethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	3.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,1-Dichloroethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,1-Dichloroethene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,1-Dichloropropene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,4-Trichlorobenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.50	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dichloroethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,2-Dichloropropane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,3-Dichloropropane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
2,2-Dichloropropane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
2-Chlorotoluene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
2-Hexanone	ND	25	ug/Kg	1	04/16/24	JLI	SW8260D
2-Isopropyltoluene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
4-Chlorotoluene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	25	ug/Kg	1	04/16/24	JLI	SW8260D
Acetone	ND	250	ug/Kg	1	04/16/24	JLI	SW8260D
Acrylonitrile	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Benzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Bromobenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Bromochloromethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Bromodichloromethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Bromoform	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Bromomethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Carbon Disulfide	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Carbon tetrachloride	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Chlorobenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Chloroethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Chloroform	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Chloromethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Dibromochloromethane	ND	3.0	ug/Kg	1	04/16/24	JLI	SW8260D
Dibromomethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Dichlorodifluoromethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Ethylbenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Hexachlorobutadiene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Isopropylbenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
m&p-Xylene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	30	ug/Kg	1	04/16/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	10	ug/Kg	1	04/16/24	JLI	SW8260D
Methylene chloride	ND	10	ug/Kg	1	04/16/24	JLI	SW8260D
Naphthalene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
n-Butylbenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
n-Propylbenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
o-Xylene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
p-Isopropyltoluene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
sec-Butylbenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Styrene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
tert-Butylbenzene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Tetrachloroethene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	10	ug/Kg	1	04/16/24	JLI	SW8260D
Toluene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Total Xylenes	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	10	ug/Kg	1	04/16/24	JLI	SW8260D
Trichloroethene	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Trichlorofluoromethane	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	10	ug/Kg	1	04/16/24	JLI	SW8260D
Vinyl chloride	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D
<b><u>QA/QC Surrogates</u></b>							
% 1,2-dichlorobenzene-d4	98		%	1	04/16/24	JLI	70 - 130 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
% Bromofluorobenzene	96		%	1	04/16/24	JLI	70 - 130 %
% Dibromofluoromethane	93		%	1	04/16/24	JLI	70 - 130 %
% Toluene-d8	100		%	1	04/16/24	JLI	70 - 130 %

### **Oxygenates & Dioxane**

1,4-Dioxane	ND	100	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
Diethyl ether	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	5.0	ug/Kg	1	04/16/24	JLI	SW8260D (OXY)

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RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.


### **Comments:**

TRIP BLANK INCLUDED.

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.  
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director

April 25, 2024

Reviewed and Released by: Greg Lawrence, Assistant Lab Director





## Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

April 25, 2024

FOR: Attn: Mr Dave Gorden  
PEER Consultants  
10 Mall Road, Suite 301  
Burlington, MA 01803

### Sample Information

Matrix: SOIL  
Location Code: PEER  
Rush Request: Standard  
P.O.#: 8404

### Custody Information

Collected by:  
Received by: CP  
Analyzed by: see "By" below

### Date

04/15/24  
04/16/24

### Time

15:01  
14:45

## Laboratory Data

SDG ID: GCQ52307  
Phoenix ID: CQ52312

Project ID: M.A.N. SCHOOL  
Client ID: B2-B5 0-2`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	80		%		04/16/24	CV	SW846-%Solid
Soil Extraction for Herbicide	Completed				04/19/24	P/D	SW3546
Soil Extraction for Pesticide	Completed				04/23/24	J/H/A	SW3546

### Chlorinated Herbicides

2,4,5-T	ND	31	ug/Kg	2	04/23/24	JRB	SW8151A
2,4,5-TP (Silvex)	ND	31	ug/Kg	2	04/23/24	JRB	SW8151A
2,4-D	ND	62	ug/Kg	2	04/23/24	JRB	SW8151A
2,4-DB	ND	310	ug/Kg	2	04/23/24	JRB	SW8151A
Dalapon	ND	31	ug/Kg	2	04/23/24	JRB	SW8151A
Dicamba	ND	31	ug/Kg	2	04/23/24	JRB	SW8151A
Dichloroprop	ND	47	ug/Kg	2	04/23/24	JRB	SW8151A
Dinoseb	ND	31	ug/Kg	2	04/23/24	JRB	SW8151A
MCPA	ND	9300	ug/Kg	2	04/23/24	JRB	SW8151A
MCPP	ND	9300	ug/Kg	2	04/23/24	JRB	SW8151A

### QA/QC Surrogates

% DCAA	73		%	2	04/23/24	JRB	30 - 150 %
% DCAA (Confirmation)	63		%	2	04/23/24	JRB	30 - 150 %

### Pesticides

4,4' -DDD	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
4,4' -DDE	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
4,4' -DDT	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
a-BHC	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Alachlor	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Aldrin	ND	4.1	ug/Kg	2	04/24/24	AW	SW8081B
b-BHC	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlordane	ND	41	ug/Kg	2	04/24/24	AW	SW8081B
d-BHC	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Dieldrin	ND	4.1	ug/Kg	2	04/24/24	AW	SW8081B
Endosulfan I	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Endosulfan II	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Endosulfan sulfate	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Endrin	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Endrin aldehyde	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Endrin ketone	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
g-BHC	ND	1.6	ug/Kg	2	04/24/24	AW	SW8081B
Heptachlor	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Heptachlor epoxide	ND	8.2	ug/Kg	2	04/24/24	AW	SW8081B
Hexachlorobenzene	ND	4.1	ug/Kg	2	04/24/24	AW	SW8081B
Methoxychlor	ND	41	ug/Kg	2	04/24/24	AW	SW8081B
Toxaphene	ND	160	ug/Kg	2	04/24/24	AW	SW8081B
<b><u>QA/QC Surrogates</u></b>							
% DCBP	67		%	2	04/24/24	AW	30 - 150 %
% DCBP (Confirmation)	68		%	2	04/24/24	AW	30 - 150 %
% TCMX	64		%	2	04/24/24	AW	30 - 150 %
% TCMX (Confirmation)	71		%	2	04/24/24	AW	30 - 150 %

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

### **Comments:**

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



**Phyllis Shiller, Laboratory Director**

**April 25, 2024**

**Reviewed and Released by: Greg Lawrence, Assistant Lab Director**



Environmental Laboratories, Inc.  
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823

## Analysis Report

April 25, 2024

FOR: Attn: Mr Dave Gorden  
PEER Consultants  
10 Mall Road, Suite 301  
Burlington, MA 01803

### Sample Information

Matrix: SOIL  
Location Code: PEER  
Rush Request: Standard  
P.O.#: 8404

### Custody Information

Collected by:  
Received by: CP  
Analyzed by: see "By" below

### Date

04/15/24  
04/16/24

### Time

15:33  
14:45

## Laboratory Data

SDG ID: GCQ52307  
Phoenix ID: CQ52313

Project ID: M.A.N. SCHOOL  
Client ID: B2-B5 WT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Fecal Coliforms	<10	10	cfu/g	10	04/16/24 16:45	MM/DN	SM9222D-15
Percent Solid	90		%		04/16/24	CV	SW846-%Solid
Chloride	< 56	56	mg/kg	10	04/16/24	BS/GD	SW9056A
Nitrite as N	< 0.11	0.11	mg/kg	10	04/16/24	BS/GD	SW9056A
Nitrate as N	0.93	0.56	mg/kg	10	04/16/24	BS/GD	SW9056A
Phosphorus, Total as P	365	14	mg/Kg	25	04/17/24	LG	SM4500PE-11

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

### Comments:

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If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.  
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Phyllis Shiller, Laboratory Director

April 25, 2024

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



## Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

April 25, 2024

FOR: Attn: Mr Dave Gorden  
PEER Consultants  
10 Mall Road, Suite 301  
Burlington, MA 01803

### Sample Information

Matrix: SOIL  
Location Code: PEER  
Rush Request: Standard  
P.O.#: 8404

### Custody Information

Collected by:  
Received by: CP  
Analyzed by: see "By" below

### Date

04/15/24

### Time

14:45

## Laboratory Data

SDG ID: GCQ52307  
Phoenix ID: CQ52314

Project ID: M.A.N. SCHOOL  
Client ID: TB041524 HL

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Field Extraction	Completed				04/15/24		SW5035A
<b><u>Volatiles</u></b>							
1,1,1,2-Tetrachloroethane	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	50	ug/Kg	50	04/16/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
1,1-Dichloroethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,1-Dichloroethene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,1-Dichloropropene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,2,4-Trichlorobenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,2-Dibromoethane	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,2-Dichloroethane	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
1,2-Dichloropropane	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,3-Dichloropropane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
2,2-Dichloropropane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
2-Chlorotoluene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
2-Hexanone	ND	1300	ug/Kg	50	04/16/24	JLI	SW8260D
2-Isopropyltoluene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
4-Chlorotoluene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	400	ug/Kg	50	04/16/24	JLI	SW8260D
Acetone	ND	5000	ug/Kg	50	04/16/24	JLI	SW8260D
Acrylonitrile	ND	500	ug/Kg	50	04/16/24	JLI	SW8260D
Benzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Bromobenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Bromochloromethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Bromodichloromethane	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
Bromoform	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
Bromomethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Carbon Disulfide	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Carbon tetrachloride	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Chlorobenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Chloroethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Chloroform	ND	200	ug/Kg	50	04/16/24	JLI	SW8260D
Chloromethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	25	ug/Kg	50	04/16/24	JLI	SW8260D
Dibromochloromethane	ND	50	ug/Kg	50	04/16/24	JLI	SW8260D
Dibromomethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Dichlorodifluoromethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Ethylbenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Hexachlorobutadiene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Isopropylbenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
m&p-Xylene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	3000	ug/Kg	50	04/16/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
Methylene chloride	ND	100	ug/Kg	50	04/16/24	JLI	SW8260D
Naphthalene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
n-Butylbenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
n-Propylbenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
o-Xylene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
p-Isopropyltoluene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
sec-Butylbenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Styrene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
tert-Butylbenzene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Tetrachloroethene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	500	ug/Kg	50	04/16/24	JLI	SW8260D
Toluene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Total Xylenes	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	25	ug/Kg	50	04/16/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	500	ug/Kg	50	04/16/24	JLI	SW8260D
Trichloroethene	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Trichlorofluoromethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
Vinyl chloride	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D
<b>QA/QC Surrogates</b>							
% 1,2-dichlorobenzene-d4 (50x)	101		%	50	04/16/24	JLI	70 - 130 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
% Bromofluorobenzene (50x)	99		%	50	04/16/24	JLI	70 - 130 %
% Dibromofluoromethane (50x)	96		%	50	04/16/24	JLI	70 - 130 %
% Toluene-d8 (50x)	99		%	50	04/16/24	JLI	70 - 130 %

### **Oxygenates & Dioxane**

1,4-Dioxane	ND	800	ug/Kg	50	04/16/24	JLI	SW8260D (OXY)
Diethyl ether	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	250	ug/Kg	50	04/16/24	JLI	SW8260D (OXY)

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.


### **Comments:**

TRIP BLANK INCLUDED.

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.  
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director

April 25, 2024

Reviewed and Released by: Greg Lawrence, Assistant Lab Director





Environmental Laboratories, Inc.  
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Tel. (860) 645-1102

## QA/QC Report

April 25, 2024

### QA/QC Data

SDG I.D.: GCQ52307

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
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QA/QC Batch 727169 (mg/kg), QC Sample No: CQ51669 2X (CQ52307, CQ52308, CQ52309, CQ52310)

Mercury - Soil	BRL	0.02	<0.03	<0.03	NC	94.7	92.5	2.4	106	89.5	16.9	75 - 125	20
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Comment:

Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 75-125%

QA/QC Batch 727091 (mg/kg), QC Sample No: CQ52191 (CQ52307, CQ52308)

#### ICP Metals - Soil

Antimony	BRL	3.3	<40	<39	NC	86.4	96.7	11.3	92.6			75 - 125	35
Arsenic	BRL	0.67	<8.0	<7.8	NC	78.6	88.3	11.6	91.8			75 - 125	35
Barium	BRL	0.33	16.7	15.0	10.7	80.9	90.3	11.0	99.7			75 - 125	35
Beryllium	BRL	0.27	<3.2	<3.1	NC	87.9	92.7	5.3	98.5			75 - 125	35
Cadmium	BRL	0.33	<4.0	<3.9	NC	82.6	88.5	6.9	93.4			75 - 125	35
Chromium	BRL	0.33	5.9	4.5	26.9	83.1	93.0	11.2	98.0			75 - 125	35
Lead	BRL	0.33	2.08	<3.9	NC	77.1	87.0	12.1	94.4			75 - 125	35
Nickel	BRL	0.33	4.4	<3.9	NC	82.3	90.5	9.5	95.2			75 - 125	35
Selenium	BRL	1.3	<16	<16	NC	76.1	81.7	7.1	83.4			75 - 125	35
Silver	BRL	0.33	<4.0	<3.9	NC	81.4	92.1	12.3	94.0			75 - 125	35
Thallium	BRL	3.0	<36	<35	NC	91.0	96.2	5.6	95.7			75 - 125	35
Vanadium	BRL	0.33	17.1	14.0	19.9	80.1	90.2	11.9	101			75 - 125	35
Zinc	BRL	0.67	13.7	11.7	15.7	77.5	87.2	11.8	93.2			75 - 125	35

Comment:

Additional: LCS acceptance range is 80-120% MS acceptance range 75-125%.

QA/QC Batch 727086 (mg/kg), QC Sample No: CQ52285 (CQ52309)

#### ICP Metals - Soil

Antimony	BRL	3.3	<3.0	<3.5	NC	86.1	94.3	9.1	91.4			75 - 125	35
Arsenic	BRL	0.67	<0.61	<0.70	NC	81.2	87.9	7.9	90.6			75 - 125	35
Barium	BRL	0.33	13.8	34.2	85.0	84.8	84.9	0.1	114			75 - 125	35
Beryllium	BRL	0.27	<0.24	<0.28	NC	90.2	95.2	5.4	104			75 - 125	35
Cadmium	BRL	0.33	<0.30	<0.35	NC	85.4	91.7	7.1	98.9			75 - 125	35
Chromium	BRL	0.33	0.40	1.07	NC	85.6	93.0	8.3	100			75 - 125	35
Lead	BRL	0.33	1.86	1.28	NC	82.2	90.5	9.6	97.7			75 - 125	35
Nickel	BRL	0.33	0.57	1.09	NC	87.4	94.8	8.1	99.5			75 - 125	35
Selenium	BRL	1.3	<1.2	<1.4	NC	89.7	77.9	14.1	75.3			75 - 125	35
Silver	BRL	0.33	<0.30	<0.35	NC	89.7	99.0	9.9	99.6			75 - 125	35
Thallium	BRL	3.0	<2.7	<3.1	NC	90.0	94.2	4.6	97.3			75 - 125	35
Vanadium	BRL	0.33	3.0	6.2	69.6	81.9	90.0	9.4	99.5			75 - 125	35
Zinc	BRL	0.67	14.0	20.2	36.3	76.8	85.0	10.1	101			75 - 125	35

Comment:

Additional: LCS acceptance range is 80-120% MS acceptance range 75-125%.

QA/QC Batch 727249 (mg/kg), QC Sample No: CQ52310 (CQ52310)

#### ICP Metals - Soil

Antimony	BRL	3.3	<3.5	<3.6	NC	90.1	93.4	3.6	92.4			75 - 125	35
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## QA/QC Data

SDG I.D.: GCQ52307

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Arsenic	BRL	0.67	3.78	2.56	NC	86.3	83.8	2.9	95.6			75 - 125	35
Barium	BRL	0.33	48.3	34.3	33.9	84.2	84.2	0.0	103			75 - 125	35
Beryllium	BRL	0.27	0.35	<0.28	NC	90.5	90.3	0.2	100			75 - 125	35
Cadmium	BRL	0.33	<0.35	<0.36	NC	85.6	84.7	1.1	99.7			75 - 125	35
Chromium	BRL	0.33	13.8	27.7	67.0	87.9	89.0	1.2	101			75 - 125	35
Lead	BRL	0.33	3.64	2.90	22.6	83.4	81.1	2.8	99.9			75 - 125	35
Nickel	BRL	0.33	9.65	6.63	37.1	87.5	87.6	0.1	99.8			75 - 125	35
Selenium	BRL	1.3	<1.4	<1.4	NC	83.5	80.6	3.5	86.7			75 - 125	35
Silver	BRL	0.33	<0.35	<0.36	NC	90.0	88.5	1.7	101			75 - 125	35
Thallium	BRL	3.0	<3.2	<3.2	NC	90.2	88.2	2.2	100			75 - 125	35
Vanadium	BRL	0.33	22.3	14.4	43.1	84.9	84.9	0.0	102			75 - 125	35
Zinc	BRL	0.67	27.3	29.2	6.70	82.8	83.1	0.4	95.4			75 - 125	35

Comment:

Additional: LCS acceptance range is 80-120% MS acceptance range 75-125%.

r = This parameter is outside laboratory RPD specified recovery limits.



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## QA/QC Report

April 25, 2024

### QA/QC Data

SDG I.D.: GCO52307

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 727649 (mg/Kg), QC Sample No: CQ51663 5X (CQ52307, CQ52308, CQ52309, CQ52310)													
Reactivity Cyanide	BRL	5	<5	<5.2	NC	97.0						80 - 120	20
Reactivity Sulfide	BRL	20	<20	<20	NC	90.8						80 - 120	20
Comment:													
Additional soil criteria LCS acceptance range is 80-120% MS acceptance range 75-125%.													
QA/QC Batch 727720 (Degree F), QC Sample No: CQ50166 (CQ52307, CQ52308, CQ52309, CQ52310)													
Flash Point			>200	>200	NC	101						75 - 125	30
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 727360 (umhos/cm), QC Sample No: CQ50787 (CQ52307, CQ52308, CQ52309, CQ52310)													
Conductivity - Soil Matrix	BRL	5	424	361	16.1							75 - 125	30
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 727237 (mg/Kg), QC Sample No: CQ51168 (CQ52313)													
Phosphorus, Total as P	BRL	0.50	8610	9200	6.60	93.5				NC		75 - 125	30
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 727151 (PH), QC Sample No: CQ51380 (CQ52307, CQ52308, CQ52309, CQ52310)													
pH			8.65	8.63	0.20	101						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 727218 (mg/L), QC Sample No: CQ52578 (CQ52313)													
Chloride	BRL	5.0	7.5	7.6	NC	96.2				100		90 - 110	20
Nitrate as Nitrogen	BRL	0.05	0.97	0.95	2.10	99.3				101		90 - 110	20
Nitrite as Nitrogen	BRL	0.004	<0.004	<0.004	NC	102				107		90 - 110	20



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## QA/QC Report

April 25, 2024

### QA/QC Data

SDG I.D.: GCO52307

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 727693 (mg/Kg), QC Sample No: CQ52422 (CQ52307, CQ52308, CQ52309, CQ52310)										
<u>TPH by GC (Extractable Products) - Soil</u>										
Ext. Petroleum H.C. (C9-C36)	ND	50	89	86	3.4	106	95	10.9	50 - 150	30
% COD (surr)	85	%	130	51	87.3	127	60	71.7	50 - 150	30
% Terphenyl (surr)	88	%	105	101	3.9	107	127	17.1	50 - 150	30

Comment:

The ETPH/DRO LCS has been normalized based on the alkane calibration.

QA/QC Batch 727496 (mg/Kg), QC Sample No: CQ52307 50X (CQ52307 (50X) , CQ52308 (50X) , CQ52309 (50X) , CQ52310 (50X) )

### Gasoline Range Hydrocarbons (C6C10) - Soil

GRO (C6-C10)	ND	5.0	95	95	0.0	94	94	0.0	70 - 130	30
% 2,5-Dibromotoluene (FID)	90	%	81	89	9.4	86	84	2.4	70 - 130	30

QA/QC Batch 727763 (ug/Kg), QC Sample No: CQ55312 10X (CQ52312)

### Chlorinated Herbicides - Soil

2,4,5-T	ND	130	51	60	16.2	54	57	5.4	40 - 140	30
2,4,5-TP (Silvex)	ND	130	56	66	16.4	64	65	1.6	40 - 140	30
2,4-D	ND	250	47	55	15.7	58	63	8.3	40 - 140	30
2,4-DB	ND	2500	32	38	17.1	40	39	2.5	40 - 140	30
Dalapon	ND	130	48	63	27.0	53	73	31.7	40 - 140	30
Dicamba	ND	130	85	95	11.1	76	86	12.3	40 - 140	30
Dichloroprop	ND	130	70	80	13.3	92	103	11.3	40 - 140	30
Dinoseb	ND	130	68	81	17.4	68	68	0.0	10 - 110	20
MCPA	ND	38000	54	59	8.8	59	65	9.7	40 - 140	30
MCPP	ND	38000	66	74	11.4	67	71	5.8	40 - 140	30
% DCAA (Surrogate Rec)	71	%	64	72	11.8	66	75	12.8	30 - 150	30
% DCAA (Surrogate Rec) (Confirm	72	%	57	70	20.5	55	61	10.3	30 - 150	30

Comment:

MCP 8151 additional criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%.

QA/QC Batch 728004 (ug/Kg), QC Sample No: CQ51831 2X (CQ52307, CQ52308)

### Polychlorinated Biphenyls - Soil

PCB-1016	ND	33	95	86	9.9	78	91	15.4	40 - 140	30
PCB-1221	ND	33							40 - 140	30
PCB-1232	ND	33							40 - 140	30
PCB-1242	ND	33							40 - 140	30
PCB-1248	ND	33							40 - 140	30
PCB-1254	ND	33							40 - 140	30
PCB-1260	ND	33	104	87	17.8	75	89	17.1	40 - 140	30
PCB-1262	ND	33							40 - 140	30
PCB-1268	ND	33							40 - 140	30
% DCBP (Surrogate Rec)	121	%	108	93	14.9	81	97	18.0	30 - 150	30
% DCBP (Surrogate Rec) (Confirm	116	%	105	96	9.0	83	97	15.6	30 - 150	30
% TCMX (Surrogate Rec)	104	%	95	86	9.9	77	88	13.3	30 - 150	30

# QA/QC Data

SDG I.D.: GCQ52307

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
% TCMX (Surrogate Rec) (Confirm	103	%	94	82	13.6	74	86	15.0	30 - 150	30
QA/QC Batch 728024 (ug/Kg), QC Sample No: CQ52390 2X (CQ52309, CQ52310)										
<u>Polychlorinated Biphenyls - Soil</u>										
PCB-1016	ND	33	93	87	6.7	74	82	10.3	40 - 140	30
PCB-1221	ND	33							40 - 140	30
PCB-1232	ND	33							40 - 140	30
PCB-1242	ND	33							40 - 140	30
PCB-1248	ND	33							40 - 140	30
PCB-1254	ND	33							40 - 140	30
PCB-1260	ND	33	105	86	19.9	75	80	6.5	40 - 140	30
PCB-1262	ND	33							40 - 140	30
PCB-1268	ND	33							40 - 140	30
% DCBP (Surrogate Rec)	99	%	110	90	20.0	79	93	16.3	30 - 150	30
% DCBP (Surrogate Rec) (Confirm	91	%	100	97	3.0	85	96	12.2	30 - 150	30
% TCMX (Surrogate Rec)	82	%	90	86	4.5	72	83	14.2	30 - 150	30
% TCMX (Surrogate Rec) (Confirm	76	%	89	80	10.7	68	80	16.2	30 - 150	30

QA/QC Batch 728175 (ug/Kg), QC Sample No: CQ49646 (CQ52312)

## Pesticides - Soil

4,4' -DDD	ND	0.83	75	69	8.3	87	85	2.3	40 - 140	30
4,4' -DDE	ND	0.83	74	67	9.9	137	142	3.6	40 - 140	30
4,4' -DDT	ND	0.83	70	66	5.9	105	106	0.9	40 - 140	30
a-BHC	ND	0.50	71	64	10.4	73	70	4.2	40 - 140	30
Alachlor	ND	1.7	NA	NA	NC	NA	NA	NC	40 - 140	30
Aldrin	ND	0.50	72	66	8.7	76	73	4.0	40 - 140	30
b-BHC	ND	0.50	84	77	8.7	88	85	3.5	40 - 140	30
Chlordane	ND	17	73	69	5.6	86	93	7.8	40 - 140	30
d-BHC	ND	1.7	70	65	7.4	78	74	5.3	40 - 140	30
Dieldrin	ND	0.50	74	68	8.5	99	100	1.0	40 - 140	30
Endosulfan I	ND	1.7	74	70	5.6	77	76	1.3	40 - 140	30
Endosulfan II	ND	1.7	74	70	5.6	79	77	2.6	40 - 140	30
Endosulfan sulfate	ND	1.7	78	74	5.3	82	82	0.0	40 - 140	30
Endrin	ND	1.7	70	65	7.4	76	74	2.7	40 - 140	30
Endrin aldehyde	ND	1.7	72	68	5.7	72	72	0.0	40 - 140	30
Endrin ketone	ND	1.7	81	77	5.1	86	83	3.6	40 - 140	30
g-BHC	ND	0.50	87	79	9.6	89	84	5.8	40 - 140	30
Heptachlor	ND	1.7	70	63	10.5	72	68	5.7	40 - 140	30
Heptachlor epoxide	ND	1.7	63	60	4.9	66	64	3.1	40 - 140	30
Hexachlorobenzene	ND	1.7	82	71	14.4	77	78	1.3	40 - 140	30
Methoxychlor	ND	1.7	73	68	7.1	76	74	2.7	40 - 140	30
Toxaphene	ND	67	NA	NA	NC	NA	NA	NC	40 - 140	30
% DCBP	42	%	77	73	5.3	81	78	3.8	30 - 150	30
% DCBP (Confirmation)	38	%	74	71	4.1	73	69	5.6	30 - 150	30
% TCMX	37	%	70	62	12.1	72	71	1.4	30 - 150	30
% TCMX (Confirmation)	34	%	67	60	11.0	68	64	6.1	30 - 150	30

QA/QC Batch 727757 (ug/kg), QC Sample No: CQ52044 (CQ52307, CQ52308, CQ52309, CQ52310)

## Semivolatiles - Soil

1,1-Biphenyl	ND	230	67	63	6.2	65	63	3.1	40 - 140	30
1,2,4,5-Tetrachlorobenzene	ND	230	73	68	7.1	69	67	2.9	40 - 140	30
1,2,4-Trichlorobenzene	ND	230	71	66	7.3	67	66	1.5	40 - 140	30
1,2-Dichlorobenzene	ND	180	64	61	4.8	60	60	0.0	40 - 140	30
1,2-Diphenylhydrazine	ND	230	64	63	1.6	64	62	3.2	40 - 140	30

## QA/QC Data

SDG I.D.: GCQ52307

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,3-Dichlorobenzene	ND	230	62	60	3.3	58	59	1.7	40 - 140	30
1,4-Dichlorobenzene	ND	230	60	58	3.4	57	57	0.0	40 - 140	30
2,2'-Oxybis(1-Chloropropane)	ND	230	60	59	1.7	59	59	0.0	40 - 140	30
2,4,5-Trichlorophenol	ND	230	87	80	8.4	81	78	3.8	30 - 130	30
2,4,6-Trichlorophenol	ND	130	86	82	4.8	83	79	4.9	30 - 130	30
2,4-Dichlorophenol	ND	130	85	80	6.1	80	78	2.5	30 - 130	30
2,4-Dimethylphenol	ND	230	78	73	6.6	73	70	4.2	30 - 130	30
2,4-Dinitrophenol	ND	230	48	41	15.7	22	19	14.6	30 - 130	30
2,4-Dinitrotoluene	ND	130	85	83	2.4	84	79	6.1	40 - 140	30
2,6-Dinitrotoluene	ND	130	85	82	3.6	84	81	3.6	40 - 140	30
2-Chloronaphthalene	ND	230	72	69	4.3	70	67	4.4	40 - 140	30
2-Chlorophenol	ND	230	76	73	4.0	71	71	0.0	30 - 130	30
2-Methylnaphthalene	ND	230	76	72	5.4	73	71	2.8	40 - 140	30
2-Methylphenol (o-cresol)	ND	230	74	72	2.7	70	70	0.0	30 - 130	30
2-Nitroaniline	ND	330	102	101	1.0	99	95	4.1	40 - 140	30
2-Nitrophenol	ND	230	72	69	4.3	73	71	2.8	30 - 130	30
3&4-Methylphenol (m&p-cresol)	ND	230	77	73	5.3	72	73	1.4	30 - 130	30
3,3'-Dichlorobenzidine	ND	130	112	106	5.5	107	98	8.8	40 - 140	30
3-Nitroaniline	ND	330	94	91	3.2	93	88	5.5	40 - 140	30
4,6-Dinitro-2-methylphenol	ND	230	84	78	7.4	60	53	12.4	30 - 130	30
4-Bromophenyl phenyl ether	ND	230	84	79	6.1	82	76	7.6	40 - 140	30
4-Chloro-3-methylphenol	ND	230	85	80	6.1	82	78	5.0	30 - 130	30
4-Chloroaniline	ND	230	73	70	4.2	70	69	1.4	40 - 140	30
4-Chlorophenyl phenyl ether	ND	230	74	71	4.1	72	69	4.3	40 - 140	30
4-Nitroaniline	ND	230	71	70	1.4	73	69	5.6	40 - 140	30
4-Nitrophenol	ND	230	72	69	4.3	67	62	7.8	30 - 130	30
Acenaphthene	ND	230	68	64	6.1	66	64	3.1	40 - 140	30
Acenaphthylene	ND	130	64	60	6.5	62	60	3.3	40 - 140	30
Acetophenone	ND	230	63	61	3.2	60	60	0.0	40 - 140	30
Aniline	ND	330	65	64	1.6	61	61	0.0	40 - 140	30
Anthracene	ND	230	75	71	5.5	74	69	7.0	40 - 140	30
Benz(a)anthracene	ND	230	78	74	5.3	77	71	8.1	40 - 140	30
Benzidine	ND	330	68	71	4.3	53	45	16.3	40 - 140	30
Benzo(a)pyrene	ND	130	87	82	5.9	84	78	7.4	40 - 140	30
Benzo(b)fluoranthene	ND	160	78	74	5.3	76	71	6.8	40 - 140	30
Benzo(ghi)perylene	ND	230	84	81	3.6	82	76	7.6	40 - 140	30
Benzo(k)fluoranthene	ND	230	77	72	6.7	75	70	6.9	40 - 140	30
Benzoic Acid	ND	670	97	80	19.2	65	50	26.1	30 - 130	30
Benzyl butyl phthalate	ND	230	78	74	5.3	77	72	6.7	40 - 140	30
Bis(2-chloroethoxy)methane	ND	230	72	69	4.3	70	68	2.9	40 - 140	30
Bis(2-chloroethyl)ether	ND	130	67	65	3.0	64	64	0.0	40 - 140	30
Bis(2-ethylhexyl)phthalate	ND	230	77	73	5.3	77	71	8.1	40 - 140	30
Carbazole	ND	230	78	74	5.3	76	71	6.8	40 - 140	30
Chrysene	ND	230	78	74	5.3	76	70	8.2	40 - 140	30
Dibenz(a,h)anthracene	ND	130	84	79	6.1	80	75	6.5	40 - 140	30
Dibenzofuran	ND	230	71	68	4.3	68	66	3.0	40 - 140	30
Diethyl phthalate	ND	230	75	72	4.1	72	69	4.3	40 - 140	30
Dimethylphthalate	ND	230	77	73	5.3	76	71	6.8	40 - 140	30
Di-n-butylphthalate	ND	670	81	77	5.1	79	74	6.5	40 - 140	30
Di-n-octylphthalate	ND	230	80	77	3.8	79	74	6.5	40 - 140	30
Fluoranthene	ND	230	77	75	2.6	76	70	8.2	40 - 140	30
Fluorene	ND	230	74	71	4.1	71	69	2.9	40 - 140	30
Hexachlorobenzene	ND	130	69	65	6.0	68	65	4.5	40 - 140	30



# QA/QC Data

SDG I.D.: GCQ52307

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Hexachlorobutadiene	ND	230	68	65	4.5	64	63	1.6	40 - 140	30
Hexachlorocyclopentadiene	ND	230	50	46	8.3	51	49	4.0	40 - 140	30
Hexachloroethane	ND	130	61	59	3.3	58	57	1.7	40 - 140	30
Indeno(1,2,3-cd)pyrene	ND	230	82	79	3.7	80	75	6.5	40 - 140	30
Isophorone	ND	130	64	61	4.8	63	61	3.2	40 - 140	30
Naphthalene	ND	230	68	64	6.1	65	63	3.1	40 - 140	30
Nitrobenzene	ND	130	66	66	0.0	65	65	0.0	40 - 140	30
N-Nitrosodimethylamine	ND	230	67	64	4.6	63	63	0.0	40 - 140	30
N-Nitrosodi-n-propylamine	ND	130	66	66	0.0	65	64	1.6	40 - 140	30
N-Nitrosodiphenylamine	ND	130	75	72	4.1	73	69	5.6	40 - 140	30
Pentachloronitrobenzene	ND	230	70	65	7.4	70	64	9.0	40 - 140	30
Pentachlorophenol	ND	230	68	63	7.6	54	49	9.7	30 - 130	30
Phenanthrene	ND	130	73	69	5.6	71	67	5.8	40 - 140	30
Phenol	ND	230	84	82	2.4	81	80	1.2	30 - 130	30
Pyrene	ND	230	76	73	4.0	74	70	5.6	40 - 140	30
Pyridine	ND	230	56	53	5.5	49	53	7.8	40 - 140	30
% 2,4,6-Tribromophenol	77	%	72	68	5.7	73	67	8.6	30 - 130	30
% 2-Fluorobiphenyl	70	%	64	61	4.8	64	62	3.2	30 - 130	30
% 2-Fluorophenol	72	%	68	66	3.0	65	64	1.6	30 - 130	30
% Nitrobenzene-d5	70	%	62	61	1.6	61	61	0.0	30 - 130	30
% Phenol-d5	71	%	67	66	1.5	65	65	0.0	30 - 130	30
% Terphenyl-d14	77	%	69	67	2.9	68	64	6.1	30 - 130	30

Comment:

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 727223 (ug/kg), QC Sample No: CQ52307 (CQ52307, CQ52308, CQ52309, CQ52310, CQ52311)

## Volatiles - Soil (Low Level)

1,1,1,2-Tetrachloroethane	ND	5.0	110	110	0.0	110	106	3.7	70 - 130	20
1,1,1-Trichloroethane	ND	5.0	113	111	1.8	118	113	4.3	70 - 130	20
1,1,2,2-Tetrachloroethane	ND	3.0	108	110	1.8	115	109	5.4	70 - 130	20
1,1,2-Trichloroethane	ND	5.0	108	109	0.9	108	103	4.7	70 - 130	20
1,1-Dichloroethane	ND	5.0	108	105	2.8	114	109	4.5	70 - 130	20
1,1-Dichloroethene	ND	5.0	113	109	3.6	120	116	3.4	70 - 130	20
1,1-Dichloropropene	ND	5.0	121	119	1.7	123	118	4.1	70 - 130	20
1,2,3-Trichlorobenzene	ND	5.0	110	112	1.8	106	102	3.8	70 - 130	20
1,2,3-Trichloropropane	ND	5.0	105	106	0.9	113	106	6.4	70 - 130	20
1,2,4-Trichlorobenzene	ND	5.0	114	117	2.6	110	105	4.7	70 - 130	20
1,2,4-Trimethylbenzene	ND	1.0	117	115	1.7	119	112	6.1	70 - 130	20
1,2-Dibromo-3-chloropropane	ND	5.0	98	101	3.0	105	104	1.0	70 - 130	20
1,2-Dibromoethane	ND	5.0	109	111	1.8	113	108	4.5	70 - 130	20
1,2-Dichlorobenzene	ND	5.0	113	113	0.0	114	107	6.3	70 - 130	20
1,2-Dichloroethane	ND	5.0	104	105	1.0	105	100	4.9	70 - 130	20
1,2-Dichloropropane	ND	5.0	110	109	0.9	110	106	3.7	70 - 130	20
1,3,5-Trimethylbenzene	ND	1.0	119	116	2.6	122	114	6.8	70 - 130	20
1,3-Dichlorobenzene	ND	5.0	116	115	0.9	118	112	5.2	70 - 130	20
1,3-Dichloropropane	ND	5.0	111	112	0.9	113	108	4.5	70 - 130	20
1,4-Dichlorobenzene	ND	5.0	116	115	0.9	116	111	4.4	70 - 130	20
1,4-dioxane	ND	100	112	114	1.8	108	99	8.7	40 - 160	20
2,2-Dichloropropane	ND	5.0	111	108	2.7	115	110	4.4	70 - 130	20
2-Chlorotoluene	ND	5.0	116	114	1.7	120	113	6.0	70 - 130	20
2-Hexanone	ND	25	82	87	5.9	89	87	2.3	40 - 160	20
2-Isopropyltoluene	ND	5.0	121	117	3.4	123	115	6.7	70 - 130	20

## QA/QC Data

SDG I.D.: GCQ52307

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
4-Chlorotoluene	ND	5.0	118	116	1.7	121	114	6.0	70 - 130	20
4-Methyl-2-pentanone	ND	25	92	97	5.3	100	96	4.1	40 - 160	20
Acetone	ND	10	73	77	5.3	86	82	4.8	40 - 160	20
Acrylonitrile	ND	5.0	98	98	0.0	108	105	2.8	70 - 130	20
Benzene	ND	1.0	113	112	0.9	115	109	5.4	70 - 130	20
Bromobenzene	ND	5.0	113	112	0.9	118	110	7.0	70 - 130	20
Bromochloromethane	ND	5.0	106	108	1.9	107	104	2.8	70 - 130	20
Bromodichloromethane	ND	5.0	104	106	1.9	103	99	4.0	70 - 130	20
Bromoform	ND	5.0	99	102	3.0	96	93	3.2	70 - 130	20
Bromomethane	ND	5.0	115	114	0.9	121	114	6.0	40 - 160	20
Carbon Disulfide	ND	5.0	116	112	3.5	123	118	4.1	70 - 130	20
Carbon tetrachloride	ND	5.0	134	131	2.3	117	114	2.6	70 - 130	20
Chlorobenzene	ND	5.0	115	114	0.9	117	112	4.4	70 - 130	20
Chloroethane	ND	5.0	120	113	6.0	122	118	3.3	70 - 130	20
Chloroform	ND	5.0	107	107	0.0	111	106	4.6	70 - 130	20
Chloromethane	ND	5.0	125	122	2.4	133	128	3.8	40 - 160	20
cis-1,2-Dichloroethene	ND	5.0	107	105	1.9	111	107	3.7	70 - 130	20
cis-1,3-Dichloropropene	ND	5.0	108	109	0.9	106	101	4.8	70 - 130	20
Dibromochloromethane	ND	3.0	107	108	0.9	103	99	4.0	70 - 130	20
Dibromomethane	ND	5.0	106	108	1.9	108	102	5.7	70 - 130	20
Dichlorodifluoromethane	ND	5.0	115	111	3.5	120	115	4.3	40 - 160	20
Diethyl ether	ND	5.0	100	102	2.0	104	98	5.9	70 - 130	20
Di-isopropyl ether	ND	5.0	103	102	1.0	105	101	3.9	70 - 130	20
Ethyl tert-butyl ether	ND	5.0	102	103	1.0	103	100	3.0	70 - 130	20
Ethylbenzene	ND	1.0	118	116	1.7	120	116	3.4	70 - 130	20
Hexachlorobutadiene	ND	5.0	118	115	2.6	109	101	7.6	70 - 130	20
Isopropylbenzene	ND	1.0	120	116	3.4	124	117	5.8	70 - 130	20
m&p-Xylene	ND	2.0	119	115	3.4	120	115	4.3	70 - 130	20
Methyl ethyl ketone	ND	5.0	83	88	5.8	88	84	4.7	40 - 160	20
Methyl t-butyl ether (MTBE)	ND	1.0	101	103	2.0	102	98	4.0	70 - 130	20
Methylene chloride	ND	5.0	95	95	0.0	99	94	5.2	70 - 130	20
Naphthalene	ND	5.0	104	109	4.7	111	106	4.6	70 - 130	20
n-Butylbenzene	ND	1.0	125	121	3.3	124	117	5.8	70 - 130	20
n-Propylbenzene	ND	1.0	121	118	2.5	126	119	5.7	70 - 130	20
o-Xylene	ND	2.0	114	112	1.8	115	110	4.4	70 - 130	20
p-Isopropyltoluene	ND	1.0	121	118	2.5	123	115	6.7	70 - 130	20
sec-Butylbenzene	ND	1.0	123	119	3.3	127	119	6.5	70 - 130	20
Styrene	ND	5.0	115	112	2.6	115	110	4.4	70 - 130	20
tert-amyl methyl ether	ND	5.0	102	105	2.9	101	96	5.1	70 - 130	20
tert-Butylbenzene	ND	1.0	119	116	2.6	124	117	5.8	70 - 130	20
Tetrachloroethene	ND	5.0	120	118	1.7	123	118	4.1	70 - 130	20
Tetrahydrofuran (THF)	ND	5.0	96	103	7.0	104	102	1.9	70 - 130	20
Toluene	ND	1.0	111	110	0.9	113	109	3.6	70 - 130	20
trans-1,2-Dichloroethene	ND	5.0	112	109	2.7	119	114	4.3	70 - 130	20
trans-1,3-Dichloropropene	ND	5.0	106	108	1.9	103	100	3.0	70 - 130	20
trans-1,4-dichloro-2-butene	ND	5.0	105	109	3.7	110	105	4.7	70 - 130	20
Trichloroethene	ND	5.0	116	115	0.9	120	114	5.1	70 - 130	20
Trichlorofluoromethane	ND	5.0	123	119	3.3	131	125	4.7	70 - 130	20
Trichlorotrifluoroethane	ND	5.0	124	118	5.0	131	126	3.9	70 - 130	20
Vinyl chloride	ND	5.0	126	121	4.0	136	131	3.7	70 - 130	20
% 1,2-dichlorobenzene-d4	100	%	99	100	1.0	99	100	1.0	70 - 130	20
% Bromofluorobenzene	96	%	100	101	1.0	100	100	0.0	70 - 130	20
% Dibromofluoromethane	95	%	97	99	2.0	97	96	1.0	70 - 130	20

# QA/QC Data

SDG I.D.: GCQ52307

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
% Toluene-d8	100	%	99	100	1.0	99	98	1.0	70 - 130	20

Comment:

Additional 8260 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is 10%.  
The RPD criteria for the LCS/LCSD is 20%,  
The MS/MSD RPD criteria is listed above.

QA/QC Batch 727223H (ug/kg), QC Sample No: CQ52307 50X (CQ52314 (50X) )

## Volatiles - Soil (High Level)

1,1,1,2-Tetrachloroethane	ND	250	108	108	0.0	99	106	6.8	70 - 130	20
1,1,1-Trichloroethane	ND	250	109	110	0.9	99	105	5.9	70 - 130	20
1,1,2,2-Tetrachloroethane	ND	250	108	110	1.8	104	111	6.5	70 - 130	20
1,1,2-Trichloroethane	ND	250	106	107	0.9	102	107	4.8	70 - 130	20
1,1-Dichloroethane	ND	250	102	104	1.9	97	103	6.0	70 - 130	20
1,1-Dichloroethene	ND	250	74	79	6.5	76	81	6.4	70 - 130	20
1,1-Dichloropropene	ND	250	119	121	1.7	109	115	5.4	70 - 130	20
1,2,3-Trichlorobenzene	ND	250	117	117	0.0	109	116	6.2	70 - 130	20
1,2,3-Trichloropropane	ND	250	104	104	0.0	100	105	4.9	70 - 130	20
1,2,4-Trichlorobenzene	ND	250	124	123	0.8	114	121	6.0	70 - 130	20
1,2,4-Trimethylbenzene	ND	250	115	115	0.0	108	114	5.4	70 - 130	20
1,2-Dibromo-3-chloropropane	ND	250	94	94	0.0	85	92	7.9	70 - 130	20
1,2-Dibromoethane	ND	250	108	109	0.9	103	110	6.6	70 - 130	20
1,2-Dichlorobenzene	ND	250	114	115	0.9	107	114	6.3	70 - 130	20
1,2-Dichloroethane	ND	250	102	103	1.0	97	103	6.0	70 - 130	20
1,2-Dichloropropane	ND	250	108	109	0.9	103	109	5.7	70 - 130	20
1,3,5-Trimethylbenzene	ND	250	115	116	0.9	108	114	5.4	70 - 130	20
1,3-Dichlorobenzene	ND	250	118	119	0.8	110	117	6.2	70 - 130	20
1,3-Dichloropropane	ND	250	111	112	0.9	105	111	5.6	70 - 130	20
1,4-Dichlorobenzene	ND	250	119	118	0.8	111	117	5.3	70 - 130	20
1,4-dioxane	ND	5000	104	112	7.4	100	107	6.8	40 - 160	20
2,2-Dichloropropane	ND	250	104	106	1.9	96	102	6.1	70 - 130	20
2-Chlorotoluene	ND	250	114	115	0.9	108	114	5.4	70 - 130	20
2-Hexanone	ND	1300	84	85	1.2	81	85	4.8	40 - 160	20
2-Isopropyltoluene	ND	250	118	118	0.0	111	118	6.1	70 - 130	20
4-Chlorotoluene	ND	250	118	118	0.0	110	117	6.2	70 - 130	20
4-Methyl-2-pentanone	ND	1300	90	92	2.2	89	93	4.4	40 - 160	20
Acetone	ND	500	58	61	5.0	62	65	4.7	40 - 160	20
Acrylonitrile	ND	250	93	95	2.1	91	96	5.3	70 - 130	20
Benzene	ND	250	112	113	0.9	106	111	4.6	70 - 130	20
Bromobenzene	ND	250	112	113	0.9	106	114	7.3	70 - 130	20
Bromochloromethane	ND	250	102	104	1.9	97	102	5.0	70 - 130	20
Bromodichloromethane	ND	250	101	102	1.0	92	98	6.3	70 - 130	20
Bromoform	ND	250	96	95	1.0	84	90	6.9	70 - 130	20
Bromomethane	ND	250	70	73	4.2	68	74	8.5	40 - 160	20
Carbon Disulfide	ND	250	75	79	5.2	76	82	7.6	70 - 130	20
Carbon tetrachloride	ND	250	108	107	0.9	95	102	7.1	70 - 130	20
Chlorobenzene	ND	250	115	115	0.0	108	114	5.4	70 - 130	20
Chloroethane	ND	250	26	27	3.8	24	27	11.8	70 - 130	20
Chloroform	ND	250	103	104	1.0	96	102	6.1	70 - 130	20
Chloromethane	ND	250	122	125	2.4	113	122	7.7	40 - 160	20
cis-1,2-Dichloroethene	ND	250	102	104	1.9	96	103	7.0	70 - 130	20
cis-1,3-Dichloropropene	ND	250	106	107	0.9	98	104	5.9	70 - 130	20
Dibromochloromethane	ND	150	103	103	0.0	92	99	7.3	70 - 130	20
Dibromomethane	ND	250	104	105	1.0	98	104	5.9	70 - 130	20

l,m

## QA/QC Data

SDG I.D.: GCQ52307

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Dichlorodifluoromethane	ND	250	113	114	0.9	102	108	5.7	40 - 160	20
Diethyl ether	ND	250	36	36	0.0	38	38	0.0	70 - 130	20
Di-isopropyl ether	ND	250	99	100	1.0	95	100	5.1	70 - 130	20
Ethyl tert-butyl ether	ND	250	100	101	1.0	95	101	6.1	70 - 130	20
Ethylbenzene	ND	250	117	118	0.9	110	115	4.4	70 - 130	20
Hexachlorobutadiene	ND	250	122	120	1.7	113	119	5.2	70 - 130	20
Isopropylbenzene	ND	250	115	116	0.9	108	115	6.3	70 - 130	20
m&p-Xylene	ND	250	117	118	0.9	111	117	5.3	70 - 130	20
Methyl ethyl ketone	ND	250	82	82	0.0	75	79	5.2	40 - 160	20
Methyl t-butyl ether (MTBE)	ND	250	98	98	0.0	93	99	6.3	70 - 130	20
Methylene chloride	ND	250	91	91	0.0	86	91	5.6	70 - 130	20
Naphthalene	ND	250	107	108	0.9	102	109	6.6	70 - 130	20
n-Butylbenzene	ND	250	126	125	0.8	117	122	4.2	70 - 130	20
n-Propylbenzene	ND	250	119	119	0.0	112	118	5.2	70 - 130	20
o-Xylene	ND	250	113	114	0.9	107	112	4.6	70 - 130	20
p-Isopropyltoluene	ND	250	120	119	0.8	112	118	5.2	70 - 130	20
sec-Butylbenzene	ND	250	121	121	0.0	113	120	6.0	70 - 130	20
Styrene	ND	250	114	115	0.9	108	114	5.4	70 - 130	20
tert-amyl methyl ether	ND	250	101	102	1.0	97	102	5.0	70 - 130	20
tert-Butylbenzene	ND	250	116	117	0.9	109	116	6.2	70 - 130	20
Tetrachloroethene	ND	250	119	120	0.8	112	117	4.4	70 - 130	20
Tetrahydrofuran (THF)	ND	250	96	98	2.1	87	93	6.7	70 - 130	20
Toluene	ND	250	110	110	0.0	104	108	3.8	70 - 130	20
trans-1,2-Dichloroethene	ND	250	106	108	1.9	100	106	5.8	70 - 130	20
trans-1,3-Dichloropropene	ND	250	104	104	0.0	95	102	7.1	70 - 130	20
trans-1,4-dichloro-2-butene	ND	250	104	105	1.0	95	102	7.1	70 - 130	20
Trichloroethene	ND	250	115	116	0.9	108	114	5.4	70 - 130	20
Trichlorofluoromethane	ND	250	27	28	3.6	26	28	7.4	70 - 130	20
Trichlorotrifluoroethane	ND	250	88	91	3.4	88	92	4.4	70 - 130	20
Vinyl chloride	ND	250	122	125	2.4	115	122	5.9	70 - 130	20
% 1,2-dichlorobenzene-d4	100	%	100	100	0.0	100	100	0.0	70 - 130	20
% Bromofluorobenzene	99	%	102	102	0.0	101	101	0.0	70 - 130	20
% Dibromofluoromethane	90	%	97	97	0.0	92	95	3.2	70 - 130	20
% Toluene-d8	100	%	99	98	1.0	98	98	0.0	70 - 130	20

Comment:

Additional 8260 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is 10%.

The RPD criteria for the LCS/LCSD is 20%,

The MS/MSD RPD criteria is listed above.

l = This parameter is outside laboratory LCS/LCSD specified recovery limits.

m = This parameter is outside laboratory MS/MSD specified recovery limits.

r = This parameter is outside laboratory RPD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

*Phyllis Shiller*  
 Phyllis Shiller, Laboratory Director  
 April 25, 2024

Sample Criteria Exceedances Report  
GCQ52307 - PEER

Criteria: MA: S1, S1G2, S1G3, S2, S2G2, S2G3  
State: MA

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL	Analysis Units
CQ52314	\$8260MER	Dibromochloromethane	MA / CMR 310.40.1600 / S1 (mg/kg)	ND	50	5	5	ug/Kg
CQ52314	\$8260MER	cis-1,3-Dichloropropene	MA / CMR 310.40.1600 / S1 (mg/kg)	ND	25	10	10	ug/Kg
CQ52314	\$8260MER	trans-1,3-Dichloropropene	MA / CMR 310.40.1600 / S1 (mg/kg)	ND	25	10	10	ug/Kg
CQ52314	\$8260MER	1,1,2,2-Tetrachloroethane	MA / CMR 310.40.1600 / S1 (mg/kg)	ND	50	5	5	ug/Kg
CQ52314	\$8260MER	1,1,2,2-Tetrachloroethane	MA / CMR 310.40.1600 / S2 (mg/kg)	ND	50	20	20	ug/Kg
CQ52314	\$8260MER	Dibromochloromethane	MA / CMR 310.40.1600 / S2 (mg/kg)	ND	50	30	30	ug/Kg
CQ52314	\$8260MER	1,1,2,2-Tetrachloroethane	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	ND	50	5	5	ug/Kg
CQ52314	\$8260MER	Dibromochloromethane	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	ND	50	5	5	ug/Kg
CQ52314	\$8260MER	Dibromochloromethane	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-2	ND	50	30	30	ug/Kg
CQ52314	\$8260MER	1,1,2,2-Tetrachloroethane	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-2	ND	50	20	20	ug/Kg
CQ52314	\$8260MER	Dibromochloromethane	MA / SOIL S-2 STANDARDS / S-2 Soil & GW-1	ND	50	5	5	ug/Kg
CQ52314	\$8260MER	1,1,2,2-Tetrachloroethane	MA / SOIL S-2 STANDARDS / S-2 Soil & GW-1	ND	50	5	5	ug/Kg
CQ52314	\$8260MER	Dibromochloromethane	MA / SOIL S-2 STANDARDS / S-2 Soil & GW-2	ND	50	30	30	ug/Kg
CQ52314	\$8260MER	1,1,2,2-Tetrachloroethane	MA / SOIL S-2 STANDARDS / S-2 Soil & GW-2	ND	50	20	20	ug/Kg
CQ52314	\$MCPADD-SM	1,4-Dioxane	MA / CMR 310.40.1600 / S1 (mg/kg)	ND	800	200	200	ug/Kg
CQ52314	\$MCPADD-SM	1,4-Dioxane	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	ND	800	200	200	ug/Kg
CQ52314	\$MCPADD-SM	1,4-Dioxane	MA / SOIL S-2 STANDARDS / S-2 Soil & GW-1	ND	800	200	200	ug/Kg

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.



**Environmental Laboratories, Inc.**  
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045  
Tel. (860) 645-1102 Fax (860) 645-0823



## Analysis Comments

April 25, 2024

SDG I.D.: GCQ52307

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report:

### **ETPH Narration**

**AU-XL2 04/20/24-1:** CQ52307, CQ52308, CQ52309, CQ52310

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: C36 29.3%L (20%)

The ETPH method allows for one discrimination check standard outlier.

### **PCB Narration**

**AU-ECD3 04/23/24-1:** CQ52307, CQ52308, CQ52309, CQ52310

The following Continuing Calibration compounds did not meet % deviation criteria:

Samples: CQ52307, CQ52308

Preceding CC 423B015 - PCB 1260 20%H (%)

Succeeding CC 423B028 - PCB 1260 17%H (%)

Samples: CQ52309, CQ52310

Preceding CC 423B028 - PCB 1260 17%H (%)

Succeeding CC 423B041 - DCBP SURR 17%H (15%), PCB 1260 19%H (%)

### **PEST Narration**

**AU-ECD33 04/24/24-1:** CQ52312

The following Continuing Calibration compounds did not meet % deviation criteria:

Samples: CQ52312

Preceding CC 424B004 - Endosulfan II 26%L (20%)

Succeeding CC 424B018 - % DCBP 21%L (20%), 4,4'-DDT 24%L (20%), Heptachlor 21%L (20%), Methoxychlor 25%L (20%)

A low "1A" standard was run after the samples to demonstrate capability to detect any compounds outside of the CC acceptance criteria. All reported samples were ND for the affected compounds.

### **SVOA Narration**

**CHEM28 04/19/24-1:** CQ52307, CQ52308, CQ52309, CQ52310

For 8270 full list, the DDT breakdown and pentachlorophenol & benzidine peak tailing were evaluated in the DFTPP tune and were found to be in control.

For 8270 BN list, benzidine peak tailing was evaluated in the DFTPP tune and was found to be in control.

The following Initial Calibration compounds did not meet recommended response factors: Hexachlorobenzene 0.087 (0.1)

The following Initial Calibration compounds did not meet minimum response factors: None.

The following Continuing Calibration compounds did not meet % deviation criteria: 2-Nitroaniline 32%L (30%)

The following Continuing Calibration compounds did not meet Maximum % deviation criteria: None.

The following Continuing Calibration compounds did not meet recommended response factors: Hexachlorobenzene 0.082 (0.1)

The following Continuing Calibration compounds did not meet minimum response factors: None.

Up to eight compounds can be outside of ICAL %RSD criteria and up to sixteen compounds can be outside of CCAL %Dev criteria if less than 40%.

### **VOA Narration**

**CHEM03 04/16/24-2:** CQ52307, CQ52308, CQ52309, CQ52310, CQ52311, CQ52314





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## Analysis Comments

April 25, 2024

SDG I.D.: GCQ52307

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The following Initial Calibration compounds did not meet RSD% criteria: Acetone 22% (20%), Dichlorodifluoromethane 23% (20%), Methyl Ethyl Ketone 23% (20%), Trichlorotrifluoroethane 23% (20%)

The following Initial Calibration compounds did not meet maximum RSD% criteria: None.

The following Initial Calibration compounds did not meet recommended response factors: 1,1,2-Trichloroethane 0.194 (0.2)

The following Initial Calibration compounds did not meet minimum response factors: None.

The following Continuing Calibration compounds did not meet % deviation criteria: Carbon tetrachloride 32%H (30%)

The following Continuing Calibration compounds did not meet Maximum % deviation criteria: None.

Up to eight compounds can be outside of ICAL %RSD criteria and up to sixteen compounds can be outside of CCAL %Dev criteria if less than 40%.



## L. Hazardous Materials Report

Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

AHERA Three-Year Reinspection

2023

Algonquin Regional High School  
79 Bartlett Street  
Northborough, MA 01532

Fannie E. Proctor Elementary School  
26 Jefferson Road  
Northborough, MA 01532

Lincoln Street Elementary School  
76 Lincoln Street  
Northborough, MA 01532

Peaslee Elementary School  
31 Maple Street  
Northborough, MA 01532

Mary E. Finn Elementary School  
60 Richards Road  
Southborough, MA 01772

Neary Elementary School  
53 Parkerville Road  
Southborough, MA 01772

Robert E. Melican Middle School  
145 Lincoln Street  
Northborough, MA 01532

Marion E. Zeh Elementary School  
33 Howard Street  
Northborough, MA 01532

Albert S. Woodward Memorial School  
28 Cordaville Road  
Southborough, MA 01772

P. Brent Trottier Middle School  
49 Parkerville Road  
Southborough, MA 01772



# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service  
*Certified Woman-owned Business Enterprise (WBE)*

95 Beaver Street  
Waltham, MA 02453

(781) 893-8330  
FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

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- A. AHERA Three Year Re-Inspection Report With Chart and Drawing(s) (Bulk Reports and SDS as warranted)
- B. Management Plan Documentation (AHERA Policies)
  - Abatement Policy
  - Training Policy
  - Notification Policy
  - Short-term Worker Policy
  - Record Keeping Policy
  - Designated Person Statements
  - Assurance of Accreditations
- C. Credentials

## Algonquin Regional High School



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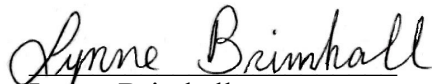
REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

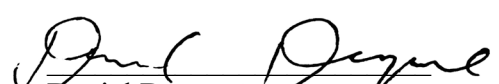
ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: AHERA Three-Year Re-inspection


SUBJECT: Algonquin Regional High School  
79 Bartlett Street  
Northborough, MA 01532

INSPECTOR(S):

  
Lynne Brimhall  
Asbestos Inspector  
MA Cert. No.: AI 061691

  
Daniel Duque  
Asbestos Inspector  
MA Cert. No.: AI 901133

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 31, 2023





# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service

*Certified Woman-owned Business Enterprise (WBE)*

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

95 Beaver Street  
Waltham, MA 02453

ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

(781) 893-8330  
FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

PROJECT: Algonquin Regional High School  
79 Bartlett Street  
Northborough, MA 01532

SUBJECT: AHERA Three-Year Reinspection

DATE: August 31, 2023

As required by the US Environmental Protection Agency's AHERA regulations, Hub Testing Laboratory has completed a survey and reassessment of asbestos containing materials in the Algonquin Regional High School of the Northborough-Southborough Public School District. This report summarizes the locations and conditions of materials remaining in the building and reviews the ongoing responsibilities of the Local Education Agency (LEA). Lynne Brimhall (AI 061691) and Daniel Duque (AI 901133) completed the inspection on July 18, 2023.

When sampling of suspect asbestos-containing materials was required, samples representative of the material were taken. If samples of thermal systems insulation and miscellaneous materials were necessary, they were collected in unobtrusive locations. If samples of surfacing materials were necessary, they were collected using the guidance document method for random sampling.

This latest survey report should be incorporated into the files that the LEA maintains pertaining to response actions, operations & maintenance activities, six-month surveillances, training, air sampling and major asbestos activities, etc.

The re-inspection consisted of reviewing previous documentation available, interviewing building personnel, and performing a thorough survey of each functional space in the building.

The Algonquin High Regional School has undergone extensive renovations during 2002 to 2010. The building appears to have been gutted and reconstructed over multiple phases. The architect has provided a letter and several safety data sheets for new materials were obtained during the previous inspection and can be located in the AHERA files. Safety data sheets for any new materials installed should also be added to the AHERA files.

Sampling was conducted on materials where safety data sheets could not be located. The bulk reports for those materials can be found in Attachment D. Bulk reports for previously sampled materials have been incorporated into the AHERA files.

The floor plan found in Attachment A should be used to identify functional spaces identification.

The standardized form from the Department of Labor Standards has been completed and is found in Attachment A.

The management planner develops recommendations based on the hazard ranking and removal ranking. See below.

<b><u>Hazard Rank</u></b>	<b><u>ACBM Condition</u></b>	<b><u>ACBM Disturbance Potential</u></b>
7	Significantly Damaged	Any
6	Damaged	Potential for Significant Damage
5	Damaged	Potential for Damage
4	Damaged	Low
3	Good	Potential for Significant Damage
2	Good	Potential for Damage
1	Good	Low

<b>Removal Rank</b>	<b>AHERA Category</b>	<b>Response Action Required By AHERA</b>
1	Significantly Damaged	Evacuate or isolate the area if needed. Remove the ACBM or enclose/encapsulate if sufficient to contain fibers. Repair of thermal systems is allowed if feasible and safe. Continue O&M
2	Damaged & Potential for Significant Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
3	Damaged & Potential for Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
4	Damaged	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
5	Potential for Significant Damage	Evacuate or isolate the area if needed. Take steps to reduce potential for disturbance. Continue O&M
6	Potential for Damage	Continue O&M
7	All remaining ACBM	Continue O&M

The materials previously identified in the Algonquin Regional High School have been sampled and found to be non-asbestos. Therefore, no immediate response actions are required. However, until the school has been as removed from the list by the Department of Labor Standards, the following actions for ongoing asbestos management in the school are recommended. All work beyond the capabilities of a trained and licensed in house O&M maintenance person must be performed by a licensed and qualified asbestos removal contractor. A licensed Project Designer must design all abatement projects outside of O&M.

1. Perform a periodic surveillance of known and assumed asbestos-containing materials every six months until such time. The chart included in this report may be used for the documentation. Next survey should be performed in January of 2024 and has an estimated cost of \$600.
2. Provide training for new maintenance personnel within 60 days of hire and provide training annually to all maintenance personnel. Training should be conducted during the Christmas break and has an estimated cost \$1250 which is for all maintenance personnel within the school district.
3. Keep an updated copy of the Management Plan in the school as well as a master copy with the Mr. Lavoie. The plan must be available, without restriction, to the public, school personnel and their representatives, parents and representatives of EPA and the state, for inspection during normal business hours.
4. If needed, perform a three-year reinspection in July of 2026 which should cost around \$1500.

3 Year Reinspection

Date of Reinspection: 7/18/2023

School: Algonquin Regional High School

Inspector Name: Lynne Brimhall

Address: 79 Bartlett St. Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
The Algonquin High Regional School has undergone extensive renovations during 2002 to 2010. The building appears to have been gutted and reconstructed over multiple phases. The architect has provided a letter, safety data sheets (SDS) for new materials, and sampling has been conducted on most materials. Records obtained are kept in the AHERA files.										
Sheetrock	E112 A, B, C, G116 A, B, C, F 114 suite, F102 – F 105, F 108, H 216 C & D, Aisles in auditorium, A 102, A 132 D 211, H 320 C & D, H 214, B 101, C 201, above lockers in hallways, doors to classrooms and exterior walls on 2 <sup>nd</sup> floor	≈ 5000 SF	F	N/A	Y	N – 8/28/23	N/A	N/A	N/A	N/A
Border ceramic tile grout	Bathrooms	≈ 24 LF per	NF	N/A	N/A	N – 7/18/23	N/A	N/A	N/A	N/A
Border ceramic tile adhesive			NF	N/A	N/A	N – 7/18/23	N/A	N/A	N/A	N/A

**Type**

T-TSI

S-Surfacing

M - Miscellaneous

**Amount**

SF-Square feet

LF-Linear feet

**Friability**

F-Friable

NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI

2. Damaged (D) surfacing

3: Significantly damaged (SD) surfacing

4: Damaged or significantly damaged misc.

5: Suspect or proven ABCM with the potential for D (\*one moderate)

6: Suspect or proven ABCM with the potential for SD (\*one high)

7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/18/2023

School: Algonquin Regional High School

Inspector Name: Lynne Brimhall

Address: 79 Bartlett St. Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Terrazzo	H3 & H4 entrances	≈ 1200 SF	NF	N/A	N/A	N – 7/18/23	N/A	N/A	N/A	N/A
Ceramic tile (blue, gray or green) grout	Bathrooms	≈ 2400 SF	NF	N/A	N/A	N – 7/18/23	N/A	N/A	N/A	N/A
Ceramic tile (blue, gray or green) adhesive			NF	N/A	N/A	N – 7/18/23	N/A	N/A	N/A	N/A
Tectum panels	Little gym (B 106S)	≈ 2000 SF	NF	N/A	N/A	N – 2/18/20 & 7/18/23	N/A	N/A	N/A	N/A
Pink fire door insulation	Fire doors (border insulation)	≈ 20 LF per	NF	N/A	N/A	N – 2/18/20 & 7/18/23	N/A	N/A	N/A	N/A
White fire door insulation	Fire doors (block insulation)	≈ 24 SF per	NF	N/A	N/A	N – 2/18/20 & 7/18/23	N/A	N/A	N/A	N/A
CMU	Walls throughout school except where sheetrock is	NA	NF	N/A	N/A	N - 2/18/20	N/A	N/A	N/A	N/A
Associated mortar		NA	NF	N/A	N/A	N - 2/18/20	N/A	N/A	N/A	N/A
Spray-on ceilings	C108 (receiving), C112, C114, C117	NA	F	N/A	N/A	N - 2/18/20	N/A	N/A	N/A	N/A

**Type**

T-TSI  
S-Surfacing  
M - Miscellaneous

**Amount**

SF-Square feet  
LF-Linear feet

**Friability**

F-Friable  
NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI
2. Damaged (D) surfacing
3. Significantly damaged (SD) surfacing
4. Damaged or significantly damaged misc.

5. Suspect or proven ABCM with the potential for D (\*one moderate)
6. Suspect or proven ABCM with the potential for SD (\*one high)
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/18/2023

School: Algonquin Regional High School

Inspector Name: Lynne Brimhall

Address: 79 Bartlett St. Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Exterior window caulking	Associated with pre-fabricated windows	NA	NF	N/A	N/A	N - 2/18/20	N/A	N/A	N/A	N/A
Red fire stop	D 204 (electrical)	NA	NF	N/A	N/A	N - 2/18/20	N/A	N/A	N/A	N/A
Textured ceiling	Auditorium	NA	F	N/A	N/A	N - 12/28/01	N/A	N/A	N/A	N/A
Stone window sills	Boiler Rooms	NA	NF	N/A	N/A	N - 4/27/98	Also removed during renovations			
Science lab tables	Science rooms in G-Wing	NA	NF	N/A	N/A	N - 4/27/98	Also removed during renovations			
Ceiling tiles	Throughout school	NA	F	N/A	N/A	SDS's on file show non-asbestos	N/A	N/A	N/A	N/A
12" x 12" Floor tiles	Throughout school	NA	NF	N/A	N/A	SDS's on file show non-asbestos	N/A	N/A	N/A	N/A
Mastic associated with new flooring		NA	NF	N/A	N/A		N/A	N/A	N/A	N/A
Vinyl cove base &	Throughout school	NA	NF	N/A	N/A	SDS's on file show non-asbestos	N/A	N/A	N/A	N/A
Associated silicone mastic		NA	NF	N/A	N/A		N/A	N/A	N/A	N/A

**Type**

T-TSI  
S-Surfacing  
M - Miscellaneous

**Amount**

SF-Square feet  
LF-Linear feet

**Friability**

F-Friable  
NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI
2. Damaged (D) surfacing
3. Significantly damaged (SD) surfacing
4. Damaged or significantly damaged misc.

5. Suspect or proven ABCM with the potential for D (\*one moderate)
6. Suspect or proven ABCM with the potential for SD (\*one high)
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/18/2023

School: Algonquin Regional High School

Inspector Name: Lynne Brimhall

Address: 79 Bartlett St. Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
9" x 9" Floor tiles	Throughout school	NA	NF	N/A	N/A	Removed during renovation	N/A	N/A	N/A	N/A
Associated mastic		NA	NF	N/A	N/A	Old mastic was shot blasted and replaced with new non- asbestos mastic.	N/A	N/A	N/A	N/A

**Type**

T-TSI

S-Surfacing

M - Miscellaneous

**Amount**

SF-Square feet

LF-Linear feet

**Friability**

F-Friable

NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI

2. Damaged (D) surfacing

3. Significantly damaged (SD) surfacing

4. Damaged or significantly damaged misc.

5. Suspect or proven ABCM with the potential for D (\*one moderate)

6. Suspect or proven ABCM with the potential for SD (\*one high)

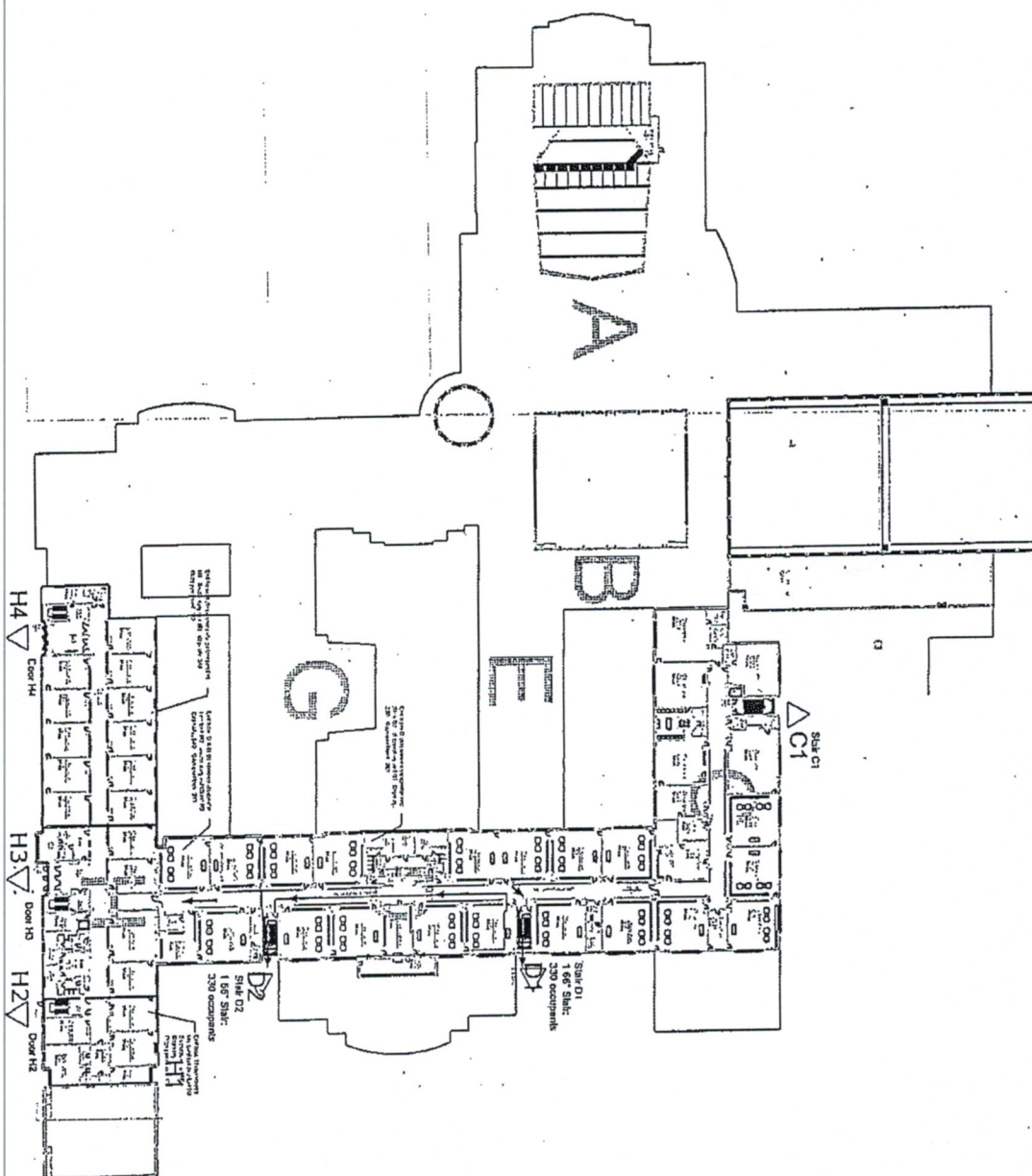
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high



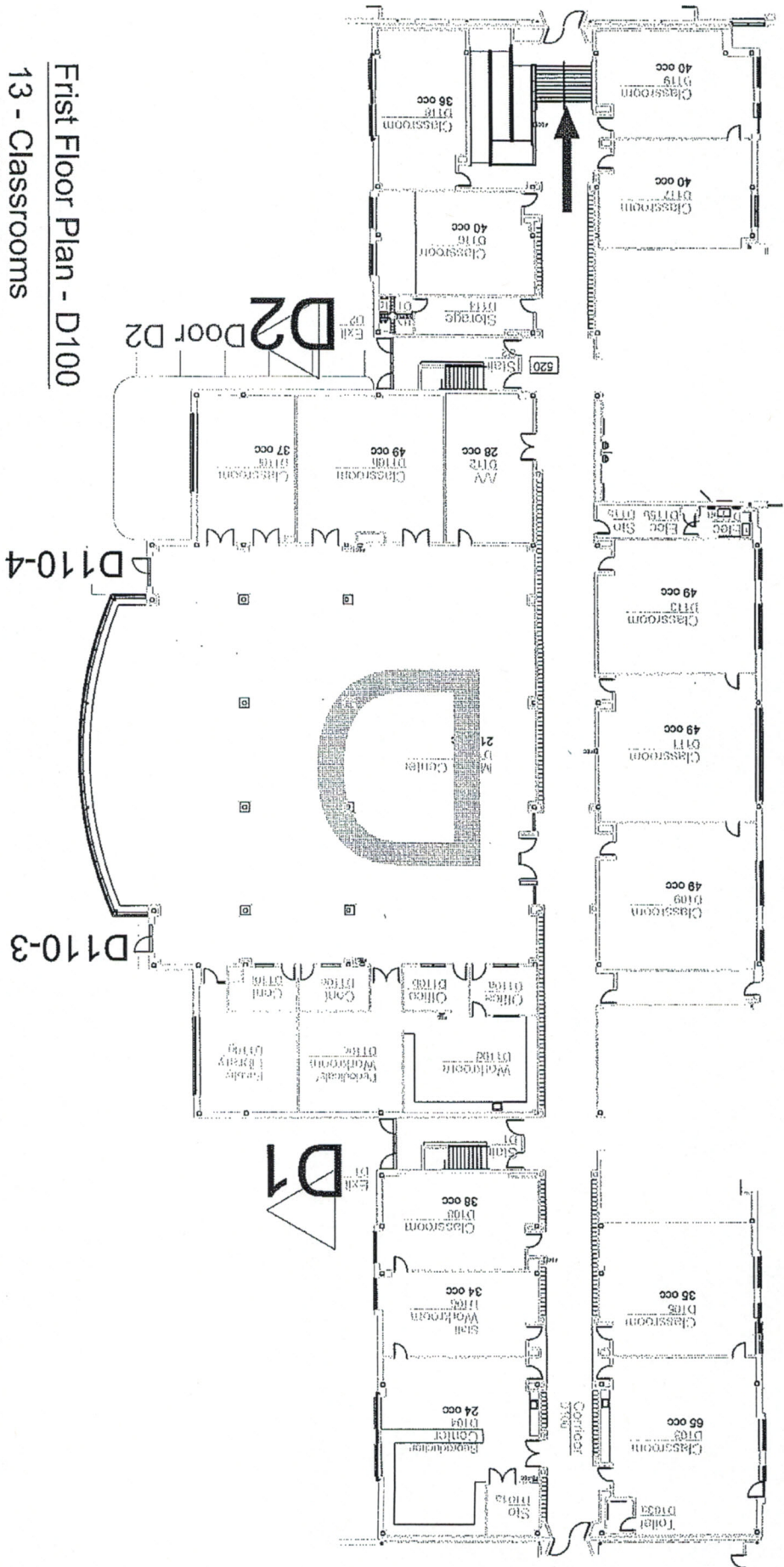
Second Floor Plan, 14300  
 19 - Classrooms  
 3 - Conference Rooms  
 2 - Large laboratories  
 3 - Small laboratories  
 2 - Office areas  
 3 - Stairwells H1, H3, H4



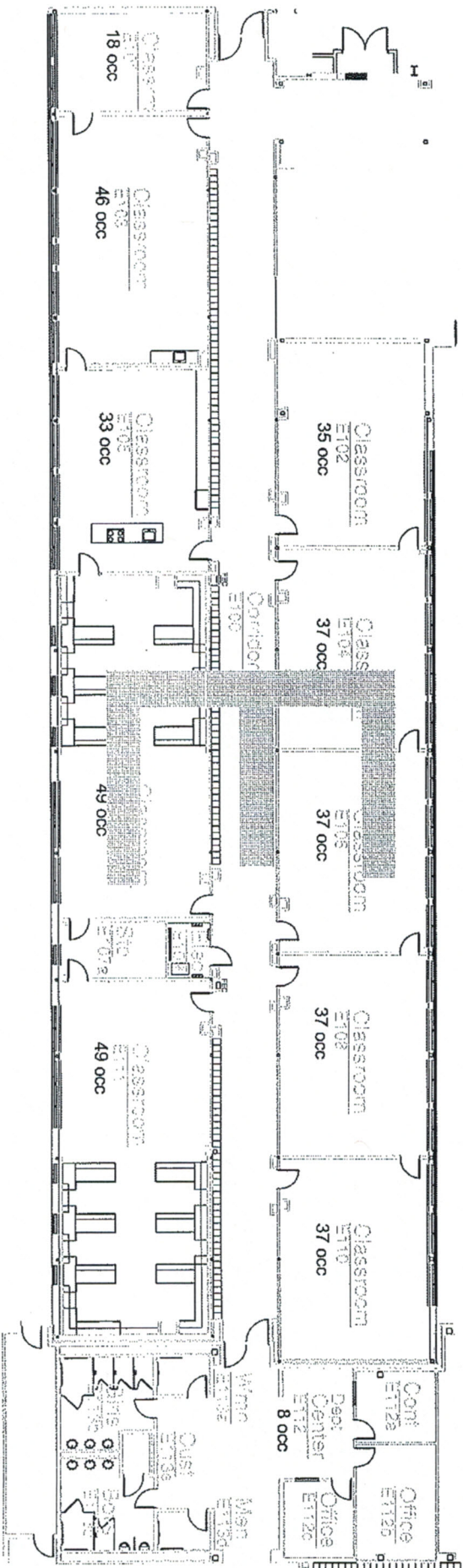












## Frist Floor Plan - E100

- 8- Classrooms
- 2- Cooking Classrooms
- 1 - Conference Rooms

[illegible]

G114

## 14- Classrooms



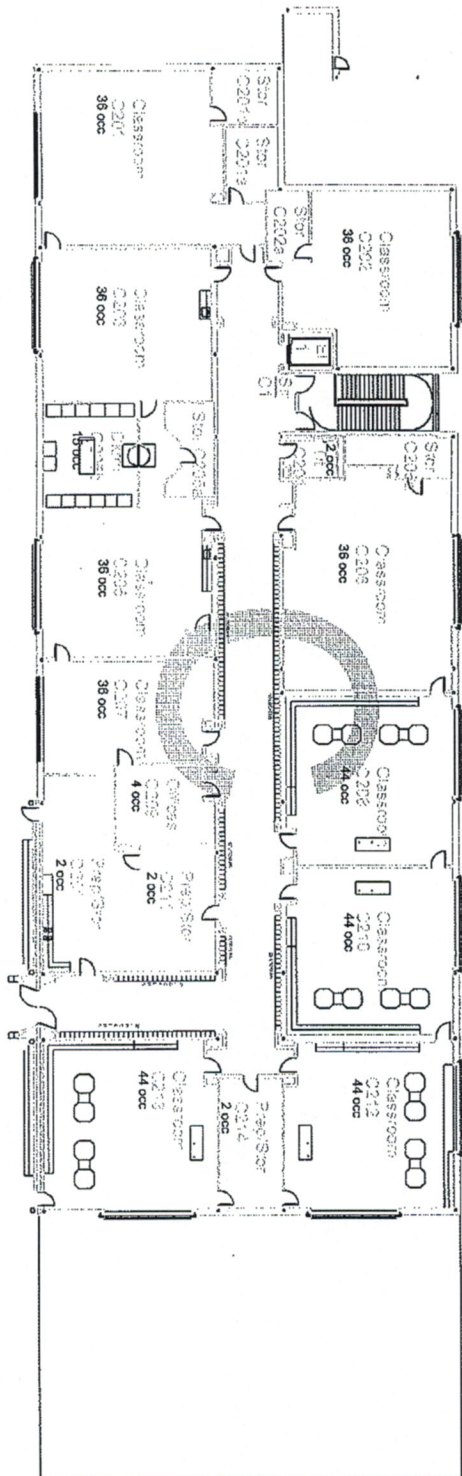
[illegible]

- 
- This detailed floor plan illustrates the second floor of a school building. The layout is organized into several key sections:
- Classrooms:** The floor contains numerous classrooms, each labeled with a number and a size (e.g., 34 ooc, 49 ooc, 8 ooc). These are arranged in rows along the top and right sides of the plan.
  - Corridors:** A central corridor, labeled "Corridor", runs horizontally through the middle of the floor, providing access to the classrooms and other areas.
  - Stairs:** Four staircases are clearly marked: "Stair H4" (top left), "Stair H3" (middle left), "Stair H2" (bottom left), and "Stair H1" (bottom right).
  - Exits:** Multiple exit points are indicated, including "Exit Above" in several locations and "Exit" near the bottom right.
  - Other Rooms:** Additional rooms include a "Storage" area, a "Conf" (conference) room, and a "Room at Landing" near the bottom left.
  - Room Numbers:** Small numbered boxes (186, 292, 159, 3) are placed throughout the plan, likely corresponding to specific room or area identifiers.
- The plan uses standard architectural symbols for doors, windows, and furniture, providing a comprehensive overview of the second floor's spatial organization.





Exit Below

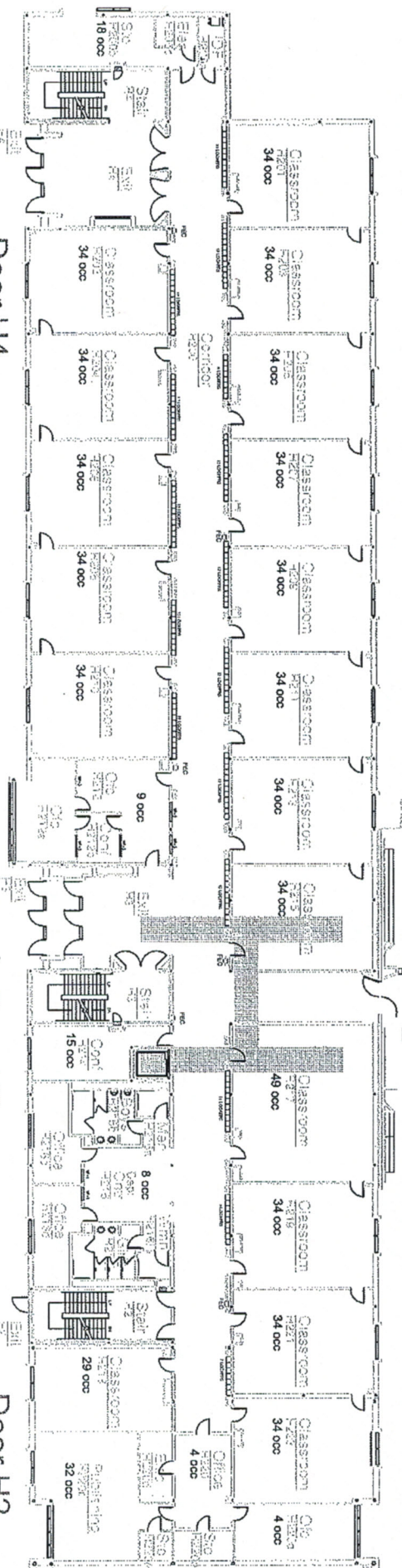


## 10-Classrooms

## 1- Small bathrooms

1- Stairwells C1





H4

Door H4

H3

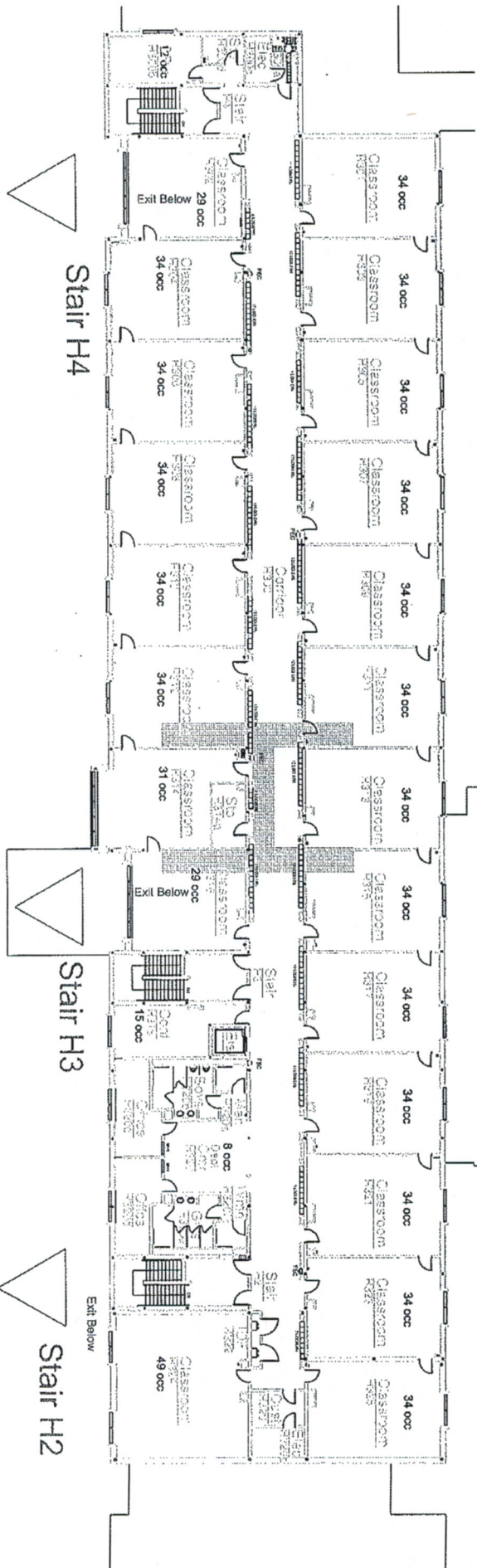
Door H3

H2

Door H2

## Second Floor Plan - H200

- 19 - Classrooms
- 3 - Conference Rooms
- 2 - Large bathrooms
- 2 - Small bathrooms
- 2 - Office areas
- 3 - Stairwells H2, H3, H4



### Third Floor Plan - H300

- 22- Classrooms
- 2- Conference Rooms
- 2- Large bathrooms
- 2- Small bathrooms
- 3- Stairwells H2, H3, H4



# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service

*Certified Woman-owned Business Enterprise (WBE)*

August 8, 2023

95 Beaver Street  
Waltham, MA 02453

Report For: Northborough-Southborough Public Schools  
Attn: Keith Lavoie  
53 Parkerville Road  
Southborough, MA 01772

(781) 893-8330  
FAX (781) 893-4414  
www.hubtesting.net

Hub I.D.: 33135

Project: Algonquin High School

Date of Survey: July 18, 2023  
Asbestos Inspector: Lynne Brimhall  
Daniel Duque

Date Samples Collected: July 18, 2023  
Certification Number: AI 061691  
AI 091133

Signature:

*Lynne Brimhall* *Daniel Duque*

Scope: During the most recent AHERA inspection, it was requested that previously identified assumed materials be sampled to determine if asbestos is present. The asbestos sampling was conducted by Lynne Brimhall (AI 061691) and Daniel Duque (AI 901133) in accordance with AHERA protocol.

Analysis: Analysis for the presence of asbestos was performed using Polarized Light Microscopy EPA/600/R-93/116, July 1993.

Results:	<u>Hub I.D.</u>	<u>Material/Location</u>	<u>Composition</u>	<u>%</u>
	33135-1	Terrazzo, H4 at door (entry)	Nonfibrous	100
		Color: Multi		
	33135-2	Terrazzo, H4 at door to school	Nonfibrous	100
		Color: Multi		
	33135-3	Terrazzo, H3 at stair door	Nonfibrous	100
		Color: Multi		
	33135-4	Ceramic border tile grout, 3 <sup>rd</sup> floor bathroom in H wing	Nonfibrous	100
		Color: Gray		
	33135-5	Ceramic border tile grout, 1 <sup>st</sup> floor girl's bathroom in D wing	Nonfibrous	100
		Color: Gray		
	33135-6	Ceramic border tile grout, A wing bathroom B by 113	Nonfibrous	100
		Color: Gray		

<u>Hub I.D.</u>	<u>Material/Location</u>	<u>Composition</u>	<u>%</u>
33135-7	Ceramic border tile adhesive, 3 <sup>rd</sup> floor bathroom in H wing Color: Gray	Nonfibrous	100
33135-8	Ceramic border tile adhesive, 1 <sup>st</sup> floor girl's bathroom in D wing Color: Tan	Nonfibrous	100
33135-9	Ceramic border tile adhesive, A wing bath B by 113 Color: Tan	Nonfibrous	100
33135-10	2" Ceramic floor tile grout, 2 <sup>nd</sup> floor boy's bathroom H wing Color: Gray	Nonfibrous	100
33135-11	2" Ceramic floor tile grout, D wing 1 <sup>st</sup> floor M staff Color: Gray	Nonfibrous	100
33135-12	2" Ceramic floor tile grout, A wing bathroom B by 113 Color: Gray	Nonfibrous	100
33135-13	2" Ceramic floor tile adhesive, 2 <sup>nd</sup> floor boy's bathroom H wing Color: Yellow	Nonfibrous	100
33135-14	2" Ceramic floor tile adhesive, D wing 1 <sup>st</sup> floor M staff Color: Yellow	Nonfibrous	100
33135-15	2" Ceramic floor tile adhesive, A wing bathroom B by 113 Color: Yellow	Nonfibrous	100
33135-16	Pink fire door insulation, H3 stairs at H100 Color: Pink	Cellulose Non fibrous	40 60
33135-17	Pink fire door insulation, Boy's locker room B107 Color: Pink	Cellulose Non fibrous	40 60
33135-18	Tectum panels, ceiling in Little Gym B Color: Multi	Cellulose Nonfibrous	70 30
33135-19	Tectum panels, panel in Little Gym B Color: Multi	Cellulose Non fibrous	70 30

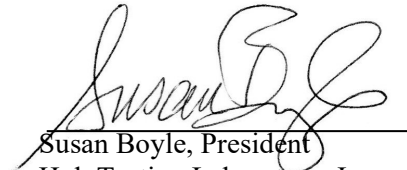


<u>Hub I.D.</u>	<u>Material/Location</u>	<u>Composition</u>	<u>%</u>
33135-20	White fire door insulation, Door to B106N Color: White	Non fibrous	100
33135-21	White fire door insulation, 4419 (Nurse) Color: White	Non fibrous	100

MA Analytical Lab #AA000156 NVLAP#200090-0

Condition: The samples were received in good condition.

Comments: No asbestos was detected in the samples submitted. This analysis pertains only to the samples analyzed. This report shall not be reproduced except in full, without the written approval of the laboratory.

  
Susan Boyle, President  
Hub Testing Laboratory, Inc.

## Analytical report from Lab



Lynne Brimhall  
Hub Testing Laboratory, Inc.  
95 Beaver St.  
Waltham, MA 02453

July 26, 2023

Dear Lynne Brimhall,

The enclosed analytical results have been obtained by using EPA 600/R-93/116 or EPA 600/M4-82-020. Calibrated Visual Estimate (CVE) is used by Aerobiology for the determination of the percentage of asbestos and other components in the sample. Point Counting is recommended when the sample contains less than 10% asbestos by CVE. Aerobiology recommends further analysis by a gravimetric method for non-friable materials that are less than 1% by CVE.

The Quality Control data related to the samples analyzed is available upon client's written request. Aerobiology Laboratory Associates, Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client. As such, these results apply to the sample(s) as received. Unless otherwise indicated, all samples were received in acceptable condition.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested. This report may not be reproduced except in its entirety, without the permission of Aerobiology Laboratory Associates, Inc., Laboratory Manager.

If you have any questions please contact the Optical Manager or the Laboratory Manager.

Sincerely,

Aimee Cormier, Laboratory Manager

Enclosure: Version 2  
LAB BATCH ID: B 133820 CLIENT PROJECT ID: 33135  
Client Ref: Algonquin  
CT ID# PH-0209; MA ID# AA000251; ME ID# LB-055; NVLAP Lab Code 200090-0; RI ID # PLM-00150; VT ID# AL254362.

# Aerobiology Laboratory Associates, Inc.

Client Name: Hub Testing Laboratory, Inc.  
 PO #: N/A  
 Client Project #: 33135  
 Client Reference: Algonquin  
 Method: EPA/600/R-93/116

Batch: B133820  
 Date Sampled: 7/18/2023  
 Date Received: 7/24/2023  
 Date Analyzed: 7/24/2023  
 Date of Report: 7/26/2023

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-1	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Terrazzo Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-2	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Terrazzo Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-3	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Terrazzo Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-4	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Border (Cove) Tile Grout Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-5	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Border (Cove) Tile Grout Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-6	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Border (Cove) Tile Grout Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

# Aerobiology Laboratory Associates, Inc.

Client Name: Hub Testing Laboratory, Inc.  
 PO #: N/A  
 Client Project #: 33135  
 Client Reference: Algonquin  
 Method: EPA/600/R-93/116

Batch: B133820  
 Date Sampled: 7/18/2023  
 Date Received: 7/24/2023  
 Date Analyzed: 7/24/2023  
 Date of Report: 7/26/2023

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-7	Tan	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Border (Cove) Tile Adhesive Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-8	Tan	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Border (Cove) Tile Adhesive Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-9	Tan	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Border (Cove) Tile Adhesive Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-10	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: 2" CFT Grout Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-11	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: 2" CFT Grout Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-12	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: 2" CFT Grout Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

# Aerobiology Laboratory Associates, Inc.

Client Name: Hub Testing Laboratory, Inc.  
 PO #: N/A  
 Client Project #: 33135  
 Client Reference: Algonquin  
 Method: EPA/600/R-93/116

Batch: B133820  
 Date Sampled: 7/18/2023  
 Date Received: 7/24/2023  
 Date Analyzed: 7/24/2023  
 Date of Report: 7/26/2023

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-13	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: 2" CFT Adhesive Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-14	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: 2" CFT Adhesive Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-15	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: 2" CFT Adhesive Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-16	Pink	0	0	0	0	0	0	0	0	40	0	0	0	60
Description: Pink Fire Door Insulation (Border) Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-17	Pink	0	0	0	0	0	0	0	0	40	0	0	0	60
Description: Pink Fire Door Insulation (Border) Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-18	Multi	0	0	0	0	0	0	0	0	70	0	0	0	30
Description: Tectum Panels Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														



# Aerobiology Laboratory Associates, Inc.

Client Name: Hub Testing Laboratory, Inc.  
 PO #: N/A  
 Client Project #: 33135  
 Client Reference: Algonquin  
 Method: EPA/600/R-93/116

**Batch: B133820**  
 Date Sampled: 7/18/2023  
 Date Received: 7/24/2023  
 Date Analyzed: 7/24/2023  
 Date of Report: 7/26/2023

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-19	Multi	0	0	0	0	0	0	0	0	70	0	0	0	30
Description: Tectum Panels Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-20	White	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: White Fire Door Insulation (Middle) Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33135-21	White	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: White Fire Door Insulation (Middle) Location: N/A Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite  
 Non-Asbestos Codes: FBG = Fiberglass MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

**Note:** To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]).

\* All results are in percentage.

**Analyst:** Dan Pine



**TAT**  
(circle one)

3 Hours 6 Hours Same Day Next Day

2 Days 3 Days 5 Days Other \_\_\_\_\_

TAT in bus. days - lab approval required for rush analysis

**PASI Batch #**

B133820

Client: Hub Testing Laboratory

**PLM**

**Chain of Custody**

Address: 95 Beaver Street

Special Instructions: Stop at 1st + for each HA.

Waltham, MA 02453

Relinquished By: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Project #: 33135 PO: \_\_\_\_\_

Received By Lab: Janeen Lounsbury

Date/Time: 7-24-23 7:30

Project Site: Algonquin

Shaded area for lab use only.

Due Date: \_\_\_\_\_

Contact: Lynne

# of Samples Received: 21

Analyzed: Station 4

Tel. / Fax #: 781-893-8330

Results: email fax verbal By: \_\_\_\_\_

Date: \_\_\_\_\_

Email: L.Brimhall@Hubtesting.net

Analyst / Date: Donna 7/24/23

QC by / Date: BS / 07/25/23

L:\Brimm\Asbestos\Testing\33135-1			Stereo Scope		Optical Properties					RI		Asbestos Percentage (%)						Non Asbestos Percentage (%)										
Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Circle Type				Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Amosite	Crocidolite	Tremolite										
33135-1	7/18/22	Terrazzo	OM	6	C	N	N																				100	
↑ -2			OM	6	C	N	N																				100	
-3			OM	6	C	N	N																				100	
-4		Ceramic border (cove)	6	4	Y	N	Y																				100	
↓ -5		tile grout	6	4	Y	N	Y																				100	
33135-6			6	4	Y	N	Y																				100	

Comments: Birefringence L= less than .010, M= .01-.050, H= greater than .05; Microscope circle 1: BH-2 - 229027, 235000, 231856, Zeiss - 3352010013

Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.



# Aerobiology Laboratory Associates, Inc.

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 boston@aerobiology.net  
www.aerobiology.net

Customer Name: Hub

ALAI Batch #

Project Name/#: 33135

B133820

QC by: BS

Date QC: 07/25/23

Analyzed by: JB

Date Analyzed: 7/24/23

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Circle Type				Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Amosite	Crocidolite	Tremolite	Anthophyllite							
33135-7	7/18/22	Ceramic border (cove) tile adhesive	0	T	Y	H	N																		100	
↑ -8			0	T	Y	H	N																		100	
-9			0	T	Y	H	N																		100	
-10		2" CFT grout	0	Y	Y	G	N																		100	
-11			0	Y	Y	G	N																		100	
-12			0	Y	Y	G	N																		100	
-13		2" CFT adhesive	0	Y	Y	R	N																		100	
-14			0	Y	Y	R	N																		100	
↓ -15			0	Y	Y	R	N																		100	
33135-16		Pink fire door insulation (border)	0	P	K	Y	F	Y														40			60	

Comments: Birefringence L= less than .010, M= .01-.050, H= greater than .05; Microscope circle 1: BH-2 - 229027, 235000, 231856, Zeiss - 3352010013

Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

ver 4.10 Updated 01/12/22

Each layer of multilayered materials are analyzed and charged individually (per NESHAPEPA).

Page 2 Of 3

# Aerobiology Laboratory Associates, Inc.

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 boston@aerobiology.net  
www.aerobiology.net

Customer Name: Hub

ALAI Batch #

Project Name/ #: 33135

B133826

QC by: BS

Date QC: 07/25/23

Analyzed by: DB

Date Analyzed: 7/24/23

Sample ID		Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
33135-17		7/18/22	Pink fire door insulation (border)		P																		W					
↑ -18			Tectum panels		O	M																	W					
↓ -19					O	M																	W					
↓ -20			White fire door insulation (middle)		W																							
33135-21					O	H	Y	G	N	Y																		
					O	H	Y	G	N	Y																		

Comments: Birefringence L= less than .010, M= .01-.050, H= greater than .05; Microscope circle 1: BH-2 - 229027, 235000, 231856, Zeiss - 3352010013

Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

ver 4.10 Updated 01/12/22

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

Page 3 Of 3





# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service

*Certified Woman-owned Business Enterprise (WBE)*

September 1, 2023

95 Beaver Street  
Waltham, MA 02453

Report For: Northborough-Southborough Public Schools  
Attn: Keith Lavoie  
53 Parkerville Road  
Southborough, MA 01772

(781) 893-8330  
FAX (781) 893-4414  
www.hubtesting.net

Hub I.D.: 33254

Project: Algonquin High School

Date of Survey: August 28, 2023  
Asbestos Inspector: Daniel Duque

Date Samples Collected: August 28, 2023  
Certification Number: AI 091133

Signature:

Scope: During the most recent AHERA inspection, it was requested that previously identified assumed materials be sampled to determine if asbestos is present. The asbestos sampling was conducted by Daniel Duque (AI 901133) in accordance with AHERA protocol.

Analysis: Analysis for the presence of asbestos was performed using Polarized Light Microscopy EPA/600/R-93/116, July 1993.

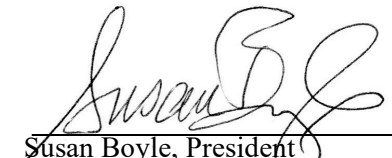
Results:	<u>Hub I.D.</u>	<u>Material/Location</u>	<u>Composition</u>	<u>%</u>
	33254-1	Sheetrock, A113 (Collaborative)	Fiberglass	<1
		Color: Gray	Cellulose	5
			Non fibrous	95
	33254-2	Sheetrock, D114 (Storage)	Fiberglass	<1
		Color: Gray	Cellulose	5
			Non fibrous	95
	33254-3	Sheetrock, H317	Fiberglass	<1
		Color: Gray	Cellulose	2
			Non fibrous	98
	33254-4	Joint compound, A113 (Collaborative)	Non fibrous	100
		Color: White		
	33254-5	Joint compound, D114 (Storage)	Non fibrous	100
		Color: White		

<u>Hub I.D.</u>	<u>Material/Location</u>	<u>Composition</u>	<u>%</u>
33254-6	Joint compound, H317	Non fibrous	100
Color: White			

MA Analytical Lab #AA000156 NVLAP#200090-0

Condition: The samples were received in good condition.

Comments: No asbestos was detected in the samples submitted. This analysis pertains only to the samples analyzed. This report shall not be reproduced except in full, without the written approval of the laboratory.

  
Susan Boyle, President  
Hub Testing Laboratory, Inc.



## Analytical report from Lab



Lynne Brimhall  
Hub Testing Laboratory, Inc.  
95 Beaver St.  
Waltham, MA 02453

August 31, 2023

Dear Lynne Brimhall,

The enclosed analytical results have been obtained by using EPA 600/R-93/116 or EPA 600/M4-82-020. Calibrated Visual Estimate (CVE) is used by Aerobiology for the determination of the percentage of asbestos and other components in the sample. Point Counting is recommended when the sample contains less than 10% asbestos by CVE. Aerobiology recommends further analysis by a gravimetric method for non-friable materials that are less than 1% by CVE.

The Quality Control data related to the samples analyzed is available upon client's written request. Aerobiology Laboratory Associates, Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client. As such, these results apply to the sample(s) as received. Unless otherwise indicated, all samples were received in acceptable condition.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested. This report may not be reproduced except in its entirety, without the permission of Aerobiology Laboratory Associates, Inc., Laboratory Manager.

If you have any questions please contact the Optical Manager or the Laboratory Manager.

Sincerely,

Aimee Cormier, Laboratory Manager

Enclosure: Version 2  
LAB BATCH ID: B 134153 CLIENT PROJECT ID: 33254  
Client Ref: N/A  
CT ID# PH-0209; MA ID# AA000251; ME ID# LB-055; NVLAP Lab Code 200090-0; RI ID # PLM-00150; VT ID# AL254362.

# Aerobiology Laboratory Associates, Inc.

Client Name: Hub Testing Laboratory, Inc.  
 PO #: N/A  
 Client Project #: 33254  
 Client Reference: N/A  
 Method: EPA/600/R-93/116

**Batch: B134153**  
 Date Sampled: 8/28/2023  
 Date Received: 8/29/2023  
 Date Analyzed: 8/30/2023  
 Date of Report: 8/31/2023

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33254-1	Gray	0	0	0	0	0	0	<1	0	5	0	0	0	95
Description: SR Location: Collaborative A113 Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33254-2	Gray	0	0	0	0	0	0	<1	0	5	0	0	0	95
Description: SR Location: Storage D114 Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33254-3	Gray	0	0	0	0	0	0	<1	0	2	0	0	0	98
Description: SR Location: H317 Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33254-4	White	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: DJC Location: Collaborative A113 Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33254-5	White	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: DJC Location: Storage D114 Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
33254-6	White	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: DJC Location: H317 Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite  
 Non-Asbestos Codes: FBG = Fiberglass MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]).

\* All results are in percentage.

Analyst: Erin F Fyfe



Client Name: Hub Testing Laboratory, Inc.

Client Project #: 33254

Client Reference: N/A

Batch: **B 134153**

Date Received: 8/29/2023

Date Due: 8/31/2023

Stop on first pos: Yes or No

Batch: **B 134153**

Batch: 134153			Stereo Scope					Optical Properties					RI		Asbestos Percent					Non-Asbestos Percent							
Sample ID	Description	Analyst	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Parallel	Perpendicular	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
33254-1	SR	JEH	0	G Y	Y	G N	Y														I	W					
			0	G Y	Y	G N	Y														C	5					95
33254-2	SR		0	G Y	Y	G N	Y														I	W					
			0	G Y	Y	G N	Y														C	5					95
33254-3	SR		0	G Y	Y	G N	Y														I	W					
			0	G Y	Y	G N	Y														C	2					98
33254-4	DJC	↓	0	W Y	Y	P W	N																				
			0	W Y	Y	P W	N																				100
33254-5	DJC		0	W Y	Y	P W	N																				100
			0	W Y	Y	P W	N																				
33254-6	DJC		0	W Y	Y	P W	N																				
			0	W Y	Y	P W	N																				

Analyzed By / Date:

*[Signature]*  
8/30/23

QC By / Date:

AS/08/31/23

Fax, Email, Verbal Results By / Date:

# of Samples:

6

Comments:



**TAT**  
(circle one)

3 Hours 6 Hours Same Day Next Day

2 Days 3 Days 5 Days Other \_\_\_\_\_

TAT in bus. days - lab approval required for rush analysis

**PASI Batch #**

B134153

Client: Hub Testing Laboratory

Address: 95 Beaver Street

Waltham, MA 02453

Project #: 33254 PO: \_\_\_\_\_

Project Site: \_\_\_\_\_

Contact: Lynne

Tel. / Fax #: 781-893-8330

Email: LBrimhall@Hubtesting.net

**PLM**

Chain of Custody

Special Instructions: Stop at 1st + for each HA.

Relinquished By: Erin Magynic Date/Time: 8-28-23 6 PM

Received By Lab: Doreen Townsend Date/Time: 8-29-23 7:30

Shaded area for lab use only.

Due Date: \_\_\_\_\_

# of Samples Received: \_\_\_\_\_ Analyzed: \_\_\_\_\_

Results: email fax verbal By: \_\_\_\_\_ Date: \_\_\_\_\_

Analyst / Date: \_\_\_\_\_ QC by / Date: \_\_\_\_\_

			Stereo Scope					Optical Properties					RI		Asbestos Percentage (%)					Non Asbestos Percentage (%)								
Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Circle Type				Anthrophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Amosite	Crocidolite	Tremolite										
33254	8/29/23																											
33254	-1 thru	33254-6																										
		see Attached																										

Comments: Birefringence L - less than .010, M - .01-.050, H - greater than .05; Microscope circle 1: BH-2 - 229027, 235000, 231856, Zeiss - 3352010013

Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_



# 3M™ Fire Barrier Sealant CP 25WB+

## Product Data Sheet

### 1. Product Description

3M™ Fire Barrier Sealant CP 25WB+ is a high-performance, ready-to-use, gun-grade, latex-based, intumescent sealant that dries to form a monolithic fire-stop seal that also acts as a barrier to airborne sound transmission. 3M™ Fire Barrier Sealant CP 25WB+ helps control the spread of fire, smoke and noxious gasses before, during and after exposure to a fire when installed in accordance with a listed through penetration or fire-resistive joint assembly system.

3M™ Fire Barrier Sealant CP 25WB+ firestops blank openings and penetrations passing through fire-rated floor, floor/ceiling or wall assemblies and other fire-rated interior building construction. The unique intumescent property of this material allows 3M™ Fire Barrier Sealant CP 25WB+ to expand and help maintain a firestop penetration seal for up to 4 hours as penetrants are exposed to fire. 3M™ Fire Barrier Sealant CP 25WB+ exhibits excellent adhesion to a full range of construction substrates and penetrants. No mixing is required.



High-performance firestop sealant that also helps minimize sound transfer

Product Color: ■ Red

### Product Features

- Firestop tested up to 4 hours in accordance with ASTM E 814 (UL 1479) & CAN/ULC S115
- Fire Resistance tested for static construction joint systems in accordance with ASTM E 1966 (UL 2079)
- Re-enterable / repairable
- Meets UL 1479 aging requirements
- Helps minimize sound transfer\*
- Applied with conventional caulking equipment (excellent caulk rate)
- Extensive listed systems
- Sag-resistant
- Halogen-free
- Excellent adhesion
- Paintable
- Water clean up

*Meets the intent of LEED® VOC regulations—helps reduce the quantity of indoor air contaminants that may be odorless, irritating and harmful to the comfort and well-being of the installers and occupants. <250 g/L VOC contents (less H<sub>2</sub>O and exempt solvents).*

*\*Minimizes noise transfer—STC-Rating of 54 when tested in STC 54-rated wall assembly.*

### 2. Applications

High-performance 3M™ Fire Barrier Sealant CP 25WB+ is ideal for sealing single or multiple through penetrations in fire-rated construction. 3M™ Fire Barrier Sealant CP 25WB+ is typically used in mechanical, electrical and plumbing applications to firestop openings created by the following penetrations in fire-rated floors, floor/ceilings or walls: metallic pipe, plastic pipe (excluding CPVC), conduit, power and communication cable, cable trays, busways, combos, insulated pipe and HVAC duct penetrations. 3M™ Fire Barrier Sealant CP 25WB+ is also used to firestop blank openings and static construction joints.

### 3. Specifications

3M™ Fire Barrier Sealant CP 25WB+ shall be a one component, ready-to-use, gun-grade, latex-based, intumescent firestop sealant capable of expanding a minimum of 3 times its dried volume when exposed to temperatures above 1000°F (538°C). The material shall be thixotropic and shall be applicable to overhead, vertical and horizontal firestops. The sealant shall be listed by independent test agencies such as UL, Intertek or FM. 3M™ Fire Barrier Sealant CP 25WB+ shall be tested to and pass the criteria of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems, ASTM E 1966 (UL 2079) Standard Test Method for Fire Resistive Joint Systems and CAN/ULC S115 Standard Method of Fire Tests of Firestop Systems. 3M™ Fire Barrier Sealant CP 25WB+ meets the requirements of the IBC, IRC, IFB, IPC, IMC, NFPA 5000, NEC (NFPA 70) and NFPA 101.

Typically Specified Division  
Division 7

Section 07 84 00 – Firestopping

#### Related Sections

Section 07 84 16 – Annular Space Protection  
Section 07 84 43 – Fire-Resistant Joint Sealants  
Section 07 86 00 – Smoke Seals  
Section 07 87 00 – Smoke Containment Barriers  
Section 07 27 00 – Air Barriers  
Section 21 00 00 – Fire Suppression  
Section 22 00 00 – Plumbing  
Section 26 00 00 – Electrical

For technical support relating to 3M Fire Protection Products and Systems, call: 1-800-328-1687  
For more information on 3M Fire Protection Products, visit: [www.3m.com/firestop](http://www.3m.com/firestop)

FIRE BARRIER SMOKE SEAL



SOUND BARRIER



FILL, VOID OR CAVITY MATERIAL  
FOR USE IN THROUGH-PENETRATION  
FIRESTOP SYSTEMS  
SEE UL FIRE RESISTANCE DIRECTORY  
90G9



LISTED

FILL, VOID OR CAVITY  
MATERIALS  
90G9



SUBJECT TO THE CONDITIONS OF APPROVAL  
AS A WALL & FLOOR PENETRATION  
FIRESTOP WHEN INSTALLED AS DESCRIBED  
IN THE CURRENT EDITION OF THE FMRC  
APPROVAL GUIDE

LISTED



Intertek

FIRESTOP SYSTEMS  
SEE INTERTEK DIRECTORY

LISTED



Intertek

FIRESTOP SYSTEMS  
SEE INTERTEK DIRECTORY

# 3M



## 4. Physical Properties

<b>Color:</b>	Red
<b>Application Temperature Range:</b> (ASTM C 1299)	40° to 122°F (4° to 50°C)
<b>Service Temperature Range:</b>	-20° to 180°F (-28° to 82°C)
<b>STC</b> (ASTM E 90 and ASTM E 413):	54 when tested in STC 54-rated wall assembly
<b>Surface Burning</b> (ASTM E 84):	Flame Spread 0 Smoke Development 0

<b>Hardness</b> (ASTM D 2240 Shore A):	45
<b>Tensile Strength:</b>	85 psi (0.59 MPa)
<b>Volume Shrinkage</b> (ASTM C 1241):	28%
<b>VOC Less H<sub>2</sub>O and Exempt Solvents:</b>	<1 g/L

**Dry:** Under typical conditions of 75°F (23°C) and 50% R.H., sealant becomes tack-free in about ten minutes and dry-to-touch in 30 to 60 minutes. Full dry depends upon ambient conditions and volume of sealant. Typical dry rate is approximately 1/8 inch (3 mm) per day.

Unit Volume: 10.1 fl. oz tube (298.7 mL, 18.2 in.<sup>3</sup>), 20 fl. oz. sausage (591.5 mL, 36.1 in.<sup>3</sup>), 27 fl. oz tube (798.5 mL, 48.7 in.<sup>3</sup>), 2 gal. pail (7.57 L, 462 in.<sup>3</sup>), 5 gal. pail (18.9 L, 1155 in.<sup>3</sup>)

## 5. Packaging, Storage, Shelf Life

<b>Packaging</b>	Product packaged in cartridge or pail is enclosed in HDPE plastic containers, sausage is packaged in aluminum foil wrap
<b>Storage</b>	3M™ Fire Barrier Sealant CP 25WB+ should be stored indoors in dry conditions between 40°F and 90°F (4°C and 32°C) in the original unopened package. Avoid repeated freeze / thaw exposures of the 3M™ Fire Barrier Sealant CP 25WB+ prior to installation.
<b>Shelf Life</b>	3M™ Fire Barrier Sealant CP 25WB+ shelf life is 12 months in original unopened containers from date of packaging when stored above 68°F (2°C).  Lot numbering (e.g. 8183AS): First digit = Last digit of year manufactured, Second to fourth digit = Julian Date, Letters = Random to distinguish between lot numbers

## 6. Installation Techniques

*Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for Applicable UL, Intertek or other third-party drawings and system details.*

<b>Preparatory Work</b>	The surface of the opening and any penetrating items should be cleaned to allow for the proper adhesion of the 3M™ Fire Barrier Sealant CP 25WB+. Ensure that the surface of the substrates are not wet and are frost free. Sealant can be installed with a standard caulking gun, pneumatic pumping equipment or it can be easily applied with a putty knife or trowel.
<b>Installation Details</b>	Install the applicable depth of backing material, if required, as detailed within the applicable UL, Intertek, FM or other third-party listed system. Cut the end of the 3M™ Fire Barrier Sealant CP 25WB+ tube spout to achieve the desired bead width when applying. Install the applicable depth of 3M™ Fire Barrier Sealant CP 25WB+ into the opening flush with the surface of the substrate, or as detailed within the applicable listed system, at the depth for the assembly and rating that is required. Tool within 5 minutes. Clean all tools immediately after use with water.
<b>Limitations</b>	Do not apply 3M™ Fire Barrier Sealant CP 25WB+ when surrounding temperature is less than 40°F (4°C) and in conditions where seals may be exposed to rain or water spray within 18 hours of application. Do not apply 3M™ Fire Barrier Sealant CP 25WB+ to building materials that bleed oil, plasticizers or solvent (e.g. impregnated wood, oil-based sealants, or green or partially vulcanized rubber). Do not apply 3M™ Fire Barrier Sealant CP 25WB+ to wet or frost-coated surfaces or to areas that are continuously damp or immersed in water.

**NOTICE:** This product is not acceptable for use with chlorinated polyvinylchloride (CPVC) pipes.

## 7. Maintenance

No maintenance should be required when installed in accordance with the applicable UL, Intertek, FM or other third-party listed system. Once installed, if any section of the 3M™ Fire Barrier Sealant CP 25WB+ is damaged, the following procedure will apply: remove and reinstall the damaged section in accordance with the applicable listed system, with a minimum 1/2 in. (12.7 mm) overlap onto the adjacent material.

## 8. Availability

3M™ Fire Barrier Sealant CP 25WB+ is available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Sealant CP 25WB+ is available in 10.1 fl. oz. cartridges (12/case), 20.0 fl. oz. sausages (10/case), 27.0 fl. oz. cartridges (6/case), 2 gallon pails (1/case) and 5 gallon pails (1/case). For additional technical and purchasing information regarding this and other 3M Fire Protection Products, please call: 1-800-328-1687 or visit [www.3m.com/firestop](http://www.3m.com/firestop).

## 9. Safe Handling Information

*Consult product's Material Safety Data Sheet (MSDS) prior to handling and disposal.*



### Building and Commercial Services Division

3M Center, Building 223-2N-21  
St. Paul, MN 55144-1000 USA  
1-800-328-1687  
[www.3m.com/firestop](http://www.3m.com/firestop)

#### Important Notice to User:

**Technical Information:** The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

**Product Use:** Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

**Warranty and Limited Remedy:** 3M warrants that each 3M Fire Protection Product will be free from defects in material and manufacture for 90 days from the date of purchase from 3M's authorized distributor. 3M MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. If a 3M product does not conform to this warranty, the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

**Limitation of Liability:** Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.

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Literature Order Info: 98-0400-5012-6

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Margaret A. Neary Elementary School



# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service

*Certified Woman-owned Business Enterprise (WBE)*

95 Beaver Street  
Waltham, MA 02453


(781) 893-8330  
FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772


ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: AHERA Three-Year Re-inspection

SUBJECT: Margaret A. Neary Elementary School  
53 Parkerville Road  
Southborough, MA 01772

INSPECTOR(S):   
Daniel Duque  
Asbestos Inspector  
MA Cert. No.: AI 901133

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 2023



# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service  
*Certified Woman-owned Business Enterprise (WBE)*

95 Beaver Street  
Waltham, MA 02453

(781) 893-8330  
FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: Margaret A. Neary Elementary School  
53 Parkerville Road  
Southborough, MA 01772

SUBJECT: AHERA Three-Year Reinspection

DATE: August 31, 2023

As required by the US Environmental Protection Agency's AHERA regulations, Hub Testing Laboratory has completed a survey and reassessment of asbestos containing materials in the Margaret A. Neary Elementary School of the Northborough-Southborough Public School District. This report summarizes the locations and conditions of materials remaining in the building and reviews the ongoing responsibilities of the Local Education Agency (LEA). Daniel Duque (AI 901133) completed the inspection on July 18, 2023.

When sampling of suspect asbestos-containing materials was required, samples representative of the material were taken. If samples of thermal systems insulation and miscellaneous materials were necessary, they were collected in unobtrusive locations. If samples of surfacing materials were necessary, they were collected using the guidance document method for random sampling.

This latest survey report should be incorporated into the files that the LEA maintains pertaining to response actions, operations & maintenance activities, six-month surveillances, training, air sampling and major asbestos activities, etc.

The re-inspection consisted of reviewing previous documentation available, interviewing building personnel, and performing a thorough survey of each functional space in the building.

The Neary Elementary School appears to have most of the original materials identified in the first few inspections. If new materials are installed, safety data sheets should be added to the AHERA files.

The floor plan found in Attachment A should be used to identify functional spaces identification.

The standardized form from the Department of Labor Standards has been completed and is found in Attachment A.

The management planner develops recommendations based on the hazard ranking and removal ranking. See below.

<b>Hazard Rank</b>	<b>ACBM Condition</b>	<b>ACBM Disturbance Potential</b>
7	Significantly Damaged	Any
6	Damaged	Potential for Significant Damage
5	Damaged	Potential for Damage
4	Damaged	Low
3	Good	Potential for Significant Damage
2	Good	Potential for Damage
1	Good	Low

<b>Removal Rank</b>	<b>AHERA Category</b>	<b>Response Action Required By AHERA</b>
1	Significantly Damaged	Evacuate or isolate the area if needed. Remove the ACBM or enclose/encapsulate if sufficient to contain fibers. Repair of thermal systems is allowed if feasible and safe. Continue O&M
2	Damaged & Potential for Significant Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
3	Damaged & Potential for Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
4	Damaged	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
5	Potential for Significant Damage	Evacuate or isolate the area if needed. Take steps to reduce potential for disturbance. Continue O&M
6	Potential for Damage	Continue O&M
7	All remaining ACBM	Continue O&M

The materials previously identified in the Neary Elementary School are in relatively good condition. However, there are some materials that will require attention. Based on the recent inspection, the following actions for ongoing asbestos management in the school are recommended. All work beyond the capabilities of a trained and licensed in house O&M maintenance person must be performed by a licensed and qualified asbestos removal contractor. A licensed Project Designer must design all abatement projects outside of O&M.

1. Perform a periodic surveillance of known and assumed asbestos-containing materials every six months until such time. The chart included in this report may be used for the



documentation. Next survey should be performed in January of 2024 and has an estimated cost of \$600.

2. Provide training for new maintenance personnel within 60 days of hire and provide training annually to all maintenance personnel. Training should be conducted during the Christmas break and has an estimated cost \$1250 which is for all maintenance personnel within the school district.
3. All friable asbestos-containing materials in routine maintenance areas must be maintained with identifying labels. Some labels are present, but further labeling will be necessary. Asbestos labels can be bought and the maintenance personnel can place them where appropriate. This should be completed by Christmas break of this year and has an estimated cost of \$600.
4. The school should continue with the use of commercial grade HEPA vacuums in lieu of dry sweeping. In classrooms where projectors have been installed, a thorough cleaning using HEPA vacuum and wet wipe techniques should be performed.
5. Special care should be taken to avoid disturbing the visible/accessible fittings.
6. The 12" x 12" ceiling tiles located at the top of the walls in the classrooms are a known asbestos containing material and have a hazard ranking of 4. Efforts have been made for numerous years to restrict their impact by occupants. Classrooms 2, 10, 11, 14 have decorations stapled to the ceiling tiles. Items are continuing to be stapled into these tiles causing damage and potential fiber release. Additionally, projectors were installed in Classrooms 4,5,6,8, & 9 and this has cause about 1 SF of damage at the projectors. Classroom 7 has about 6 SF of damage and tiles are beginning to separate. This room should be monitored to determine if abatement is needed. The 12" x 12" ceiling tiles are also on the ceiling in the music room. Multiple areas in this room are damaged and separating. It is recommended that the tiles in the music room be continuously monitored until abatement can occur over the summer break. A meeting with a Designer should be scheduled to put in a plan in place for the removal. Estimated cost of meeting with Designer is \$500. Funding should be appropriated using a cost of \$40.00 per square foot for removal.
7. The 12" Gray floor tiles have sustained normal wear & tear at thresholds and double doors historic damage. Both the tile and associated mastic are known asbestos containing materials and must be maintained in good condition. The floor tiles and mastic have a hazard ranking of 4. Efforts, such as a thick coat of wax, should be taken to prevent the delamination of the floor tiles in the building. The condition of the floor tiles should be monitored during the six-month surveillances, which is performed as required by a knowledgeable person. This process will aid in documenting when tiles become broken and to determine when and where significantly damaged tiles need to be replaced.
8. Assumed asbestos containing materials such as the tectum ceiling panels, sheetrock ceiling tiles, sheetrock divider walls, and ceiling plaster (top coat & brown coat) have a hazard ranking of 4. Sampling, in accordance with AHERA, is required to determine if further action is necessary. An estimated cost of \$1,200 will be needed to conduct the sampling.

If funding is available, sampling could be conducted over the Christmas break. Care should be taken to not cause further damage.

9. Keep an updated copy of the Management Plan in the school as well as a master copy with the Mr. Lavoie. The plan must be available, without restriction, to the public, school personnel and their representatives, parents and representatives of EPA and the state, for inspection during normal business hours.
10. Perform a three-year reinspection in July of 2026 which should cost around \$1500.

3 Year Reinspection

Date of Reinspection: 7/18/2023

School: Margaret A. Neary Elementary School

Inspector Name: Daniel Duque

Address: 53 Parkerville Road, Southborough, MA 01772

Inspector Signature:



License #: AI 901133

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Fittings	Visible in gym, laundry in custodian's area & boiler room, but throughout school above ceilings except in HVAC mezzanine.	≈ 74 fittings	F	5		Y – 1/23/02 & 7/1/09	None at this time			No
Hot water tank insulation	Boiler room	≈ 90 SF	F	5	Y	Y – 6/2/09	None at this time	The tank was encapsulated on 2020.		No
Breeching insulation	Boiler room	≈ 150 SF	F	5	Y	Y – 6/2/98	None at this time			No
Exterior window sills	Window walls throughout school	≈ 10 SF per sill	NF	7	Y		None at this time			No
Window caulking	Pre-fab window walls	≈ 20 LF per wall	NF	7	Y		None at this time			No
Coating under sink	Classrooms (25 units)	≈ 40 SF per sink	NF	5	Y		None at this time			No
Transite panels (Not accessible)	Associated with Underwritten Laboratories composite fire doors	≈ 560 SF	NF	5	Y		None at this time			No

**Type Amount Friability Assessment Categories for Friable Materials**

T-TSI SF-Square feet  
S-Surfacing LF-Linear feet  
M - Miscellaneous

F-Friable  
NF-Non-friable

1. Damaged or significantly damaged TSI
2. Damaged (D) surfacing
3. Significantly damaged (SD) surfacing
4. Damaged or significantly damaged misc.

5. Suspect or proven ABCM with the potential for D (\*one moderate)
6. Suspect or proven ABCM with the potential for SD (\*one high)
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

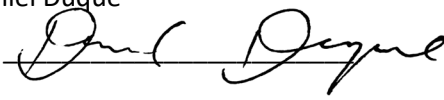
3 Year Reinspection

Date of Reinspection: 7/18/2023

School: Margaret A. Neary Elementary School

Inspector Name: Daniel Duque

Address: 53 Parkerville Road, Southborough, MA 01772

Inspector Signature: 

License #: AI 901133

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Transite panels (Not accessible)	Behind wood laminate of front lobby hallway, cafeteria & hallway. Also, in classrooms behind shelving units attached to HVAC unit	≈ 70 SF each with 6 panels per classroom	NF	7	Y	Y – 7/1/09  ≈ 20 classrooms had panels removed in 2009.	None at this time			No
12" x 12" Gray floor tile	Hallways, nurses' office, paper storage room and classrooms except rm 3.	≈ 23,000 SF	NF	4	Y	Y – 1/23/02	Damage is historic. Keep well waxed.	** Wear & tear especially at thresholds & double doors  Minor damage noted (< 10% in each area):		No
Associated mastic (Not accessible)	Removed from secretary & principal's office, corridor by office & bisecting corridor of main hall & cafeteria. (see below)		NF	6	y	Y – 7/13/00	None at this time	custodian office near washer/dryer, in custodian closet across from learning center, outside gym (by custodian office), classrooms 1, 6, 8-10, 15 16, learning center & hallways at classroom entries		No

<b>Type</b>	<b>Amount</b>	<b>Friability</b>	<b>Assessment Categories for Friable Materials</b>
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing
M - Miscellaneous			3: Significantly damaged (SD) surfacing
			4: Damaged or significantly damaged misc.
			5: Suspect or proven ABCM with the potential for D (*one moderate)
			6: Suspect or proven ABCM with the potential for SD (*one high)
			7. Any remaining suspect or proven ACBM (*all low)
			*Potential for future disturbance for categories 5, 6, & 7
			Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/18/2023

School: Margaret A. Neary Elementary School

Inspector Name: Daniel Duque

Address: 53 Parkerville Road, Southborough, MA 01772

Inspector Signature:



License #: AI 901133

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
12" x 12" Green floor tile w/dark green flecks	Faculty room, bathrooms of the speech office, reading room, guidance office and at water fountains	≈ 400 SF	NF	6	Y		None at this time			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No
Carpet adhesive (Carpet is over tile in some locations)	Office, library, room 25 A & B, rooms 27C, business office & office of the superintendent	≈ 3000 SF	NF	7	Y		None at this time			No
Tectum ceiling panels (Not accessible)	Gym and acoustical panels in HVAC mezzanine	≈ 3000 SF	F	4	Y		Sample		During Christmas break 2023	No
Ceiling (plaster/concrete)	Boiler room	≈ 2500 SF	F	5	Y		None at this time			No
Sheetrock ceiling tiles	Kitchen & Laundry in custodial office area	≈ 3110 SF	NF	4	Y		Sample		During Christmas break 2023	No

**Type**

T-TSI

S-Surfacing

M - Miscellaneous

**Amount**

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LF-Linear feet

**Friability**

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4: Damaged or significantly damaged misc.

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7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

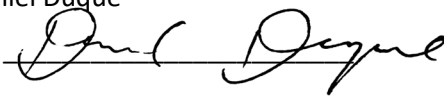
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Date of Reinspection: 7/18/2023

School: Margaret A. Neary Elementary School

Inspector Name: Daniel Duque

Address: 53 Parkerville Road, Southborough, MA 01772

Inspector Signature: 

License #: AI 901133

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
12" x 12" Ceiling tiles	2 rows in on walls used for acoustical purposes in classrooms, learning center, exit and bathrooms between 23 & 24. Ceiling in music room.	≈ 12,349 SF  Removals: 2000 - 16, 541 SF hallways, front offices & closets, nurse's, computer wire room, bathrooms, media center, custodian closet. 2008 –new admin offices 2009 –e HVAC mezzanine.	F	4	Y	Y – 7/13/00	Abate the tiles in room 7 above the sink that are starting to separate. Abate the entire music room ceiling.	Classrooms 2, 10, 11, 14 14 have decorations stapled to ceiling tiles. Classrooms 4,5,6,8, & 9 have < 2 SF of damage where projectors had previously been installed. Classroom 7 has about 6 SF of damage and separating. The music room needs to be abated due to damage.	Removal during Christmas break 2023.	No, but should be watched to ensure tiles do not fall.

**Type**

T-TSI

S-Surfacing

M - Miscellaneous

**Amount**

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LF-Linear feet

**Friability**

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Access, Vibration, Air Erosion: L-low M-medium H-high



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Date of Reinspection: 7/18/2023

School: Margaret A. Neary Elementary School

Inspector Name: Daniel Duque

Address: 53 Parkerville Road, Southborough, MA 01772

Inspector Signature: 

License #: AI 901133

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Sheetrock	Divider walls in classrooms, cafeteria, gym by office, window wall by office, conference room, central offices, S-5 closet & S-3	≈ 400 SF per	NF	4	Y		Sample	Minor damage noted on wall between 25 B & 25 B, divider wall in 25 A, 26 A & 26 B.	During Christmas break 2023	No
12" x 12" White floor tile w/blue	Modular classrooms 1 & 2	≈ 400 SF per	NF	N/A	N/A	N – SDS on file shows no asbestos.	N/A	N/A	N/A	N/A
Associated mastic			NF	N/A	N/A		N/A	N/A	N/A	N/A
Floor tile	Classroom 3	≈ 560 SF	NF	N/A	N/A	N – 12/15/10	N/A	N/A	N/A	N/A
CMU	Walls throughout school	NA	NF	N/A	N/A	N – 4/19/16	N/A	N/A	N/A	N/A
Associated mortar		NA	NF	N/A	N/A	N – 4/19/16	N/A	N/A	N/A	N/A
2' x 2' Ceiling tiles	Modular classrooms 1 & 2	≈ 400 SF per	F	N/A	N/A	N – SDS on file shows no asbestos.	N/A	N/A	N/A	N/A
2' x 2' Thick textured ceiling tiles	Classrooms 2-24, lower library & cafeteria	NA	NF	N/A	N/A	N – 4/19/16	N/A	N/A	N/A	N/A

**Type**

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S-Surfacing

M - Miscellaneous

**Amount**

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Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/18/2023

School: Margaret A. Neary Elementary School

Inspector Name: Daniel Duque

Address: 53 Parkerville Road, Southborough, MA 01772

Inspector Signature:



License #: AI 901133

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
All types of 2' x 4' ceiling tiles  (Smooth, Thin fissured, Painted textured, etc.)	Band, custodian office, psych room, equipment room across from room 21, storage between room 21 & 22, garage outside at room 21, OT/ESL room, teacher's lounge, transoms above hallway doors, attic, hallways, workroom, gym office, break room by kitchen, maintenance, kitchen & laundry	NA	NF	N/A	N/A	N – 4/19/16	N/A	N/A	N/A	N/A
2' x 2' Thick textured ceiling tiles	Classrooms 2- 24, lower library & cafeteria	NA	NF	N/A	N/A	N – 4/19/16	N/A	N/A	N/A	N/A

**Type**

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S-Surfacing

M - Miscellaneous

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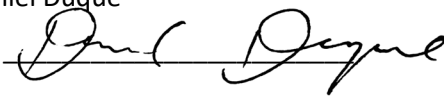
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Inspector Name: Daniel Duque

Address: 53 Parkerville Road, Southborough, MA 01772

Inspector Signature: 

License #: AI 901133

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Domestic water pipe fittings	Laundry in custodial area & custodial closet near music room	≈ 10 fittings	NF	N/A	N/A	N – 6/2/98 & 1/29/02	N/A	N/A	N/A	N/A
Ceramic tile grout	Bathrooms in reading room, custodian's office, speech room, guidance office, nurse's office, & classrooms 21, 22,23, between 23 & 24. Also, in hallways by water fountains & closet of room 22.	≈ 25 SF per	NF	N/A	N/A	N – 1/29/02	N/A	N/A	N/A	N/A
Beige cove base	Throughout school	NA	NF	N/A	N/A	Not suspect per regulations	N/A	N/A	N/A	N/A
Black cove base			NF	N/A	N/A		N/A	N/A	N/A	N/A
Associated mastic			NF	N/A	N/A	N – 4/19/16	N/A	N/A	N/A	N/A

**Type**

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S-Surfacing

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**Amount**

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*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

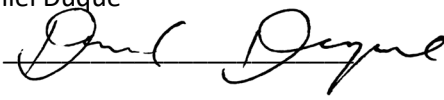
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Date of Reinspection: 7/18/2023

School: Margaret A. Neary Elementary School

Inspector Name: Daniel Duque

Address: 53 Parkerville Road, Southborough, MA 01772

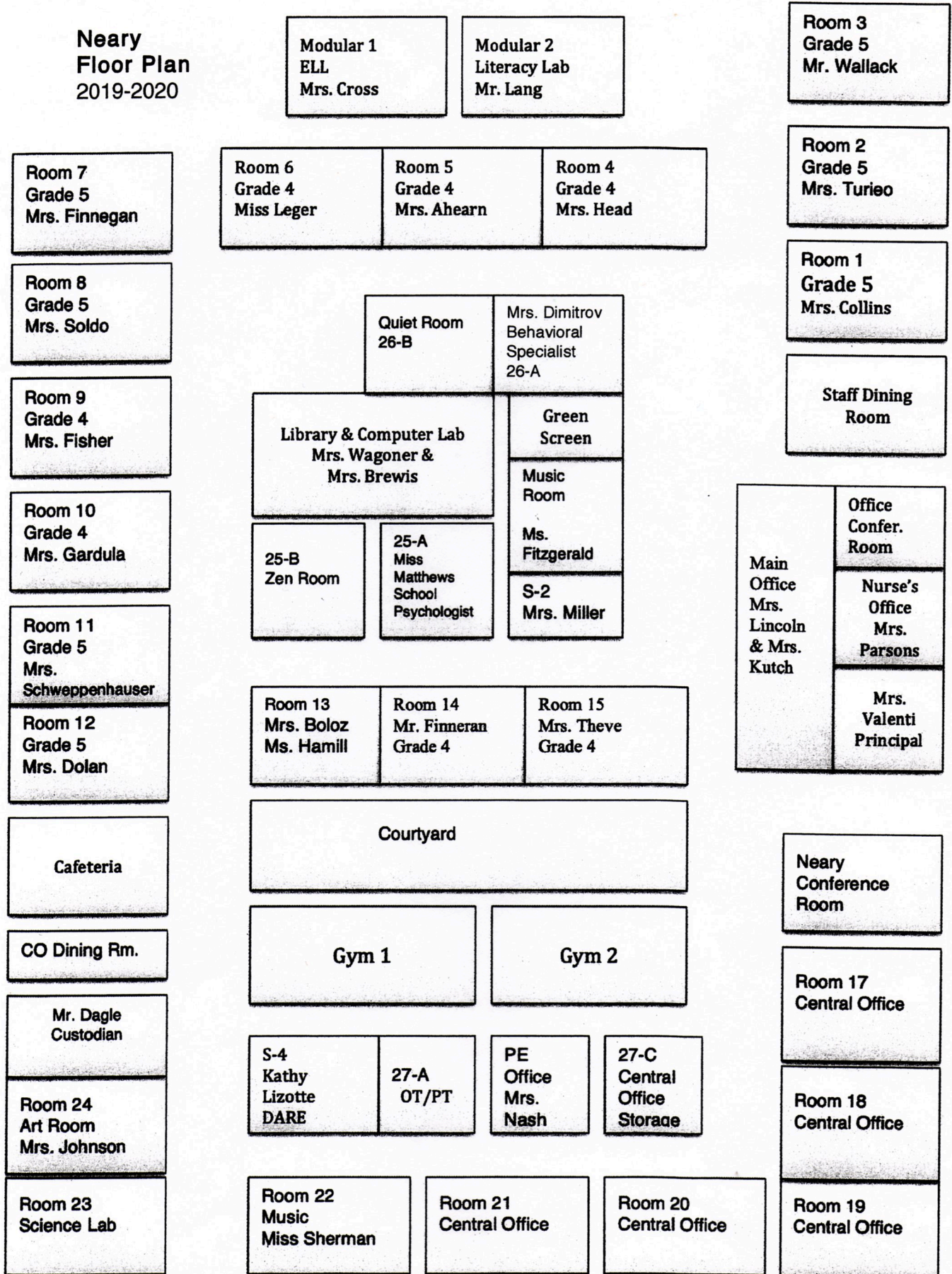
Inspector Signature: 

License #: AI 901133

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
12" x 12" Ceiling tiles	16, 541 SF removed summer of 2000 from the hallways, front offices including closets, nurse's office, computer wire room, bathrooms, media center, custodian closet. Removal occurred in the new admin offices in 2008 & in the HVAC mezzanine in 2009.									
Fitting insulation	36 Fittings were removed from the HVAC mezzanine in 2009 and replaced with fiberglass or not insulated. 90 Fittings were removed from the Boiler room in 2009 and replaced with fiberglass or not insulated. However about 10 fittings still remain.									
Valve insulation (HVAC)	Removed from the Gym # 2 & Gym # 1 in 2009.									
12" x 12" Gray floor tile	400 SF was removed from the secretary & principal's office in 2009 and replaced with carpet. 680 SF was removed from the bisecting corridor of main hall and cafeteria in 2010 and replaced with new non-acm (VCT) floor tile 3058 SF was removed from the corridor by the office in 2011 and replaced with new non-acm (VCT) floor tile									

Type	Amount	Friability	Assessment Categories for Friable Materials	
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI	5: Suspect or proven ABCM with the potential for D (*one moderate)
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing	6: Suspect or proven ABCM with the potential for SD (*one high)
M - Miscellaneous			3: Significantly damaged (SD) surfacing	7. Any remaining suspect or proven ACBM (*all low)
			4: Damaged or significantly damaged misc.	*Potential for future disturbance for categories 5, 6, & 7
				Access, Vibration, Air Erosion: L-low M-medium H-high

**Neary  
Floor Plan  
2019-2020**



Fannie E. Proctor Elementary School





# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service

*Certified Woman-owned Business Enterprise (WBE)*

95 Beaver Street  
Waltham, MA 02453


(781) 893-8330  
FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772


ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: AHERA Three-Year Re-inspection

SUBJECT: Fannie E. Proctor Elementary School  
26 Jefferson Road  
Northborough, MA 01532

INSPECTOR(S):   
Lynne Brimhall  
Asbestos Inspector  
MA Cert. No.: AI 061691

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 2023

Address: 26 Jefferson Rd. Northborough, MA 01532

Inspector Name: Lynne Brimhall

Inspector Signature: Lynne Brimhall

License #: AI 061691

[illegible]

Type

Amount

### Friability

### Assessment Categories for Friable Materials

T-TSI

SF-Square feet

F-Friable

1. Damaged or significantly damaged TSI

5: Suspect or proven ABCM with the potential for D (\*one moderate)

## S-Surfacing

LF-Linear feet

NF-Non-friable

## 2. Damaged (D) surfacing

6: Suspect or proven ABCM with the potential for SD (\*one high)

M - Miscellaneous

3: Significantly damaged (SD) surfacing

7. Any remaining suspect or proven ACBM (\*all low)

4: Damaged or significantly damaged misc.

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

Robert E. Melican Middle School



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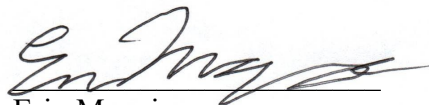
REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations


PROJECT: AHERA Three-Year Re-inspection

SUBJECT: Robert E. Melican Middle School  
145 Lincoln Street  
Northborough, MA 01532

INSPECTOR(S):

  
Erin Maguire  
Asbestos Inspector  
MA Cert. No.: AI 901068

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 2023



# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service  
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Waltham, MA 02453

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FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: Robert E. Melican Middle School  
145 Lincoln Street  
Northborough, MA 01532

SUBJECT: AHERA Three-Year Reinspection

DATE: August 31, 2023

As required by the US Environmental Protection Agency's AHERA regulations, Hub Testing Laboratory has completed a survey and reassessment of asbestos containing materials in the Robert E. Melican Middle School of the Northborough-Southborough Public School District. This report summarizes the locations and conditions of materials remaining in the building and reviews the ongoing responsibilities of the Local Education Agency (LEA). Erin Maguire (AI 901068) completed the inspection on July 25, 2023.

When sampling of suspect asbestos-containing materials was required, samples representative of the material were taken. If samples of thermal systems insulation and miscellaneous materials were necessary, they were collected in unobtrusive locations. If samples of surfacing materials were necessary, they were collected using the guidance document method for random sampling.

This latest survey report should be incorporated into the files that the LEA maintains pertaining to response actions, operations & maintenance activities, six-month surveillances, training, air sampling and major asbestos activities, etc.

The re-inspection consisted of reviewing previous documentation available, interviewing building personnel, and performing a thorough survey of each functional space in the building.

The Melican Middle School appears to have most of the original materials identified in the first few inspections. Some flooring has been removed over the years. If new materials are installed, safety data sheets should be added to the AHERA files.

The floor plan found in Attachment A should be used to identify functional spaces identification.

The standardized form from the Department of Labor Standards has been completed and is found in Attachment A.

<b><u>Hazard Rank</u></b>	<b><u>ACBM Condition</u></b>	<b><u>ACBM Disturbance Potential</u></b>
7	Significantly Damaged	Any
6	Damaged	Potential for Significant Damage
5	Damaged	Potential for Damage
4	Damaged	Low
3	Good	Potential for Significant Damage
2	Good	Potential for Damage
1	Good	Low

<b>Removal Rank</b>	<b>AHERA Category</b>	<b>Response Action Required By AHERA</b>
1	Significantly Damaged	Evacuate or isolate the area if needed. Remove the ACBM or enclose/encapsulate if sufficient to contain fibers. Repair of thermal systems is allowed if feasible and safe. Continue O&M
2	Damaged & Potential for Significant Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
3	Damaged & Potential for Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
4	Damaged	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
5	Potential for Significant Damage	Evacuate or isolate the area if needed. Take steps to reduce potential for disturbance. Continue O&M
6	Potential for Damage	Continue O&M
7	All remaining ACBM	Continue O&M



The materials previously identified in the Melican Middle School are in relatively good condition. However, there are some materials that will require attention. Based on the recent inspection, the following actions for ongoing asbestos management in the school are recommended. All work beyond the capabilities of a trained and licensed in house O&M maintenance person must be performed by a licensed and qualified asbestos removal contractor. A licensed Project Designer must design all abatement projects outside of O&M.

1. Perform a periodic surveillance of known and assumed asbestos-containing materials every six months until such time. The chart included in this report may be used for the documentation. Next survey should be performed in January of 2024 and has an estimated cost of \$600.
2. Provide training for new maintenance personnel within 60 days of hire and provide training annually to all maintenance personnel. Training should be conducted during the Christmas break and has an estimated cost \$1250 which is for all maintenance personnel within the school district.
3. All friable asbestos-containing materials in routine maintenance areas must be maintained with identifying labels. Some labels are present, but further labeling will be necessary. Asbestos labels can be bought and the maintenance personnel can place them where appropriate. This should be completed by Christmas break of this year and has an estimated cost of \$600.
4. The school should continue with the use of commercial grade HEPA vacuums in lieu of dry sweeping. In classrooms where projectors have been installed, a thorough cleaning using HEPA vacuum and wet wipe techniques should be performed.
5. Special care should be taken to avoid disturbing the visible/accessible fittings.
6. The various floor tiles throughout the building have sustained normal wear & tear at thresholds and double doors and have historic damage. Both the tile and associated mastic are assumed asbestos containing materials and must be maintained in good condition. The floor tiles and mastic have a hazard ranking of 4. Efforts, such as a thick coat of wax, should be taken to prevent the delamination of the floor tiles in the building. The condition of the floor tiles should be monitored during the six-month surveillances, which is performed as required by a knowledgeable person. This process will aid in documenting when tiles become broken and to determine when and where significantly damaged tiles need to be replaced.
7. Assumed asbestos containing materials such as the ceramic tile grouts and thin sets/adhesives, new floor tile and mastics (if SDS's can't be located), seam sealant, carpet mastics, linoleum, pegboard, sheetrock divider walls, and acoustical panels/textured ceiling have a hazard ranking of 2. Sampling, in accordance with AHERA, is required to determine if materials are asbestos containing. An estimated cost of \$1,500 will be needed to conduct the sampling. If funding is available, sampling could be conducted over the Christmas break. Care should be taken to not cause further damage.

8. Keep an updated copy of the Management Plan in the school as well as a master copy with the Mr. Lavoie. The plan must be available, without restriction, to the public, school personnel and their representatives, parents and representatives of EPA and the state, for inspection during normal business hours.
9. Perform a three-year reinspection in July of 2026 which should cost around \$1500.

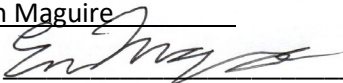
3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Robert E. Melican Middle School

Inspector Name: Erin Maguire

Address: 53 Parkerville Road, Southborough, MA 01772

Inspector Signature: 

License #: AI 901068

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Pipe fittings	Throughout school & garage except boiler room	Over 100 fittings	F	5		Y - 12/28/01	None at this time			No
Seam sealant	On edges of exhaust fan in kitchen	≈ 40 LF	NF	5	Y		None at this time			No
Flange Gasket	On breeching in boiler room	≈ 1 LF per	F	6		Y - 2/24/11	None at this time			No
Packing	In boiler room at breeching, where it enters the chimney	≈ 2 SF	F	7		Y - 2/24/11	None at this time			No
Coating on CMU	Boiler room	≈ 400 SF	F	5		Y - 2/24/11	None at this time			No
Transite panels (brown panels both alone & with windows panes	Boiler Room and throughout school	≈ 70 SF each	NF	7		Y - 2/24/11	None at this time			No
Glazing on transite Panels		≈ 17 LF per	NF	7		Y - 2/24/11	None at this time			No

**Type**

T-TSI  
S-Surfacing  
M - Miscellaneous

**Amount**

SF-Square feet  
LF-Linear feet

**Friability**

F-Friable  
NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI
2. Damaged (D) surfacing
3. Significantly damaged (SD) surfacing
4. Damaged or significantly damaged misc.

5. Suspect or proven ABCM with the potential for D (\*one moderate)
6. Suspect or proven ABCM with the potential for SD (\*one high)
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

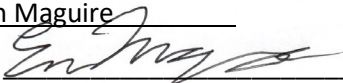
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Coating under sinks	Rooms 121, 309, 320, 322	≈ 30 SF per	NF	5	Y		None at this time			No
9" x 9" Olive floor tile with beige & black streaks	Rooms 101 – 113, 131, 121, Storage by 121& Stairwell hallways, 60 SF in room 205A, 120  Hallways patterned with:	≈ 17,000 SF	NF	4	Y		** Wear & tear especially at thresholds, double doors & water fountains. Maintain a good coat of wax and maybe place mats at fountains. 121 has 32 SF of new tile			No
Associated mastic (Not accessible)	9x9 beige: 1 <sup>st</sup> floor hallway & hallway by 314A		NF	7	Y		None at this time			No
9" x 9" Beige floor tile with maroon streaks	321 Hallways patterned with: 9x9 olive: 1 <sup>st</sup> floor hallway & hallway by 314A	≈ 8000 SF	NF	4	Y		** Wear & tear especially at thresholds & double doors  Maintain a good coat of wax.			No
Associated mastic (Not accessible)	9x9 brown: 3 <sup>rd</sup> floor hallway		NF	7	Y		None at this time			No

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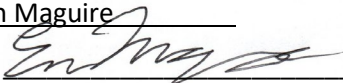
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9" x 9" Brown floor tile with red & beige streaks	Rooms 301-312, 320, 319, storage room shared with 319 & 320, 317, utility storage, instructional supplies, and middle hallway	≈ 21, 000 SF	NF	4	Y		** Wear & tear especially at thresholds & double doors  Maintain a good coat of wax. 308A, 308, 305A & 208 have patches of new tile.			No
Associated mastic (Not accessible)	Hallways patterned with: 9x9 beige: 2 <sup>nd</sup> floor hallway  Tan: 2 <sup>nd</sup> floor hallway		NF	7	Y		None at this time			No
9" x 9" Brown (maroon) speckled flooring	Stairwell landings (middle hallway and 2 <sup>nd</sup> floor)	≈ 200 SF each	NF	4	Y		** Wear & tear especially at thresholds & double doors Maintain a good coat of wax.			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No

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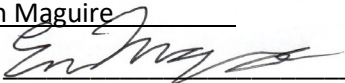
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9" x 9" Tan floor tile with beige & brown	Rooms 201 - 208, 210 - 212, storage rooms by library (215 & 214), 217, 218, & 120 SF in 219	≈ 18,000 SF	NF	4	Y		** Wear & tear especially at thresholds & double doors  Maintain a good coat of wax.  205A & 212 have patches of new tile.			No
Associated mastic (Not accessible)	Hallways patterned with 9x9 brown: 2 <sup>nd</sup> floor hall		NF	7	Y		None at this time			No
12" x 12" Beige mottled floor tile	1 <sup>st</sup> floor faculty, Storage room by elevator on 1 <sup>st</sup> floor, 114 conference under carpet, 209, 318	≈ 2,500 SF	NF	6	Y		Appears to be new floor tile, but maybe over 9". Obtain SDS to show non-asbestos or sample.			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No
12" x 12" White with maroon floor tile	322, 321	≈ 2,500 SF	NF	6	Y		Appears to be new floor tile. Obtain SDS to show non-asbestos or sample.			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No

<b>Type</b>	<b>Amount</b>	<b>Friability</b>	<b>Assessment Categories for Friable Materials</b>	
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI	5: Suspect or proven ABCM with the potential for D (*one moderate)
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing	6: Suspect or proven ABCM with the potential for SD (*one high)
M - Miscellaneous			3: Significantly damaged (SD) surfacing	7. Any remaining suspect or proven ABCM (*all low)
			4: Damaged or significantly damaged misc.	*Potential for future disturbance for categories 5, 6, & 7
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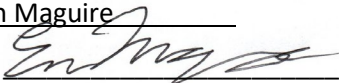
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Tan/Dark brown stone pattern linoleum	Gyms Cafeteria	≈ 3500 SF ≈ 5160 SF	NF	6	Y		None at this time			No
Carpet mastic associated with carpet squares (Not accessible)	Office complex, room 114 (divided), Teaching center/band room & small room, 116	≈ 3600 SF	NF	7	Y		None at this time			No
Multi-size ceramic floor tile grout	Blue/gray tile in boy's room	≈ 295 SF per bath	NF	4	Y		Sample to determine if further action is required.	< 10 SF is damaged at fountain near 114 & in M wing.	During Christmas break	No
Multi-size ceramic floor tile thin set	Green/yellow tile in girl's room Fountains	≈ 10 SF per fountain	NF	7	Y		Sample to determine if further action is required.	< 10 SF is damaged at fountain near 114 & in M wing.	During Christmas break	No

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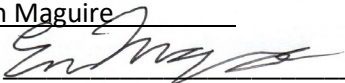
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6" Red ceramic floor tile grout	Kitchen	≈ 2000 SF	NF	5	Y		None at this time			No
6" Red ceramic floor tile thin set			NF	7	Y		None at this time			No
Sheetrock	Divider wall between: 111 & 110, 108 & 107, 160 & 105, 102 & 103, 114 Staff, 114 conference, 211 & 210, 207 & 206, 202 & 203, 313 & 314, 314 & 315, 315 & 316, 113 Room 121, conference in library, Science storage prep walls	≈ 400 SF per	F	6	Y		None at this time			No

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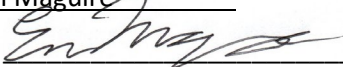
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Pegboard	Top of divider wall in front gym	≈ 400 SF	F	6	Y		None at this time			No
Acoustical panels/ textured ceiling	Teaching center/band room	≈ 2400 SF	F	5	Y		None at this time			No
Spray-on fire-proofing	Throughout school	-----	N/A	N/A	N/A	Removed in 1988 & 1989 and replaced with non-asbestos fireproofing	N/A	N/A	N/A	N/A
Elbows on roof drains with fiberglass insulation	Gym Storage, Gym, Gym HVAC Room, 2 <sup>nd</sup> floor HVAC Room	-----	N/A	N/A	N/A	N - 12/28/01	N/A	N/A	N/A	N/A
Textured ceiling plaster	Boiler Room, Garage	-----	N/A	N/A	N/A	N - 12/28/01	N/A	N/A	N/A	N/A
Hot water tank insulation	Boiler room	-----	N/A	N/A	N/A	N - 11/10/05	N/A	N/A	N/A	N/A

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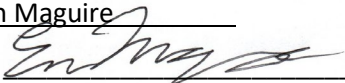
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CMU	Boiler room	-----	N/A	N/A	N/A	N - 2/24/11	N/A	N/A	N/A	N/A
Brick mortar	Boiler room - Incinerator	-----	N/A	N/A	N/A	N - 2/24/11	N/A	N/A	N/A	N/A
Cement	Boiler room – Top of Incinerator	-----	N/A	N/A	N/A	N - 2/24/11	N/A	N/A	N/A	N/A
Coarse mortar	Boiler room - Bottom Clean-out, Incinerator	-----	N/A	N/A	N/A	N - 2/24/11	N/A	N/A	N/A	N/A
Red brick & mortar	Boiler room chimney	-----	N/A	N/A	N/A	N - 2/24/11	N/A	N/A	N/A	N/A
Caulking associated with brown transite panels	Throughout school	-----	N/A	N/A	N/A	N - 2/24/11	N/A	N/A	N/A	N/A
Window sills	Throughout school	-----	N/A	N/A	N/A	N - 12/28/01 N - 2/24/11	N/A	N/A	N/A	N/A
Textured ceiling	-----	-----	N/A	N/A	N/A	N - 6/2/09	N/A	N/A	N/A	N/A
Red brick	Chimney & entrances	-----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Associated mortar		-----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A

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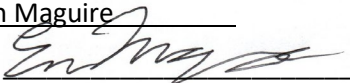
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CMU	Throughout school except boiler room	-----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Associated grout		-----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Speed tile	Walls in bathrooms & stairwells	-----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Associated grout		-----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
2' x 4' Thin fissured ceiling tiles	1 <sup>st</sup> floor, 2 <sup>nd</sup> floor & sporadic on 3 <sup>rd</sup> floor	-----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
2' x 4' Misc. ceiling tiles (fissured, dotted, etc.)	Mixed throughout (Kitchen, Hall, Science room, etc)	-----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
2' x 4' Dotted textured ceiling tiles (previously identified as bumpy ceiling tile w/ dots)	Mixed on 3 <sup>rd</sup> Floor, 1 <sup>st</sup> floor, Tom's office	-----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A

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Access, Vibration, Air Erosion: L-low M-medium H-high

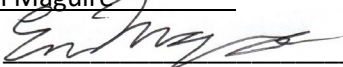
3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Robert E. Melican Middle School

Inspector Name: Erin Maguire

Address: 53 Parkerville Road, Southborough, MA 01772

Inspector Signature: 

License #: AI 901068

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Carpet mastic	Library	----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Top coat - plaster	Science rooms some walls, bathroom ceilings, storage room off kitchen, custodial room ceilings, stairwells, storage barn, incinerator room (storage), 317, 318, 319, 321, instructional supplies	----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Brown coat - plaster		----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Vinyl cove base (black, tan, or beige)	Throughout school	----	N/A	N/A	N/A	Not suspect under regulations	N/A	N/A	N/A	N/A
Mastic associated with vinyl cove base		----	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A

**Type**

T-TSI  
S-Surfacing  
M - Miscellaneous

**Amount**

SF-Square feet  
LF-Linear feet

**Friability**

F-Friable  
NF-Non-friable

**Assessment Categories for Friable Materials**


1. Damaged or significantly damaged TSI
2. Damaged (D) surfacing
3. Significantly damaged (SD) surfacing
4. Damaged or significantly damaged misc.

5. Suspect or proven ABCM with the potential for D (\*one moderate)
6. Suspect or proven ABCM with the potential for SD (\*one high)
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

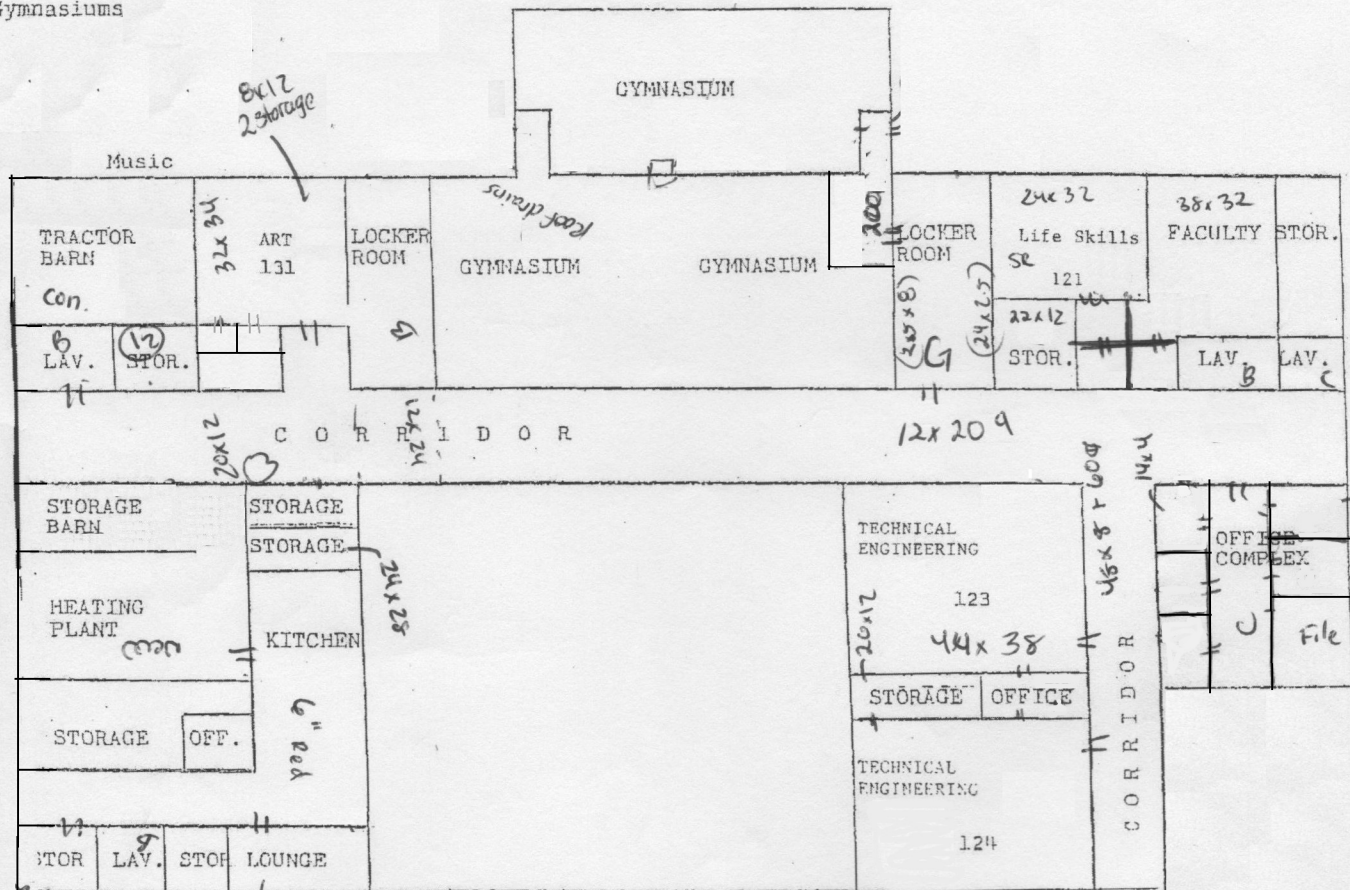


nm = Area of damaged floor  
 = Water fountain location


# First Floor


Offices  
 Cafeteria  
 Gymnasiums

Melican Middle School  
 First Floor  
 06/07

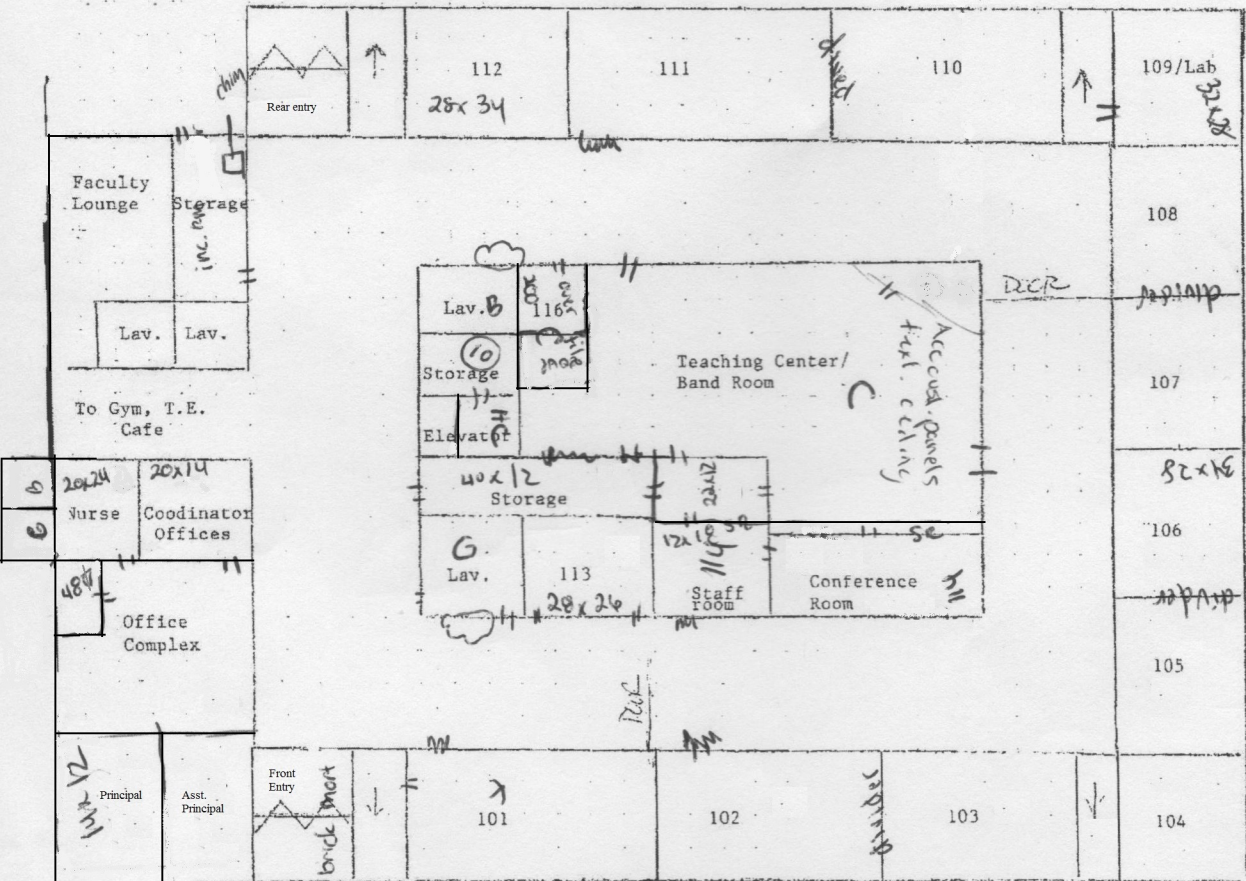


12x32



 = Area of damaged floor

 = Water fountain location

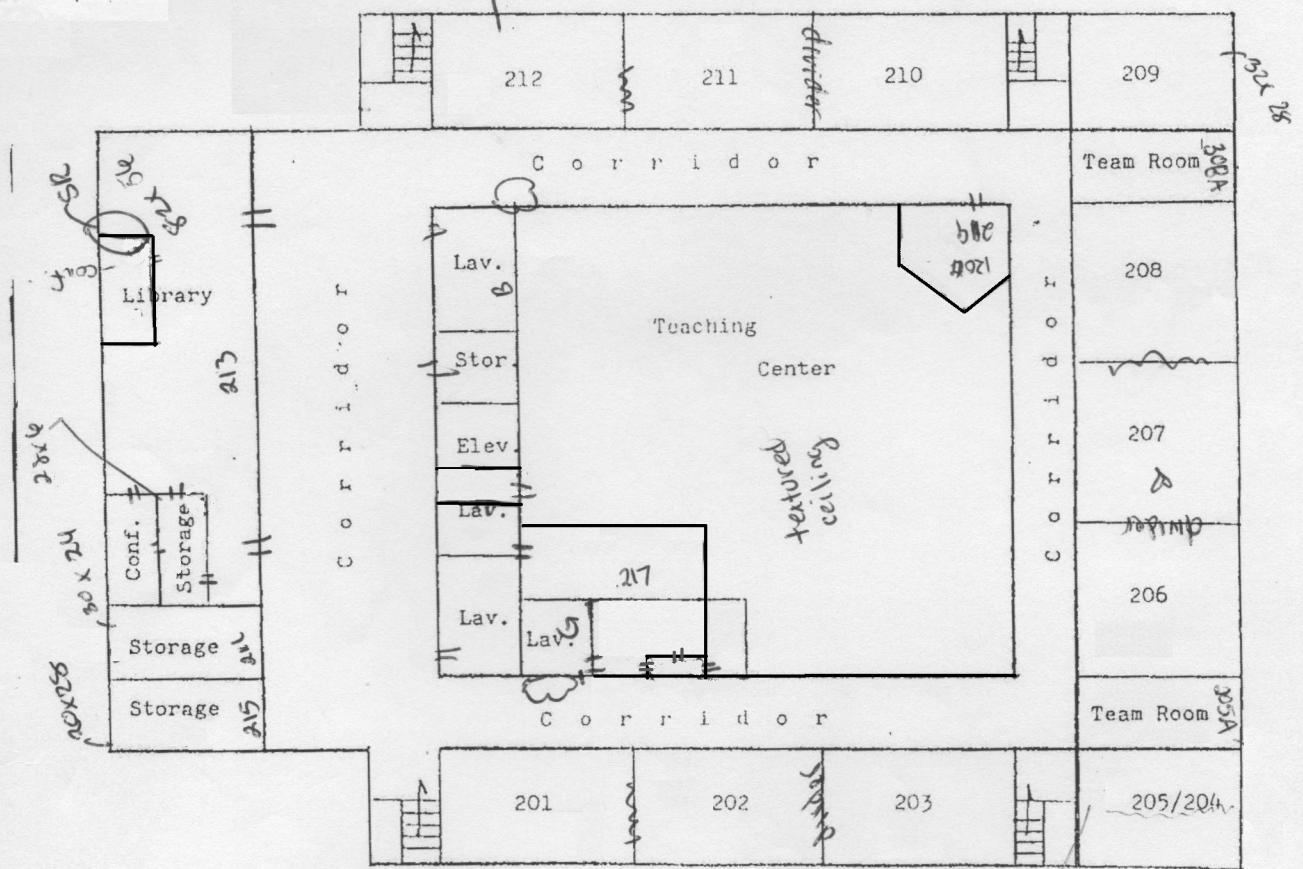
Melican Middle School  
First Floor  
06/07





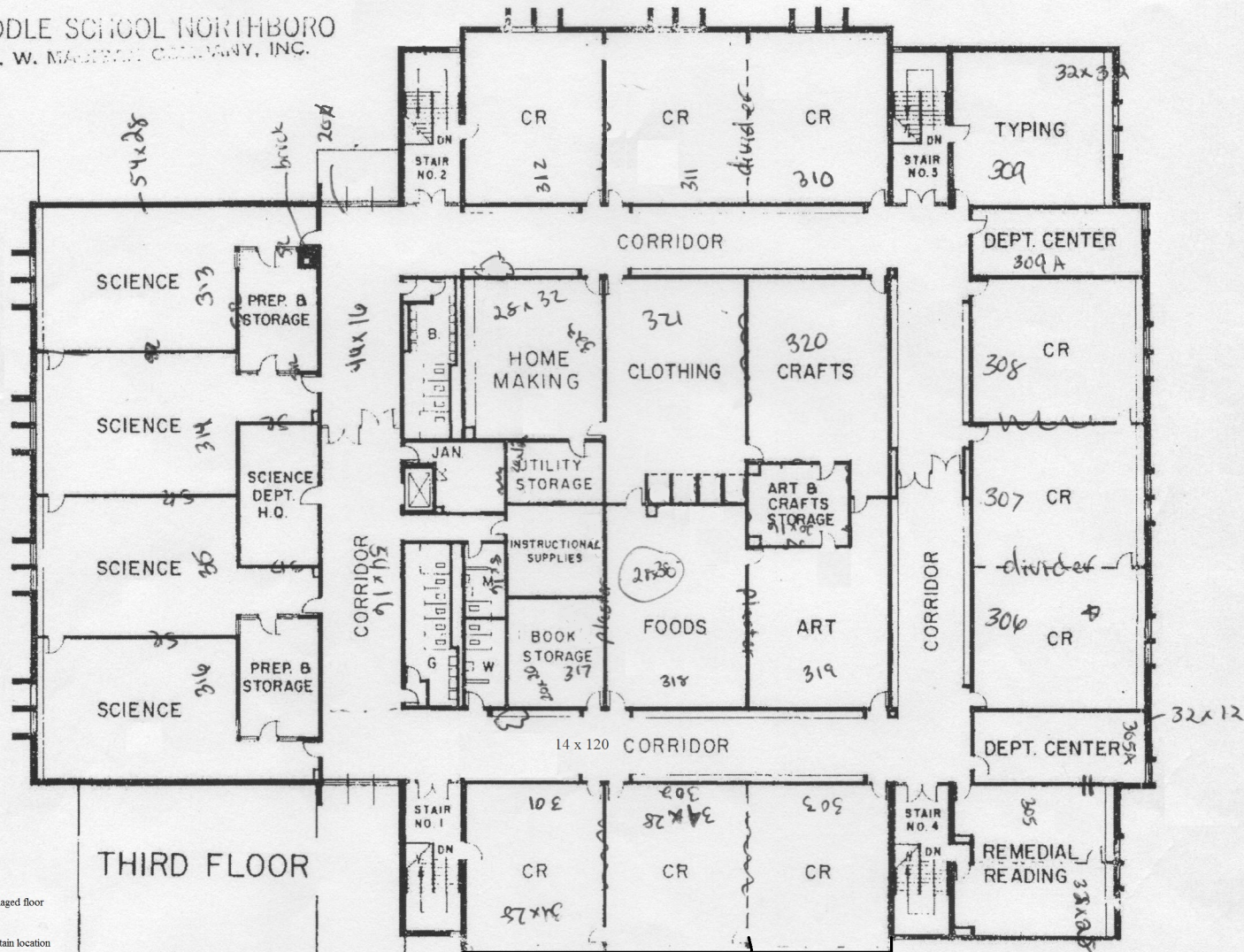
 = Area of damaged floor  
 = Water fountain location

# NORTHBORO MIDDLE SCHOOL ( Second Floor )



Divider wall (open)

MIDDLE SCHOOL NORTHBORO  
F. W. MASONRY COMPANY, INC.



Moveable wall

## Lincoln Street Elementary School



# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service

*Certified Woman-owned Business Enterprise (WBE)*

95 Beaver Street  
Waltham, MA 02453


(781) 893-8330  
FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: AHERA Three-Year Re-inspection

SUBJECT: Lincoln Street Elementary School  
76 Lincoln Street  
Northborough, MA 01532

INSPECTOR(S):   
Lynne Brimhall  
Asbestos Inspector  
MA Cert. No.: AI 061691

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 2023



3 Year Reinspection

Date of Reinspection: 7/18/2023

School: Lincoln Street Elementary School

Inspector Name: Lynne Brimhall

Address: 76 Lincoln St. Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
<p>The Lincoln Street Elementary School underwent a completely gut renovation and rebuilt in 2020.</p> <p>Previous AHERA documentation indicates that 2' x 4' ceiling tiles were visually identified as fiberglass and pipe fitting insulation was referenced in the 1998 report as non-asbestos; however this was not confirmed. The sink under coatings identified on sinks in all classrooms was previously identified as asbestos containing. The remaining materials breaching insulation, boiler insulation, hot water tank insulation, pipe fitting insulation, vibration dampeners, vent packing, 9" x 9" floor tiles (various colors) and the associated mastics, linoleum under the gym floor, 2' x 4' fissured ceiling tiles, speed tile &amp; grout, ceramic tile grout/adhesive, window sills, mastic associated with the vinyl cove base and window glazing &amp; caulking were assumed materials. Previous documentation indicates the 9" x 9" floor tiles were abated from rooms 3, 6, 16, 18, the teacher's room, hallways and the stage and replaced with new 12" non-asbestos containing floor tiles. However, no information regarding the mastic was found. The previous designated person, Mr. Tom Maedler, has documentation provided by the consulting firm hired by the architect. This data and any other documentation pertaining to the removal of suspect materials and/or asbestos inspections and sampling should be obtained and kept in the AHERA files. In addition, the architect should provide a letter stating to the best of their knowledge, no asbestos containing building materials were used during the build back of the new school. It is also a good idea to obtain and keep in the AHERA file, any safety data sheets (SDS) for new materials installed.</p> <p>For this school, the records are maintained in the master AHERA files. Department of Labor Standards should be notified so that they may remove this school from their list. Therefore, no immediate response actions are required.</p>										

Type	Amount	Friability	Assessment Categories for Friable Materials	
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI	5: Suspect or proven ABCM with the potential for D (*one moderate)
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing	6: Suspect or proven ABCM with the potential for SD (*one high)
M - Miscellaneous			3: Significantly damaged (SD) surfacing	7. Any remaining suspect or proven ACBM (*all low)
			4: Damaged or significantly damaged misc.	*Potential for future disturbance for categories 5, 6, & 7
				Access, Vibration, Air Erosion: L-low M-medium H-high

Marion E. Zeh Elementary School



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[www.hubtesting.net](http://www.hubtesting.net)

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: AHERA Three-Year Re-inspection

SUBJECT: Marion E. Zeh Elementary School  
33 Howard Street  
Northborough, MA 01532

INSPECTOR(S):   
Lynne Brimhall  
Asbestos Inspector  
MA Cert. No.: AI 061691

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 2023

Address: 33 Howard St. Northborough, MA 01532

Inspector Signature: Lynne Brimhall

[illegible]

Type	Amount	Friability	Assessment Categories for Friable Materials	
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI	5: Suspect or proven ABCM with the potential for D (*one moderate)
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing	6: Suspect or proven ABCM with the potential for SD (*one high)
M - Miscellaneous			3: Significantly damaged (SD) surfacing	7. Any remaining suspect or proven ACBM (*all low)
			4: Damaged or significantly damaged misc.	<i>*Potential for future disturbance for categories 5, 6, &amp; 7</i>
				Access, Vibration, Air Erosion: L-low M-medium H-high

Marguerite E. Peaslee Elementary School



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REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

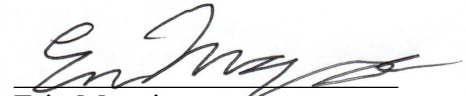
ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: AHERA Three-Year Re-inspection


SUBJECT: Marguerite E. Peaslee Elementary School  
31 Maple Street  
Northborough, MA 01532

INSPECTOR(S):

  
Lynne Brimhall  
Asbestos Inspector  
MA Cert. No.: AI 061691

  
Erin Maguire  
Asbestos Inspector  
MA Cert. No.: AI 901068

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 2023





# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service  
*Certified Woman-owned Business Enterprise (WBE)*

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: Marguerite E. Peaslee Elementary School  
31 Maple Street  
Northborough, MA 01532

SUBJECT: AHERA Three-Year Reinspection

DATE: August 31, 2023

95 Beaver Street  
Waltham, MA 02453  
(781) 893-8330  
FAX (781) 893-4414  
www.hubtesting.net

As required by the US Environmental Protection Agency's AHERA regulations, Hub Testing Laboratory has completed a survey and reassessment of asbestos containing materials in the Marguerite E. Peaslee Elementary School of the Northborough-Southborough Public School District. This report summarizes the locations and conditions of materials remaining in the building and reviews the ongoing responsibilities of the Local Education Agency (LEA). Lynne Brimhall (AI 061691) and Erin Maguire (AI 901068) completed the inspection on July 25, 2023.

When sampling of suspect asbestos-containing materials was required, samples representative of the material were taken. If samples of thermal systems insulation and miscellaneous materials were necessary, they were collected in unobtrusive locations. If samples of surfacing materials were necessary, they were collected using the guidance document method for random sampling.

This latest survey report should be incorporated into the files that the LEA maintains pertaining to response actions, operations & maintenance activities, six-month surveillances, training, air sampling and major asbestos activities, etc.

The re-inspection consisted of reviewing previous documentation available, interviewing building personnel, and performing a thorough survey of each functional space in the building.

The Peaslee Elementary School has had some removal of flooring materials. But for the most part appears to have original materials identified in the first few inspections. If new materials are installed, safety data sheets should be added to the AHERA files.

The floor plan found in Attachment A should be used to identify functional spaces identification.

The standardized form from the Department of Labor Standards has been completed and is found

in Attachment A.

The management planner develops recommendations based on the hazard ranking and removal ranking. See below.

<b><u>Hazard Rank</u></b>	<b><u>ACBM Condition</u></b>	<b><u>ACBM Disturbance Potential</u></b>
7	Significantly Damaged	Any
6	Damaged	Potential for Significant Damage
5	Damaged	Potential for Damage
4	Damaged	Low
3	Good	Potential for Significant Damage
2	Good	Potential for Damage
1	Good	Low

<b><u>Removal Rank</u></b>	<b><u>AHERA Category</u></b>	<b><u>Response Action Required By AHERA</u></b>
1	Significantly Damaged	Evacuate or isolate the area if needed. Remove the ACBM or enclose/encapsulate if sufficient to contain fibers. Repair of thermal systems is allowed if feasible and safe. Continue O&M
2	Damaged & Potential for Significant Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
3	Damaged & Potential for Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
4	Damaged	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
5	Potential for Significant Damage	Evacuate or isolate the area if needed. Take steps to reduce potential for disturbance. Continue O&M
6	Potential for Damage	Continue O&M
7	All remaining ACBM	Continue O&M

The materials previously identified in the Peaslee Elementary School are in relatively good condition. However, there are some materials that will require attention. Based on the recent inspection, the following actions for ongoing asbestos management in the school are recommended. All work beyond the capabilities of a trained and licensed in house O&M maintenance person must be performed by a licensed and qualified asbestos removal contractor. A licensed Project Designer must design all abatement projects outside of O&M.

1. Perform a periodic surveillance of known and assumed asbestos-containing materials every six months until such time. The chart included in this report may be used for the documentation. Next survey should be performed in January of 2024 and has an estimated cost of \$600.
2. Provide training for new maintenance personnel within 60 days of hire and provide training annually to all maintenance personnel. Training should be conducted during the Christmas break and has an estimated cost \$1250 which is for all maintenance personnel within the school district.
3. All friable asbestos-containing materials in routine maintenance areas must be maintained with identifying labels. Some labels are present, but further labeling will be necessary. Asbestos labels can be bought and the maintenance personnel can place them where appropriate. This should be completed by Christmas break of this year and has an estimated cost of \$600.
4. The school should continue with the use of commercial grade HEPA vacuums in lieu of dry sweeping. Additionally cleaning, HEPA vacuum and wet wiping, is required in the boiler room due to the damaged breeching insulation. Access should be minimized and cleaning should occur ASAP.
5. Special care must be taken to avoid disturbing the damaged breeching insulation. The material was sampled during the previous three-year re-inspection and found to be asbestos containing. This material is in a routine maintenance area with limited access and has a hazard ranking of 4. A licensed designer should generate a design for removal of the breeching insulation. This should be removed during the summer of 2024 utilizing licensed personal and monitored by a licensed project monitor. An estimated cost \$12,000 should be put aside for this project.
6. Special care must be taken to avoid disturbing the accessible fittings. The fitting insulation has a hazard ranking of 4 and repair should be conducted during the summer of 2024 in conjunction with the breeching. Pricing has been worked into the above quote for this project.
7. Historically 9" floor tiles have contained asbestos; however, both the tile and associated mastic are assumed miscellaneous materials and must be maintained in good condition. The floor tiles and mastic have a hazard ranking of 4. Efforts, such as a thick coat of wax, should be taken to prevent the delamination of the floor tiles in the building. The condition of the floor tiles should be monitored during the six-month surveillances, which is performed as required by a knowledgeable person. This process will aid in documenting when tiles become broken and to determine when and where significantly damaged tiles need to be replaced.
8. Assumed asbestos containing materials such as sheetrock, linoleum in the cafetorium, and the plaster (top coat & brown coat) in the boiler room have a hazard ranking of 4. Sampling, in accordance with AHERA, is required to determine if further action is necessary. If funding is available, sampling could be conducted over the Christmas break.

An estimated cost \$3,000 will be needed to conduct the sampling. Care should be taken to not cause further damage.

9. Keep an updated copy of the Management Plan in the school as well as a master copy with the Mr. Lavoie. The plan must be available, without restriction, to the public, school personnel and their representatives, parents and representatives of EPA and the state, for inspection during normal business hours.
10. Perform a three-year reinspection in July of 2026 which should cost around \$1500.

3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Peaslee Elementary School

Inspector Name: Lynne Brimhall

Address: 31 Maple St, Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Breeching insulation	Boiler Room	≈ 200 SF	F	1		Y – 4/22/16	Repair insulation	Cracking and separating of insulation	Summer 2024	Yes
Pipe fittings	Classrooms 1-18, Boiler Room, Gym, Hallways, Kitchen, Receiving, Pipe Chases in Custodial Closets near Rooms 9 & 10, Storage Rooms Across from Rooms 7 & 12, Two Rooms near Gym adjacent to Bathrooms	≈ 350 fittings	F	1		Y – 2/18/20	Repair insulation	Damage in slop sink room by Classroom 6 Damage in TSI conference room Damage in slop sink room by Classroom 10 Boiler room fitting at tank no cover  Fittings accessible in classrooms (except 14), have been enclosed to prevent damage.	Summer 2024	No
Vibration Dampeners	Gymnasium	≈ 30 SF	NF	6	Y		None at this time			No
Window glazing	Windows throughout school	≈ 20 LF per window	NF	7	Y		None at this time			No

**Type**

T-TSI

S-Surfacing

M - Miscellaneous

**Amount**

SF-Square feet

LF-Linear feet

**Friability**

F-Friable

NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI

2. Damaged (D) surfacing

3: Significantly damaged (SD) surfacing

4: Damaged or significantly damaged misc.

5: Suspect or proven ABCM with the potential for D (\*one moderate)

6: Suspect or proven ABCM with the potential for SD (\*one high)

7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Peaslee Elementary School

Inspector Name: Lynne Brimhall

Address: 31 Maple St, Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Window sills	Throughout school	≈ 10 SF per sill	NF	7	Y		None at this time			No
Coating under sink	2 Sinks per classroom	≈ 40 SF per sink	F	5	Y		None at this time			No
Brown glue dots on 1' x 1' ceiling tiles	Classrooms 2, 4, 6, 14, 16, 18	≈ 950 SF per classroom	F	7		Y – 12/28/01	None at this time			No
9" x 9" Gray floor tile w/white & black	Rooms 1,3,5 Storage rooms	≈ 950 SF per classroom & ≈ 60 SF per storage	NF	4	Y		Damage is historic. Maintain a good coat of wax to prevent further damage.			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No
9" x 9" Brown floor tile w/white & black	Rooms 2,4,6 & Stage	≈ 950 SF per classroom & ≈ 400 SF at stage	NF	4	Y		Damage is historic. Maintain a good coat of wax to prevent further damage.			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No

**Type**

T-TSI  
S-Surfacing  
M - Miscellaneous

**Amount**

SF-Square feet  
LF-Linear feet

**Friability**

F-Friable  
NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI
2. Damaged (D) surfacing
3. Significantly damaged (SD) surfacing
4. Damaged or significantly damaged misc.

- 5: Suspect or proven ABCM with the potential for D (\*one moderate)
- 6: Suspect or proven ABCM with the potential for SD (\*one high)
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high



3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Peaslee Elementary School

Inspector Name: Lynne Brimhall

Address: 31 Maple St, Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
9" x 9" Blue floor tile w/gray	Rooms 7, 8, 9	≈ 950 SF per classroom	NF	4	Y		Damage is historic. Maintain a good coat of wax to prevent further damage.			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No
9" x 9" Light green/gray floor tile w/ blue & beige flecks	Rooms 14,16,18	≈ 950 SF per classroom	NF	4	Y		Damage is historic. Maintain a good coat of wax to prevent further damage.			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No
Linoleum	Cafetorium		NF	4	Y		Material is assumed and therefore sampling should occur	< 10 SF of minor damage and separation noted.	2023 Christmas break	No
12" x 12" White & black floor tile	Hallways	≈ 6000 SF	NF	4	Y		Damage is historic. Maintain a good coat of wax to prevent further damage.			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No

<b>Type</b>	<b>Amount</b>	<b>Friability</b>	<b>Assessment Categories for Friable Materials</b>	
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI	5: Suspect or proven ABCM with the potential for D (*one moderate)
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing	6: Suspect or proven ABCM with the potential for SD (*one high)
M - Miscellaneous			3: Significantly damaged (SD) surfacing	7. Any remaining suspect or proven ACBM (*all low)
			4: Damaged or significantly damaged misc.	*Potential for future disturbance for categories 5, 6, & 7
				Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Peaslee Elementary School

Inspector Name: Lynne Brimhall

Address: 31 Maple St, Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
12" x 12" Beige floor tile with red & blue flecks	ELL room	≈ 256 SF	NF	4	Y		Damage is historic. Maintain a good coat of wax to prevent further damage.			No
Associated mastic (Not accessible)			NF	7	Y		None at this time			No
12" x 12" Beige floor tile with multi- colored fecks	½ of Occupational Therapy	≈ 162 SF	NF	4	Y		Damage is historic. Maintain a good coat of wax to prevent further damage.			No
Associated mastic (Not accessible)		≈ 2,500 SF	NF	7	Y		None at this time			No
Carpet mastic (Not accessible)	Office, Principal's office, Office conference room, learning center, PE equipment room, Computers, & ½ of Occupational Therapy	≈ 2,500 SF	NF	7	Y		None at this time			No

<b>Type</b>	<b>Amount</b>	<b>Friability</b>	<b>Assessment Categories for Friable Materials</b>	
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI	5: Suspect or proven ABCM with the potential for D (*one moderate)
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M - Miscellaneous			3: Significantly damaged (SD) surfacing	7. Any remaining suspect or proven ABCM (*all low)
			4: Damaged or significantly damaged misc.	*Potential for future disturbance for categories 5, 6, & 7
				Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Peaslee Elementary School

Inspector Name: Lynne Brimhall

Address: 31 Maple St, Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Sheetrock	Shared wall speech & ELL, shared wall ELL and electrical, Learning center, PE equipment room, Occupational Therapy	≈ 200 SF per	F	4	Y		Material is assumed and therefore sampling should occur.	< 10 SF of minor damage noted.	2023 Christmas break	No
Plaster – top coat	Ceilings: boiler room, boiler storage, kitchen storage rooms, learning center	≈ 3,000 SF	F	4	Y		Material is assumed and therefore sampling should occur.	< 10 SF of minor damage noted.	2023 Christmas break	No
Plaster – brown coat			F	4	Y		Material is assumed and therefore sampling should occur.	< 10 SF of minor damage noted.	2023 Christmas break	No
6" Red ceramic floor tile grout	Kitchen	≈ 1000 SF	NF	5	Y		None at this time			No
6" Red ceramic floor tile thin set (Not accessible)			NF	5	Y		None at this time			No

**Type**

T-TSI  
S-Surfacing  
M - Miscellaneous

**Amount**

SF-Square feet  
LF-Linear feet

**Friability**

F-Friable  
NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI
2. Damaged (D) surfacing
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- 6: Suspect or proven ABCM with the potential for SD (\*one high)
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Peaslee Elementary School

Inspector Name: Lynne Brimhall

Address: 31 Maple St, Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Multi-sized ceramic floor tile grout	Pink/gray - Nurse's bath and Main bath Red – Girl's bathrooms Blue –Boy's bathrooms Blue/white - Computers below carpet (≈ 120 SF)	≈ 80 SF per	NF	4	Y		Material is assumed and therefore sampling should occur.	< 10 SF of minor damage noted.	2023 Christmas break	No
Multi-sized ceramic floor tile thin set/adhesive (Not accessible)			NF	4	Y		Material is assumed and therefore sampling should occur.	< 10 SF of minor damage noted.	2023 Christmas break	No
½" x ½" Blue ceramic floor tile grout	At water fountains	16 SF each	NF	5	Y		None at this time			No
½" x ½" Blue ceramic floor tile thin set/adhesive			NF	5	Y		None at this time			No
Boiler insulation	Boiler Room	N/A	N/A	N/A	N/A	N - 2/18/20	N/A	N/A	N/A	N/A
CMU	Majority of walls throughout school	N/A	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Associated grout		N/A	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A

**Type**

T-TSI  
S-Surfacing  
M - Miscellaneous

**Amount**

SF-Square feet  
LF-Linear feet

**Friability**

F-Friable  
NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI
2. Damaged (D) surfacing
3. Significantly damaged (SD) surfacing
4. Damaged or significantly damaged misc.

- 5: Suspect or proven ABCM with the potential for D (\*one moderate)
- 6: Suspect or proven ABCM with the potential for SD (\*one high)
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Peaslee Elementary School

Inspector Name: Lynne Brimhall

Address: 31 Maple St, Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
1' x 1' Dotted ceiling tiles	Visually identified as fiberglass located in the Copy room, Office suite, Nurse, Bathrooms, Art, Staff lounge & perimeter of classrooms									
2' x 4' Small dotted ceiling tiles	Visually identified as metal located in the Hallway									
1' x 1' Smooth ceiling tile	Visually identified as fiberglass located in the Interior of classrooms, ABA, & Kitchen									
1' x 1' Smooth ceiling tile	Head custodian office	N/A	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
2' x 4' Thick fissured ceiling tiles with dots	Lobby, Computers, ELL, Speech	N/A	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
2' x 4' Miscellaneous ceiling tiles (dotted, textured & fissured)	Patched in hallways	N/A	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
2' x 2' Small fissured ceiling tiles	Occupational therapy	N/A	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A

<b>Type</b>	<b>Amount</b>	<b>Friability</b>	<b>Assessment Categories for Friable Materials</b>
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing
M - Miscellaneous			3: Significantly damaged (SD) surfacing
			4: Damaged or significantly damaged misc.
			5: Suspect or proven ABCM with the potential for D (*one moderate)
			6: Suspect or proven ABCM with the potential for SD (*one high)
			7. Any remaining suspect or proven ACBM (*all low)
			*Potential for future disturbance for categories 5, 6, & 7
			Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Peaslee Elementary School

Inspector Name: Lynne Brimhall

Address: 31 Maple St, Northborough, MA 01532

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Speed tile & associated grout	4ft up walls then becomes CMU	N/A	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Mastic associated with vinyl cove base	Sporadic throughout school	N/A	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Joint compound	ELL, Learning center, Occupational Therapy	N/A	N/A	N/A	N/A	N - 4/22/16	N/A	N/A	N/A	N/A
Hot water tank insulation - gray	Boiler Room	N/A	N/A	N/A	N/A	N – 12/28/01	N/A	N/A	N/A	N/A
Hot water tank insulation - white	Boiler Room	N/A	N/A	N/A	N/A	N – 12/28/01	N/A	N/A	N/A	N/A

**Type**

T-TSI

S-Surfacing

M - Miscellaneous

**Amount**

SF-Square feet

LF-Linear feet

**Friability**

F-Friable

NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI

2. Damaged (D) surfacing

3: Significantly damaged (SD) surfacing

4: Damaged or significantly damaged misc.

5: Suspect or proven ABCM with the potential for D (\*one moderate)

6: Suspect or proven ABCM with the potential for SD (\*one high)

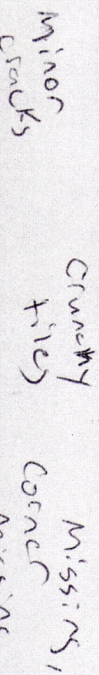
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high



5x10





Albert S. Woodward Memorial School



# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service

*Certified Woman-owned Business Enterprise (WBE)*

95 Beaver Street  
Waltham, MA 02453


(781) 893-8330  
FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

ATTENTION: Keith Lavoie  
Assistant Superintendant of Operations

PROJECT: AHERA Three-Year Re-inspection

SUBJECT: Albert S. Woodward Memorial School  
28 Cordaville Road  
Southborough, MA 01772

INSPECTOR(S):   
Lynne Brimhall  
Asbestos Inspector  
MA Cert. No.: AI 061691

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 2023

Address: 28 Cordaville Rd. Southborough, MA 01772

Inspector Name: Lynne Brimhall

Inspector Signature: Lynne Brimhall

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Type	Amount	Friability	Assessment Categories for Friable Materials	
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI	5: Suspect or proven ABCM with the potential for D (*one moderate)
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing	6: Suspect or proven ABCM with the potential for SD (*one high)
M - Miscellaneous			3: Significantly damaged (SD) surfacing	7. Any remaining suspect or proven ACBM (*all low)
			4: Damaged or significantly damaged misc.	<i>*Potential for future disturbance for categories 5, 6, &amp; 7</i>
				Access, Vibration, Air Erosion: L-low M-medium H-high

Mary E. Finn School



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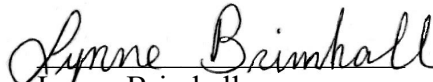
REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: AHERA Three-Year Re-inspection


SUBJECT: Mary E. Finn Elementary School  
60 Richards Road  
Southborough, MA 01772

INSPECTOR(S):

  
Lynne Brimhall  
Asbestos Inspector  
MA Cert. No.: AI 061691

  
Daniel Duque  
Asbestos Inspector  
MA Cert. No.: AI 901133

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 2023





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Waltham, MA 02453

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772

(781) 893-8330  
FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: Mary E. Finn Elementary School  
60 Richards Road  
Southborough, MA 01772

SUBJECT: AHERA Three-Year Reinspection

DATE: August 31, 2023

As required by the US Environmental Protection Agency's AHERA regulations, Hub Testing Laboratory has completed a survey and reassessment of asbestos containing materials in the Mary E. Finn Elementary School of the Northborough-Southborough Public School District. This report summarizes the locations and conditions of materials remaining in the building and reviews the ongoing responsibilities of the Local Education Agency (LEA). Lynne Brimhall (AI 061691) and Daniel Duque (AI 901133) completed the inspection on July 27, 2023.

When sampling of suspect asbestos-containing materials was required, samples representative of the material were taken. If samples of thermal systems insulation and miscellaneous materials were necessary, they were collected in unobtrusive locations. If samples of surfacing materials were necessary, they were collected using the guidance document method for random sampling.

This latest survey report should be incorporated into the files that the LEA maintains pertaining to response actions, operations & maintenance activities, six-month surveillances, training, air sampling and major asbestos activities.

The re-inspection consisted of reviewing previous documentation available, interviewing building personnel, and performing a thorough survey of each functional space in the building.

The re-inspection consisted of reviewing previous documentation available, interviewing building personnel, and performing a thorough survey of each functional space in the building.

The Finn Elementary School has undergone extensive renovations. The building appears to have been gutted and completely renovated. Documentation for the removal of asbestos during the renovation project should be obtained and kept in the AHERA files. If

possible, a letter from the architect indicating that no asbestos was requested to be used during the renovation project should be obtained. Safety data sheets (SDS) for new materials should be located and kept in the AHERA files. If no documentation can be found, sampling should be conducted. If new materials are installed, safety data sheets should be added to the AHERA files.

The floor plan found in Attachment A should be used to identify functional spaces identification.

The standardized form from the Department of Labor Standards has been completed and is found in Attachment A.

The management planner develops recommendations based on the hazard ranking and removal ranking. See below.

<b>Hazard Rank</b>	<b>ACBM Condition</b>	<b>ACBM Disturbance Potential</b>
7	Significantly Damaged	Any
6	Damaged	Potential for Significant Damage
5	Damaged	Potential for Damage
4	Damaged	Low
3	Good	Potential for Significant Damage
2	Good	Potential for Damage
1	Good	Low

<b>Removal Rank</b>	<b>AHERA Category</b>	<b>Response Action Required By AHERA</b>
1	Significantly Damaged	Evacuate or isolate the area if needed. Remove the ACBM or enclose/encapsulate if sufficient to contain fibers. Repair of thermal systems is allowed if feasible and safe. Continue O&M
2	Damaged & Potential for Significant Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
3	Damaged & Potential for Damage	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
4	Damaged	Evacuate or isolate the area if needed. Remove, enclose or encapsulate or repair to correct damage. Take steps to reduce potential for disturbance. Continue O&M
5	Potential for Significant Damage	Evacuate or isolate the area if needed. Take steps to reduce potential for disturbance. Continue O&M
6	Potential for Damage	Continue O&M
7	All remaining ACBM	Continue O&M

The materials previously identified in the Finn Elementary School are in relatively good condition. However, there are some materials that will require attention. Based on the recent inspection, the following actions for ongoing asbestos management in the school are recommended. All work beyond the capabilities of a trained and licensed in house O&M maintenance person must be performed by a licensed and qualified asbestos removal contractor. A licensed Project Designer must design all abatement projects outside of O&M.

1. Obtain a letter from the contractor and/or architect stating to the best of their knowledge, no asbestos containing building materials were used and/or required during construction of the addition and the renovation of the school.
2. Perform a periodic surveillance of known and assumed asbestos-containing materials every six months until such time. The chart included in this report may be used for the documentation. Next survey should be performed in January of 2024 and has an estimated cost of \$600.
3. Provide training for new maintenance personnel within 60 days of hire and provide training annually to all maintenance personnel. Training should be conducted during the Christmas break and has an estimated cost \$1250 which is for all maintenance personnel within the school district.
4. All friable asbestos-containing materials in routine maintenance areas must be maintained with identifying labels. Some labels are present, but further labeling will be necessary. Asbestos labels can be bought and the maintenance personnel can place them where appropriate. This should be completed by Christmas break of this year and has an estimated cost of \$600.
5. The school should continue with the use of commercial grade HEPA vacuums in lieu of dry sweeping.
6. All materials in this school appear to be newly installed and are assumed to contain asbestos. Minor damage is noted associated with some materials such as the tectum panels, sheetrock, and ceramic tiles which have a hazard ranking of 4. The remaining materials are not damaged and have a hazard rank of 2. Sampling, in accordance with AHERA, should be conducted on all materials. An estimated cost of \$2,000 will be needed to conduct the sampling. If funding is available, sampling could be conducted over the summer break.
7. Keep an updated copy of the Management Plan in the school as well as a master copy with the Mr. Lavoie. The plan must be available, without restriction, to the public, school personnel and their representatives, parents and representatives of EPA and the state, for inspection during normal business hours.
8. Perform a three-year reinspection in July of 2026 which should cost around \$1500.

3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Mary E. Finn Elementary School

Inspector Name: Lynne Brimhall

Address: 60 Richards Rd., Southborough, MA 01772

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
The Mary E. Finn Elementary School has undergone extensive renovations. The building appears to have been gutted and completely renovated. Documentation for the removal of asbestos during the renovation project should be obtained and kept in the AHERA files. If possible, a letter from the architect indicating that no asbestos was requested to be used during the renovation project should be obtained. Safety data sheets (SDS) for new materials should be located and kept in the AHERA files. If no documentation can be found, sampling should be conducted.										
Vibration dampeners	Majority of ductwork above ceilings are runs, meaning dampeners may be associated with roof AHUs.	≈ 4 SF per unit	F	6	Y		None at this time.			No
Transite Panels (Not accessible)	Behind classroom window wall bookcases (radiator) in Art/Music, Extended day care, grade 1 classrooms, Motor Development, Speech & Kindergarten classrooms	≈ 45 SF per classroom	NF	5	Y		None at this time.			No
Flue packing	Boiler room	≈ 1 SF	F	5	Y		None at this time.			No

Type	Amount	Friability	Assessment Categories for Friable Materials		
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI	5: Suspect or proven ABCM with the potential for D (*one moderate)	
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing	6: Suspect or proven ABCM with the potential for SD (*one high)	
M - Miscellaneous			3: Significantly damaged (SD) surfacing	7. Any remaining suspect or proven ACBM (*all low)	
			4: Damaged or significantly damaged misc.	*Potential for future disturbance for categories 5, 6, & 7	
				Access, Vibration, Air Erosion: L-low M-medium H-high	

3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Mary E. Finn Elementary School

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Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Caulking/sealant at back of boilers	Boiler room	< 1 SF per	NF	5	Y		None at this time.			No
Red fire stop above ceiling tiles	S-2	≈ 4 SF	NF	5	Y		None at this time.			No
Window caulking	Pre-fabricated windows	≈ 20 LF per window	NF	7	Y		None at this time.			No
Gray HVAC mastic	On ductwork above ceiling	≈ 45 SF per location	NF	7	Y		None at this time.			No
Mastic from old 9" x 9" floor tiles (Not accessible)	Beneath new flooring	≈ 73000 SF	NF	7	Y		None at this time.	This material may no longer be present as new floor tiles are noted. However, no documentation was available to indicate the mastic was removed		No
1" Ceramic floor tile grout	Bathrooms except bath by custodian, bath	≈ 60 SF per	NF	5	Y		None at this time.			No
1" Ceramic floor tile thin set	by 35 and bath by teacher's room	≈ 60 SF per	NF	5	Y		None at this time.			No

**Type**

T-TSI  
S-Surfacing  
M - Miscellaneous

**Amount**

SF-Square feet  
LF-Linear feet

**Friability**

F-Friable  
NF-Non-friable

**Assessment Categories for Friable Materials**

1. Damaged or significantly damaged TSI
2. Damaged (D) surfacing
3. Significantly damaged (SD) surfacing
4. Damaged or significantly damaged misc.

5. Suspect or proven ABCM with the potential for D (\*one moderate)
6. Suspect or proven ABCM with the potential for SD (\*one high)
7. Any remaining suspect or proven ACBM (\*all low)

*\*Potential for future disturbance for categories 5, 6, & 7*

Access, Vibration, Air Erosion: L-low M-medium H-high

3 Year Reinspection

Date of Reinspection: 7/25/2023

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Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Tectum panels	Gym	≈ 3000 SF	F	5	Y		The current gym was built by Keyes Associates in 2000. SDS should be obtained for this material or sampling should occur to prove it non-asbestos		Summer break	No
Sheetrock walls	Entry walls (≈ 1000 SF), closets in classrooms -2 walls (≈ 72 SF per closet) & Divider walls room 65 (≈ 56 SF)		F	4	Y		Sampling should occur to prove it non-asbestos		Summer break	No
1" x 3" Ceramic tile grout	At water fountains	≈ 60 SF per	NF	5 <sup>1</sup>	Y		None at this time.			No
1" x 3" Ceramic tile adhesive		≈ 60 SF per	NF	5 <sup>1</sup>	Y		None at this time.			No

**Type**

T-TSI

S-Surfacing

M - Miscellaneous

**Amount**

SF-Square feet

LF-Linear feet

**Friability**

F-Friable

NF-Non-friable

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1. Damaged or significantly damaged TSI

2. Damaged (D) surfacing

3: Significantly damaged (SD) surfacing

4: Damaged or significantly damaged misc.

5: Suspect or proven ABCM with the potential for D (\*one moderate)

6: Suspect or proven ABCM with the potential for SD (\*one high)

7. Any remaining suspect or proven ACBM (\*all low)

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Access, Vibration, Air Erosion: L-low M-medium H-high



3 Year Reinspection

Date of Reinspection: 7/25/2023

School: Mary E. Finn Elementary School

Inspector Name: Lynne Brimhall

Address: 60 Richards Rd., Southborough, MA 01772

Inspector Signature: Lynne Brimhall

License #: AI 061691

Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
Pipe insulation	Throughout	-----	F	N/A	N/A	Visually identified as fiberglass	Documentation indicates a removal job in 2009.	N/A	N/A	N/A
Elbows	Throughout	-----	F	N/A	N/A	Visually identified PVC	Documentation indicates a removal job in 2009.	N/A	N/A	N/A
9" x 9" VAT	Throughout	-----	NF	N/A	N/A		Removed & replaced with new 12" Mottled VCT in a variety of colors: beige, pink, green & blue	N/A	N/A	N/A
Vinyl sheet linoleum countertops	Classrooms & Speech rooms	-----	NF	N/A	N/A		Removed & replaced with counter tops when vent units were replaced	N/A	N/A	N/A
Vinyl cove base	Throughout school	-----	NF	N/A	N/A	Not suspect per regulations	N/A	N/A	N/A	N/A
Mastic associated with vinyl cove base		-----	NF	N/A	N/A	N- 4/19/16	N/A	N/A	N/A	N/A

**Type**

T-TSI  
S-Surfacing  
M - Miscellaneous

**Amount**

SF-Square feet  
LF-Linear feet

**Friability**

F-Friable  
NF-Non-friable

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Access, Vibration, Air Erosion: L-low M-medium H-high

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School: Mary E. Finn Elementary School

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Material	Location (Homogeneous Area)	QTY	Friable	Phys Assess Category	Assumed ACM	Sample Date ACM Y or N	Recommendation	Amount/Location of Damage; Type of Damage	Schedule Begin/Complete	Special Cleaning
2' x 2' Small fissured ceiling tiles w/ lots of dots	Majority of school ceilings	-----	NF	N/A	N/A	N- 4/19/16	N/A	N/A	N/A	N/A
2' x 4' Large and small dotted ceiling tile	Storage, Custodian's office, bathrooms by gym, kitchen	-----	NF	N/A	N/A	N- 4/19/16	N/A	N/A	N/A	N/A
CMU	Walls throughout	-----	NF	N/A	N/A	N- 4/19/16	N/A	N/A	N/A	N/A
Associated grout		-----	NF	N/A	N/A	N- 4/19/16	N/A	N/A	N/A	N/A
Top coat – plaster	At stage – right wall above	-----	NF	N/A	N/A	N- 4/19/16	N/A	N/A	N/A	N/A
Brown coat – plaster	CMU	-----	NF	N/A	N/A	N- 4/19/16	N/A	N/A	N/A	N/A
Sheetrock	Hard ceilings in Electrical, Boiler room, at Hall by room 35, Bathrooms (boys, girls, & adults) by media & Entry	-----	NF	N/A	N/A	N - 2/19/20	N/A	N/A	N/A	N/A
Joint compound		-----	NF	N/A	N/A	N - 2/19/20	N/A	N/A	N/A	N/A

**Type**

**Amount**

**Friability**

**Assessment Categories for Friable Materials**

T-TSI

SF-Square feet

F-Friable

1. Damaged or significantly damaged TSI

5: Suspect or proven ABCM with the potential for D (\*one moderate)

S-Surfacing

LF-Linear feet

NF-Non-friable

2. Damaged (D) surfacing

6: Suspect or proven ABCM with the potential for SD (\*one high)

M - Miscellaneous

3: Significantly damaged (SD) surfacing

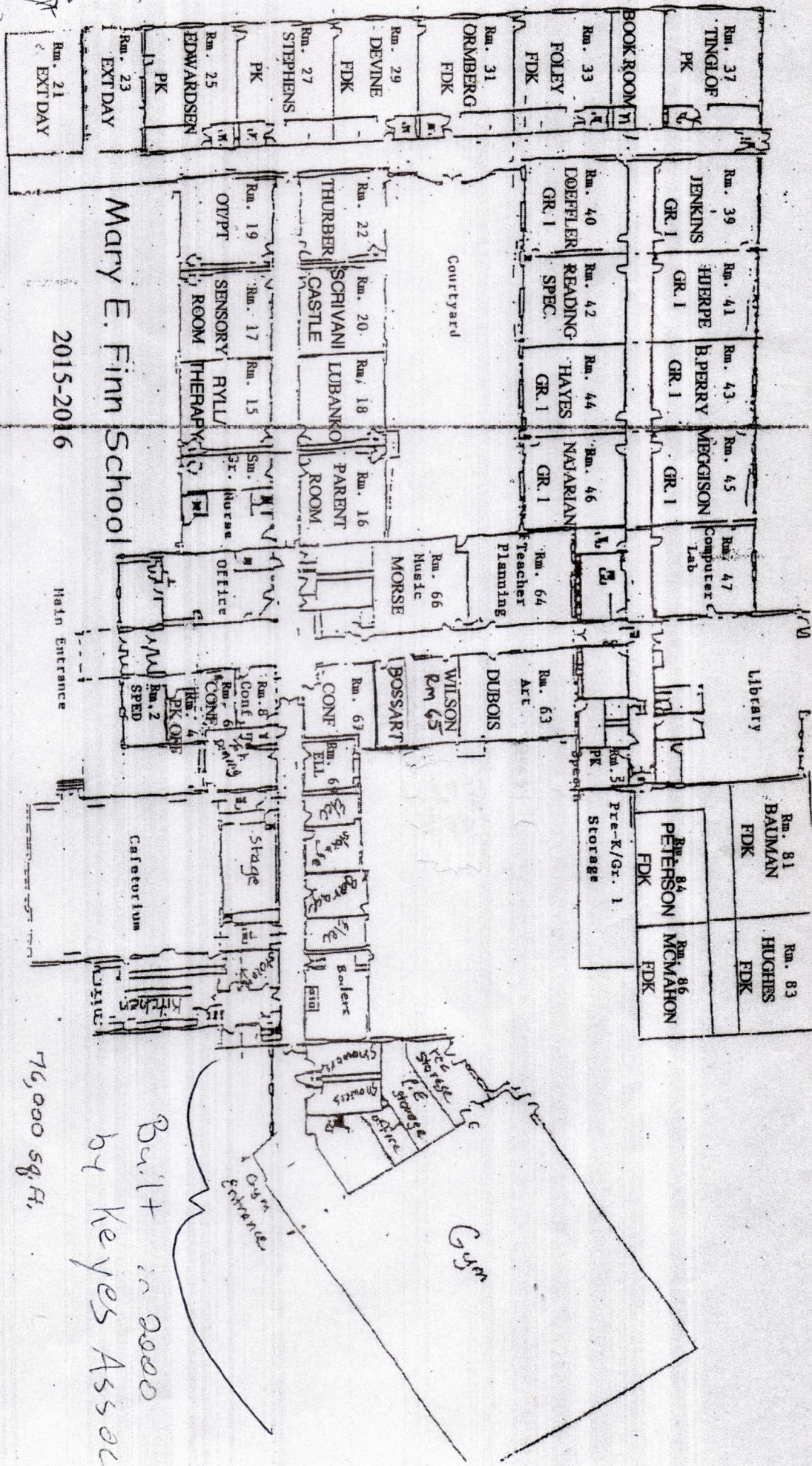
7. Any remaining suspect or proven ABCM (\*all low)

4: Damaged or significantly damaged misc.

\*Potential for future disturbance for categories 5, 6, & 7

Access, Vibration, Air Erosion: L-low M-medium H-high





Mary E. Finn School

2015-2016

Main Entrance

Built in 2000  
by Keyes Assoc.  
76,000 sq. ft.



P. Brent Trottier Middle School



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95 Beaver Street  
Waltham, MA 02453

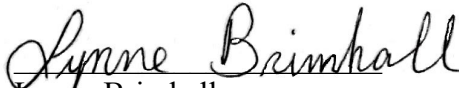
(781) 893-8330  
FAX (781) 893-4414  
[www.hubtesting.net](http://www.hubtesting.net)

REPORT FOR: Northborough-Southborough Public Schools  
53 Parkerville Road  
Southborough, MA 01772


ATTENTION: Keith Lavoie  
Assistant Superintendent of Operations

PROJECT: AHERA Three-Year Re-inspection

SUBJECT: P. Brent Trottier Middle School  
49 Parkerville Road  
Southborough, MA 01772

INSPECTOR(S):   
Lynne Brimhall  
Asbestos Inspector  
MA Cert. No.: AI 061691

PREPARED BY: Hub Testing Laboratory, Inc.

  
Lynne Brimhall  
Management Planner  
MA Cert. No.: AP900405

DATE: August 2023

Address: 49 Parkerville Rd. Southborough, MA 01772

Inspector Signature: Lynne Brimhall

[illegible]

Type	Amount	Friability	Assessment Categories for Friable Materials	
T-TSI	SF-Square feet	F-Friable	1. Damaged or significantly damaged TSI	5: Suspect or proven ABCM with the potential for D (*one moderate)
S-Surfacing	LF-Linear feet	NF-Non-friable	2. Damaged (D) surfacing	6: Suspect or proven ABCM with the potential for SD (*one high)
M - Miscellaneous			3: Significantly damaged (SD) surfacing	7. Any remaining suspect or proven ACBM (*all low)
			4: Damaged or significantly damaged misc.	<i>*Potential for future disturbance for categories 5, 6, &amp; 7</i>
				Access, Vibration, Air Erosion: L-low M-medium H-high



## B. Management Plan Documentation (AHERA Policies)

- Abatement Policy
- Training Policy
- Notification Policy
- Short Term Worker Policy
- Record Keeping Policy
- Designated Person Statements
- Assurance of Accreditations

## Abatement Policy

It is the policy of the Northborough-Southborough Public Schools that asbestos removal, repair and/or O&M activities will be conducted by contract personnel. All contracted personnel will be licensed under the Commonwealth of Massachusetts and will be accredited through the Environmental Protection Agency Model Accreditation Program.

### ORGANIZATIONAL CHART

The following is an administrative/organizational chart identifying personnel involved with the asbestos operations and maintenance program (O&M) at this facility:

<b><u>Name</u></b>	<b><u>Title</u></b>	<b><u>Phone Number</u></b>
Bryan Fantony	Designated Person Southborough Schools	508/485-2400 x65176 508/878-2503 cell
Charles Richardson	Designated Person Northborough Public Schools	508/351-7020 x 55411 774/415-4806 cell
Michael Gorman	Designated Person Algonquin Regional High School	508/351-7010 x 1035 774/258-1759
Hub Testing Laboratory	Contracted Inspector Management Planner Project Designer Project Monitor	781-893-8330
Keith Lavoie	Point of Contact	617-750-7589

1. Although these individuals will be responsible for the execution of the Operations and Maintenance Program for their facilities, they will not perform any of the O&M functions themselves or any work which will require the use of respiratory protection.
2. An outside contractor(s) under the direction of the Designated Person and the certified Abatement Project Designer will conduct the work and Emergency Response Team responsibilities.
3. If unable to contact the above parties, coordination should be conducted through Mr. Keith Lavoie.

## **DESIGNATED PERSON'S RESPONSIBILITIES**

The Designated Person's responsibilities include the following:

- a. Become knowledgeable of the results of the asbestos inspection.
- b. Have a working knowledge and understanding of the Management Plan.
- c. Ensure that all asbestos related activities are performed by appropriately trained individuals.
- d. Employ the services of outside consulting and contract personnel to assist in the implementation of the Management Plan.
- e. Comply with all federal, state and local regulations.

## **CUSTODIAL AND MAINTENANCE STAFF RESPONSIBILITIES**

The custodial and maintenance staff responsibilities include:

- a. Know and understand where ACBM is located in the building.
- b. Be able to recognize material, which has become damaged and requires a response.
- c. Know who the Designated Person is.
- d. Help to verify that the outside contractors do not damage an in-place ACBM.
- e. Notify the Designated Person of any observed changes to an existing ACBM.

## **PROHIBITED WORK/MAINTENANCE ACTIVITIES**

**All employees are prohibited from the following activities**

- a. Holes must not be drilled into asbestos-containing materials except where previously described using proper procedures.
- b. Plants or pictures must not be hung on structures covered with asbestos-containing materials

- c. Do not saw, sand or drill asbestos-containing floor tile except where previously described using proper procedures.
- d. Do not damage asbestos-containing materials while moving furniture or other objects.
- e. Do not install curtains, drapes, or dividers in such a way that they damage asbestos containing materials.
- f. Do not dust floors, ceilings, molding, or other surfaces in asbestos-contaminated environments with a dry brush or sweep with dry broom.
- g. Do not use an ordinary vacuum to clean up asbestos-containing debris.
- h. Do not remove asbestos-containing ceiling tiles.
- i. Do not remove ventilation system filters while dry.
- j. Do not shake ventilation system filters.

**When non-friable ACM is likely to become friable as a result of activities performed in the building, the material must be treated as if it were friable.**

## **RESPONSE PROCEDURES IN DISASTROUS SITUATIONS**

In disastrous situations such as tornadoes, fires, floods and earthquakes; asbestos containing materials may suffer significant damage and therefore release asbestos fibers and pose immediate hazards to human health and environment. The following procedures should be followed in these situations:

- a. Protect yourself from immediate danger before following any asbestos response procedures.
- b. Remove unauthorized personnel and restrict access.
- c. As soon as the immediate emergency has passed, vacate the area.
- d. Contact the Designated Person or his/her assistant and follow their instructions.

- e. The Designated Person will be responsible for contacting the Response Team or an asbestos abatement contractor and must issue a work permit order before the start of any asbestos abatement procedures.
- f. The Designated Person shall notify state and local authorities when required.
- g. The contractor must immediately take all measures to vacate the area of unauthorized personnel, put up warning and danger signs, and rope-off or close off the area.
- h. The Designated Person and his/her agent (Project Monitor) shall oversee a post-work inspection to assure that all asbestos-containing materials have been properly removed or repaired and cleaned-up prior to re-occupancy.

## **Training Policy**

### **A. TRAINING PROGRAM**

The key element in initiating and carrying out this Asbestos Operations and Maintenance Plan is the building custodial and maintenance staff. This group is responsible for daily awareness of ACM as they perform their tasks. The custodial and maintenance staff will report any indication of potential problems resulting from changes of ACM condition, area use, or in maintenance practices. The custodial and maintenance staff will receive the 2-Hour Awareness Training. The following elements should be presented in the training programs:

#### **Custodial and Maintenance Personnel**

- a. Introduction – General background on asbestos, common uses of asbestos in building materials, explanation of the Asbestos Operations and Maintenance Plan, abatement efforts to date, etc.
- b. Medical/Mechanisms for Exposure – Condensed version of medical review from the 16 hour “Operations and Maintenance” training, along with similar mechanisms for exposure, with emphasis on fiber entrainment mechanisms.
- c. Location of ACM and Presumed ACM
- d. Recognition of damage, deterioration and delamination of ACM.
- e. Name and telephone number of the Designated Person.

#### **Business Managers, IT Personnel, and Building Principals**

Business managers, IT Personnel and Building Principals shall attend training on an as requested basis.

Same as above however special attention will be made to the Administrations responsibility of over sight of potential asbestos concerns in their schools.

### **B. TRAINING UPDATE**

Training update sessions should be provided annually. The updating sessions should include all items listed in paragraph A – Training Program, plus any new issues or concerns, which may have arisen between sessions.



All custodial and maintenance staff and the Custodial and Maintenance Supervisors shall attend the update in-service training annually.

Business Managers and building principals shall attend the update in-service training as necessary.

All training records will be kept with the Asbestos O&M Plan.

### **C. NEW EMPLOYEE TRAINING**

Each new employee will be trained in asbestos 2-Hour Awareness Training within 60 days of hire.

Each new employee will be given a tour of the areas ACM is located.

All training records should be kept with the Asbestos O & M Plan.

### **D. SUGGESTED TRAINING COURSES FOR EMPLOYEES INVOLVED IN THE O&M PLAN**

Custodial & Maintenance Personnel	2-Hour Awareness Training
IT Professionals	2- Hour Awareness Training
School Administration (invited)	2-Hour Awareness Training
Custodial & Maintenance Personnel who will impact know and suspect ACBM	16-Hour Associated Worker Training

(It is not the intent of the Northborough-Southborough Public Schools to utilize 16 Hour Trained Workers at their schools at the time. All abatement activities will be contracted for.)

Designated Person	LEA Designated Person/Asbestos Coordinator Training, utilizing on-line training and 1 to 1 training with Hub Testing
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**E. APPROVED ASBESTOS TRAINING SOURCES**

<b>Providers Name</b>	<b>City/State</b>	<b>Phone Number</b>
<hr/>		
(Awareness Training) <b>Hub Testing Laboratory</b>	<b>Waltham MA</b>	<b>781-893-8330</b>
(Associated Worker Training) <b>Institute for Environmental Education</b>	<b>Wilmington MA</b>	<b>978-658-5272</b>
(Designated Person Training/Review) <b>Hub Testing Laboratory</b>	<b>Waltham MA</b>	<b>781-893-8330</b>

**And**

**EPA 910-B-96-01    How to Manage Asbestos in School Buildings, AHERA  
Designated Person Self Study Guide**

## **Notification Policy**

**Notification of asbestos containing materials and associated activities will take place in three forms; a notification to occupants as to the availability of the AHERA inspections and Management plan, an update on asbestos related activities within the schools and a notification as to the potential for asbestos containing materials to be present in routine mechanical spaces.**

**A. Availability of the AHERA Inspection and Management Plan.**

Annually the parents, guardians, employees and occupants will be notified as to the availability of the Asbestos Hazard Emergency Response Act Asbestos Inspections and Management Plan.

This notification will be conducted through:

A notice in the annual calendar sent out at the beginning of the school year and a notice located on the school systems web site. A copy of the notice will be also placed into the master AHERA file and each individual school file.

**B. Update of asbestos related activities.**

Annually the parents, guardians, employees and occupants will be notified as to the current status of asbestos related activities in the schools. This will cover items such as periodic surveillances, inspections, and abatement activities.

This notification will be conducted through:

A posting of a general bulletin on the bulletin boards in each school and Central office as well as a copy of the notice supplied to the Administrative council. A copy of the notice will also be placed into the master AHERA file and each individual school file.

C. Location of asbestos containing materials in routine maintenance areas.

The presence of asbestos containing materials will be posted in routine maintenance areas.

This notification will be conducted through:

The placement of yellow warning stickers immediately inside routine maintenance areas where asbestos containing materials are located. These will be areas such as crawlspaces, boiler rooms and electrical equipment spaces. The stickers will be standard manufactured in a bright yellow color. The wording shall be “Caution. Asbestos. Hazardous. Do Not Disturb Without Proper Training and Equipment.”

## Short Term Workers Policy

It is the policy of the Northborough-Southborough Public Schools that any visitor to the school must first go to the front office and get a pass.

Short term worker will be met by the Designated Person and escorted to the work area. A short review will be conducted with the Designated Person to determine if their work will impact any known or assumed asbestos containing material. The short-term worker will be made aware of the presence of asbestos and assumed asbestos containing materials in the school and will be asked to sign the form indicating their knowledge. If it is felt their work may impact any asbestos containing materials (known or assumed), then they will not be allowed to perform the operation and an alternative plan will be utilized. If any alternative plan cannot be utilized, the asbestos consultant will be notified.

In addition, a copy of the most recent 3 Year Re-Inspection Chart Report will be mailed out to companies that have a standing contract with the school for their review.

**SHORT TERM WORKER**  
**(Tel. repair personnel, plumbers, heating contractors etc.)**

<b>Name</b>	<b>Company</b>	<b>Date</b>	<b>Reason For Work</b>	<b>Has the Designated Person reviewed the location of ACBM or suspect ACBM with you?</b>	<b>Will your work impact any ACBM or suspect ACBM? (Yes or No)</b>

\*If your work in the building has the potential of impacting asbestos containing materials contact:

Bryan Fantony	Designated Person Southborough Public Schools	508/485-2400 ext. 65176 508/878-2503 cell
Charles Richardson	Designated Person Northborough Public Schools	508/351-7020 ext. 55411 774/415-4806 cell
Michael Gorman	Designated Person Algonquin Regional High School	508/351-7010 ext. 1035 774/258-1759 cell
Keith Lavoie	Point of Contact	617-750-7589 cell



## **Record Keeping Policy**

**A master file of all records associated with asbestos related activities in the Northborough-Southborough Public Schools will be maintained in a location designated by the Assistant Superintendent of Operations. Additionally, a copy of the most recent inspection/survey will be maintained in a central location at each individual school.**

The following records are required to be maintained for each type of activity:

### **Preventative Measure and Response Action For Friable And Non-Friable**

- A. A detailed written description of measures or action taken.  
Including:
- B. Method used
- C. Reason for choosing method
- D. Start and completion dates
- E. Name and addresses of all contractors involved
- F. State accreditation and accreditation numbers
- G. Name and location of disposal facility

### **For Any Air Samples That Are Collected For Completion Purposes**

- A. Name and signature of any person collecting completion air samples
- B. Location where samples were collected
- C. Date of collection
- D. Name and address of laboratory analyzing samples
- E. Date of analysis
- F. Results of analysis
- G. Method of analysis
- H. Name and signature of person performing analysis
- I. Laboratory compliance with accreditation requirements

### **For Each Persons Required To Be Trained Under Section 763.92 (A) (1) (2) (Awareness And Associated Worker Training)**

- A. Person's name
- B. Job title
- C. Date training was conducted
- D. Location of the training
- E. Number of hours of training completed

For Each Time That Periodic Surveillance Is Conducted

- A. Name of person performing surveillance
- B. Date of surveillance
- C. Any changes in the condition of the known or assumed asbestos containing materials

For Each Time Cleaning Is Performed Under 763.91 c

- A. Person performing cleaning,
- B. Date of cleaning
- C. Location cleaned
- D. Method used to clean

For each O&M activity is conducted

- A. Name of each person involved in activity
- B. Start and completion date of activity
- C. Location where activity occurred
- D. Description of activity
  - i. including
- F. Preventative measures used
- G. If ACBM is removed name and location of disposal facility

For Each Major Abatement Activity

- A. Name and signature of each person performing activity
- B. State and number of accreditation of each person performing activity
- C. Start and completion date
- D. Location where activity occurred
- E. Description of activity including preventative measures
- F. Name and location of disposal facility

For Each Fiber Release Episode

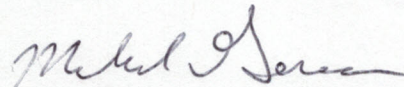
- A. Date of episode
- B. Location of episode
- C. Method of repair
- D. Preventative measures or response action taken
- E. Name of each person performing work
- F. Name and location of disposal facility

In addition, copies of notifications made to parents, guardians, employees and occupants will be maintained in the AHERA record.

Mr. Michael Gorman  
Designated Person  
Facilities Manager  
Algonquin Regional High School  
79 Bartlett Street  
Northborough, MA 01532

As Designated Person for the Algonquin Regional School District, I will hereby:

- Ensure that activities of any persons that perform inspections, re-inspection, and periodic surveillance, develop and up date Management Plans, and implement response actions, including operations and maintenance activities, are carried out in accordance with 40 CFR Part 763 Subpart E.
- Ensure that all custodial and maintenance employees are properly trained as required by 40 CRF Part 763 Subpart E and other applicable federal and/or state regulations (e.g., the OSHA standards for construction, EPA worker Protection Rule, and/or applicable state regulations).
- Ensure that workers and building occupants or their legal guardians are informed at least once each year about inspections, response actions, and post response action activities including periodic re-inspection and surveillance activities that are planned or in progress.
- Ensure that short term workers (e.g., telephone repair workers, utility workers, computer wiring technicians, exterminators, etc.) who may come into contact with asbestos in a school are provided information regarding the location of ACBM and suspect ACBM assumed to be ACM.
- Ensure that warning labels are posted in accordance with 40 CFR Part 763.95.
- Ensure that Management Plans are available for inspection and notification of their availability has been provided as specified in the Management Plan and under 40 CFR Part 763.93 (g).
- Furthermore, I hereby state that I am/will be trained with a basic knowledge of:
  - Health effects of asbestos
  - Detection, identification and assessment of ACM
  - Options for controlling ACBM
  - Asbestos management programs
  - Relevant federal and state regulations concerning asbestos, including those in 40 CFR Part 763 Subpart E and those of the Occupational safety and Health Administration, US Department of Labor, the US Department of Transportation and the US Environmental Protection Agency.



Mr. Michael Gorman  
Designated Person  
Facilities Manager  
Algonquin Regional High School



Mr. Michael Gorman  
Designated Person  
Facilities Manager  
Algonquin Regional High School  
79 Bartlett Street  
Northborough, MA 01532

As Designated Person of the Algonquin Regional High School, I hereby assure that all persons who have or will:

- Inspect for ACBM in school buildings,
- Prepare Management Plans for such buildings,
- Design response actions and/or abatement activities and/or
- Conduct response actions with respect to friable and non-friable ACBM in such schools
- Shall be accredited as required by federal and state regulations.

A handwritten signature in dark ink, appearing to read "Michael Gorman", written over a horizontal line.

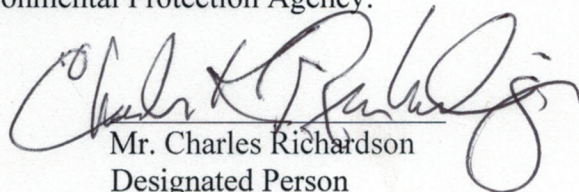
Mr. Michael Gorman  
Designated Person  
Facilities Manager  
Algonquin Regional High School



Mr. Charles Richardson  
Designated Person  
Facilities Manager  
Northborough School District  
Robert E Melican Middle School  
145 Lincoln Street  
Northborough, MA 01532

As Designated Person for the Northborough School District, I will hereby:

- Ensure that activities of any persons that perform inspections, re-inspection, and periodic surveillance, develop and up date Management Plans, and implement response actions, including operations and maintenance activities, are carried out in accordance with 40 CFR Part 763 Subpart E.
- Ensure that all custodial and maintenance employees are properly trained as required by 40 CRF Part 763 Subpart E and other applicable federal and/or state regulations (e.g., the OSHA standards for construction, EPA worker Protection Rule, and/or applicable state regulations).
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  - Asbestos management programs
  - Relevant federal and state regulations concerning asbestos, including those in 40 CFR Part 763 Subpart E and those of the Occupational safety and Health Administration, US Department of Labor, the US Department of Transportation and the US Environmental Protection Agency.



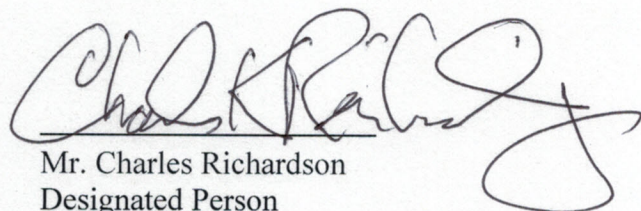
Mr. Charles Richardson  
Designated Person  
Facilities Manager  
Northborough School District



Mr. Charles Richardson  
Designated Person  
Facilities Manager  
Northborough School District  
Robert E Melican Middle School  
145 Lincoln Street  
Northborough, MA 01532

As Designated Person of the Northborough School District, I hereby assure that all persons who have or will:

- Inspect for ACBM in school buildings,
- Prepare Management Plans for such buildings,
- Design response actions and/or abatement activities and/or
- Conduct response actions with respect to friable and non-friable ACBM in such schools
- Shall be accredited as required by federal and state regulations.

A handwritten signature in black ink, appearing to read 'Charles Richardson', with a large, stylized flourish extending from the end of the signature.

Mr. Charles Richardson  
Designated Person  
Facilities Manager  
Northborough School District



Mr. Bryan Fantony  
Designated Person  
Facilities Manager  
Southborough School District  
P. Brent Trotter Middle School  
49 Parkerville Road  
Southborough, MA 01772

As Designated Person for the Southborough School District, I will hereby:

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- Ensure that all custodial and maintenance employees are properly trained as required by 40 CFR Part 763 Subpart E and other applicable federal and/or state regulations (e.g., the OSHA standards for construction, EPA worker Protection Rule, and/or applicable state regulations).
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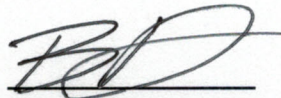
Mr. Bryan Fantony  
Designated Person  
Facilities Manager  
Southborough School District



Mr. Bryan Fantony  
Designated Person  
Facilities Manager  
Southborough School District  
P. Brent Trottier Middle School  
49 Parkerville Road  
Southborough, MA 01772

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- Inspect for ACBM in school buildings,
- Prepare Management Plans for such buildings,
- Design response actions and/or abatement activities and/or
- Conduct response actions with respect to friable and non-friable ACBM in such schools
- Shall be accredited as required by federal and state regulations.



Mr. Bryan Fantony  
Designated Person  
Facilities Manager  
Southborough School District

## C. Credentials



THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DEPARTMENT OF LABOR STANDARDS

Michael Flanagan  
Director

**Asbestos Management Planner**

**LYNNE BRIMHALL**

Eff. Date 11/17/22

Exp. Date 11/17/23

AP900405

Member of C.O.N.E.S.

DOSR

BOS

23







*This is to certify that*

**Lynne G. Brimhall**

147 Franklin Ave, Apt 2, Chelsea, MA 02150

MA DLS Asbestos Management Planner License# AP900405

*has completed the requisite training by Video Conference, and has passed an examination for  
reaccreditation*

**Asbestos Management Planner Refresher**

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Zoom Video Conference

Institute for Environmental Education 16 Upton Drive Wilmington, MA 01887

November 15, 2022

Course Dates

22-4509-136-231902

Certificate Number

November 15, 2022

Examination Date

November 15, 2023

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

www.ieetrains.com

**INSTITUTE FOR ENVIRONMENTAL EDUCATION**



THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DEPARTMENT OF LABOR STANDARDS

Michael Flanagan  
Director

Asbestos Inspector

LYNNE BRIMHALL

Eff. Date 11/17/22

Exp. Date 11/17/23

AI061691

Member of C.O.N.E.S.

DPSR

BOS

23







*This is to certify that*

**Lynne G. Brimhall**

147 Franklin Ave, Apt 2, Chelsea, MA 02150

MA DLS Asbestos Inspector License# AI061691



*has completed requisite training by Video Conference, and has passed an examination for  
reaccreditation as:*

**Asbestos Inspector Refresher**

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Zoom Video Conference

Institute for Environmental Education 16 Upton Drive Wilmington, MA 01887

November 15, 2022

Course Dates

22-4312-106-231902

Certificate Number

November 15, 2022

Examination Date

November 15, 2023

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

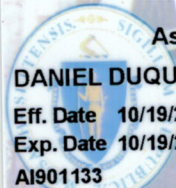
www.ieetrains.com

**INSTITUTE FOR ENVIRONMENTAL EDUCATION**



THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DEPARTMENT OF LABOR STANDARDS

Michael Flanagan  
Director



Asbestos Inspector

DANIEL DUQUE

Eff. Date 10/19/22

Exp. Date 10/19/23

AI901133

Member of C.O.N.E.S.

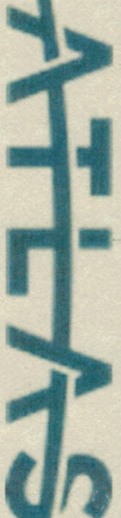
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# CERTIFICATE OF ACHIEVEMENT

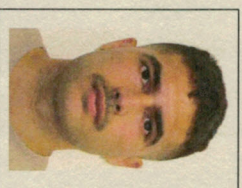
*This certifies that*

**Daniel Duque**

*has successfully completed the*  
**4 Hour Asbestos Site Inspector Refresher Training**  
**Asbestos Accreditation Under TSCA Title II**  
**40 CFR Part 763**

*conducted by:*

ATC Group Services LLC dba ATLAS Technical  
73 William Franks Drive  
West Springfield, MA 01089  
(413) 781-0070



*Gregory Q. Bernard*

*Gregory Q. Bernard*

Principal Instructor: Gregory Morsch

August 10, 2023  
Date of Course

August 10, 2024  
Expiration Date

Regional Training Director: Gregory Morsch

STAR - 7501  
Certificate Number

August 10, 2023  
Examination Date





THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DEPARTMENT OF LABOR STANDARDS

Michael Flanagan  
Director

**ASBESTOS INSPECTOR**

**ERIN MAGUIRE**

**Eff.Date: 01/25/2023**

**Exp.Date: 01/25/2024**

**AI901068**

**Member C.O.N.E.S.**

**BOS NEW**



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*This is to certify that*

**Erin E. Maguire**

80 Willet Street, Quincy, MA 02170



*has completed requisite training, and has passed an examination for reaccreditation as:*

## Asbestos Inspector Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

### Course Location

Zoom Video Conference

Institute for Environmental Education 16 Upton Drive Wilmington, MA 01887

November 3, 2022

Course Dates

22-4311-106-275489

Certificate Number

November 03, 2022

Examination Date

November 03, 2023

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

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**INSTITUTE FOR ENVIRONMENTAL EDUCATION**



[EARLY FEASIBILITY PHASE] REPORT TO

**ARROWSTREET**

APRIL 26, 2024

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**HAZARDOUS BUILDING MATERIALS INSPECTION  
MARGARET A. NEARY ELEMENTARY SCHOOL  
53 PARKERVILLE ROAD  
SOUTHBOROUGH, WORCESTER COUNTY, MASSACHUSETTS**



Submitted by:

*dave gorden*

Dave Gorden (AI-900459)

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Project Number: 8404



## 1. INTRODUCTION

PEER Consultants, P.C. (PEER) [Asbestos Consulting Service Provider Certificate, AF66] conducted a limited, non-destructive asbestos in building materials inspection (the "Scope"), during Early Feasibility Phase, and related to the proposed Massachusetts School Building Authority (MSBA) project and Associated Work (the "Work") at the Margaret A. Neary Elementary School building (the "Building"), 53 Parkerville Road, Southborough, Worcester County, Massachusetts (the "Property").

The Scope was conducted on the following date: April 17, 2024; by MA Licensed Asbestos Inspector/Management Planner Dave Gorden [PEER Consultants, 10 Mall Road, Suite 301, Burlington, MA 01803; 781-238-8880] in general accordance with PEER's Proposal to Arrowstreet (the "Client"), dated February 4, 2024. In consideration of this proposal, and in consideration that a solution under the MSBA Modules has not yet been determined for the Building on the Property, the Client requested that PEER only allow for one day on the Property at this Early Feasibility Phase in order to perform a Scope under Task 3.1.A. (and related tasks: Task 3.2.A and Task 3.2.B).



PEER notes that for this Early Feasibility Phase Report, and as it relates to suspect ACM Sampling, and as discussed with the Client, the intent of this specific "early feasibility phase" report was for one asbestos inspector to collect as many suspect ACM samples within the time frame of the initial day of collection as physically possible. The overall intent was not to collect (at this "early feasibility phase") suspect ACM samples according to certain regulatory requirements [refer to 454 CMR 28.13 (3)]. Specifically, 454 CMR 28.13 (3)(b)5. cites that for "miscellaneous material, in a manner sufficient to determine whether material is ACM or not ACM, a licensed inspector must collect bulk samples from each homogeneous area of friable miscellaneous material that is not assumed to be ACM." In addition, 454 CMR 28.13 (3)(b)6. cites that for "non-friable suspected ACM. if any homogeneous area of non-friable suspected ACM is not assumed to be ACM, then a licensed inspector must collect, in a manner sufficient to determine whether the material is ACM or not ACM, bulk samples from the homogeneous area of non-friable suspected ACM that is not assumed to be ACM."

Depending on the desired solution for the Building on the Property by the MSBA and/or the Owner and/or the Architect, PEER anticipates that additional hazardous building material sampling and investigation will be necessary to achieve a "thorough" inspection under 310 CMR 7.15; and to achieve these requirements under 454 CMR 28.13.

As such, for the purposes of this Early Feasibility Phase Report, PEER considers that all "NAD" (No Asbestos Detected) shown in Table 1A below shall still be considered to be "presumed ACM", i.e., building materials that potentially contain asbestos until such a time that the material is tested and found to be non-asbestos containing. The material is "presumed" to contain asbestos unless it is demonstrated, in accordance with 454 CMR 28.00, that the presumed ACM does not contain asbestos.



Where accessible on the date of the Scope, the interior and exterior building components associated with the Work were inspected, and initial homogeneous areas of suspect asbestos-containing materials (ACM) were visually identified and documented. The Building was "in use" and occupied during the period of the Scope. Although a reasonable effort was made to inspect accessible suspect ACM associated with the

Scope, additional suspect but un-sampled building materials may be located in inaccessible and/or concealed and/or unsafe areas on the interior (or exterior) of the Building, and also may be located in other areas of the interior (or exterior) of the Building not assessed under this limited Scope, and/or not anticipated to be included in the Work. Suspect ACM samples were collected in general accordance with the sampling protocols outlined in United States Environmental Protection Agency (EPA) Regulation 40 Code of Federal Regulations (CFR) Part 763 Subpart E 763.86, known as the Asbestos Hazard Emergency Response Act (AHERA) and 454 CMR 28.00. Suspect ACM samples were delivered to an accredited laboratory for analysis by Polarized Light Microscopy (PLM).

Please note that according to “Final Amendments to 310 CMR 7.15 U Asbestos, dated 7/12/19”, the owner/operator of a facility or facility component that contains suspect (asbestos containing material) {ACM} shall, prior to conducting any demolition or renovation, employ or engage an asbestos inspector to thoroughly inspect the facility or facility component, or those parts thereof where the demolition or renovation will occur, to identify the presence, location, amount and condition of any ACM or suspect ACM and to prepare a written asbestos evaluation report. The evaluation shall identify and assess suspect ACM located in all areas that will be breached or otherwise affected by demolition or renovation activities, including, but not limited to wall cavities, areas above ceilings and under/between multiple layers of flooring.

In consideration of this information, PEER recommends that a comparison of sampled and analyzed building materials included in PEER’s limited Scope be reviewed against the proposed building materials, which may be impacted by any future Work, and if necessary, in coordination with other trades, additional samples of building materials (i.e., a thorough inspection), including irreparable destructive sampling of building materials, be collected, and analyzed for asbestos, prior to the (finalization and) issuance of bid / contract documents and prior to any site work.

The Massachusetts Health and Human Services Database (the “Database”) for ‘Lead Safe Homes’ was searched as of April 25, 2024. This Database (Lead Safe Homes 1.0) is no longer updated however it may indicate whether an address has been inspected for lead, has had any lead hazards, or has a letter of compliance (105 CMR 460.00).

The address for the Building (53 Parkerville Rd., Southborough, MA) **was not listed** in this database. The Massachusetts Childhood Lead Poisoning Prevention Program’s Lead Safe Homes 2.0 database was also searched as of April 25, 2024 for lead inspection reports and compliance documents for the Building (53 Parkerville Rd., Southborough, MA), and the database reported “**no documents found**”.

The Occupational Safety and Health Administration (OSHA) 29 CFR 1926.62 Subpart D, Lead, applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard (OSHA 29 CFR 1926.62 Subpart D, Lead). Construction work is defined as work for construction, alteration and/or repair, including painting and decorating. Construction work includes but is not limited to the following: Demolition or salvage of structures where lead or materials containing lead are present; Removal or encapsulation of materials containing lead; New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead; Installation of products containing lead; Lead contamination/emergency cleanup; Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed, and Maintenance operations associated with the construction activities described in this paragraph.

The employer shall include lead in the program established to comply with the Hazard Communication Standard (HCS) (§ 1910.1200). The employer shall ensure that each employee has access to labels on containers of lead and safety data sheets, and is trained in accordance with the provisions of HCS. Where lead is present, until the employer performs an employee exposure assessment and documents that the employee performing any of the listed tasks is not exposed above the permissible exposure limit (PEL), the employer shall treat the employee as if the employee were exposed above the PEL.

*Project Objective:*

PEER understands that this limited hazardous building materials inspection was requested by the Facility Owner/Operator of the Margaret A. Neary Elementary School building to gather information on the potential for the presence or absence of hazardous building materials related to the Work at the existing Building on the Property, and in order to satisfy the requirements of the USEPA Regulation 40 CFR Part 61, Subpart M, National Emission Standards for Hazardous Air Pollutants (NESHAP).

The objective of this limited hazardous building material inspection was to inspect readily accessible constructs, finishes, and other building materials that may be affected by the proposed Work at the Building and that may contain asbestos or that may contain lead in paint.

## **2. GENERAL BUILDING PROJECT DESCRIPTION**

Based on information within the Request for Designer Services, the Town of Southborough is a suburban town with approximately 10,400 residents located fifteen miles east of Worcester, and 25 miles west of Boston. Southborough possesses a highly skilled labor force, a diversified economy, high-wage employment, and a three-decade record of growth. Many businesses and non-profit organizations choose Southborough because of its highly educated workforce and its close proximity to rail, air, bus, and highway services. Southborough has a stop on the MBTA's Framingham/Worcester line which offers service from Worcester to Boston and the Metropolitan Boston area.

The town government is an open town meeting form of government. The five elected members of the Select Board are the town's executive officers. The Town Administrator is appointed by the Select Board and is responsible for the daily operations of the town and the supervision of town employees. The School Committee consists of five elected members and has oversight and responsibility for the school system. The Southborough Public School District is a high performing school district. The K-8 District is comprised of three elementary schools and one middle school. Student enrollment for the 2022-2023 school year was 1,270 students as of October 1, 2022. The District's mission is to educate, inspire, and challenge. The District is centered in the core values of integrity, empathy, inclusivity, equity, perseverance, and respect.

The existing building is a structural block construction with masonry in-fill walls and exterior face brick veneer. Steel roof joists support a flat Carlisle EDPM membrane roof, which was replaced in 1990. An addition of two (2) modular classrooms occurred at the building in 2001, adding 2,744 square feet. The interior finishes include vinyl roll, vinyl asbestos tile, ceramic tile, vinyl gym flooring, and quarry tile as well as exposed concrete flooring and concrete block walls, and plaster, acoustic tile and lay-in acoustic tile (LAT) ceilings. Doors and windows are original construction. There has been no significant modification from the original design at the building. An upgrade of the HVAC equipment, generator, and electrical system was completed in 2007. This upgrade also included new clocks and a communication system. A voice over IP phone system was installed in 2018.

### **3. FIELD ACTIVITIES**

#### **3.1 Asbestos Inspection**

The asbestos inspection was completed by Mr. Dave Gorden, Massachusetts Department of Labor Standards (DLS) licensed asbestos inspector (AI 900459). Multiple samples of suspect building materials were collected to meet the requirements of the sampling protocols established in the USEPA Regulation 40 CFR Part 763 Subpart E 763.86, known as the AHERA, 454 CMR 28.00, and the OSHA regulations. A summary of inspection activities is provided below.

##### **3.1.1 Visual Assessment**

Asbestos inspection activities were initiated with limited, visual observation of the interior and exterior spaces of the Building associated with the proposed Work to identify homogeneous areas of suspect ACM. A homogeneous area is an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in size, color and texture and was applied at approximately the same time. In general, a homogeneous area may consist of building materials that appear similar throughout in terms of size, color, and texture with consideration given to the suspected date of application. The interior and exterior assessment was conducted in visually accessible areas of the interior and exterior portion of the Building proposed for renovation / demolition related to the proposed Work.

##### **3.1.2 Physical Assessment**

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable asbestos material is defined by the EPA as “any material containing more than 1 percent asbestos as determined using the method specified in Appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure”.

MADEP defines a Friable Asbestos-Containing Material, as a material, “when dry, can be crumbled, shattered, pulverized or reduced to powder by hand pressure or any non-friable ACM that has been subjected to sanding, grinding, cutting, or abrading or has been crumbled, shattered or pulverized by mechanical means such as, but not limited to, the use of excavators, bulldozers, heavy equipment, or power and/or hand tools”.

Friability was assessed by physically touching suspect materials. If any **friable** building materials were determined by the laboratory to be asbestos containing, these materials may have been classified into one of the three following condition categories by the asbestos inspector:

- “Good” condition (G); material with no visible damage or deterioration; or showing only very limited damage or deterioration.
- “Damaged” condition (D); materials with greater than 1% although less than 10% distributed damage or less than 25% localized damage. Damage is determined when deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or, if applicable, which has delaminated such that its bond to the substrate (adhesion) is inadequate or which for any other reason lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from

the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM; or damage to jacketing or coatings; and

- “Significantly Damaged” condition (SD); materials where damage impacts at least 10% of a localized subject surface area or if the damage is evenly distributed representing an area of at least 25% of the subject surface area.

### **3.1.3 Asbestos - Sample Collection**

Based on results of the visual observations of suspect building materials, bulk samples of suspect ACM were collected in general accordance with USEPA AHERA (and 454 CMR 28.00) sampling protocols. Samples of suspect building materials were collected from randomly selected locations in each homogeneous area with the access assistance of representatives from Margaret A. Neary Elementary School, the Town of Southborough, and the Client in order to facilitate the sampling of suspect building materials that may be disturbed by the future renovation / demolition activities related to the proposed Work. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable plastic containers, labeled with unique sample numbers using an indelible marker, and appropriate chain-of-custody documentation was completed for the samples, prior to delivering and then relinquishing the samples to the analytical laboratory.

*April 17, 2024*

PEER collected approximately 90 bulk samples from 41 discrete, homogeneous areas of suspect ACM associated with the interior and exterior of the Building on the Property. The suspect ACM included: *glazing putty, coating, acoustical wall tile, resilient floor tile, mastic, cement board, mortar, cementitious material, frame caulk, coating, concrete masonry units, other caulk, cove base, acoustical ceiling tile, gypsum wall board, joint compound / joint tape, sealant, canvas, brick, concrete,*

The selection of sample locations and frequency of sampling were based on PEER’s observations and the assumption that similar materials in the same area are homogeneous in content. PEER did not collect samples from suspect ACM associated with any other portions of the Building or areas on the Property, not specifically identified in the chain of custody (COC) included in Attachment A. However, homogeneous areas of suspected ACM may extend into other portions of the Building beyond those areas in which ACM were sampled, and beyond areas which may have been included in the Scope and the proposed Work at this phase of the project. A summary of suspect ACM samples collected during the inspection is included as Table 1A. An EMSL Analytical, Inc. (EMSL) laboratory Test Report and associated COCs for the suspect ACM is included as Attachment A of this Report.

### **3.1.4 Asbestos - Sample Analysis**

Bulk samples of suspected ACM were submitted under COC to EMSL of Woburn, Massachusetts for analysis by PLM coupled with dispersion staining techniques per EPA methodology EPA 600/R-93/116 and/or EPA 600/M4-82-020 "Method for the Determination of Asbestos in Bulk Building Materials" (EPA/600/R-93/116, July 1993). The percentage of asbestos, where applicable, was determined by microscopic visual estimation or point counting.

OSHA and EPA define ACM as a material which contains greater than 1% asbestos by qualitative or quantitative analysis techniques. MADEP defines ACM as “any material containing 1% or more asbestos

as determined by a laboratory using protocols set forth in the Method for the Determination of Asbestos in Bulk Building Materials found in EPA report EPA/600/R-93/116, or another method as directed by the Department". The EPA NESHAP requires quantitative analysis, commonly referred to as a "point count," for all qualitative analysis results when asbestos is detected in concentrations <1% to 10%. However, under common practice, qualitative results greater than or equal to 2% and <10% are often accepted to be ACM.

If the laboratory determined that the building materials contained <1% asbestos, depending on the building material type, the samples may have been re-analyzed via the Asbestos Analysis of Non-Friable Organically Bound Materials by Transmission Electron Microscopy (TEM) via "Method for the Determination of Asbestos in Bulk Building Materials" (EPA/600/R-93/116 Section 2.5.5.1) or Quantitation using the 400 Point Count Procedure.

This reanalysis was not applicable to these ACM sample analyses.

In general, except if and where noted on the "Special Instructions and/or Regulatory Requirements" section of the COC, or the "Positive Stop – Clearly Identify Homogeneous Areas" section of the COC for the specific sampling date, the laboratory was instructed to analyze all samples from each homogeneous area. The analysts described below were overseen by Mr. Steve Grise, Laboratory Manager. EMSL is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP Accreditation No. 101147-0).

At the Building, for samples A-1 through A-63, Mr. John McCarthy, Mr. Kevin McKenzie, and Ms. Ava Kopellas; Analysts, provided the asbestos analytical services for EMSL. The samples (A-1 through A-63) were kept under custody by PEER until they were delivered to and relinquished to EMSL on April 19, 2024. Sample results for A-1 through A-63 were received electronically by PEER on April 23, 2024.

### **3.2 Lead in Paint Inspection**

The limited lead in paint and lead in coating inspection on interior building materials was completed by Mr. Dave Gorden, Massachusetts Lead Safe Renovator Supervisor (22-4561-374-251190). PEER collected representative homogeneous paint or coating samples on substrates found on the interior of the Building on the Property that may be subject to disturbance during the proposed Work. Homogenous paints / coatings may be defined as areas of similar paint or coating history, such as color, consistency, and location.

#### **3.2.1 Lead in Paint – Sample Collection**

The selection of sample locations and frequency of sampling were based on PEER's observations, the assumption that similar painted materials in the same area on the same surface are homogeneous in content.

On April 17, 2024, PEER collected three paint/coating samples. These paint / coating samples were collected from building materials associated with the proposed Work on the interior of the Building on the Property by swabbing the surface with a 3M™ LeadCheck™ Swab.



PEER understands that EPA has been informed that, as of October 2023, 3M has suspended the production and sale of 3M™ LeadCheck™ test kits. Consumers may continue to use 3M™ LeadCheck™ test kits they may already have on hand. EPA will continue to recognize the 3M™ LeadCheck™ test kit, or any already recognized test kit, should it be transferred to another entity, provided that the formulation does not change and no new test kit that meets both response criteria is recognized.

The 3M™ LeadCheck™ Swab has no shelf life and EPA recognizes that when used by a Certified Renovator, the 3M™ LeadCheck™ lead test kit can reliably determine that regulated lead-based paint is not present on wood, ferrous metal (alloys that contain iron), or drywall and plaster surfaces. In Massachusetts.

EPA recognizes that when used by trained professionals, the Commonwealth of Massachusetts lead test kit can reliably determine that regulated lead-based paint is not present on drywall and plaster; it is not recognized for use on wood and ferrous metal (alloys that contain iron) surfaces.

The Swab immediately provides an accurate but qualitative (yes/no) confirmation of the presence of lead in paint, i.e., “red means lead.” According to the manufacturer, 3M™ LeadCheck™ Swabs reliably detect lead in paints at 0.5% (5,000 ppm), and 3M™ LeadCheck™ Swabs may indicate lead in some paint films as low as 0.06% (600 ppm).

Please note that lead may still occur in paints and coatings at the Building below the concentration that 3M™ LeadCheck™ Swabs can reliably detect lead in paints; therefore, Title 29 - Subtitle B - Chapter XVII - Part 1926 - Subpart D - § 1926.62 is made applicable to all Work associated with the Scope at the Building.

PEER did not collect samples from suspect lead in paint or lead in coatings associated with any other portions of the Building or areas on the Property, not specifically identified in Table 2A. In addition, PEER did not collect samples from areas near the Building not anticipated to be impacted by the proposed Work.

## **4. REGULATORY OVERVIEW**

### **4.1 Asbestos**

USEPA regulation 40 CFR 61, Subpart M, NESHAP regulates asbestos fiber emissions during renovation or demolition activities and asbestos waste disposal practices. It also requires one to thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM.

Under NESHAP, asbestos-containing building materials are classified as Friable or Category I non-friable or Category II non-friable ACM. Friable ACM are those materials containing more than 1% asbestos that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. Category I non-friable ACM includes packings, gaskets, resilient floor coverings and asphalt roofing products containing more than 1% asbestos. Category II non-friable ACM are any materials other than Category I materials that contain more than 1% asbestos.

Friable ACM, along with Category I and Category II non-friable ACM which is in poor condition and has become friable or which will be subjected to drilling, sanding, grinding, cutting or abrading and which

could be crushed or pulverized during anticipated renovation or demolition activities are considered regulated asbestos containing material (RACM).

In the Commonwealth of Massachusetts, asbestos activities are regulated by the Massachusetts Department of Environmental Protection (DEP) [310 CMR 7.15: Asbestos, dated July 12, 2019], and by the Massachusetts Executive Office of Labor and Workforce Development (EOLWD) under 454 CMR 28.00.

According to 310 CMR 7.15 (2)(a), 310 CMR 7.15 applies to any persons engaged in asbestos abatement activities or associated activities or actions set forth in 310 CMR 7.15(3), and to activities associated with such asbestos abatement activities, including, but not limited to, notifications, inspections, visual inspections, and recordkeeping.

According to 454 CMR 28.01 (2)(a), 454 CMR 28.00 applies to (a) all work, including construction, demolition, alteration or repair, involving any building or structure, including those owned or leased by the commonwealth or any of its political subdivisions or authorities, where such work involves the use or handling of asbestos or material containing asbestos, including the disposal of materials containing asbestos and asbestos contaminated waste. 454 CMR 28.00 also applies to asbestos training, consultation and/or analytical services including, but not limited to:

1. Asbestos inspection and hazard assessment services;
2. The preparation of asbestos project designs, asbestos project oversight and/or monitoring;
3. Asbestos training required by 454 CMR 28.00; and
4. Asbestos analysis performed in connection with any of the above services.

Massachusetts regulations require that any asbestos-related activity conducted in the Commonwealth be performed by personnel licensed by the EOLWD Division of Safety. Asbestos abatement must be performed by Massachusetts-licensed asbestos abatement contractors in accordance with a Project Design prepared by an MA-Licensed Asbestos Designer. Third-party clearance air monitoring must be conducted at the completion of abatement activities. Management Plans developed for the in-place management of asbestos-containing materials must be developed by an EOLWD-licensed Management Planner.

RACM must be removed prior to demolition activities. The owner or operator of a facility must provide DEP (and EPA) with written notification of planned removal activities at least 10 working days prior to the commencement of asbestos abatement activities. In addition, certain cities and towns, including health departments and fire departments, in the Commonwealth of Massachusetts may have additional notification requirements.

The U. S. Occupational Safety and Health Administration (OSHA) Asbestos standard for construction (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained at or below 0.1 asbestos fibers per cubic centimeter of air (0.1 f/cc) as an 8-hour time weighted average (TWA) and not exceed 1.0 fibers per cubic centimeter of air (1.0 f/cc) over a 30-minute time period known as an excursion limit (EL). The TWA and EL are known as OSHA's permissible exposure limits (PELs). The OSHA standard classifies construction and maintenance activities which could disturb ACM; and specifies work practices and precautions which employers must follow when engaging in each class of regulated work.

The DLS Asbestos Program (the "Program") is responsible for the regulation of occupational asbestos exposure in Massachusetts. The Program works with employers, employees, unions, and state and local

agencies to create healthier and safer work conditions for Massachusetts workers through site visits, analytical services, and technical information. The Program aids in the coordination of OSHA, EPA, and Multi-State regulatory authorities along with the Consortium of North Eastern U.S. States (CONES) in the common goal of protecting the public from long term damage from excessive asbestos exposure.

## **4.2 Lead in Paint**

### *EPA Renovation, Repair and Painting (RRP) Rule*

EPA's RRP rule was published on April 22, 2008, under the authority of the Toxic Substances Control Act (TSCA). RRP was effective on April 22, 2010 and addresses lead-based paint hazards created in target housing and child-occupied facilities.

Target housing is a home or residential unit built before 1978. There are exceptions for elderly and disable persons and zero-bedroom dwellings. A child-occupied facility is a pre-1978 building that is visited regularly by the same child (under 6 years of age), for at least two different days during the week, and each visit lasts at least 3 hours. The combined weekly visits must be at least 6 hours, and the combined annual visits must be at least 60 hours.

The RRP Final Rule Requires:

- Renovators (individuals) performing work in target housing or child-occupied facilities must be trained and certified.
- Renovation firms must be certified.
- Non-Certified workers must work under and be trained on-the-job by a certified renovator.
- Lead safe work practices must be followed.
- Certified renovators must educate owners/occupants.
- Training providers must be accredited.

The requirements listed above are triggered if renovation, repair, or painting activities will disturb more than 6 square feet of interior paint or 20 square feet of exterior paint in target housing or child-occupied facilities. Please note that the RRP does not replace lead-based paint abatement regulations (40 CFR 745.223) or the OSHA Lead in Construction Standard (29 CFR 1926.62). Federally assisted target housing must address lead hazards under the U.S. Department of Housing and Urban Development (HUD) Guidelines.

Lead is a pollutant regulated by many laws administered by EPA, including the Toxic Substances Control Act (TSCA), Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X), Clean Air Act (CAA), Clean Water Act (CWA), Safe Drinking Water Act (SDWA), Resource Conservation and Recovery Act (RCRA), and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) among others. Please note that according to EPA, lead-based paint is defined by statute as paint with lead levels equal to or exceeding 1.0 milligrams per square centimeter (mg/cm<sup>2</sup>) or 0.5% by weight (see section 302(c) of the Lead-Poisoning Prevention Act (42 U.S.C. 4822(c)) and Toxic Substances Control Act (TSCA) section 401(9) (15 U.S.C. 2681(9))).

### *OSHA: Lead-Based Paint (LBP) Rules*

29 CFR 1926.62 Subpart D, Lead, applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard (OSHA 29 CFR 1926.62 Subpart D, Lead). Construction work is defined as work for construction, alteration and/or repair, including painting

and decorating. Construction work includes but is not limited to the following: Demolition or salvage of structures where lead or materials containing lead are present; Removal or encapsulation of materials containing lead; New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead; Installation of products containing lead; Lead contamination/emergency cleanup; Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed, and Maintenance operations associated with the construction activities described in this paragraph.

The employer shall include lead in the program established to comply with the HCS (§ 1910.1200). The employer shall ensure that each employee has access to labels on containers of lead and safety data sheets, and is trained in accordance with the provisions of HCS. Where lead is present, until the employer performs an employee exposure assessment and documents that the employee performing any of the listed tasks is not exposed above the PEL, the employer shall treat the employee as if the employee were exposed above the PEL.

#### *Commonwealth of Massachusetts LBP Rules*

In the December 1, 2017 update, the Massachusetts lead law (105 CMR 460.000) requires certain actions when lead paint hazards are present in homes built before 1978 where any children under 6 years of age live. Lead paint hazards include loose lead paint, lead on moveable/impact windows, lead on accessible/mouth-able surfaces (windowsills, handrails, railing caps), and lead on friction surfaces (doors edge, door jambs, stair treads). Owners are responsible for complying with the lead law. This includes owners of rental property as well as owners living in their own single-family home.

Under 105 CMR 460.000, Dangerous Levels of Lead means the level of lead in paint, other coating, plaster, or putty which materially endangers the health of children or adults by producing a substantial and serious danger of lead poisoning.

- 1) When present in paint or coatings offered for sale, a dangerous level of lead shall be deemed to be 90 parts per million or greater as measured by atomic absorption spectrophotometry.
- 2) When present in a dried film including, but not limited to, paint, glaze, stain, varnish or other substance on any toy, furniture or other articles, or when present in paint, other coating, plaster or putty on residential surfaces, a dangerous level of lead shall be deemed to be the following:
  - a. a positive reaction with a 6% to 8% sodium sulfide solution, indicative of 0.5% or more lead by dry weight; or
  - b. equal to or more than 1.0 milligram of lead per square centimeter (mg/cm<sup>2</sup>) of surface as measured on site by a mobile X-ray fluorescence analyzer; or
  - c. equal to or more than 5,000 parts per million (ppm) or equal to or more than 0.5% by dry weight, as measured by atomic absorption spectrophotometry.
- 3) When present in a glaze or enamel on a glass, ceramic, porcelain or porcelain-coated cooking, eating or drinking utensil, or a porcelain-coated household appliance or fixture, a dangerous level of lead shall be deemed to be two (2) parts per million or greater as tested by A.S.T.M. Standard Method C 738-94(2000).

If work is to be done in areas that contain lead paint hazards in target housing, it is called deleading. Deleading must be done by people who are trained, certified, and authorized to do the work safely. Renovation is work done to repair or improve a residence if it is built before 1978. Contractors must be RRP certified to do renovations in a residence if it is built before 1978. Work that disturbs lead paint can be dangerous, and can include Painting (removing paint; sanding or scraping painted surfaces; painting

outside surfaces); Renovation/Demolition (tearing down walls or plaster; removing windows and woodwork); and Repairing (fixing plumbing or electrical systems; repairing heating or ventilation ducts).

In Massachusetts, the Childhood Lead Poisoning Prevention Program (CLPPP) was established for the prevention, screening, diagnosis, and treatment of lead poisoning, including the elimination of sources of poisoning through research and educational, epidemiologic, and clinical activities as may be necessary. CLPPP provides a range of both primary and secondary prevention services to the children of the Commonwealth of Massachusetts, their families, and others with an interest in the prevention of lead poisoning. In order to accomplish the fundamental goals of identifying lead poisoned children and ensuring that they receive medical and environmental services as well as preventing further cases of lead poisoning, CLPPP has developed linkages with a wide array of professionals and programs that provide services to children. CLPPP also provides coordinated and comprehensive nursing case management.

#### *Commonwealth of Massachusetts Lead Safe Renovation Information*

Renovation, repair, and painting work conducted for a fee in housing built before to 1978 and child-occupied facilities where more than 6 square feet of painted surface per Room is disturbed on the interior of a building, or more than 20 square feet of painted surface on the exterior of a building, must be carried out by lead-safe renovation (LSR) contractor. Licensed LSR contractors must have a trained and certified LSR supervisor on their staff. Under Massachusetts regulations, an LSR supervisor is always required to be on site while renovation work is in progress. Entities that perform renovation work (as defined in 454 CMR 22.02) must be licensed as a LSR contractor, deleading contractor, or have a contractor licensing waiver.

The presence of lead in paint during renovation and demolition activities may necessitate certain requirements under OSHA for worker protection. In addition, the presence of lead in paint in construction and demolition waste/debris, as it applies to the toxicity characteristic leaching procedure (TCLP), may serve a certain role in the selected location for the final building material disposal location, as it relates to classification as a hazardous waste or non-hazardous waste under RCRA. In addition, Massachusetts has specific transport and disposal requirements related to the characterization of waste, which contains concentrations of lead.

### **4.3 Management of Lead Wastes - Massachusetts**

In Massachusetts, the Massachusetts Policy on the Management of Wastes from Lead Abatement, Remodeling and Renovation Activities Conducted in Households policy provides further clarification of the household hazardous waste exemption cited at 310 CMR 30.104(6) as it relates to the management of lead-based paint (LBP) waste generated from lead abatement, remodeling and renovation activities in residences. LBP waste is composed of coated building components (doors, window frames and painted woodwork), and concentrated residue from chemical and physical paint removal activities (paint chips, dust, and sludges).

This policy adds LBP waste to the household waste exemption, 310 CMR 30.104(2)(g), and is consistent with recent USEPA guidance discussed below. LBP coated building components and concentrated residues generated by residents or by contractors performing activities in residences are classified as household waste, and are therefore exempt from hazardous waste regulations. Accordingly, LBP wastes from residences may be managed as non-hazardous solid waste. However, this policy does not apply to LBP wastes generated from activities conducted in non-residential buildings or from structures (e.g., bridges,

tanks); such wastes continue to be subject to the Massachusetts Hazardous Waste Management Regulations, 310 CMR 30.000.

This policy is intended to facilitate lead abatement activities, especially in HUD-funded public housing initiatives, by reducing waste management and disposal costs while ensuring public and environmental protection. The Department's management approach mirrors the federal approach described in a July 31, 2000, memo by Elizabeth Cotsworth, Director of the Office of Solid Waste, USEPA, entitled "Regulatory Status of Waste Generated by Contractors and Residents from Lead-Based Paint Activities Conducted in Households." This memo clarifies the federal regulatory status of lead-based paint waste generated as a result of lead abatement, renovation and remodeling activities in homes and other residences.

Specifically, EPA clarifies that the "household waste" exemption, which has been historically limited to residents, is applicable to waste generated by contractors conducting lead abatement, remodeling and renovation activities in residences, thereby allowing both contractors and residents to manage LBP waste as non-hazardous solid waste. The memo further states that LBP waste can be discarded in a municipal solid waste landfill or a municipal solid waste combustor. Finally, the memo expands the definition of "residence" to include not only single-family homes, multifamily homes, apartment buildings, but public and military housing as well. By this policy, the Department adopts the guidance provided in EPA's July 31, 2000, interpretive memo and strongly recommends that residents and contractors comply with the "Best Management Practices" (BMPs) for removing, packaging and disposing of lead abatement wastes specifically described in the memorandum.

#### **4.4 TCLP Lead in Paint and Substrates**

Since the Building is currently used as the Margaret A. Neary Elementary School, an elementary education facility for the Town of Southborough, it may be important to note that the presence of lead in paint and its associated leachability in the construction and demolition waste/debris waste stream may serve a certain role in the selected location for the final building material disposal location, as it relates to determining whether a "solid waste" exhibits the characteristics of "hazardous waste" or non-hazardous waste under RCRA.

Solid wastes containing lead are subject to RCRA regulation and 310 CMR 30.00. If the amount of lead that leaches from a waste using the toxicity characteristic leaching procedure (TCLP) exceeds the lead toxicity characteristic (TC) limit of 5 mg/L, the solid waste must be managed as a TC hazardous waste (unless otherwise excluded, as per Paragraph 4.3, above).

A solid waste (except manufactured gas plant waste) exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter, the extract from a representative sample of the waste contains any of the contaminants listed in Table 1 of that publication at the concentration equal to or greater than the respective value given in that table.

For this analysis, if the TCLP result for lead is equal to or greater than 5 milligrams per Liter (mg/L), the waste stream may be considered a hazardous waste that must be disposed of at a hazardous waste landfill.



Depending on the desired solution for the Building on the Property by the MSBA and/or the Owner and/or the Architect, PEER anticipates that TCLP lead in paint and substrates analytical testing may be completed for future phases.

## **5. FINDINGS**

### **5.1 Asbestos-Containing Material Classifications**

As discussed in Section 4.1, ACMs, if identified during the Inspection were classified on Table 1B as; RACM ("friable"), Category I non-friable ACM, or Category II non-friable ACM. These categories are shown on Table 1B for each identified material containing asbestos. The classifications are used because ACMs can vary in the relative hazard these materials present; and based on their characteristics when disturbed by varying renovation or demolition techniques. For this reason, state and federal regulations manage these categories differently when regulating disturbance and abatement activities.

PACM includes building materials that potentially contain asbestos until such a time that the material is tested and found to be non-asbestos containing. The material is "presumed" to contain asbestos unless it is demonstrated, in accordance with 454 CMR 28.00, that PACM does not contain asbestos.

#### **5.1.1 Regulated Asbestos-Containing Material (RACM)**

RACM was identified associated with the proposed Work at the Building (based on the material's expectation to become friable during any disturbance), as per Table 1B. If renovation or demolition will disturb RACM, it must be removed prior to disturbance. All RACM must be removed prior to the demolition of a building. Removal must be performed by Massachusetts licensed Asbestos Contractors using accredited and Massachusetts licensed personnel.

#### **5.1.2 Category I Non-Friable ACM**

At the Building, Category I non-friable asbestos-containing material (including *resilient floor tiles*) was detected associated with the sampled building materials as part of the proposed Work at the Building on the Property.

#### **5.1.3 Category II Non-Friable ACM**

At the Building, Category II non-friable asbestos-containing material (including *glazing putty, mastic, coating, cementitious mudded thermal system insulation, joint compound / joint tape, cement board*) was detected associated with the sampled building materials as part of the proposed Work at the Building on the Property.

#### **5.1.4 Asbestos Management Recommendations**

Please note that according to 454 CMR 28.00, an asbestos project design is a site-specific written work plan describing the means and methods for asbestos removal, enclosure, encapsulation or repair projects that exceed three linear or three square feet of asbestos containing material in facilities ***(required for facilities subject to AHERA)***.

In addition, according to 454 CMR 28.00, except as mandated by AHERA for Asbestos Response Actions conducted in school facilities, the preparation of an asbestos project design *is recommended*, but not required by 454 CMR 28.00.

Under OSHA and EPA regulations, any employee or contractor working in proximity to asbestos containing materials at the building must be made aware of the asbestos inspection and its limitations, and provided a copy of this Inspection Report prior to commencing renovation/demolition activities. If previously inaccessible suspected ACM is discovered during renovation or demolition activities, disturbance work should immediately stop, until representative bulk samples can be collected by a licensed asbestos inspector and analytical laboratory results are available to render a determination regarding asbestos content within the material discovered.

Therefore, an asbestos project design is **REQUIRED** prior to the Renovation/Demolition Work at the Margaret A. Neary Elementary School and All Other Associated Work.

#### **5.1.5 Data Gaps - Asbestos**

As part of this Report, PEER understands that there may be areas and building materials within the interior (or the exterior) of the Building, which may become impacted by or become part of the proposed Work, or a future proposed Work, that:

- may have been covered, hidden, or otherwise not visible,
- may not have been safely accessible (as determined by PEER),
- may not have been included in the Architect's or Engineer's scope of work,
- may not have been included in PEER's limited Scope,
- may have been modified, removed, or eliminated from PEER's limited Scope by the Architect, Engineer, Owner, or Others after PEER's proposal date(s); and either prior to the date of, or during the date of the hazardous building material sampling investigation event,
- has yet to be evaluated as part of this Early Feasibility phase for the project site,
- may have been added to the Building after PEER's April 17, 2024 limited hazardous building materials investigation,
- would have required irreparable, destructive sampling (which may have impacted the historical integrity, structural integrity, or impact the health and safety of the Inspector, occupants, visitors, or workers present or anticipated to be present after the April 17, 2024 building material sampling event, and/or for any other reason (as determined by PEER).

In general, PEER recommends that a comparison of sampled and analyzed building materials (as per Table 1A) be reviewed by the Facility Owner/Operator, Architect/Engineer, General Contractor, Asbestos Contractor, and/or Others (together, the "Parties") against the building materials which may become impacted by the proposed Work, and if determined to be necessary by the Parties, in coordination with other trades, additional samples of building materials, including irreparable destructive sampling of building materials, be collected, and analyzed for asbestos, prior to the (finalization and) issuance of bid documents and prior to any site work.

**Table 1A**

**Suspect ACM Summary Table  
Margaret A. Neary Elementary School  
53 Parkerville Road, Southborough, Massachusetts**

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**Collection Date (2024): April 17**

Sample Number	Analytical Results (%)	Building Material	Homogeneous Area	Location/ Room	Material Classification	Detailed Description
<b>April 17, 2024</b>						
A-1	<b>2</b>	Glazing Putty	1	Room 22	M	Yellow-White Glazing Putty for Metal Reinforced Glass at Wood Classroom Door
A-2	<b>10</b>	Coating	2	Room 22	M	Gray Coating on Base/Bottom of 19" x 22" Metal Sink
A-3	NAD	Acoustical Wall Tile	3	Room 22	M	White Coated Gray Back 1' x 1' Acoustical Wall Tile with Pinpricks and Valleys on Wall
A-4A	<b>4</b>	Resilient Floor Tile	4-1	Room 22	M	Brown-Light Brown-Black-Pink Speckled/Mosaic 12" x 12" Resilient Floor Tile
A-4B	<b>10</b>	Mastic	4-2	Room 22	M	Black Mastic on Back of Resilient Floor Tile and on Concrete Floor
A-5A	<b>15</b>	Cement Board	5-1	Room 22	M	Black 6" x 60" Cement Board Window Sill with White Fibers
A-5B	NAD	Mortar	5-2	Room 22	M	Light Gray Mortar beneath Sill at Vertical Wall Surface
A-5C	NAD	Cementitious Material	5-3	Room 22	M	Light Gray-Gray Cementitious Material as Filler for Sill at Edge of Concrete Masonry Unit Wall
A-6	<b>3</b>	Glazing Putty	6	Room 22	M	Light Gray Brittle Glazing Putty for Operable Exterior Window
A-7	<b>2</b>	Glazing Putty	7	Room 22	M	Light Gray Brittle Glazing Putty for Non-Operable Window Glass Pane
A-8A	NAD	Frame Caulk	8-1	Room 22	M	Brown Firm Interior Frame Caulk for Exterior Window System
A-8B	NAD	Frame Caulk / Coating	8-2	Room 22	M	White Brittle Frame Caulk/Textured Concrete Masonry Unit Coating as Contaminant

Sample Number	Analytical Results (%)	Building Material	Homogeneous Area	Location/ Room	Material Classification	Detailed Description
A-9A	NAD	Coating	9-1	Room 22	M	White Painted White Coating on Surface of Concrete Masonry Unit
A-9B	NAD	Concrete Masonry Unit	9-2	Room 22	M	Gray Concrete Masonry Unit Wall Block with Black Grains
A-9C	NAD	Mortar	9-3	Room 22	M	Light Gray Mortar for Gray Concrete Masonry Unit at Concrete Masonry Unit to Concrete Masonry Unit Connections
A-10	NAD	Other Caulk	10	Room 22	M	White Painted White Firm Other Caulk at Concrete Masonry Unit/Concrete Masonry Unit Corner Connect
A-11	NAD	Glazing Putty	11	Room 22	M	Gray Glazing Putty for Metal Reinforced Glass at Wood for Classroom Door Exit D3
A-12	NAD	Frame Caulk	12	Room 22	M	Yellow Stained Light Gray-White Frame Caulk Solid Wood Door Frame at Closet
A-13A	NAD	Cove Base	13-1	Room 22	M	Black Hard 3.5" Wide Cove Base at Base of Fixed Cabinetry
A-13B	2	Mastic	13-2	Room 22	M	Yellow-Brown Mastic on 4.25" Cove Base and on Wood Cabinetry Base
A-14A	NAD	Cove Base	14-1	Room 22	M	Black Hard 4.25" Wide Cove Base at Base of Concrete Masonry Unit Wall/Fixed Closet
A-14B	2	Mastic	14-2	Room 22	M	Brown Mastic on 4.25" Wide Cove Base and on Concrete Masonry Unit/Wood
A-15	NAD	Acoustical Ceiling Tile	15	Room 22	M	White Coated 2' x 2' Acoustical Ceiling Tile with Surface Small to Medium Dots and Long Valleys (with Light Brown Interior)
A-16	5	Cementitious Mud	16	Room 22	M	White Cementitious Mud Wrapped on Elbow Fittings in Plenum
A-17	NAD	Acoustical Ceiling Tile	17	Hallway at Room 22	M	White Textured/Coated 2' x 2' Acoustical Ceiling Tile with Light Gray Interior (071300-LM-01-34)
A-18A	NAD	Gypsum Wall Board	18-1	Hallway at Room 22	M	Brown Paper Coated Light Gray Gypsum Wall Board above Hall Corridor Door/in Plenum
A-18B	2	Joint Compound/ Joint Tape	18-2	Hallway at Room 22	M	White Joint Compound/Joint Tape on Light Gray Gypsum Wall Board - Hall Corridor Door
A-19	NAD	Sealant	19	Hallway at Room 22	M	Red Sealant at Through Wall Pipe Run in Plenum above Corridor Door

Sample Number	Analytical Results (%)	Building Material	Homogeneous Area	Location/ Room	Material Classification	Detailed Description
A-20	NAD	Frame Caulk	20	Hallway at Room 22	M	White Hard Frame Caulk for Hallway Corridor Door at Concrete Masonry Unit
A-21	NAD	Glazing Putty	21	Hallway at Room 22	M	Light Gray Brittle Glazing Putty for 7.5x8' Corridor Door System
A-22A	NAD	Canvas	22-1	Room 22	M	Light Blue Painted 1/4" Thick Canvas Tack Board Wall of Classroom
A-22B	NAD	Mastic	22-2	Room 22	M	Brown Mastic on Back of Canvas and on Wood Backing Board Wall Classroom
A-23	2	Glazing Putty	1	Room 6	M	Yellow-White Glazing Putty for Metal Reinforced Glass at Wood Classroom Door
A-24	3	Coating	23	Room 6	M	Black Coating on Base/Bottom of 19" x 25" Metal Sink
A-25	NAD	Acoustical Wall Tile	3	Room 6	M	White Coated Gray Back 1' x 1' Acoustical Wall Tile with Pinpricks and Valleys on Wall
A-26A	3	Resilient Floor Tile	4-1	Room 6	M	Brown-Light Brown-Black-Pink Speckled/Mosaic 12" x 12" Resilient Floor Tile
A-26B	10	Mastic	4-2	Room 6	M	Black Mastic on Back of Resilient Floor Tile and on Concrete Floor
A-27A	15	Cement Board	5-1	Room 6	M	Black 6" x 60" Cement Board Window Sill with White Fibers
A-27B	NAD	Mortar	5-2	Room 6	M	Light Gray Mortar beneath Sill at Vertical Wall Surface
A-27C	NAD	Cementitious Material	5-3	Room 6	M	Light Gray-Gray Cementitious Material as Filler for Sill at Edge of Concrete Masonry Unit Wall
A-28	NAD	Glazing Putty	24	Room 6	M	Black Sticky Glazing Putty for Operable Exterior Window
A-29	2	Glazing Putty	7	Room 6	M	Light Gray Brittle Glazing Putty for Non-Operable Window Glass Pane
A-30A	NAD	Frame Caulk	8-1	Room 6	M	Brown Firm Interior Frame Caulk for Exterior Window System
A-30B	NAD	Frame Caulk / Coating	8-2	Room 6	M	White Brittle Frame Caulk/Textured Concrete Masonry Unit Coating as Contaminant
A-31A	NAD	Coating	9-1	Room 6	M	White Painted White Coating on Surface of Concrete Masonry Unit

Sample Number	Analytical Results (%)	Building Material	Homogeneous Area	Location/ Room	Material Classification	Detailed Description
A-31B	NAD	Concrete Masonry Unit	9-2	Room 6	M	Gray Concrete Masonry Unit Wall Block with Black Grains
A-31C	NAD	Mortar	9-3	Room 6	M	Light Gray Mortar for Gray Concrete Masonry Unit at Concrete Masonry Unit to Concrete Masonry Unit Connections
A-32	NAD	Other Caulk	10	Room 6	M	White Painted White Firm Other Caulk at Concrete Masonry Unit/Concrete Masonry Unit Corner Connect
A-33	NAD	Frame Caulk	12	Room 6	M	Yellow Stained Light Gray-White Frame Caulk Solid Wood DF at Closet
A-34A	NAD	Cove Base	13-1	Room 6	M	Black Hard 3.5" Wide Cove Base at Base of Fixed Cabinetry
A-34B	2	Mastic	13-2	Room 6	M	Yellow-Brown Mastic on 4.25" Cove Base and on Wood Cabinetry Base
A-35A	NAD	Cove Base	14-1	Room 6	M	Black Hard 4.25" Wide Cove Base at Base of Concrete Masonry Unit Wall/Fixed Closet
A-35B	2	Mastic	14-2	Room 6	M	Brown Mastic on 4.25" Wide Cove Base and on Concrete Masonry Unit/Wood
A-36	NAD	Acoustical Ceiling Tile	15	Room 6	M	White Coated 2' x 2' Acoustical Ceiling Tile with Surface Small to Medium Dots and Long Valleys (with Light Brown Interior)
A-37	20	Cementitious Mud	16	Room 6	M	White Cementitious Mud Wrapped on Elbow Fittings in Plenum
A-38	NAD	Acoustical Ceiling Tile	17	Room 6	M	White Textured/Coated 2' x 2' Acoustical Ceiling Tile with Light Gray Interior (071200LM2243)
A-39A	NAD	Gypsum Wall Board	18-1	Hallway at Room 6	M	Brown Paper Coated Light Gray Gypsum Wall Board above Hall Corridor Door/in Plenum
A-39B	2	Joint Compound/ Joint Tape	18-2	Hallway at Room 6	M	White Joint Compound/Joint Tape on Light Gray Gypsum Wall Board - Hall Corridor Door
A-40	NAD	Frame Caulk	20	Hallway at Room 6	M	White Hard for Hallway Corridor Door at Concrete Masonry Unit
A-41	2	Glazing Putty	21	Hallway at Room 6	M	Light Gray Brittle Glazing Putty for 10' x 8.6' High 5 Pane Metal Reinforced Glass Door System
A-42A	NAD	Canvas	22-1	Room 6	M	Light Blue Painted 1/4" Thick Canvas Tack Board Wall of Classroom (Blue Paint)



Sample Number	Analytical Results (%)	Building Material	Homogeneous Area	Location/ Room	Material Classification	Detailed Description
A-42B	NAD	Mastic	22-2	Room 6	M	Brown Mastic on Back of Canvas and on Wood Backing Board Wall Classroom
A-43A	NAD	Resilient Floor Tile	25-1	Hallway at Room 15	M	Gray 12" x 12" Speckled Resilient Floor Tile with Light Gray/Dark Gray Specks
A-43B	4	Mastic	25-2	Hallway at Room 15	M	Black Mastic under Resilient Floor Tile and on Concrete Slab (Check for Yellow Mastic)
A-44A	NAD	Resilient Floor Tile	25-2	Hallway at Gym	M	Gray 12" x 12" Speckled Resilient Floor Tile with Light Gray/Dark Gray Specks
A-44B	5	Mastic	25-2	Hallway at Gym	M	Black Mastic under Yellow Mastic and on Concrete Slab
A-44C	NAD	Mastic	25-3	Hallway at Gym	M	Yellow Mastic on Surface of Black Mastic and on Resilient Floor Tile
A-45	NAD	Frame Caulk	26	Courtyard at Entry A1	M	Light Red Firm Frame Caulk for Double Glass Doors with Transom into Courtyard
A-46	NAD	Frame Caulk	27	Courtyard at Entry A1	M	Gray Firm Frame Caulk for 2 Door System into Courtyard - on Metal
A-47	NAD	Frame Caulk	28	Courtyard at Entry A1	M	White Hard Remnant Frame Caulk for Suspect Former Boarded Area Hallway Windows
A-48A	NAD	Glazing Putty	29-1	Courtyard at Entry A1	M	Black to Dark Gray Exterior Glazing Putty on Surfaces of Courtyard Hallway Windows
A-48B	2	Glazing Putty	29-2	Courtyard at Entry A1	M	Light Brown Glazing Putty on Exterior Windows for Courtyard at Hallway
A-49	Not Analyzed	Other Caulk	30	Courtyard at Entry A1	M	White-Light Brown Firm, Hard Other Caulk - Cementitious Forms at Red Brick
A-50	Not Analyzed	Other Caulk	31	Courtyard at Entry A1	M	White-Light Brown Firm, Hard Other Caulk - Cementitious Forms at Gravel Panel
A-51A	8	Glazing Putty	29-1	Courtyard at Entry A1	M	Black to Dark Gray Exterior Glazing Putty on Surfaces of Courtyard Hallway Windows
A-51B	2	Glazing Putty	29-2	Courtyard at Entry A1	M	Light Brown Glazing Putty on Exterior Windows for Courtyard at Hallway
A-52	NAD	Other Caulk	32	Courtyard at Entry A1	M	White Firm Other Caulk Coating Mortar in between Cementitious Material Panels at Roof Elev
A-53	NAD	Cementitious Panels	33	Courtyard at Entry A1	M	Yellowish-White Preformed Vertical Cementitious Panels (Fine Grained) at Roof Elevation

Sample Number	Analytical Results (%)	Building Material	Homogeneous Area	Location/ Room	Material Classification	Detailed Description
A-54	NAD	Other Caulk	34	Courtyard at Entry A1	M	White Firm, Hard Other Caulk as Horizontal Bead Preformed Panels at Brick
A-55	NAD	Cementitious Panels	35	Courtyard at Entry A1	M	White Fine Grained Cementitious Material Frame for Gravel Panel (with White Suspect Quartz)
A-56	NAD	Cementitious Material	36	Courtyard at Entry A1	M	White Fine Grained Cementitious Material Beams for Exterior Edge of Window System (with White Suspect Quartz)
A-57A	NAD	Brick	37-1	Courtyard at Entry A1	M	Red To Red Brown Brick for Exterior Envelope of Building
A-57B	NAD	Mortar	37-2	Courtyard at Entry A1	M	White Mortar in between Red to Red Brown Brick for Exterior of Build
A-58	NAD	Frame Caulk	38	Exterior Door A2	M	Red Painted Light Gray Frame Caulk - Metal at Brick - Door A2
A-59	NAD	Frame Caulk	39	Exterior	M	Black Flexible Frame Caulk for New Window Penetration "Lemieur" Office
A-60A	NAD	Brick	37-1	Exterior at B1 Door	M	Red To Red Brown Brick for Exterior Envelope of Building
A-60B	NAD	Mortar	37-2	Exterior at B1 Door	M	White Mortar in between Red to Red Brown Brick for Exterior of Build
A-61	NAD	Concrete	40	Exterior at B1 Door	M	Gray Fine to Medium Grained – with Few Coarse Grained Concrete as Foundation
A-62	NAD	Frame Caulk	41	Exterior at B1 Door	M	Red Painted Pink Firm Frame Caulk Metal Door at Brick
A-63	2	Glazing Putty	42	Exterior at B1 Door	M	White Brittle Glazing Putty for Side Glass Transom Panel in Door System

Notes (as may be applicable):

- a. Material Classification = Surfacing (S), Thermal System Insulation (TSI), or Miscellaneous (M)
- b. NAD = No Asbestos Detected.
- c. As per 454 CMR 28.00 – “Homogeneous Area” is an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in size, color and texture and was applied at approximately the same time. Homogeneous sub areas, typically materials that could not be separated by hand tools in the field, are represented by a “-” in the above table. Materials listed in these groups are associated with other building materials within that homogeneous area.

- d. LQ = Limited Quantity of building material available for sampling without eliminating building material source / Limited Quantity of building material available for sampling in order to still be classified as homogeneous / Limited Quantity of building material available for sampling due to health and safety related inaccessibility of material.
- e. PEER notes that for this Early Feasibility Phase Report, and as it relates to suspect ACM Sampling, and as discussed with the Client, the intent of this specific “early feasibility phase” report was for one asbestos inspector to collect as many suspect ACM samples within the time frame of the initial day of collection as physically possible. The overall intent was not to collect (at this “early feasibility phase”) suspect ACM samples according to certain regulatory requirements [refer to 454 CMR 28.13 (3)]. Specifically, 454 CMR 28.13 (3)(b)5. cites that for “miscellaneous material, in a manner sufficient to determine whether material is ACM or not ACM, a licensed inspector must collect bulk samples from each homogeneous area of friable miscellaneous material that is not assumed to be ACM.” In addition, 454 CMR 28.13 (3)(b)6. cites that for “non-friable suspected ACM. if any homogeneous area of non-friable suspected ACM is not assumed to be ACM, then a licensed inspector must collect, in a manner sufficient to determine whether the material is ACM or not ACM, bulk samples from the homogeneous area of non-friable suspected ACM that is not assumed to be ACM.” Depending on the desired solution for the Building on the Property by the MSBA and/or the Owner and/or the Architect, PEER anticipates that additional hazardous building material sampling and investigation will be necessary to achieve a “thorough” inspection under 310 CMR 7.15; and to achieve these requirements under 454 CMR 28.13. As such, for the purposes of this Early Feasibility Phase Report, PEER considers that all “NAD” (No Asbestos Detected) shown in Table 1A below shall still be considered to be “presumed ACM”, i.e., building materials that potentially contain asbestos until such a time that the material is tested and found to be non-asbestos containing. The material is “presumed” to contain asbestos unless it is demonstrated, in accordance with 454 CMR 28.00, that the presumed ACM does not contain asbestos.

**Table 1B**

**Identified ACM Summary Table Details  
Margaret A. Neary Elementary School  
53 Parkerville Road, Southborough, Massachusetts**

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**Collection Date (2024): April 17**

Sample Number	Analytical Results (%)	Building Material	Homogenous Area	Material Classification	Friable (F) / Non-Friable (NF)	Current Condition	Disturbance Potential	Estimated Quantity	Detailed Description
A-4A; A-26A	3; 4	Resilient Floor Tile { <i>Brown-Light Brown-Black-Pink Speckled/Mosaic 12" x 12"</i> }	4-1	M	CAT I NF (RACM) <sup>#</sup>	Damaged	High	See Note ①	See Note ①
A-4B; A-26B; A-43B; A-44B	4; 5; 10	Mastic { <i>on All Resilient Floor Tile and on Concrete</i> }	4-2; 25-2	M	CAT II NF (RACM) <sup>#</sup>	Good	Low	See Note ①	See Note ①
A-13B; A-14B; A-34B; A-35B	2	Mastic { <i>on Cove Base, Wood Cabinetry, Concrete Masonry Unit Walls, Other Wall Surfaces</i> }	13-2; 14-2	M	CAT II NF (RACM) <sup>#</sup>	Significantly Damaged	High	See Note ②	See Note ②
A-18B; A-39B	2	Joint Compound / Joint Tape { <i>on Gypsum Board Walls above and below Plenum</i> }	18-2	M	CAT II NF (RACM) <sup>#</sup>	Significantly Damaged	High	See Note ③	See Note ③
A-1; A-23	2	Glazing Putty { <i>Metal Reinforced Glass at Classroom Door</i> }	1	M	CAT II NF (RACM) <sup>#</sup>	Significantly Damaged	High	See Note ④	See Note ④

Sample Number	Analytical Results (%)	Building Material	Homogenous Area	Material Classification	Friable (F) / Non-Friable (NF)	Current Condition	Disturbance Potential	Estimated Quantity	Detailed Description
A-2; A-24	3; 10	Coating {on underside of Metal Sinks}	2; 23	M	CAT II NF (RACM) <sup>#</sup>	Significantly Damaged	High	See Note ⑤	See Note ⑤
A-16; A-37	5; 20	Mudded Thermal System Insulation {on Fittings}	16	M	CAT II NF (RACM) <sup>#</sup>	Damaged	High	See Note ⑥	See Note ⑥
A-5A; A-27A	15	Cement Board {Interior Window Sills}	5-1	M	CAT II NF (RACM) <sup>#</sup>	Damaged	Low	See Note ⑦	See Note ⑦
A-6; A-7; A-29; A-48B; A-51A; A-51B	2; 3; 8	Glazing Putty {on Interior and Exterior of Windows at Building Envelope}	6; 7; 29-1; 29-2	M	CAT II NF (RACM) <sup>#</sup>	Significantly Damaged	High	See Note ⑧	See Note ⑧
A-63	2	Glazing Putty {on Interior and Exterior of Doors / Door Systems at Building Envelope}	42	M	CAT II NF (RACM) <sup>#</sup>	Significantly Damaged	High	See Note ⑨	See Note ⑨
A-41	2	Glazing Putty {on Both Sides of Doors / Door Systems at Building Hallways}	21	S	CAT II NF (RACM) <sup>#</sup>	Significantly Damaged	High	See Note ⑩	See Note ⑩

Notes: Material Classification = Surfacing (S), Thermal System Insulation (TSI), or Miscellaneous (M)  
Friable = Material containing more than 1% asbestos, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure  
Category I Non-Friable: Asbestos containing packings, gaskets, resilient floor covering, and asphalt roofing products containing >1% asbestos...  
Category II Non-Friable: Any material excluding Category I non-friable...

Assessment Category:

- |  |  |
|--|--|
| (1) Damaged or significantly damaged TSI ACM                   | (5) ACBM with potential for damage                       |
| (2) Damaged friable surfacing ACM                              | (6) ACBM with potential for significant damage           |
| (3) Significantly damaged friable surfacing ACM                | (7) Any remaining friable ACBM or friable suspected ACBM |
| (4) Damaged or significantly damaged friable miscellaneous ACM |  |

Current Condition: Good, Damaged, Significantly Damaged;

Disturbance Potential: Contact/Vibration/Air Erosion [High (H), Moderate (M), or Low (L)]

# = RACM based on anticipated disturbance during renovation/demolition.

**Notes: ① through ⑩**

- ✓ Asbestos abatement includes the following materials and/or building materials associated with the proposed Massachusetts School Building Authority Project at Margaret A. Neary Elementary School and All Other Associated Work, under the Base Bid, as per the above Table 1B, and as per the Project Drawings.

**[ PEER has inserted this section as a placeholder and notes that this section will be further developed during future phases of this project. ]**

All of which occurring at, in, on, beneath, and/or associated with the interior and/or envelope and/or exterior of the Building on the Property, and which is comprised of an ACM on a building component associated with the interior and/or envelope and/or exterior building environment, and any ACM debris, and/or any other asbestos containing or asbestos contaminated materials (including asbestos contaminated building materials), as per the Asbestos Project Design, and as per all Contract Documents, and as per the Project Drawings (when Project Drawings have been included with the Asbestos Project Design).



## 5.2 Lead in Paint Inspection Findings

On April 17, 2024, PEER collected three paint/coating samples on concrete masonry unit, or metal, or canvas building materials associated with the proposed Work on the interior of the Building on the Property by swabbing the surface with a 3M™ LeadCheck™ Swab. Lead was not detected at or above the 3M™ LeadCheck™ Swab method detectable concentration of 5,000 ppm.

**Table 2A**

**Lead in Paint/Substrates  
Margaret A. Neary Elementary School  
53 Parkerville Road, Southborough, Massachusetts**

---

**Collection Date (2024): April 17**

Lead Sample ID	Description	Lead (ppm)	TCLP Pb (mg/L)	Screening (Yes / No)
L-1	White paint over white textured coating on the concrete masonry unit wall in Room 22.	--	--	No
L-2	Red coating on a metal truss within the plenum at Room 22.	--	--	No
L-3	Light blue painted tack canvas board on wall within Room 22.	--	--	No

### Notes:

In general, interior painted surfaces at the Site were observed to be intact.

PEER notes that for Sample L-3, the canvas (i.e., not the paint) became light pink in color after the use of the 3M™ LeadCheck™ Swab. PEER has noted this occurrence at other Facilities and may be a result of the canvas board manufacturing process.

“No” = Screening results did not show method detectable (greater than or equal to 5,000 ppm) concentrations of lead. Please note that 3M™ LeadCheck™ Swabs may indicate lead in some paint films as low as 0.06% (600 ppm). Please note that lead may be present within the paint/coatings at certain concentrations. Please refer to the requirements of OSHA 1926.62 Lead In Construction Standard.

“Yes” = Screening results showed method detectable (greater than or equal to 5,000 ppm) concentrations of lead. Please note that 3M™ LeadCheck™ Swabs may indicate lead in some paint films as low as 0.06% (600 ppm).

“-” = Sample not screened using a Swab or sample not analyzed at an analytical laboratory, for the stated analysis.

### 5.2.1 Lead in Paint Recommendations

Considering the Work Practices which may occur during proposed renovation, repair, and painting activities at the Building on the Property, and considering the current and future use of the Building, including consideration for the occupants and visitors to continue to utilize the interior and exterior of the Building on the Property as part of the elementary school facility, **PEER recommends that the work practices associated with 454 CMR 22.00, be considered and then implemented by the Contractor or**

**Contractors for any renovation, repair, and painting which may become associated with the Work at the Property.**

Renovation includes the modification of any existing structure, or portion thereof, that results in the disturbance of painted surfaces. The term renovation includes, but is not limited to, the removal or modification of painted surfaces or painted components (e.g., modification of painted doors, surface preparation activity such as sanding, scraping, or other such activities that may generate paint dust); the removal of portions of structures (e.g., walls, ceiling, large surface replastering, major re-plumbing); and window replacement.

Licensed lead safe renovation (LSR) contractors must have a trained and certified LSR supervisor on their staff. An LSR supervisor is a person who is duly certified under 454 CMR 22.06 to carry out supervisory functions on renovation projects, and with the additional training specified by 454 CMR 22.08(4)(e), to carry out supervisory functions and/or performs the work, in accordance with 454 CMR 22.12(2), on moderate risk deleading projects. An LSR supervisor is always required to be on site while renovation work is in progress. Entities that perform renovation work (as defined in 454 CMR 22.02) must be licensed as a LSR contractor, deleading contractor, or have a contractor licensing waiver.

**In addition, in relation to All Work which may disturb paint or coating, or which may disturb lead in paint or lead in coating, PEER recommends that the policies, rules, and regulations from OSHA (and specifically, OSHA 29 CFR 1926.62 Subpart D, Lead) be reviewed and followed by the Contractor or Contractors performing the Work, for applicability to the Work at the Site on the Property.**

## 6. Standard of Care / Limitations / Reliance / General Comments

As detailed in the above paragraphs, this limited hazardous building materials inspection report (this "Report") was conducted utilizing limited, non-destructive sampling techniques. Therefore, efforts were made to determine if multiple layers of building materials may be present although limited to the extent of allowable access points with hand tools without affecting historical integrity, structural integrity, the impact to the health and safety of those occupants or workers present, or anticipated to be present, security, fire and life safety, slips, trips and/or fall hazards, and including unacceptable aesthetic or functional damage to building surfaces and materials, as per the judgment of the inspector at the time of the Inspection.

Please note that additional suspect hazardous building materials may be present associated with the Building such as those in concealed spaces, cavities, plenums, behind walls, above ceilings, beneath floors, beneath roofs or roof decks, beneath slabs or underground, in crawl spaces, in confined spaces, behind or associated with any electrical, heating, ventilation, air conditioning, or mechanical system, and in any other area, including non-accessible or unsafe areas (as determined by PEER) associated with the proposed Work for the Building or a future proposed Work for the Building.

This limited hazardous building materials inspection was performed in accordance with generally accepted Practices of this profession, undertaken in similar studies at the same time and in the same geographical area, and in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing.

We have endeavored to meet this standard of care, but may be limited by conditions encountered during its performance, a client-driven scope of work, the inability to review information not received by the report date, and/or any other condition as determined by PEER.

The limited hazardous building materials inspection, such as the one performed at the Building on the Property, is of limited scope, is noninvasive, and cannot eliminate the potential for hazardous building materials to occur elsewhere at the Building on the Property beyond what has been identified through the limited scope of services included in PEER's proposal as part of this limited hazardous building materials inspection.

In conducting the limited scope of services described herein, certain sources of information and other public records were not reviewed. The limitations herein must be considered when Arrowstreet and the Town of Southborough formulates opinions as to risks associated with the Building on the Property or otherwise uses this Report for any other purpose. These risks may be further evaluated – but not eliminated – through additional research and/or assessment. We will, upon your written request, advise you of additional research or assessment options that may be available and associated costs.

We have no obligation to provide information obtained or discovered by us after the issuance date of this Report, or to perform any additional scope of services, regardless of whether the information would affect any findings, and/or opinions, and/or conclusions, and/or recommendations in this Report. This disclaimer specifically applies to any information that has not been provided by the Client, and/or by the Facility Owner/Operator, and/or by any other person or entity, as of the date of this Report.

Findings, opinions, and conclusions in this Report are based upon the current use of the Building on the Property, and information visually and/or physically observed during our limited, non-destructive

assessment of the specific building materials sampled (identified earlier in this report from the most recent site visit on April 17, 2024).

Therefore, such information, including findings, opinions, and conclusions are subject to change. Certain indicators of the presence of hazardous building materials may have been latent, inaccessible, not observable, or not present during the most recent site visit and may have subsequently become observable (such as after property renovations, building repairs, building demolition, new development on the property, and/or redevelopment on the Property). Further, our scope of services are not to be construed as legal interpretation or legal advice.

This Report has been prepared for the exclusive use and reliance of Arrowstreet and the Town of Southborough (the "Authorized Parties"). Use or reliance by any other party is prohibited without the written authorization of Arrowstreet, the Town of Southborough, and PEER Consultants, P.C.

Reliance on this Report by the Authorized Parties will be subject to the terms, conditions and limitations stated in the PEER proposal (or proposals), stated in this Report, and/or stated in PEER's Agreement for Services with the Client. The limitation of liability (i.e., the total cost defined in the PEER's June 30, 2023 proposal to the Client and/or PEER's Agreement for Services) is the aggregate limit of PEER's liability to the Client, and all relying parties.

The information contained in this Report (dated April 26, 2024) is relevant to the date on which the most recent inspection was performed (April 17, 2024) and should not be relied upon to represent building conditions at a later date. This Report represents our scope of services to Arrowstreet and the Town of Southborough as of this Report date and constitutes our Final document; its text may not be altered after issuance.

This Report is not a stand-alone bidding document and **MUST NOT** be used by itself for bidding purposes. Contractors or consultants or any other party reviewing this Report must draw their own conclusions regarding further investigation, further assessment, further sampling, and/or remediation/abatement deemed necessary. PEER does not warrant the work of regulatory agencies, laboratories, and any or all other third parties supplying information which may have been used in the preparation of this Report. No warranties, express or implied, are intended or made.

## Appendix A

### Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using PLM

#### Sample Log and Analytical Data



**EMSL ANALYTICAL, INC.**  
LABORATORY • PRODUCTS • TRAINING

## Asbestos Bulk Building Materials - Chain of Custody

EMSL Order Number / Lab Use Only

EMSL Analytical, Inc.  
5 Constitution Way, Unit A


Woburn, MA 01801

PHONE: (781) 933-8411

EMAIL: [bostonlab@emsl.com](mailto:bostonlab@emsl.com)

132402216

Customer Information	Customer ID:	PEER42			Billing Information	Billing ID:	PEER42				
	Company Name:	PEER Consultants				Company Name:	PEER Consultants				
	Contact Name:	Dave Gorden				Billing Contact:	Dave Gorden				
	Street Address:	10 Mall Road, Suite 301				Street Address:	10 Mall Road, Suite 301				
	City, State, Zip:	Burlington	MA	01864		Country:	US				
	Phone:	781-238-8880				City, State, Zip:	Burlington	MA	01864	Country:	US
	Email(s) for Report:	gordend@peerpc.com				Phone:	781-238-8880				
					Email(s) for Invoice:	gordend@peerpc.com					

Project Name/No: Margaret A. Neary School / 8404										Purchase Order: 8404	
EMSL LIMS Project ID: (If applicable, EMSL will provide)					US State where samples collected: MA		State of Connecticut (CT) must select project location: <input type="checkbox"/> Commercial (Taxable) <input type="checkbox"/> Residential (Non-Taxable)				
Sampled By Name: Dave Gorden (PEER)			Sampled By Signature: 			Date Sampled: 4/17/24		No. of Samples in Shipment: 90			
Turn-Around-Time (TAT)											
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 32 Hour	<input checked="" type="checkbox"/> 48 Hour	<input type="checkbox"/> 72 Hour	<input type="checkbox"/> 96 Hour	<input type="checkbox"/> 1 Week	<input type="checkbox"/> 2 Week			
Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am.											

<p><b><u>PLM - Bulk (reporting limit)</u></b></p> <p><input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (&lt;1%)</p> <p><input type="checkbox"/> PLM EPA NOB (&lt;1%)</p> <p><input type="checkbox"/> POINT COUNT</p> <p style="padding-left: 40px;"><input type="checkbox"/> 400 (&lt;0.25%)    <input type="checkbox"/> 1,000 (&lt;0.1%)</p> <p><input type="checkbox"/> POINT COUNT w/ GRAVIMETRIC</p> <p style="padding-left: 40px;"><input type="checkbox"/> 400 (&lt;0.25%)    <input type="checkbox"/> 1,000 (&lt;0.1%)</p> <p><input type="checkbox"/> NIOSH 9002 (&lt;1%)</p> <p><input type="checkbox"/> NYS 198.1 (Friable - NY)</p> <p><input type="checkbox"/> NYS 198.6 NOB (Non-Friable - NY)</p> <p><input type="checkbox"/> NYS 198.8 (Vermiculite SM-V)</p>	<p style="text-align: center;"><b><u>Test Selection</u></b></p> <p><input type="checkbox"/> TEM EPA NOB</p> <p><input type="checkbox"/> NYS NOB 198.4 (Non-Friable - NY)</p> <p><input type="checkbox"/> TEM EPA 600/R-93/116 w Milling Prep (0.1%)</p> <p style="text-align: center;"><b><u>TEM - Bulk</u></b></p> <p style="text-align: center;"><b><u>Other Tests (please specify)</u></b></p> <p><input type="checkbox"/> Positive Stop - Clearly Identified Homogeneous Areas (HA)</p>
---	---

[illegible]

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

A1 to A63

Method of Shipment: <b>Delivery</b>		Sample Condition Upon Receipt: <b>SM 932</b>	
Relinquished by: <b>Dave Gorden (PEER)</b>	Date/Time: <b>4/19/24 0932</b>	Received by: <b>REC'D</b>	Date/Time: <b>APR 19 2024</b>
Relinquished by:	Date/Time:	Received by: <b>FMSL-BOSTON</b>	Date/Time: <b>10/11/24</b>

Controlled Document - Asbestos Bulk R7 9/14/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.



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10 Mall Road, Suite 301 • Burlington, MA 01803 • (781) 238-8880 • Fax (781) 238-8884

CLIENT: Arrowstreet PROJECT NAME: Margaret A. Neary School PROJECT #: 8404				Hazardous Building Material Inspection Sample Log / Chain of Custody	
BUILDING NAME: MANS, 53 Parkerville Rd., Southborough, MA YEAR: 2024 ▲ SAMPLING DATE: April 17				ASBESTOS INSPECTOR: D. Gorden (PEER); MA: AI-900459 PAGE 2 OF 6	
Homogenous Group	Location (Level / Room)	Building Material / Type (S, TSI, M)	Physical Assessment Category, and Damage Type or Disturbance Potential Detailed Description of Sampled Material		Quantity / Other
A-1	1 Room 22	G. putty	yellow-white glazing putty for MR glass @ wood CR door		9x43" H/B
A-2	2	coating	gray coating on base/bottom of 12x22" metal sink.		
A-3	3	AWT	white coated gray back 1x1' AWT w/ pinpricks + valleys on wall		
A-4A	4	RFT	Brown-light brown-black-pink speckled/mosaic 12x12" RFT		
A-4B	4	mastic	Black mastic on back of RFT and on concrete floor		
A-5A	5	cement board	Black 6x60" cement board window sill w/ white fibers		
A-5B	5	mortar	light gray mortar beneath sill at vertical wall surface		
A-5C	5	CM	light gray-gray cementitious material as filler for sill at edge of cmu wall		
A-6	6	G. putty	light gray brittle glazing putty for operable exterior window		15x56"
A-7	7	G. putty	light gray brittle glazing putty for non-op. window glass pane		56x63"
A-8A	8	F. caulk	Brown firm interior frame caulk for exterior window system		
A-8B	8	F. caulk	white brittle frame caulk/textured cmu coating as contaminant		
A-9A	9	coating	white painted white coating on surface of cmu		
A-9B	9	cmu	gray cmu wall block w/ black grains		16x7.5x5.5"
A-9C	9	mortar	light gray mortar for gray cmu at cmu to cmu connections		
A-10	10	O. caulk	white painted white firm other caulk at cmu/cmu corner connect		
A-11	11	G. putty	gray glazing putty for MR. glass @ wood for CR door exit D3		9x43" H/B
A-12	12	F. caulk	yellow stained light gray-white frame caulk solid wood DF at closet		

Physical Assessment: (1) Damaged "D" or significantly damaged "SD" TSI ACBM, (2) D friable surfacing ACBM, (3) SD friable surfacing ACBM, (4) D or SD friable miscellaneous ACBM, (5) ACBM with potential for D, (6) ACBM with potential for SD, (7) Any remaining friable ACBM or friable suspected ACBM.

Damage Type: Contact, Water, Age, Vibration, Air Erosion

Disturbance Potential: Low, Moderate, High

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Homogenous Group	Location (Level / Room)	Building Material / Type (S, TSI, M)	Physical Assessment Category, and Damage Type or Disturbance Potential Detailed Description of Sampled Material		Quantity / Other
A-13A	13 Room 22	CB	M	Black hard 3.5" wide core base at base of fixed cabinetry.	
A-13B	13	mastic		yellow-brown mastic on 3.5" 4.25" CB and on wood cabinetry base.	
A-14A	14	CB		Black hard 4.25" wide core base at base of cmu wall / fixed closet	
A-14B	14	mastic		Brown mastic on 4.25" wide core base + on cmu / wood	
A-15	15	ACT		white coated 2x2' ACT w/surface s-m dots and long valleys (w/Hibrown interior)	TYPE A
A-16	16	cement. mud		white cementitious mud wrapped on elbow fittings in plenum	
A-17	17 Hallway at Room 22	ACT		white textured/coated 2x2' ACT w/lt gray interior (071300-LM-01-34)	TYPE B
A-18A	18	GWB		Brown paper coated light gray gwb above hall corridor door / in plenum	
A-18B	18	JC		white joint compound / joint tape on light gray gwb - hall corridor door	
A-19	19	SEALANT		Red sealant at through wall pipe run in plenum above corridor door	Firm
A-20	20	F. caulk		white hard frame caulk for hallway corridor door at cmu	
A-21	21	G. putty		Light gray brittle glazing putty for 7.5' x 8' corridor door system	MR glass
A-22A	22 Room 22	CANVAS		light blue painted 1/4" thick canvas tack board wall of CR	mastic wall?
A-22B	22	MASTIC		Brown mastic on back of canvas + on wood backing board wall CR	
A-23	1 Room 6	G. putty		see A1	which ones fire door
A-24	23	coating		Black coating on base / bottom of 19x25" metal sink.	
A-25	3	AWT		see A3	
A-26A	4	RFT		see A4A	

Physical Assessment: (1) Damaged "D" or significantly damaged "SD" TSI ACBM, (2) D friable surfacing ACBM, (3) SD friable surfacing ACBM, (4) D or SD friable miscellaneous ACBM, (5) ACBM with potential for D, (6) ACBM with potential for SD, (7) Any remaining friable ACBM or friable suspected ACBM.

Damage Type: Contact, Water, Age, Vibration, Air Erosion

Disturbance Potential: Low, Moderate, High

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Homogenous Group	Location (Level / Room)	Building Material / Type (S, TSI, M)	Physical Assessment Category, and Damage Type or Disturbance Potential Detailed Description of Sampled Material		Quantity / Other
A- 26B	4 Room 6	mastic M	see A4B		
A- 27A	5	cement board	see A5A		
A- 27B	5	mortar	see A5B		
A- 27C	5	CM	see A5C		
A- 28A	24	G. putty	Black sticky glazing putty for operable exterior window		15x57" some rubber.
A- 29	7	G. putty	see A7		42x57" + 3rd pane
A- 30A	8	B.F. caulk	see A8A		
A- 30B	8	F. caulk	see A8B		
A- 31A	9	coating	see A9A		
A- 31B	9	cmu	see A9B		
A- 31C	9	mortar	see A9C		
A- 32	10	O. caulk	see A10		
A- 33	12	F. caulk	see A12 (entry door)		
A- 34A	13	CB	see A13A		
A- 34B	13	mastic	see A13B		
A- 35A	14	CB	see A14A		
A- 35B	14	mastic	see A14B		
A- 36	15	ACT	see A15		TYPE A

Physical Assessment: (1) Damaged "D" or significantly damaged "SD" TSI ACBM, (2) D friable surfacing ACBM, (3) SD friable surfacing ACBM, (4) D or SD friable miscellaneous ACBM, (5) ACBM with potential for D, (6) ACBM with potential for SD, (7) Any remaining friable ACBM or friable suspected ACBM.

Damage Type: Contact, Water, Age, Vibration, Air Erosion

Disturbance Potential: Low, Moderate, High

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Homogenous Group	Location (Level / Room)	Building Material / Type (S, TSI, M)	Physical Assessment Category, and Damage Type or Disturbance Potential Detailed Description of Sampled Material		Quantity / Other
A-37	16 Room 6	cement, mud M	see A16		
A-38	17 ↓	ACT	white textured/coated 2x2' ACT w/lt gray interior (071200 LN 2243)		Relates TYPE C
A-39A	18 Hallway at Room 6	GWB	see A18A		
A-39B	18 ↓	JC	see A18B		
A-40	20 ↓	F. caulk	see A20		
A-41	21 ↓	G. putty	light gray brittle glazing putty for 10' x 8.6' high 5 pane MR glass DS		
A-42A	22 Room 6	CANVAS	see A22A (blue paint)		
A-42B	22 ↓	mastic	see A22B		
A-43A	25 Hallway at Room 15	RFT	gray 12x12" speckled RFT w/lt gray/dark gray specks		
A-43B	25 ↓	mastic	Black mastic under RFT and on concrete slab (check for yellow mastic)		
A-44A	25 Hallway at Gym	RFT	see A43A		
A-44B	25 ↓	mastic	Black mastic under yellow mastic and on concrete slab		
A-44C	25 ↓	mastic	yellow mastic on surface of black mastic and on RFT		
A-45	26 Courtyard at Entry A1	F. caulk	light red firm frame caulk for double glass doors w/transom into CY		metal at brick
A-46	27 ↓	F. caulk	gray firm frame caulk for 2 door system into CY - on metal		
A-47	28 ↓	O caulk	white hard venant frame caulk for suspect former boarded area. HWW		3 glass
A-48A	29 ↓	G. putty	black to dark gray exterior glazing putty on surface of CY HW windows		
A-48B	29 ↓	↓	light brown glazing putty on exterior windows for CY at HW		

Physical Assessment: (1) Damaged "D" or significantly damaged "SD" TSI ACBM, (2) D friable surfacing ACBM, (3) SD friable surfacing ACBM, (4) D or SD friable miscellaneous ACBM, (5) ACBM with potential for D, (6) ACBM with potential for SD, (7) Any remaining friable ACBM or friable suspected ACBM.

Damage Type: Contact, Water, Age, Vibration, Air Erosion

Disturbance Potential: Low, Moderate, High

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10 Mall Road, Suite 301 • Burlington, MA 01803 • (781) 238-8880 • Fax (781) 238-8884

CLIENT: Arrowstreet PROJECT NAME: Margaret A. Neary School PROJECT #: 8404			Hazardous Building Material Inspection Sample Log / Chain of Custody	
BUILDING NAME: MANS, 53 Parkerville Rd., Southborough, MA YEAR: 2024 ▲ SAMPLING DATE: April 17			ASBESTOS INSPECTOR: D. Gorden (PEER); MA: AI-900459 PAGE 6 OF 6	
Homogenous Group	Location (Level / Room)	Building Material / Type (S, TSI, M)	Physical Assessment Category, and Damage Type or Disturbance Potential Detailed Description of Sampled Material	Quantity / Other
A-49	30 Courtyard at entry A	O caulk M	white-light brown firm, hard other caulk cement forms at red brick	
A-50	31	O caulk	white-light brown firm, hard other caulk cement forms @ gravel panel	
A-51A	29	G. putty	See A48A	
A-51B	29	↓	See A48B	
A-52	32	O caulk	white firm other caulk coating mortar in b/w cm panels at roof elev	
A-53	33	ceмент, mat.	yellowish-white preformed vertical cement panels (finegrained) at Roof elev	
A-54	34	O caulk	white firm, hard other caulk as horiz. bead preformed panels at brick	
A-55	35	ceмент, mat.	white fine grained cm frame for gravel panel (w/white suspect quartz)	3'x5' Relates
A-56	36	↓	white fine grained cm beams for ext. edge of window system (w/white suspect quartz)	6"x10' Relates
A-57A	37	brick	Red to red brown brick for ext. envelope of building	8x2 1/4 x3.5"D
A-57B	38	mortar	white mortar in b/w red to red brown brick for ext. of build	
A-58	38 Exterior Door A2	F. caulk	red painted light gray frame caulk - metal at brick - door A2	
A-59	39 Exterior	F. caulk	Black flexible frame caulk for new window penetration "lemieur" off	36.5 x 66.5"
A-60A	37 Exterior @ B1 door	brick	see A57A	
A-60B	37	mortar	see A57B	
A-61	40	concrete	gray f-m grained - few coarse graine concrete as foundation	
A-62	41 Exterior @ B1 door	F. caulk	red painted pink firm frame caulk metal door at brick	
A-63	↓	G. putty	white brittle glazing putty for side glass transom panel in door syst	5 GL Transoms 1 door

Physical Assessment: (1) Damaged "D" or significantly damaged "SD" TSI ACBM, (2) D friable surfacing ACBM, (3) SD friable surfacing ACBM, (4) D or SD friable miscellaneous ACBM, (5) ACBM with potential for D, (6) ACBM with potential for SD, (7) Any remaining friable ACBM or friable suspected ACBM.

Damage Type: Contact, Water, Age, Vibration, Air Erosion

Disturbance Potential: Low, Moderate, High

REC'D  
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EMSL Order: 132402216

Customer ID: PEER42

Customer PO:

Project ID:

Attention: Dave Gorden

PEER Consultants

10 Mall Road, Suite 301

Burlington, MA 01803

Phone: (781) 238-8880

Fax: (781) 238-8884

Received Date: 04/19/2024 9:35 AM

Analysis Date: 04/22/2024 - 04/23/2024

Collected Date: 04/17/2024

Project: 8404 / Margaret A. Neary School

## Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A-1 132402216-0001	Room 22 - Yellow-White Glazing Putty for MR Glass at Wood CR Door	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
HA: 1					
A-2 132402216-0002	Room 22 - Gray Coating on Base/Bottom of 19x22" Metal Sink	Gray Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
HA: 2					
A-3 132402216-0003	Room 22 - White Coated Gray Back 1x1' AWT w. Pinpricks & Valleys on Wall	Gray/White Fibrous Homogeneous	40% Cellulose 30% Min. Wool	30% Non-fibrous (Other)	None Detected
HA: 3					
A-4A 132402216-0004	Room 22 - Brown-Light Brown-Black-Pink Speckled/Mosaic 12x12" RFT	Brown/Gray Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
HA: 4					
A-4B 132402216-0005	Room 22 - Black Mastic on Back of RFT & on Concrete Floor	Black Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
HA: 4					
A-5A 132402216-0006	Room 22 - Black 6x60" Cement Board Window Sill w. White Fibers	Black Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
HA: 5					
A-5B 132402216-0007	Room 22 - Light Gray Mortar beneath Sill at Vertical Wall Surface	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HA: 5					
A-5C 132402216-0008	Room 22 - Light Gray-Gray Cementitious Material as Filler for Sill at Edge of CMU Wall	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HA: 5					
A-6 132402216-0009	Room 22 - Light Gray Brittle Glazing Putty for Operable Exterior Window	Tan Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
HA: 6					
A-7 132402216-0010	Room 22 - Light Gray Brittle Glazing Putty for Non-Op Window Glass Pane	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile

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			Non-Asbestos	Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
			HA: 7		
A-8A  132402216-0011	Room 22 - Brown Firm Interior Frame Caulk for Exterior Window System	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 8		
A-8B  132402216-0012	Room 22 - White Brittle Frame Caulk/Textured CMU Coating as Contaminant	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 8		
A-9A  132402216-0013	Room 22 - White Painted White Coating on Surface of CMU	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 9		
A-9B  132402216-0014	Room 22 - Gray CMU Wall Block w. Black Grains	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 9		
A-9C  132402216-0015	Room 22 - Light Gray Mortar for Gray CMU at CMU to CMU Connections	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 9		
A-10  132402216-0016	Room 22 - White Painted White Firm Other Caulk at CMU/CMU Corner Connect	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 10		
A-11  132402216-0017	Room 22 - Gray Glazing Putty for MR Glass at Wood for CR Door Exit D3	Gray Non-Fibrous Homogeneous	2% Glass	98% Non-fibrous (Other)	None Detected
			HA: 11		
A-12  132402216-0018	Room 22 - Yellow Stained Light Gray-White Frame Caulk Solid Wood DF at Closet	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 12		
A-13A  132402216-0019	Room 22 - Black Hard 3.5" Wide Cove Base at Base of Fixed Cabinetry	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 13		
A-13B  132402216-0020	Room 22 - Yellow-Brown Mastic on 4.25" CB & on Wood Cabinetry Base	Brown Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
			HA: 13		
A-14A  132402216-0021	Room 22 - Black Hard 4.25" Wide Cove Base at Base of CMU Wall/Fixed Closet	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 14		

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A-14B  132402216-0022	Room 22 - Brown Mastic on 4.25" Wide Cove Base & on CMU/Wood	Brown Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
HA: 14					
A-15  132402216-0023	Room 22 - White Coated 2x2' ACT w. Surface S-M Dots & Long Valleys (w. Light Brown Interior)	Gray/White Fibrous Homogeneous	65% Min. Wool	35% Non-fibrous (Other)	None Detected
HA: 15					
A-16  132402216-0024	Room 22 - White Cementitious Mud Wrapped on Elbow Fittings in Plenum	Gray Fibrous Homogeneous	10% Min. Wool	85% Non-fibrous (Other)	5% Chrysotile
HA: 16					
A-17  132402216-0025	Hallway at Room 22 - White Textured/Coated 2x2' ACT w. Light Gray Interior (071300-LM-01-34)	Gray/White Fibrous Homogeneous	40% Cellulose 30% Min. Wool	30% Non-fibrous (Other)	None Detected
HA: 17					
A-18A  132402216-0026	Hallway at Room 22 - Brown Paper Coated Light Gray GWB above Hall Corridor Door/in Plenum	Gray/Tan Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
HA: 18					
A-18B  132402216-0027	Hallway at Room 22 - White Joint Compound/Joint Tape on Light Gray GWB - Hall Corridor Door	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
HA: 18					
A-19  132402216-0028	Hallway at Room 22 - Red Sealant at Through Wall Pipe Run in Plenum above Corridor Door	Red Fibrous Homogeneous	3% Glass	97% Non-fibrous (Other)	None Detected
HA: 19					
A-20  132402216-0029	Hallway at Room 22 - White Hard Frame Caulk for Hallway Corridor Door at CMU	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HA: 20					
A-21  132402216-0030	Hallway at Room 22 - Light Gray Brittle Glazing Putty for 7.5x8' Corridor Door System	Tan Non-Fibrous Homogeneous	2% Glass	98% Non-fibrous (Other)	None Detected
HA: 21					
A-22A  132402216-0031	Room 22 - Light Blue Painted 1/4" Thick Canvas Tack Board Wall of CR	Brown/Blue Fibrous Homogeneous	25% Cellulose	75% Non-fibrous (Other)	None Detected
HA: 22					

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Sample	Description	Appearance	% Fibrous	Non-Asbestos	Asbestos
				% Non-Fibrous	% Type
A-22B 132402216-0032	Room 22 - Brown Mastic on Back of Canvas & on Wood Backing Board Wall CR	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 22		
A-23 132402216-0033	Room 6 - Yellow-White Glazing Putty for MR Glass at Wood CR Door	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
			HA: 1		
A-24 132402216-0034	Room 6 - Black Coating on Base/Bottom of 19x25" Metal Sink	Black Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
			HA: 23		
A-25 132402216-0035	Room 6 - White Coated Gray Back 1x1' AWT w. Pinpricks & Valleys on Wall	Gray/White Fibrous Homogeneous	45% Cellulose 20% Min. Wool	35% Non-fibrous (Other)	None Detected
			HA: 3		
A-26A 132402216-0036	Room 6 - Brown-Light Brown-Black-Pink Speckled/Mosaic 12x12" RFT	Gray Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
			HA: 4		
A-26B 132402216-0037	Room 6 - Black Mastic on Back of RFT & on Concrete Floor	Black Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
			HA: 4		
A-27A 132402216-0038	Room 6 - Black 6x60" Cement Board Window Sill w. White Fibers	Black Non-Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
			HA: 5		
A-27B 132402216-0039	Room 6 - Light Gray Mortar beneath Sill at Vertical Wall Surface	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 5		
A-27C 132402216-0040	Room 6 - Light Gray-Gray Cementitious Material as Filler for Sill at Edge of CMU Wall	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 5		
A-28 132402216-0041	Room 6 - Black Sticky Glazing Putty for Operable Exterior Window	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 24		
A-29 132402216-0042	Room 6 - Light Gray Brittle Glazing Putty for Non-Op Window Glass Pane	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
			HA: 7		

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A-30A 132402216-0043	Room 6 - Brown Firm Interior Frame Caulk for Exterior Window System	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 8		
A-30B 132402216-0044	Room 6 - White Brittle Frame Caulk/Textured CMU Coating as Contaminant	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 8		
A-31A 132402216-0045	Room 6 - White Painted White Coating on Surface of CMU	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 9		
A-31B 132402216-0046	Room 6 - Gray CMU Wall Block w. Black Grains	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 9		
A-31C 132402216-0047	Room 6 - Light Gray Mortar for Gray CMU at CMU to CMU Connections	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 9		
A-32 132402216-0048	Room 6 - White Painted White Firm Other Caulk at CMU/CMU Corner Connect	White/Beige Non-Fibrous Homogeneous	1% Glass	99% Non-fibrous (Other)	None Detected
			HA: 10		
A-33 132402216-0049	Room 6 - Yellow Stained Light Gray-White Frame Caulk Solid Wood DF at Closet	Tan/White Non-Fibrous Homogeneous	2% Fibrous (Other)	98% Non-fibrous (Other)	None Detected
			HA: 12		
A-34A 132402216-0050	Room 6 - Black Hard 3.5" Wide Cove Base at Base of Fixed Cabinetry	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 13		
A-34B 132402216-0051	Room 6 - Yellow-Brown Mastic on 4.25" CB & on Wood Cabinetry Base	Brown Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
			HA: 13		
A-35A 132402216-0052	Room 6 - Black Hard 4.25" Wide Cove Base at Base of CMU Wall/Fixed Closet	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 14		
A-35B 132402216-0053	Room 6 - Brown Mastic on 4.25" Wide Cove Base & on CMU/Wood	Brown Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
			HA: 14		

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A-36  132402216-0054	Room 6 - White Coated 2x2' ACT w. Surface S-M Dots & Long Valleys (w. Light Brown Interior)	Beige Fibrous Homogeneous	90% Min. Wool	10% Non-fibrous (Other)	None Detected
			HA: 15		
A-37  132402216-0055	Room 6 - White Cementitious Mud Wrapped on Elbow Fittings in Plenum	Beige Non-Fibrous Homogeneous	60% Min. Wool	20% Non-fibrous (Other)	20% Chrysotile
			HA: 16		
A-38  132402216-0056	Room 6 - White Textured/Coated 2x2' ACT w. Light Gray Interior (071200LM2243)	Gray/Tan/White Fibrous Homogeneous	50% Cellulose 30% Min. Wool	20% Non-fibrous (Other)	None Detected
			HA: 17		
A-39A  132402216-0057	Hallway at Room 6 - Brown Paper Coated Light Gray GWB above Hall Corridor Door/in Plenum	Brown/Gray Non-Fibrous Homogeneous	12% Cellulose 1% Glass	87% Non-fibrous (Other)	None Detected
			HA: 18		
A-39B  132402216-0058	Hallway at Room 6 - White Joint Compound/Joint Tape on Light Gray GWB - Hall Corridor Door	Tan/White Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
			HA: 18		
A-40  132402216-0059	Hallway at Room 6 - White Hard Frame Caulk for Hallway Corridor Door at CMU	Gray/Tan/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 20		
A-41  132402216-0060	Hallway at Room 6 - Light Gray Brittle Glazing Putty for 10x8.6' High 5 Pane MR Glass DS	Gray/Tan/White Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
			HA: 21		
A-42A  132402216-0061	Room 6 - Light Blue Painted 1/4" Thick Canvas Tack Board Wall of CR (Blue Paint)	Brown/Tan Non-Fibrous Homogeneous	25% Cellulose	75% Non-fibrous (Other)	None Detected
			HA: 22		
A-42B  132402216-0062	Room 6 - Brown Mastic on Back of Canvas & on Wood Backing Board Wall CR	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 22		
A-43A  132402216-0063	Hallway at Room 15 - Gray 12x12' Speckled RFT w. Light Gray/Dark Gray Specks	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 25		

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A-43B 132402216-0064	Hallway at Room 15 - Black Mastic under RFT & on Concrete Slab (Check for Yellow Mastic)	Brown/Black/Yellow Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
			HA: 25		
A-44A 132402216-0065	Hallway at Gym - Gray 12x12' Speckled RFT w. Light Gray/Dark Gray Specks	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 25		
A-44B 132402216-0066	Hallway at Gym - Black Mastic under Yellow Mastic & on Concrete Slab	Brown/Black Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
			HA: 25		
A-44C 132402216-0067	Hallway at Gym - Yellow Mastic on Surface of Black Mastic & on RFT	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 25		
A-45 132402216-0068	Courtyard at Entry A1 - Light Red Firm Frame Caulk for Double Glass Doors w. Transom into CY	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 26		
A-46 132402216-0069	Courtyard at Entry A1 - Gray Firm Frame Caulk for 2 Door System into CY - on Metal	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 27		
A-47 132402216-0070	Courtyard at Entry A1 - White Hard Remnant Frame Caulk for Suspect Former Boarded Area HWW	Brown/White/Black Non-Fibrous Homogeneous	2% Fibrous (Other)	98% Non-fibrous (Other)	None Detected
			HA: 28		
A-48A 132402216-0071	Courtyard at Entry A1 - Black to Dark Gray Exterior Glazing Putty on Surfaces of CY HW Windows	Gray/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 29		
A-48B 132402216-0072	Courtyard at Entry A1 - Light Brown Glazing Putty on Exterior Windows for CY at HW	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
			HA: 29		
A-49 132402216-0073	Courtyard at Entry A1 - White-Light Brown Firm, Hard Other Caulk Cement. Forms at Red Brick				Not Submitted
			HA: 30		

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A-50  132402216-0074	Courtyard at Entry A1 - White-Light Brown Firm, Hard Other Caulk Cement. Forms at Gravel Panel		HA: 31		Not Submitted
A-51A  132402216-0075	Courtyard at Entry A1 - Black to Dark Gray Exterior Glazing Putty on Surfaces of CY HW Windows	Gray Non-Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
			HA: 29		
A-51B  132402216-0076	Courtyard at Entry A1 - Light Brown Glazing Putty on Exterior Windows for CY at HW	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
			HA: 29		
A-52  132402216-0077	Courtyard at Entry A1 - White Firm Other Caulk Coating Mortar in between CM Panels at Roof Elev	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 32		
A-53  132402216-0078	Courtyard at Entry A1 - Yellowish-White Preformed Vertical Cement. Panels (Fine Grained) at Roof Elev	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 33		
A-54  132402216-0079	Courtyard at Entry A1 - White Firm, Hard Other Caulk as Horiz. Bead Preformed Panels at Brick	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 34		
A-55  132402216-0080	Courtyard at Entry A1 - White Fine Grained CM Frame for Gravel Panel (w. White Suspect Quartz)	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 35		
A-56  132402216-0081	Courtyard at Entry A1 - White Fine Grained CM Beams for Ext. Edge of Window System (w. White Suspect Quartz)	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 36		
A-57A  132402216-0082	Courtyard at Entry A1 - Red Toned Brown Brick for Ext. Envelope of Building	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 37		
A-57B  132402216-0083	Courtyard at Entry A1 - White Mortar in between Red to Red Brown Brick for Ext. of Build	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 37		

Initial report from: 04/23/2024 12:52:27



# EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com / bostonlab@emsl.com>

EMSL Order: 132402216

Customer ID: PEER42

Customer PO:

Project ID:

## Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A-58 132402216-0084	Exterior Door A2 - Red Painted Light Gray Frame Caulk - Metal at Brick - Door A2	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HA: 38					
A-59 132402216-0085	Exterior - Black Flexible Frame Caulk for New Window Penetration "Lemieur" Office	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HA: 39					
A-60A 132402216-0086	Exterior at B1 Door - Red Toned Brown Brick for Ext. Envelope of Building	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HA: 37					
A-60B 132402216-0087	Exterior at B1 Door - White Mortar in between Red to Red Brown Brick for Ext. of Build	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HA: 37					
A-61 132402216-0088	Exterior at B1 Door - Gray F-M Grained - Fair Coarse Grained Concrete as Foundation	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HA: 40					
A-62 132402216-0089	Exterior at B1 Door - Red Painted Pink Firm Frame Caulk Metal Door at Brick	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HA: 41					
A-63 132402216-0090	Exterior at B1 Door - White Brittle Glazing Putty for Side Glass Transom Panel in Door System	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile

Analyst(s)

Ava Kopellas (30)

John McCarthy (21)

Kevin McKenzie (37)

Steve Grise, Laboratory Manager  
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-139, VT AL998919, ME LB-0039

Initial report from: 04/23/2024 12:52:27

## N. Preliminary Cost Estimate Summaries



**PM&C LLC**

20 Downer Avenue, Suite 5  
Hingham, MA 02043

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**PDP Options Cost Estimate**

**Neary Elementary School**

Southborough, MA

Prepared for:

**Arrowstreet**

May 9, 2024



Neary Elementary School  
Southborough, MA

9-May-24

## PDP Options Cost Estimate

## INTRODUCTION

**NOTE: The costs for the various PDP Options indicated above are intended to be an analysis of the relative costs between options and NOT a prediction of the actual final cost of any individual option. Major variables such as geotechnical, site grading, structural system and final MEP systems have yet to be designed and costs will vary significantly from the benchmark cost estimating included as part of this PDP cost analysis. The costs outlined in this report should not be represented as the FINAL construction budget.**

This PDP Design Submission cost estimate was produced from narratives and outline drawings dated April 23rd, 2024 prepared by Arrowstreet Architects and their design team.

This estimate includes all direct construction costs, General Contractors OH+P and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be public bidding under 149 of the Massachusetts General Laws to pre-qualified general contractors, and pre-qualified sub-contractors, open specifications for materials and manufacturers.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

## ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- All professional fees and insurance
- Building Permit costs
- Rock excavation
- Land acquisition, feasibility, and financing costs
- All Furnishings, Fixtures and Equipment
- Items identified in the design as Not In Contract (NIC)
- Items identified in the design as by others
- Owner supplied and/or installed items (e.g. draperies, furniture and equipment)
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)



Neary Elementary School  
Southborough, MA

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**PDP Options Cost Estimate**

**PDP PRICING OPTIONS**

**MAIN CONSTRUCTION COST SUMMARY**

	<b>Gross Floor Area</b>	<b>\$/sf</b>	<b>Estimated Construction Cost - DBB</b>	<b>Estimated Construction Cost - CMr</b>
<b>OPTION A.1 - Base Repair/Code Update Neary (305 Enrollment)</b>	66,775	\$676.47	<b>\$45,171,073</b>	<b>\$47,881,337</b>
<b>OPTION A.2 - Base Repair/Code Update Woodward (450 Enrollment)</b>	68,400	\$678.35	<b>\$46,398,955</b>	<b>\$49,182,892</b>
<b>OPTION B.1 - Add/Reno at Neary (305 Enrollment)</b>	88,690	\$913.61	<b>\$81,027,856</b>	<b>\$85,889,527</b>
<b>OPTION B.2 - Add/Reno at Neary (450 Enrollment)</b>	102,330	\$916.60	<b>\$93,795,633</b>	<b>\$99,423,371</b>
<b>OPTION B.3 - Add/Reno at Woodward (450 Enrollment)</b>	104,435	\$888.26	<b>\$92,765,568</b>	<b>\$98,331,502</b>
<b>OPTION B.4 - Add/Reno at Neary (610 Enrollment)</b>	122,630	\$876.14	<b>\$107,440,884</b>	<b>\$113,887,337</b>
<b>OPTION B.5 - Add/Reno at Woodward (610 Enrollment)</b>	130,782	\$844.51	<b>\$110,446,404</b>	<b>\$117,073,188</b>
<b>OPTION C.1 - New Construction Neary (305 Enrollment)</b>	78,405	\$1,014.56	<b>\$79,546,798</b>	<b>\$84,319,606</b>
<b>OPTION C.2 - New Construction Neary (450 Enrollment)</b>	100,200	\$933.45	<b>\$93,531,923</b>	<b>\$99,143,838</b>
<b>OPTION C.3 - New Construction Woodward (450 Enrollment)</b>	100,200	\$926.36	<b>\$92,821,382</b>	<b>\$98,390,665</b>
<b>OPTION C.4 - New Construction Neary (610 Enrollment)</b>	121,070	\$878.14	<b>\$106,316,624</b>	<b>\$112,695,621</b>
<b>OPTION C.5 - New Construction Woodward (610 Enrollment)</b>	121,010	\$870.92	<b>\$105,389,745</b>	<b>\$111,713,130</b>
<b>Alternate Pricing</b>				
Geothermal System - Based on 610 Enrollment	ADD		<b>\$6,728,156</b>	





Neary Elementary School  
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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION A.1 - Base Repair/Code Update Neary (305 Enrollment)</b>				
CODE UPGRADES TO EXISTING SCHOOL		66,775	\$400.00	\$26,710,000
REMOVE HAZARDOUS MATERIALS - ALLOWANCE				\$1,500,000
SITEWORK - Allowance (code upgrades only)				\$2,000,000
<hr/>				
SUB-TOTAL	Jun-26	66,775	\$452.41	\$30,210,000
ESCALATION TO START DATE	6.80%			\$2,054,280
DESIGN AND PRICING CONTINGENCY	15.0%			\$4,531,500
<hr/>				
SUB-TOTAL		66,775	\$551.04	\$36,795,780
GENERAL CONDITIONS	24	MTHS	\$160,000	\$3,840,000
GENERAL REQUIREMENTS	2.00%			\$735,916
PHASING	4.00%			\$1,471,831
BONDS	0.75%			\$275,968
INSURANCES	2.00%			\$735,916
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$43,855,411
OH+P	3.0%			\$1,315,662
MODULAR CLASSROOMS				Excluded
TOTAL OF ALL CONSTRUCTION		66,775	\$676.47	<b>\$45,171,073</b>



Neary Elementary School  
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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION A.2 - Base Repair/Code Update Woodward (450 Enrollment)</b>				
CODE UPGRADES TO EXISTING SCHOOL		68,400	\$400.00	\$27,360,000
REMOVE HAZARDOUS MATERIALS - ALLOWANCE				\$1,750,000
SITEWORK - Allowance (code upgrades only)				\$2,000,000
<hr/>				
SUB-TOTAL	Jun-26	68,400	\$454.82	\$31,110,000
ESCALATION TO START DATE	6.80%			\$2,115,480
DESIGN AND PRICING CONTINGENCY	15.0%			\$4,666,500
<hr/>				
SUB-TOTAL		68,400	\$553.98	\$37,891,980
GENERAL CONDITIONS	24	MTHS	\$160,000	\$3,840,000
GENERAL REQUIREMENTS	2.00%			\$757,840
PHASING	4.00%			\$1,515,679
BONDS	0.75%			\$284,190
INSURANCES	2.00%			\$757,840
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$45,047,529
OH+P	3.0%			\$1,351,426
MODULAR CLASSROOMS				Excluded
<b>TOTAL OF ALL CONSTRUCTION</b>		68,400	\$678.35	<b>\$46,398,955</b>



Neary Elementary School  
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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION B.1 - Add/Reno at Neary (305 Enrollment)</b>				
NEW ADDITION + RENOVATE EXISTING SCHOOL		88,690	\$481.97	\$42,746,198
DEMOLITION (modulars)		2,570	\$15.00	\$38,550
REMOVE HAZARDOUS MATERIALS				\$1,500,000
SITEWORK - ALLOWANCE				\$12,000,000
<hr/>				
SUB-TOTAL	Jun-26	88,690	\$634.62	\$56,284,748
ESCALATION TO START DATE	6.80%			\$3,827,363
DESIGN AND PRICING CONTINGENCY	15.0%			\$8,442,712
<hr/>				
SUB-TOTAL		88,690	\$772.97	\$68,554,823
GENERAL CONDITIONS	30	MTHS	\$160,000	\$4,800,000
GENERAL REQUIREMENTS	2.00%			\$1,371,096
PHASING	3.00%			\$2,056,645
BONDS	0.75%			\$514,161
INSURANCES	2.00%			\$1,371,096
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$78,667,821
OH+P	3.0%			\$2,360,035
MODULAR CLASSROOMS				Excluded
<b>TOTAL OF ALL CONSTRUCTION</b>		88,690	\$913.61	<b>\$81,027,856</b>



Neary Elementary School  
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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION B.2 - Add/Reno at Neary (450 Enrollment)</b>				
NEW ADDITION + RENOVATE EXISTING SCHOOL		102,330	\$498.00	\$50,959,960
DEMOLITION (modulars)		2,570	\$15.00	\$38,550
REMOVE HAZARDOUS MATERIALS				\$1,500,000
SITEWORK - Allowance				\$12,500,000
<hr/>				
SUB-TOTAL	Jun-26	102,330	\$635.19	\$64,998,510
ESCALATION TO START DATE	6.80%			\$4,419,899
DESIGN AND PRICING CONTINGENCY	15.0%			\$9,749,777
<hr/>				
SUB-TOTAL		102,330	\$773.66	\$79,168,186
GENERAL CONDITIONS	36	MTHS	\$160,000	\$5,760,000
GENERAL REQUIREMENTS	2.00%			\$1,583,364
PHASING	3.00%			\$2,375,046
BONDS	0.75%			\$593,761
INSURANCES	2.00%			\$1,583,364
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$91,063,721
OH+P	3.0%			\$2,731,912
MODULAR CLASSROOMS				Excluded
<b>TOTAL OF ALL CONSTRUCTION</b>		102,330	\$916.60	<b>\$93,795,633</b>



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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION B.3 - Add/Reno at Woodward (450 Enrollment)</b>				
NEW ADDITION + RENOVATE EXISTING SCHOOL		104,435	\$478.64	\$49,986,497
DEMOLITION				NR
REMOVE HAZARDOUS MATERIALS				\$1,750,000
SITEWORK -Allowance				\$12,500,000
<hr/>				
SUB-TOTAL	Jun-26	104,435	\$615.09	\$64,236,497
ESCALATION TO START DATE	6.80%			\$4,368,082
DESIGN AND PRICING CONTINGENCY	15.0%			\$9,635,475
<hr/>				
SUB-TOTAL		104,435	\$749.17	\$78,240,054
GENERAL CONDITIONS	36	MTHS	\$160,000	\$5,760,000
GENERAL REQUIREMENTS	2.00%			\$1,564,801
PHASING	3.00%			\$2,347,202
BONDS	0.75%			\$586,800
INSURANCES	2.00%			\$1,564,801
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$90,063,658
OH+P	3.0%			\$2,701,910
MODULAR CLASSROOMS				Excluded
<b>TOTAL OF ALL CONSTRUCTION</b>		104,435	\$888.26	<b><u><u>\$92,765,568</u></u></b>



Neary Elementary School  
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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION B.4 - Add/Reno at Neary (610 Enrollment)</b>				
NEW ADDITION + RENOVATE EXISTING SCHOOL		122,630	\$489.82	\$60,066,685
DEMOLITION (modulars)		2,570	\$15.00	\$38,550
REMOVE HAZARDOUS MATERIALS				\$1,500,000
SITEWORK -Allowance				\$13,000,000
<hr/>				
SUB-TOTAL	Jun-26	122,630	\$608.38	\$74,605,235
ESCALATION TO START DATE	6.80%			\$5,073,156
DESIGN AND PRICING CONTINGENCY	15.0%			\$11,190,785
<hr/>				
SUB-TOTAL		122,630	\$741.00	\$90,869,176
GENERAL CONDITIONS	40	MTHS	\$160,000	\$6,400,000
GENERAL REQUIREMENTS	2.00%			\$1,817,384
PHASING	3.00%			\$2,726,075
BONDS	0.75%			\$681,519
INSURANCES	2.00%			\$1,817,384
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$104,311,538
OH+P	3.0%			\$3,129,346
MODULAR CLASSROOMS				Excluded
<b>TOTAL OF ALL CONSTRUCTION</b>		122,630	\$876.14	<b>\$107,440,884</b>





Neary Elementary School  
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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION B.5 - Add/Reno at Woodward (610 Enrollment)</b>				
NEW ADDITION + RENOVATE EXISTING SCHOOL		130,782	\$474.67	\$62,078,636
DEMOLITION				NR
REMOVE HAZARDOUS MATERIALS				\$1,750,000
SITEWORK				\$13,000,000
<hr/>				
SUB-TOTAL	Jun-26	130,782	\$587.46	\$76,828,636
ESCALATION TO START DATE	6.80%			\$5,224,347
DESIGN AND PRICING CONTINGENCY	15.0%			\$11,524,295
<hr/>				
SUB-TOTAL		130,782	\$715.52	\$93,577,278
<hr/>				
GENERAL CONDITIONS	40	MTHS	\$160,000	\$6,400,000
GENERAL REQUIREMENTS	2.00%			\$1,871,546
PHASING	3.00%			\$2,807,318
BONDS	0.75%			\$701,830
INSURANCES	2.00%			\$1,871,546
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$107,229,518
OH+P	3.0%			\$3,216,886
<b>TOTAL OF ALL CONSTRUCTION</b>		130,782	\$844.51	<b>\$110,446,404</b>



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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION C.1 - New Construction Neary (305 Enrollment)</b>				
NEW CONSTRUCTION		78,405	\$552.95	\$43,354,383
DEMOLITION		66,775	\$10.00	\$667,750
REMOVE HAZARDOUS MATERIALS				\$1,500,000
SITEWORK				\$12,000,000
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SUB-TOTAL	Jun-26	78,405	\$733.65	\$57,522,133
ESCALATION TO START DATE	6.80%			\$3,911,505
DESIGN AND PRICING CONTINGENCY	15.0%			\$8,628,320
<hr/>				
SUB-TOTAL		78,405	\$893.59	\$70,061,958
GENERAL CONDITIONS	24	MTHS	\$160,000	\$3,840,000
GENERAL REQUIREMENTS	2.00%			\$1,401,239
PHASING				NR
BONDS	0.75%			\$525,465
INSURANCES	2.00%			\$1,401,239
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$77,229,901
OH+P	3.0%			\$2,316,897
<b>TOTAL OF ALL CONSTRUCTION</b>		78,405	\$1,014.56	<b>\$79,546,798</b>



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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION C.2 - New Construction Neary (450 Enrollment)</b>				
NEW CONSTRUCTION		100,200	\$526.39	\$52,744,057
DEMOLITION		66,775	\$10.00	\$667,750
REMOVE HAZARDOUS MATERIALS				\$1,500,000
SITEWORK				\$12,500,000
SUB-TOTAL	Jun-26	100,200	\$672.77	\$67,411,807
ESCALATION TO START DATE	6.80%			\$4,584,003
DESIGN AND PRICING CONTINGENCY	15.0%			\$10,111,771
SUB-TOTAL		100,200	\$819.44	\$82,107,581
GENERAL CONDITIONS	30	MTHS	\$160,000	\$4,800,000
GENERAL REQUIREMENTS	2.00%			\$1,642,152
PHASING				NR
BONDS	0.75%			\$615,807
INSURANCES	2.00%			\$1,642,152
PERMIT				Excl
SUB-TOTAL				\$90,807,692
OH+P	3.0%			\$2,724,231
<b>TOTAL OF ALL CONSTRUCTION</b>		100,200	\$933.45	<b>\$93,531,923</b>

<sup>1</sup> Costs from UEC report Dated Feb 6-9, 2024



Neary Elementary School  
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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION C.3 - New Construction Woodward (450 Enrollment)</b>				
NEW CONSTRUCTION		100,200	\$518.33	\$51,937,116
DEMOLITION		68,400	\$10.00	\$684,000
REMOVE HAZARDOUS MATERIALS				\$1,750,000
SITEWORK				\$12,500,000
<hr/>				
SUB-TOTAL	Jun-26	100,200	\$667.38	\$66,871,116
ESCALATION TO START DATE	6.80%			\$4,547,236
DESIGN AND PRICING CONTINGENCY	15.0%			\$10,030,667
<hr/>				
SUB-TOTAL		100,200	\$812.86	\$81,449,019
GENERAL CONDITIONS	30	MTHS	\$160,000	\$4,800,000
GENERAL REQUIREMENTS	2.00%			\$1,628,980
PHASING				NR
BONDS	0.75%			\$610,868
INSURANCES	2.00%			\$1,628,980
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$90,117,847
OH+P	3.0%			\$2,703,535
<b>TOTAL OF ALL CONSTRUCTION</b>		100,200	\$926.36	<b>\$92,821,382</b>



Neary Elementary School  
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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION C.4 - New Construction Neary (610 Enrollment)</b>				
NEW CONSTRUCTION		121,070	\$505.53	\$61,204,820
DEMOLITION		68,400	\$10.00	\$684,000
REMOVE HAZARDOUS MATERIALS				\$1,750,000
SITEWORK				\$13,000,000
SUB-TOTAL	Jun-26	121,070	\$633.01	\$76,638,820
ESCALATION TO START DATE	6.80%			\$5,211,440
DESIGN AND PRICING CONTINGENCY	15.0%			\$11,495,823
SUB-TOTAL		121,070	\$771.01	\$93,346,083
GENERAL CONDITIONS	34	MTHS	\$160,000	\$5,440,000
GENERAL REQUIREMENTS	2.00%			\$1,866,922
PHASING	2.00%			NR
BONDS	0.75%			\$700,096
INSURANCES	2.00%			\$1,866,922
PERMIT				Excl
SUB-TOTAL				\$103,220,023
OH+P	3.0%			\$3,096,601
<b>TOTAL OF ALL CONSTRUCTION</b>		121,070	\$878.14	<b>\$106,316,624</b>



Neary Elementary School  
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**PDP Options Cost Estimate**

**MAIN CONSTRUCTION COST SUMMARY**

	Start Date	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION C.5 - New Construction Woodward (610 Enrollment)</b>				
NEW CONSTRUCTION		121,010	\$499.95	\$60,499,504
DEMOLITION		68,400	\$10.00	\$684,000
REMOVE HAZARDOUS MATERIALS <sup>1</sup>				\$1,750,000
SITEWORK				\$13,000,000
<hr/>				
SUB-TOTAL	Jun-26	121,010	\$627.50	\$75,933,504
ESCALATION TO START DATE	6.80%			\$5,163,478
DESIGN AND PRICING CONTINGENCY	15.0%			\$11,390,026
<hr/>				
SUB-TOTAL		121,010	\$764.29	\$92,487,008
GENERAL CONDITIONS	34	MTHS	\$160,000	\$5,440,000
GENERAL REQUIREMENTS	2.00%			\$1,849,740
PHASING				NR
BONDS	0.75%			\$693,653
INSURANCES	2.00%			\$1,849,740
PERMIT				Excl
<hr/>				
SUB-TOTAL				\$102,320,141
OH+P	3.0%			\$3,069,604
<b>TOTAL OF ALL CONSTRUCTION</b>		121,010	\$870.92	<b>\$105,389,745</b>





Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 88,690

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.1</b>					
<b>A10</b>	<b>FOUNDATIONS</b>				
A1010	Standard Foundations	\$468,300			
A1020	Special Foundations	\$438,300			
A1030	Lowest Floor Construction	\$748,961	<b>\$1,655,561</b>	\$18.67	3.9%
<b>A20</b>	<b>BASEMENT CONSTRUCTION</b>				
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10</b>	<b>SUPERSTRUCTURE</b>				
B1010	Upper Floor Construction	\$1,001,625			
B1020	Roof Construction	\$1,303,620	<b>\$2,305,245</b>	\$25.99	5.4%
<b>B20</b>	<b>EXTERIOR CLOSURE</b>				
B2010	Exterior Walls	\$3,961,440			
B2020	Windows	\$3,214,677			
B2030	Exterior Doors	\$88,690	<b>\$7,264,807</b>	\$81.91	17.0%
<b>B30</b>	<b>ROOFING</b>				
B3010	Roof Coverings	\$3,659,750			
B3020	Roof Openings	\$0	<b>\$3,659,750</b>	\$41.26	8.6%
<b>C10</b>	<b>INTERIOR CONSTRUCTION</b>				
C1010	Partitions	\$3,205,668			
C1020	Interior Doors	\$709,520			
C1030	Specialties/Millwork	\$1,303,554	<b>\$5,218,742</b>	\$58.84	12.2%
<b>C20</b>	<b>STAIRCASES</b>				
C2010	Stair Construction	\$0			
C2020	Stair Finishes	\$0	<b>\$0</b>	\$0.00	0.0%
<b>C30</b>	<b>INTERIOR FINISHES</b>				
C3010	Wall Finishes	\$709,520			
C3020	Floor Finishes	\$1,486,845			
C3030	Ceiling Finishes	\$886,900	<b>\$3,083,265</b>	\$34.76	7.2%
<b>D10</b>	<b>CONVEYING SYSTEMS</b>				
D1010	Elevator	\$0	<b>\$0</b>	\$0.00	0.0%



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 88,690

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.1</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$2,483,320	<b>\$2,483,320</b>	\$28.00	5.8%
<b>D30 HVAC</b>				
D30 HVAC	\$7,095,200	<b>\$7,095,200</b>	\$80.00	16.6%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$709,520	<b>\$709,520</b>	\$8.00	1.7%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$6,006,458	<b>\$6,006,458</b>	\$67.72	14.1%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,433,000	<b>\$1,433,000</b>	\$16.16	3.4%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,204,280			
E2020 Movable Furnishings	NIC	<b>\$1,204,280</b>	\$13.58	2.8%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$627,050			
F2020 Hazardous Components Abatement	\$0	<b>\$627,050</b>	\$7.07	1.5%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$42,746,198</b>	<b>\$481.97</b>	<b>100.0%</b>



PDP Options Cost Estimate

GFA

88,690

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.1**

**GROSS FLOOR AREA CALCULATION**

Level 1	21,915
Level 2	
Level 3	
Building Renovation	66,775

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>88,690 sf</b>
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**A10 FOUNDATIONS**

<b>A1010</b>	<b>STANDARD FOUNDATIONS</b>						
	Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B	<b>21,915</b>	sf	20.00	438,300		
	Temporary dewatering for foundation work	<b>1</b>	ls	30,000.00	30,000		
	SUBTOTAL					468,300	
<b>A1020</b>	<b>SPECIAL FOUNDATIONS</b>						
	Structural fill/Ground Improvements Allowance	<b>21,915</b>	sf	20.00	438,300		
	SUBTOTAL					438,300	
<b>A1030</b>	<b>LOWEST FLOOR CONSTRUCTION</b>						
<i>033000</i>	<b>CONCRETE</b>						
	Vapor barrier, 15mils	<b>21,915</b>	sf	1.25	27,394		
	<u>Slab on grade</u>	<i>21,915</i>	sf				
	WWF reinforcement	<b>25,202</b>	sf	1.85	46,624		
	Concrete - 5" thick	<b>349</b>	cy	170.00	59,330		
	Placing concrete	<b>349</b>	cy	65.00	22,685		
	Finishing and curing concrete	<b>21,915</b>	sf	3.00	65,745		
	Control joints - saw cut	<b>21,915</b>	sf	0.10	2,192		
	<u>Miscellaneous</u>						
	Patch existing floors	<b>66,775</b>	sf	5.00	333,875		
	Equipment pads	<b>1</b>	ls	15,000.00	15,000		
	Loading dock	<b>1</b>	ls	30,000.00	30,000		
	Elevator pits	<b>1</b>	ea	40,000.00	NR		
	Radon system				Excluded; NR		
<i>072100</i>	<b>THERMAL INSULATION</b>						
	Under slab insulation, 2" thick under slab	<b>21,915</b>	sf	3.00	65,745		
<i>312000</i>	<b>EARTHWORK</b>						
	Gravel base, 12"	<b>812</b>	cy	45.00	36,540		
	Compact existing sub-grade	<b>21,915</b>	sf	0.50	10,958		
	Underslab E&B for plumbing	<b>21,915</b>	sf	1.50	32,873		
	SUBTOTAL					748,961	

<b>TOTAL - FOUNDATIONS</b>	<b>\$1,655,561</b>
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**A20 BASEMENT CONSTRUCTION**

<b>A2010</b>	<b>BASEMENT EXCAVATION</b>						
	No Work in this section						
	SUBTOTAL					-	
<b>A2020</b>	<b>BASEMENT WALLS</b>						
	No Work in this section						
	SUBTOTAL					-	

<b>TOTAL - BASEMENT CONSTRUCTION</b>	
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**B10 SUPERSTRUCTURE**

<b>B1010</b>	<b>FLOOR CONSTRUCTION</b>						
		<i>14.0</i>	lbs/sf				
		<i>153</i>	tns		excluding canopies + roof screens		
		<i>\$6,850</i>	\$/Ton				
<i>033000</i>	<b>CONCRETE</b>						
	WWF reinforcement		sf	1.85			
	Concrete Fill to metal deck; lightweight, total thickness 5 1/4"		cy	190.00			



PDP Options Cost Estimate

GFA

88,690

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.1</b>							
	Place and finish concrete		sf	3.00			
	Rebar to decks		lbs	2.00			
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF		tns	5,200.00			
	Moment connections		ea	750.00			
	Shear studs		ea	3.50			
	2" metal galvanized floor deck		sf	7.50			
	Expansion joints	1	ls	100,000.00	NR		
	Seismic upgrades	66,775	sf	15.00	1,001,625		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr		sf	3.00			
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00	NR		
	SUBTOTAL					1,001,625	
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00	90,000		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 14 lbs per SF	153	tns	5,200.00	795,600		
	Canopy	11	tns	5,500.00	60,500		
	Roof screens	7	tns	5,500.00	38,500		
	<u>Decking</u>						
	1 1/2" galvanized metal deck, typical	21,915	sf	7.00	153,405		
	Premium for acoustic (Gym)	6,000	sf	6.00	36,000		
	Roof deck repair at existing; 2%	1,336	sf	15.00	20,040		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	21,915	sf	5.00	109,575		
	SUBTOTAL					1,303,620	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$2,305,245</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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<b>B2010</b>	<b>EXTERIOR WALLS</b>	46,665	Total closure area
	<b>Exterior Wall Area - 70% solid</b>	32,666	sf total area solid
042000	<b>MASONRY</b>		
	Mockup	1	ls 50,000.00 50,000
	Brick veneer; 60% of Solid	19,600	sf 823,200
	Remove existing brick	15,866	sf 237,990
	8" Mineral wool at exterior closure (2 layers 4")	32,666	sf 244,995
	Miscellaneous flashings and sealants	32,666	sf 48,999
	Staging to exterior wall	32,666	sf 130,664
055000	<b>MISC. METALS</b>		
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	19,600	sf 29,400
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>		
	Air barrier	32,666	sf 326,660
	Miscellaneous sealants to closure	32,666	sf 32,666
072100	<b>THERMAL INSULATION</b>		
	4" Batt insulation in stud	16,800	sf 67,200
	Insulation at glazed openings	4,667	lf 28,002
076400	<b>CLADDING</b>		
	Phenolic Panel Rainscreen; 40% of solid	13,066	sf 1,306,600
	12' high Acoustic Equipment Screen	1,440	sf 136,800



PDP Options Cost Estimate

GFA

88,690

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.1**

	<i>EXPANSION JOINT COVERS</i>						
	Expansion joints	1	ls	25,000.00	25,000		
092900	<i>GYPSUM BOARD ASSEMBLIES</i>						
	Exterior wall;						
	6" Stud backup	16,800	sf	16.00	268,800		
	Gypsum Sheathing	16,800	sf	3.50	58,800		
	Drywall lining to interior face of stud backup	32,666	sf	4.00	130,664		
101400	<i>SIGNAGE</i>						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					3,961,440	
<b>B2020</b>	<b>WINDOWS</b>						
	<b>Exterior Wall Area; 30%</b>	14,000	sf				
061000	<i>ROUGH CARPENTRY</i>						
	Wood blocking at openings	4,667	lf	10.00	46,670		
070001	<i>WATERPROOFING, DAMPPROOFING AND CAULKING</i>						
	Air barrier/flashng at windows	4,667	lf	10.00	46,670		
	Backer rod & double sealant	4,667	lf	11.00	51,337		
080001	<i>METAL WINDOWS</i>						
	Aluminum windows, triple glazed	10,000	sf	205.00	2,050,000		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	<i>LOUVERS</i>						
	Louvers				N/A		
	SUBTOTAL					3,214,677	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	88,690	gsf	1.00	88,690		
	SUBTOTAL					88,690	

<b>TOTAL - EXTERIOR CLOSURE</b>	<b>\$7,264,807</b>
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**B30 ROOFING**

055000	<i>MISCELLANEOUS METALS</i>						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	<i>ROUGH CARPENTRY</i>						
	Rough carpentry and blocking @ roof	88,690	sf	1.50	133,035		
070002	<i>ROOFING AND FLASHING</i>						
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	88,690	total area				
	Plaza deck pavers system at terrace	88,690	sf	32.00	2,838,080		
	<u>Miscellaneous Roofing</u>						
	Demo existing roofing	66,775	sf	5.00	333,875		
	Miscellaneous flashings/copings/walkway pads etc.	88,690	sf	4.00	354,760		
	SUBTOTAL					3,659,750	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	<i>ROOF SKYLIGHTS</i>						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>	<b>\$3,659,750</b>
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**C10 INTERIOR CONSTRUCTION**

**C1010 PARTITIONS**



PDP Options Cost Estimate

GFA

88,690

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.1</b>							
040001	MASONRY						
	Allowance for masonry partitions	88,690	gsf	2.00	177,380		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		
	Wood blocking at interiors	88,690	gsf	0.50	44,345		
078400	FIREPROOFING/FIRESTOPPING						
	Fire stopping including slab edges and core	88,690	gsf	1.00	88,690		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Miscellaneous sealants throughout building	88,690	gsf	1.25	110,863		
078150	EXPANSION JOINTS						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	INTERIOR GLAZING						
	Allowance for interior glazing	88,690	gsf	5.00	443,450		
092900	GYPSUM BOARD ASSEMBLIES						
	Allowance for GWB partitions	88,690	gsf	26.00	2,305,940		
	SUBTOTAL					3,205,668	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	88,690	gsf	8.00	709,520		
	SUBTOTAL					709,520	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	MISCELLANEOUS METALS						
	Miscellaneous metals throughout building	88,690	gsf	5.00	443,450		
061000	ROUGH CARPENTRY						
062000	INTERIOR ARCHITECTURAL WOODWORK						
	Interior millwork package	88,690	gsf	3.00	266,070		
101100	VISUAL DISPLAY SURFACES						
	Markerboard and tackboard package	88,690	gsf	2.00	177,380		
101400	SIGNAGE						
	Room identification, directional & safety signage, building directory + environmental graphics	88,690	gsf	2.00	177,380		
102800	TOILET ACCESSORIES						
	Toilet accessories/compartments	88,690	gsf	1.00	88,690		
104400	FIRE PROTECTION SPECIALTIES						
	Fire extinguisher cabinets	1	ls	15,549.00	15,549		
	AED cabinets	1	ls	2,000.00	2,000		
105000	LOCKERS						
	Student lockers	88,690	gsf	1.50	133,035		
	SUBTOTAL					1,303,554	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$5,218,742</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	CONCRETE						
	Concrete to stairs		flt	5,000.00	NR		
055000	MISCELLANEOUS METALS						
	Egress stairs w/ stainless steel rails and handrails		flt	50,000.00	NR		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair		flt	80,000.00	NR		
	SUBTOTAL					-	





PDP Options Cost Estimate

GFA

88,690

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.1**

**C2020 STAIR FINISHES**

090005 RESILIENT FLOORS

Stair finishes

flts

20,000.00

NR

SUBTOTAL

-

**TOTAL - STAIRCASES**

**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package

88,690

gsf

8.00

709,520

SUBTOTAL

709,520

**C3020 FLOOR FINISHES**

Floor finishes complete package

88,690

gsf

13.00

1,152,970

Floor prep at existing

66,775

sf

5.00

333,875

SUBTOTAL

1,486,845

**C3030 CEILING FINISHES**

Ceiling finishes complete package

88,690

gsf

10.00

886,900

SUBTOTAL

886,900

**TOTAL - INTERIOR FINISHES**

**\$3,083,265**

**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

055000 MISCELLANEOUS METALS

Pit ladder and miscellaneous metals

1

ea

900.00

NR

Sill angles

1

ls

1,500.00

NR

142100 ELEVATOR

HC lift at stage

1

ea

55,000.00

NR

Electric traction elevator, 3 stop, 4,000lbs

1

ea

285,000.00

NR

SUBTOTAL

-

**TOTAL - CONVEYING SYSTEMS**

**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete

88,690

gsf

28.00

2,483,320

SUBTOTAL

2,483,320

**TOTAL - PLUMBING**

**\$2,483,320**

**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium

88,690

gsf

40.00

ALT

HVAC System; ASHP

88,690

gsf

80.00

7,095,200

SUBTOTAL

7,095,200

**TOTAL - HVAC**

**\$7,095,200**

**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire Equipment

Fire pump with controller 75GPM, incl Jockey pump with controller

1

ea

80,000.00

Assumed NR

Sprinkler system; complete

88,690

gsf

8.00

709,520

SUBTOTAL

709,520

**TOTAL - FIRE PROTECTION**

**\$709,520**



PDP Options Cost Estimate

GFA

88,690

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.1**

**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard

1 ea 125,000.00 125,000

Panelboards/feeders

88,690 gsf 6.00 532,140

Emergency power

Emergency Generator

1 ls Included Below

Emergency power feeders

88,690 gsf 6.50 576,485

Photovoltaic

PV system equipment; roof top

Excluded

Battery Storage

Excluded

Equipment Wiring

Feeders + Electrical to equipment

88,690 gsf 7.00 620,830

SUBTOTAL

1,854,455

**D5020 LIGHTING & POWER**

Lighting, Controls + Power

88,690 gsf 18.00 1,596,420

SUBTOTAL

1,596,420

**D5030 COMMUNICATION & SECURITY SYSTEMS**

Telecommunications/PA + Clock

88,690 gsf 4.00 354,760

Performance lighting

Platform dimming panelboard with feeders

1 ls 15,000.00 15,000

Platform/performance lighting system

1 ls 75,000.00 75,000

Audio Visual Systems/Speech Reinforcement

88,690 gsf 10.00 886,900

Specialty Communications Systems

BDA system, antenna and annunciator

88,690 sf 0.65 57,649

Cell repeater/Distributed antenna system, not specified

88,690 sf 1.00 88,690

Fire Alarm

88,690 gsf 3.00 266,070

Security System

88,690 gsf 6.00 532,140

SUBTOTAL

2,276,209

**D5040 OTHER ELECTRICAL SYSTEMS**

Common Work Results for Electrical

Lightning prevention

88,690 gsf 0.30 26,607

Grounding

88,690 gsf 0.40 35,476

Misc. demolition work

88,690 gsf 0.25 22,173

Temp power and lights

88,690 gsf 1.20 106,428

Seismic restraints/Coordination/misc.

88,690 gsf 1.00 88,690

SUBTOTAL

279,374

<b>TOTAL - ELECTRICAL</b>						<b>\$6,006,458</b>	
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**E10 EQUIPMENT**

**E10 EQUIPMENT, GENERALLY**

**112000 LOADING DOCK EQUIPMENT**

Loading dock equipment

1 ls 10,000.00 10,000

**110620 THEATRICAL EQUIPMENT**

Allowance for auditorium; lighting/rigging/AV/Seating

1 ls 750,000.00 750,000

**113100 APPLIANCES**

Residential appliances - allowance

1 ls 15,000.00 15,000

**114000 FOOD SERVICE EQUIPMENT**

Kitchen equipment

1 ls 420,000.00 420,000

**115300 EDUCATIONAL EQUIPMENT**

Kiln

1 ea 5,000.00 5,000

Allowance for miscellaneous equipment

1 ls 50,000 50,000

**116600 GYM EQUIPMENT**

Gym Equipment

1 ls 117,000.00 117,000

**126000 SEATING**



PDP Options Cost Estimate

GFA

88,690

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.1**

Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
SUBTOTAL						1,433,000

<b>TOTAL - EQUIPMENT</b>	<b>\$1,433,000</b>
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**E20 FURNISHINGS**

**E2010 FIXED FURNISHINGS**

122100	WINDOW TREATMENT					
	Window shades at exterior glazing including blackout shades at art & science classrooms - allowance	14,000	sf	10.00	140,000	
123553	CASEWORK					
	Casework package	88,690	gsf	12.00	1,064,280	
	SUBTOTAL					1,204,280

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner						NIC
SUBTOTAL						

<b>TOTAL - FURNISHINGS</b>	<b>\$1,204,280</b>
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**F10 SPECIAL CONSTRUCTION**

F10	SPECIAL CONSTRUCTION					
	SUBTOTAL					-

<b>TOTAL - SPECIAL CONSTRUCTION</b>	
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**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

	Remove windows	6,800	sf	12.00	81,600	
	Remove exterior wall for new connection	450	sf	25.00	11,250	
	Gut demolition	66,775	sf	8.00	534,200	
	SUBTOTAL					627,050

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance					See Summary	
SUBTOTAL						

<b>TOTAL - SELECTIVE BUILDING DEMOLITION</b>	<b>\$627,050</b>
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<b>SUBTOTAL</b>	<b>\$42,746,198</b>
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Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 102,330

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.2</b>					
<b>A10 FOUNDATIONS</b>					
A1010	Standard Foundations	\$741,100			
A1020	Special Foundations	\$711,100			
A1030	Lowest Floor Construction	\$979,469	<b>\$2,431,669</b>	\$23.76	4.8%
<b>A20 BASEMENT CONSTRUCTION</b>					
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10 SUPERSTRUCTURE</b>					
B1010	Upper Floor Construction	\$1,001,625			
B1020	Roof Construction	\$1,966,500	<b>\$2,968,125</b>	\$29.01	5.8%
<b>B20 EXTERIOR CLOSURE</b>					
B2010	Exterior Walls	\$5,218,862			
B2020	Windows	\$4,194,218			
B2030	Exterior Doors	\$102,330	<b>\$9,515,410</b>	\$92.99	18.7%
<b>B30 ROOFING</b>					
B3010	Roof Coverings	\$4,171,250			
B3020	Roof Openings	\$0	<b>\$4,171,250</b>	\$40.76	8.2%
<b>C10 INTERIOR CONSTRUCTION</b>					
C1010	Partitions	\$3,693,298			
C1020	Interior Doors	\$818,640			
C1030	Specialties/Millwork	\$1,503,283	<b>\$6,015,221</b>	\$58.78	11.8%
<b>C20 STAIRCASES</b>					
C2010	Stair Construction	\$0			
C2020	Stair Finishes	\$0	<b>\$0</b>	\$0.00	0.0%
<b>C30 INTERIOR FINISHES</b>					
C3010	Wall Finishes	\$818,640			
C3020	Floor Finishes	\$1,664,165			
C3030	Ceiling Finishes	\$1,023,300	<b>\$3,506,105</b>	\$34.26	6.9%
<b>D10 CONVEYING SYSTEMS</b>					
D1010	Elevator	\$0	<b>\$0</b>	\$0.00	0.0%



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 102,330

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.2</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$2,865,240	<b>\$2,865,240</b>	\$28.00	5.6%
<b>D30 HVAC</b>				
D30 HVAC	\$8,186,400	<b>\$8,186,400</b>	\$80.00	16.1%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$818,640	<b>\$818,640</b>	\$8.00	1.6%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$6,897,150	<b>\$6,897,150</b>	\$67.40	13.5%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,533,000	<b>\$1,533,000</b>	\$14.98	3.0%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,413,450			
E2020 Movable Furnishings	NIC	<b>\$1,413,450</b>	\$13.81	2.8%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$638,300			
F2020 Hazardous Components Abatement	\$0	<b>\$638,300</b>	\$6.24	1.3%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$50,959,960</b>	<b>\$498.00</b>	<b>100.0%</b>



PDP Options Cost Estimate

GFA

102,330

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.2**

**GROSS FLOOR AREA CALCULATION**

Level 1	35,555
Level 2	
Level 3	
Building Renovation	66,775

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>102,330</b>	<b>\$f</b>
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**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B

35,555 sf 20.00 711,100

Temporary dewatering for foundation work

1 ls 30,000.00 30,000

SUBTOTAL

741,100

**A1020 SPECIAL FOUNDATIONS**

Structural fill/Ground Improvements Allowance

35,555 sf 20.00 711,100

SUBTOTAL

711,100

**A1030 LOWEST FLOOR CONSTRUCTION**

033000

**CONCRETE**

Vapor barrier, 15mils

35,555 sf 1.25 44,444

Slab on grade

35,555 sf

WWF reinforcement

40,888 sf 1.85 75,643

Concrete - 5" thick

567 cy 170.00 96,390

Placing concrete

567 cy 65.00 36,855

Finishing and curing concrete

35,555 sf 3.00 106,665

Control joints - saw cut

35,555 sf 0.10 3,556

Miscellaneous

Patch existing floors

66,775 sf 5.00 333,875

Equipment pads

1 ls 15,000.00 15,000

Loading dock

1 ls 30,000.00 30,000

Elevator pits

1 ea 40,000.00 NR

Radon system

Excluded; NR

072100

**THERMAL INSULATION**

Under slab insulation, 2" thick under slab

35,555 sf 3.00 106,665

312000

**EARTHWORK**

Gravel base, 12"

1,317 cy 45.00 59,265

Compact existing sub-grade

35,555 sf 0.50 17,778

Underslab E&B for plumbing

35,555 sf 1.50 53,333

SUBTOTAL

979,469

<b>TOTAL - FOUNDATIONS</b>	<b>\$2,431,669</b>
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**A20 BASEMENT CONSTRUCTION**

**A2010 BASEMENT EXCAVATION**

No Work in this section

SUBTOTAL

-

**A2020 BASEMENT WALLS**

No Work in this section

SUBTOTAL

-

<b>TOTAL - BASEMENT CONSTRUCTION</b>
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**B10 SUPERSTRUCTURE**

**B1010 FLOOR CONSTRUCTION**

14.0 lbs/sf  
249 tns excluding canopies + roof screens  
\$6,597 \$/Ton

033000

**CONCRETE**

WWF reinforcement

sf 1.85

Concrete Fill to metal deck; lightweight, total thickness 5 1/4"

cy 190.00





PDP Options Cost Estimate

GFA

102,330

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.2</b>							
	Place and finish concrete		sf	3.00			
	Rebar to decks		lbs	2.00			
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF		tns	5,200.00			
	Moment connections		ea	750.00			
	Shear studs		ea	3.50			
	2" metal galvanized floor deck		sf	7.50			
	Expansion joints	1	ls	50,000.00	NR		
	Seismic upgrades	66,775	sf	15.00	1,001,625		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr		sf	3.00			
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00	NR		
	SUBTOTAL					1,001,625	
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00	90,000		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 14 lbs per SF	249	tns	5,200.00	1,294,800		
	Canopy	11	tns	5,500.00	60,500		
	Roof screens	7	tns	5,500.00	38,500		
	<u>Decking</u>						
	1 1/2" galvanized metal deck, typical	35,555	sf	7.00	248,885		
	Premium for acoustic (Gym)	6,000	sf	6.00	36,000		
	Roof deck repair at existing; 2%	1,336	sf	15.00	20,040		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	35,555	sf	5.00	177,775		
	SUBTOTAL					1,966,500	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$2,968,125</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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<b>B2010</b>	<b>EXTERIOR WALLS</b>	61,830	Total closure area
	<b>Exterior Wall Area - 70% solid</b>	43,281	sf total area solid
042000	<b>MASONRY</b>		
	Mockup	1	ls 50,000.00 50,000
	Brick veneer; 60% of Solid	25,969	sf 1,090,698
	Remove existing brick	15,866	sf 237,990
	8" Mineral wool at exterior closure (2 layers 4")	43,281	sf 324,608
	Miscellaneous flashings and sealants	43,281	sf 64,922
	Staging to exterior wall	43,281	sf 173,124
055000	<b>MISC. METALS</b>		
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	25,969	sf 38,954
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>		
	Air barrier	43,281	sf 432,810
	Miscellaneous sealants to closure	43,281	sf 43,281
072100	<b>THERMAL INSULATION</b>		
	4" Batt insulation in stud	27,415	sf 109,660
	Insulation at glazed openings	6,183	lf 37,098
076400	<b>CLADDING</b>		
	Phenolic Panel Rainscreen; 40% of solid	17,312	sf 1,731,200
	12' high Acoustic Equipment Screen	1,440	sf 136,800



PDP Options Cost Estimate

GFA

102,330

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.2**

	<i>EXPANSION JOINT COVERS</i>						
	Expansion joints	1	ls	25,000.00	25,000		
092900	<i>GYPSUM BOARD ASSEMBLIES</i>						
	Exterior wall;						
	6" Stud backup	27,415	sf	16.00	438,640		
	Gypsum Sheathing	27,415	sf	3.50	95,953		
	Drywall lining to interior face of stud backup	43,281	sf	4.00	173,124		
101400	<i>SIGNAGE</i>						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					5,218,862	
<b>B2020</b>	<b>WINDOWS</b>						
	<b>Exterior Wall Area; 30%</b>	18,549	sf				
061000	<i>ROUGH CARPENTRY</i>						
	Wood blocking at openings	6,183	lf	10.00	61,830		
070001	<i>WATERPROOFING, DAMPPROOFING AND CAULKING</i>						
	Air barrier/flashng at windows	6,183	lf	10.00	61,830		
	Backer rod & double sealant	6,183	lf	11.00	68,013		
080001	<i>METAL WINDOWS</i>						
	Aluminum windows, triple glazed	14,549	sf	205.00	2,982,545		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	<i>LOUVERS</i>						
	Louvers				N/A		
	SUBTOTAL					4,194,218	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	102,330	gsf	1.00	102,330		
	SUBTOTAL					102,330	

<b>TOTAL - EXTERIOR CLOSURE</b>	<b>\$9,515,410</b>
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**B30 ROOFING**

055000	<i>MISCELLANEOUS METALS</i>						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	<i>ROUGH CARPENTRY</i>						
	Rough carpentry and blocking @ roof	102,330	sf	1.50	153,495		
070002	<i>ROOFING AND FLASHING</i>						
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	102,330	total area				
	Plaza deck pavers system at terrace	102,330	sf	32.00	3,274,560		
	<u>Miscellaneous Roofing</u>				Assumed NR		
	Demo existing roofing	66,775	sf	5.00	333,875		
	Miscellaneous flashings/copings/walkway pads etc.	102,330	sf	4.00	409,320		
	SUBTOTAL					4,171,250	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	<i>ROOF SKYLIGHTS</i>						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>	<b>\$4,171,250</b>
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**C10 INTERIOR CONSTRUCTION**

**C1010 PARTITIONS**



PDP Options Cost Estimate

GFA

102,330

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.2</b>							
040001	MASONRY						
	Allowance for masonry partitions	102,330	gsf	2.00	204,660		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		
	Wood blocking at interiors	102,330	gsf	0.50	51,165		
078400	FIREPROOFING/FIRESTOPPING						
	Fire stopping including slab edges and core	102,330	gsf	1.00	102,330		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Miscellaneous sealants throughout building	102,330	gsf	1.25	127,913		
078150	EXPANSION JOINTS						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	INTERIOR GLAZING						
	Allowance for interior glazing	102,330	gsf	5.00	511,650		
092900	GYPSUM BOARD ASSEMBLIES						
	Allowance for GWB partitions	102,330	gsf	26.00	2,660,580		
	SUBTOTAL					3,693,298	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	102,330	gsf	8.00	818,640		
	SUBTOTAL					818,640	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	MISCELLANEOUS METALS						
	Miscellaneous metals throughout building	102,330	gsf	5.00	511,650		
061000	ROUGH CARPENTRY						
062000	INTERIOR ARCHITECTURAL WOODWORK						
	Interior millwork package	102,330	gsf	3.00	306,990		
101100	VISUAL DISPLAY SURFACES						
	Markerboard and tackboard package	102,330	gsf	2.00	204,660		
101400	SIGNAGE						
	Room identification, directional & safety signage, building directory + environmental graphics	102,330	gsf	2.00	204,660		
102800	TOILET ACCESSORIES						
	Toilet accessories/compartments	102,330	gsf	1.00	102,330		
104400	FIRE PROTECTION SPECIALTIES						
	Fire extinguisher cabinets	1	ls	17,497.57	17,498		
	AED cabinets	1	ls	2,000.00	2,000		
105000	LOCKERS						
	Student lockers	102,330	gsf	1.50	153,495		
	SUBTOTAL					1,503,283	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$6,015,221</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	CONCRETE						
	Concrete to stairs		flt	5,000.00	NR		
055000	MISCELLANEOUS METALS						
	Egress stairs w/ stainless steel rails and handrails		flt	50,000.00	NR		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair		flt	80,000.00	NR		
	SUBTOTAL					-	



PDP Options Cost Estimate

GFA

102,330

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.2**

**C2020 STAIR FINISHES**

**090005 RESILIENT FLOORS**

Stair finishes

flts

20,000.00

NR

SUBTOTAL

-

**TOTAL - STAIRCASES**

**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package

102,330

gsf

8.00

818,640

SUBTOTAL

818,640

**C3020 FLOOR FINISHES**

Floor finishes complete package

102,330

gsf

13.00

1,330,290

Floor prep at existing

66,775

sf

5.00

333,875

SUBTOTAL

1,664,165

**C3030 CEILING FINISHES**

Ceiling finishes complete package

102,330

gsf

10.00

1,023,300

SUBTOTAL

1,023,300

**TOTAL - INTERIOR FINISHES**

**\$3,506,105**

**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

**055000 MISCELLANEOUS METALS**

Pit ladder and miscellaneous metals

1

ea

900.00

NR

Sill angles

1

ls

1,500.00

NR

**142100 ELEVATOR**

HC lift at stage

1

ea

55,000.00

NR

Electric traction elevator, 2 stop, 4,000lbs

1

ea

190,000.00

NR

SUBTOTAL

-

**TOTAL - CONVEYING SYSTEMS**

**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete

102,330

gsf

28.00

2,865,240

SUBTOTAL

2,865,240

**TOTAL - PLUMBING**

**\$2,865,240**

**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium

102,330

gsf

40.00

ALT

HVAC System; ASHP

102,330

gsf

80.00

8,186,400

SUBTOTAL

8,186,400

**TOTAL - HVAC**

**\$8,186,400**

**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire Equipment

Fire pump with controller 75GPM, incl Jockey pump with controller

1

ea

80,000.00

Assumed NR

Sprinkler system; complete

102,330

gsf

8.00

818,640

SUBTOTAL

818,640

**TOTAL - FIRE PROTECTION**

**\$818,640**



PDP Options Cost Estimate

GFA

102,330

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.2**

**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard

1 ea 125,000.00 125,000

Panelboards/feeders

102,330 gsf 6.00 613,980

Emergency power

Emergency Generator

1 ls Included Below

Emergency power feeders

102,330 gsf 6.50 665,145

Photovoltaic

PV system equipment; roof top

Excluded

Battery Storage

Excluded

Equipment Wiring

Feeders + Electrical to equipment

102,330 gsf 7.00 716,310

SUBTOTAL

2,120,435

**D5020 LIGHTING & POWER**

Lighting, Controls + Power

102,330 gsf 18.00 1,841,940

SUBTOTAL

1,841,940

**D5030 COMMUNICATION & SECURITY SYSTEMS**

Telecommunications/PA + Clock

102,330 gsf 4.00 409,320

Performance lighting

Platform dimming panelboard with feeders

1 ls 15,000.00 15,000

Platform/performance lighting system

1 ls 75,000.00 75,000

Audio Visual Systems/Speech Reinforcement

102,330 gsf 10.00 1,023,300

Specialty Communications Systems

BDA system, antenna and annunciator

102,330 sf 0.65 66,515

Cell repeater/Distributed antenna system, not specified

102,330 sf 1.00 102,330

Fire Alarm

102,330 gsf 3.00 306,990

Security System

102,330 gsf 6.00 613,980

SUBTOTAL

2,612,435

**D5040 OTHER ELECTRICAL SYSTEMS**

Common Work Results for Electrical

Lightning prevention

102,330 gsf 0.30 30,699

Grounding

102,330 gsf 0.40 40,932

Misc. demolition work

102,330 gsf 0.25 25,583

Temp power and lights

102,330 gsf 1.20 122,796

Seismic restraints/Coordination/misc.

102,330 gsf 1.00 102,330

SUBTOTAL

322,340

<b>TOTAL - ELECTRICAL</b>						<b>\$6,897,150</b>	
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**E10 EQUIPMENT**

**E10 EQUIPMENT, GENERALLY**

**112000 LOADING DOCK EQUIPMENT**

Loading dock equipment

1 ls 10,000.00 10,000

**110620 THEATRICAL EQUIPMENT**

Allowance for auditorium; lighting/rigging/AV/Seating

1 ls 750,000.00 750,000

**113100 APPLIANCES**

Residential appliances - allowance

1 ls 15,000.00 15,000

**114000 FOOD SERVICE EQUIPMENT**

Kitchen equipment

1 ls 520,000.00 520,000

**115300 EDUCATIONAL EQUIPMENT**

Kiln

1 ea 5,000.00 5,000

Allowance for miscellaneous equipment

1 ls 50,000 50,000

**116600 GYM EQUIPMENT**

Gym Equipment

1 ls 117,000.00 117,000

**126000 SEATING**



PDP Options Cost Estimate

GFA

102,330

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.2**

Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
SUBTOTAL						1,533,000

<b>TOTAL - EQUIPMENT</b>	<b>\$1,533,000</b>
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**E20 FURNISHINGS**

**E2010 FIXED FURNISHINGS**

122100	WINDOW TREATMENT					
	Window shades at exterior glazing including blackout shades at art & science classrooms - allowance	18,549	sf	10.00	185,490	
123553	CASEWORK					
	Casework package	102,330	gsf	12.00	1,227,960	
	SUBTOTAL					1,413,450

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner						NIC
SUBTOTAL						

<b>TOTAL - FURNISHINGS</b>	<b>\$1,413,450</b>
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**F10 SPECIAL CONSTRUCTION**

F10	SPECIAL CONSTRUCTION					
	SUBTOTAL					-

<b>TOTAL - SPECIAL CONSTRUCTION</b>	
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**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

	Remove windows	6,800	sf	12.00	81,600	
	Remove exterior wall for new connection	900	sf	25.00	22,500	
	Gut demolition	66,775	sf	8.00	534,200	
	SUBTOTAL					638,300

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance					See Summary	
SUBTOTAL						

<b>TOTAL - SELECTIVE BUILDING DEMOLITION</b>	<b>\$638,300</b>
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<b>SUBTOTAL</b>	<b>\$50,959,960</b>
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Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 104,435

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.3</b>					
<b>A10</b>	<b>FOUNDATIONS</b>				
A1010	Standard Foundations	\$557,300			
A1020	Special Foundations	\$527,300			
A1030	Lowest Floor Construction	\$880,576	<b>\$1,965,176</b>	\$18.82	3.9%
<b>A20</b>	<b>BASEMENT CONSTRUCTION</b>				
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10</b>	<b>SUPERSTRUCTURE</b>				
B1010	Upper Floor Construction	\$1,171,050			
B1020	Roof Construction	\$1,526,795	<b>\$2,697,845</b>	\$25.83	5.4%
<b>B20</b>	<b>EXTERIOR CLOSURE</b>				
B2010	Exterior Walls	\$4,553,455			
B2020	Windows	\$3,728,247			
B2030	Exterior Doors	\$104,435	<b>\$8,386,137</b>	\$80.30	16.8%
<b>B30</b>	<b>ROOFING</b>				
B3010	Roof Coverings	\$4,306,663			
B3020	Roof Openings	\$0	<b>\$4,306,663</b>	\$41.24	8.6%
<b>C10</b>	<b>INTERIOR CONSTRUCTION</b>				
C1010	Partitions	\$3,768,552			
C1020	Interior Doors	\$835,480			
C1030	Specialties/Millwork	\$1,534,106	<b>\$6,138,138</b>	\$58.77	12.3%
<b>C20</b>	<b>STAIRCASES</b>				
C2010	Stair Construction	\$0			
C2020	Stair Finishes	\$0	<b>\$0</b>	\$0.00	0.0%
<b>C30</b>	<b>INTERIOR FINISHES</b>				
C3010	Wall Finishes	\$835,480			
C3020	Floor Finishes	\$1,748,005			
C3030	Ceiling Finishes	\$1,044,350	<b>\$3,627,835</b>	\$34.74	7.3%
<b>D10</b>	<b>CONVEYING SYSTEMS</b>				
D1010	Elevator	\$0	<b>\$0</b>	\$0.00	0.0%



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 104,435

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.3</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$2,924,180	<b>\$2,924,180</b>	\$28.00	5.8%
<b>D30 HVAC</b>				
D30 HVAC	\$8,354,800	<b>\$8,354,800</b>	\$80.00	16.7%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$835,480	<b>\$835,480</b>	\$8.00	1.7%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$7,034,607	<b>\$7,034,607</b>	\$67.36	14.1%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,533,000	<b>\$1,533,000</b>	\$14.68	3.1%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,417,070			
E2020 Movable Furnishings	NIC	<b>\$1,417,070</b>	\$13.57	2.8%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$765,566			
F2020 Hazardous Components Abatement	\$0	<b>\$765,566</b>	\$7.33	1.5%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$49,986,497</b>	<b>\$478.64</b>	<b>100.0%</b>



PDP Options Cost Estimate

GFA

104,435

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.3**

**GROSS FLOOR AREA CALCULATION**

Level 1	26,365
Level 2	
Level 3	
Building Renovation	78,070

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>104,435 sf</b>
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**A10 FOUNDATIONS**

<b>A1010</b>	<b>STANDARD FOUNDATIONS</b>						
	Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B	<b>26,365</b>	sf	20.00	527,300		
	Temporary dewatering for foundation work	<b>1</b>	ls	30,000.00	30,000		
	SUBTOTAL					557,300	
<b>A1020</b>	<b>SPECIAL FOUNDATIONS</b>						
	Structural fill/Ground Improvements Allowance	<b>26,365</b>	sf	20.00	527,300		
	SUBTOTAL					527,300	
<b>A1030</b>	<b>LOWEST FLOOR CONSTRUCTION</b>						
<i>033000</i>	<b>CONCRETE</b>						
	Vapor barrier, 15mils	<b>26,365</b>	sf	1.25	32,956		
	<u>Slab on grade</u>	<i>26,365</i>	<i>sf</i>				
	WWF reinforcement	<b>30,320</b>	sf	1.85	56,092		
	Concrete - 5" thick	<b>420</b>	cy	170.00	71,400		
	Placing concrete	<b>420</b>	cy	65.00	27,300		
	Finishing and curing concrete	<b>26,365</b>	sf	3.00	79,095		
	Control joints - saw cut	<b>26,365</b>	sf	0.10	2,637		
	<u>Miscellaneous</u>						
	Patch existing floors	<b>78,070</b>	sf	5.00	390,350		
	Equipment pads	<b>1</b>	ls	15,000.00	15,000		
	Loading dock	<b>1</b>	ls	30,000.00	30,000		
	Elevator pits	<b>1</b>	ea	40,000.00	NR		
	Radon system				Excluded; NR		
<i>072100</i>	<b>THERMAL INSULATION</b>						
	Under slab insulation, 2" thick under slab	<b>26,365</b>	sf	3.00	79,095		
<i>312000</i>	<b>EARTHWORK</b>						
	Gravel base, 12"	<b>976</b>	cy	45.00	43,920		
	Compact existing sub-grade	<b>26,365</b>	sf	0.50	13,183		
	Underslab E&B for plumbing	<b>26,365</b>	sf	1.50	39,548		
	SUBTOTAL					880,576	
<b>TOTAL - FOUNDATIONS</b>							<b>\$1,965,176</b>

**A20 BASEMENT CONSTRUCTION**

<b>A2010</b>	<b>BASEMENT EXCAVATION</b>						
	No Work in this section						
	SUBTOTAL					-	
<b>A2020</b>	<b>BASEMENT WALLS</b>						
	No Work in this section						
	SUBTOTAL					-	

**TOTAL - BASEMENT CONSTRUCTION**

**B10 SUPERSTRUCTURE**

<b>B1010</b>	<b>FLOOR CONSTRUCTION</b>						
		<i>14.0</i>	<i>lbs/sf</i>				
		<i>185</i>	<i>tns</i>		excluding canopies + roof screens		
		<i>\$6,733</i>	<i>\$/Ton</i>				
<i>033000</i>	<b>CONCRETE</b>						
	WWF reinforcement		sf	1.85			
	Concrete Fill to metal deck; lightweight, total thickness 5 1/4"		cy	190.00			



PDP Options Cost Estimate

GFA

104,435

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.3</b>							
	Place and finish concrete		sf	3.00			
	Rebar to decks		lbs	2.00			
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF		tns	5,200.00			
	Moment connections		ea	750.00			
	Shear studs		ea	3.50			
	2" metal galvanized floor deck		sf	7.50			
	Expansion joints	1	ls	50,000.00		NR	
	Seismic upgrades	78,070	sf	15.00		1,171,050	
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr		sf	3.00			
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00		NR	
	SUBTOTAL						1,171,050
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00		90,000	
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 14 lbs per SF	185	tns	5,200.00		962,000	
	Canopy	11	tns	5,500.00		60,500	
	Roof screens	7	tns	5,500.00		38,500	
	<u>Decking</u>						
	1 1/2" galvanized metal deck, typical	26,365	sf	7.00		184,555	
	Premium for acoustic (Gym)	6,000	sf	6.00		36,000	
	Roof deck repair at existing; 2%	1,561	sf	15.00		23,415	
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	26,365	sf	5.00		131,825	
	SUBTOTAL						1,526,795
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$2,697,845</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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<b>B2010</b>	<b>EXTERIOR WALLS</b>	54,615	Total closure area
	<b>Exterior Wall Area - 70% solid</b>	38,231	sf total area solid
042000	<b>MASONRY</b>		
	Mockup	1	ls 50,000.00 50,000
	Brick veneer; 60% of Solid	22,939	sf 963,438
	Remove existing brick	23,772	sf 356,580
	8" Mineral wool at exterior closure (2 layers 4")	38,231	sf 286,733
	Miscellaneous flashings and sealants	38,231	sf 57,347
	Staging to exterior wall	38,231	sf 152,924
055000	<b>MISC. METALS</b>		
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	22,939	sf 34,409
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>		
	Air barrier	38,231	sf 382,310
	Miscellaneous sealants to closure	38,231	sf 38,231
072100	<b>THERMAL INSULATION</b>		
	4" Batt insulation in stud	14,459	sf 57,836
	Insulation at glazed openings	5,462	lf 32,772
076400	<b>CLADDING</b>		
	Phenolic Panel Rainscreen; 40% of solid	15,292	sf 1,529,200
	12' high Acoustic Equipment Screen	1,440	sf 136,800



PDP Options Cost Estimate

GFA

104,435

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.3**

	<i>EXPANSION JOINT COVERS</i>						
	Expansion joints	1	ls	25,000.00	25,000		
092900	<i>GYPSUM BOARD ASSEMBLIES</i>						
	Exterior wall;						
	6" Stud backup	14,459	sf	16.00	231,344		
	Gypsum Sheathing	14,459	sf	3.50	50,607		
	Drywall lining to interior face of stud backup	38,231	sf	4.00	152,924		
101400	<i>SIGNAGE</i>						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					4,553,455	
<b>B2020</b>	<b>WINDOWS</b>						
	<b>Exterior Wall Area; 30%</b>	16,385	sf				
061000	<i>ROUGH CARPENTRY</i>						
	Wood blocking at openings	5,462	lf	10.00	54,620		
070001	<i>WATERPROOFING, DAMPPROOFING AND CAULKING</i>						
	Air barrier/flashing at windows	5,462	lf	10.00	54,620		
	Backer rod & double sealant	5,462	lf	11.00	60,082		
080001	<i>METAL WINDOWS</i>						
	Aluminum windows, triple glazed	12,385	sf	205.00	2,538,925		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	<i>LOUVERS</i>						
	Louvers				N/A		
	SUBTOTAL					3,728,247	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	104,435	gsf	1.00	104,435		
	SUBTOTAL					104,435	

<b>TOTAL - EXTERIOR CLOSURE</b>	<b>\$8,386,137</b>
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**B30 ROOFING**

055000	<i>MISCELLANEOUS METALS</i>						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	<i>ROUGH CARPENTRY</i>						
	Rough carpentry and blocking @ roof	104,435	sf	1.50	156,653		
070002	<i>ROOFING AND FLASHING</i>						
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	104,435	total area				
	Plaza deck pavers system at terrace	104,435	sf	32.00	3,341,920		
	<u>Miscellaneous Roofing</u>				Assumed NR		
	Demo existing roofing	78,070	sf	5.00	390,350		
	Miscellaneous flashings/copings/walkway pads etc.	104,435	sf	4.00	417,740		
	SUBTOTAL					4,306,663	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	<i>ROOF SKYLIGHTS</i>						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>	<b>\$4,306,663</b>
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**C10 INTERIOR CONSTRUCTION**

**C1010 PARTITIONS**



PDP Options Cost Estimate

GFA

104,435

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.3</b>							
040001	MASONRY						
	Allowance for masonry partitions	104,435	gsf	2.00	208,870		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		
	Wood blocking at interiors	104,435	gsf	0.50	52,218		
078400	FIREPROOFING/FIRESTOPPING						
	Fire stopping including slab edges and core	104,435	gsf	1.00	104,435		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Miscellaneous sealants throughout building	104,435	gsf	1.25	130,544		
078150	EXPANSION JOINTS						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	INTERIOR GLAZING						
	Allowance for interior glazing	104,435	gsf	5.00	522,175		
092900	GYPSUM BOARD ASSEMBLIES						
	Allowance for GWB partitions	104,435	gsf	26.00	2,715,310		
	SUBTOTAL					3,768,552	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	104,435	gsf	8.00	835,480		
	SUBTOTAL					835,480	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	MISCELLANEOUS METALS						
	Miscellaneous metals throughout building	104,435	gsf	5.00	522,175		
061000	ROUGH CARPENTRY						
062000	INTERIOR ARCHITECTURAL WOODWORK						
	Interior millwork package	104,435	gsf	3.00	313,305		
101100	VISUAL DISPLAY SURFACES						
	Markerboard and tackboard package	104,435	gsf	2.00	208,870		
101400	SIGNAGE						
	Room identification, directional & safety signage, building directory + environmental graphics	104,435	gsf	2.00	208,870		
102800	TOILET ACCESSORIES						
	Toilet accessories/compartments	104,435	gsf	1.00	104,435		
104400	FIRE PROTECTION SPECIALTIES						
	Fire extinguisher cabinets	1	ls	17,798.29	17,798		
	AED cabinets	1	ls	2,000.00	2,000		
105000	LOCKERS						
	Student lockers	104,435	gsf	1.50	156,653		
	SUBTOTAL					1,534,106	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$6,138,138</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	CONCRETE						
	Concrete to stairs		flt	5,000.00	NR		
055000	MISCELLANEOUS METALS						
	Egress stairs w/ stainless steel rails and handrails		flt	50,000.00	NR		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair		flt	80,000.00	NR		
	SUBTOTAL					-	





PDP Options Cost Estimate

GFA

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.3**

**C2020 STAIR FINISHES**

**090005 RESILIENT FLOORS**

Stair finishes

flts

20,000.00

NR

SUBTOTAL

-

**TOTAL - STAIRCASES**

**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package

104,435

gsf

8.00

835,480

SUBTOTAL

835,480

**C3020 FLOOR FINISHES**

Floor finishes complete package

104,435

gsf

13.00

1,357,655

Floor prep at existing

78,070

sf

5.00

390,350

SUBTOTAL

1,748,005

**C3030 CEILING FINISHES**

Ceiling finishes complete package

104,435

gsf

10.00

1,044,350

SUBTOTAL

1,044,350

**TOTAL - INTERIOR FINISHES**

**\$3,627,835**

**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

**055000 MISCELLANEOUS METALS**

Pit ladder and miscellaneous metals

1

ea

900.00

NR

Sill angles

1

ls

1,500.00

NR

**142100 ELEVATOR**

HC lift at stage

1

ea

55,000.00

NR

Electric traction elevator, 2 stop, 4,000lbs

1

ea

190,000.00

NR

SUBTOTAL

-

**TOTAL - CONVEYING SYSTEMS**

**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete

104,435

gsf

28.00

2,924,180

SUBTOTAL

2,924,180

**TOTAL - PLUMBING**

**\$2,924,180**

**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium

104,435

gsf

40.00

ALT

HVAC System; ASHP

104,435

gsf

80.00

8,354,800

SUBTOTAL

8,354,800

**TOTAL - HVAC**

**\$8,354,800**

**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire Equipment

Fire pump with controller 75GPM, incl Jockey pump with controller

1

ea

80,000.00

Assumed NR

Sprinkler system; complete

104,435

gsf

8.00

835,480

SUBTOTAL

835,480

**TOTAL - FIRE PROTECTION**

**\$835,480**



PDP Options Cost Estimate

GFA

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.3**

**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard

1 ea 125,000.00 125,000

Panelboards/feeders

104,435 gsf 6.00 626,610

Emergency power

Emergency Generator

1 ls Included Below

Emergency power feeders

104,435 gsf 6.50 678,828

Photovoltaic

PV system equipment; roof top

Excluded

Battery Storage

Excluded

Equipment Wiring

Feeders + Electrical to equipment

104,435 gsf 7.00 731,045

SUBTOTAL

2,161,483

**D5020 LIGHTING & POWER**

Lighting, Controls + Power

104,435 gsf 18.00 1,879,830

SUBTOTAL

1,879,830

**D5030 COMMUNICATION & SECURITY SYSTEMS**

Telecommunications/PA + Clock

104,435 gsf 4.00 417,740

Performance lighting

Platform dimming panelboard with feeders

1 ls 15,000.00 15,000

Platform/performance lighting system

1 ls 75,000.00 75,000

Audio Visual Systems/Speech Reinforcement

104,435 gsf 10.00 1,044,350

Specialty Communications Systems

BDA system, antenna and annunciator

104,435 sf 0.65 67,883

Cell repeater/Distributed antenna system, not specified

104,435 sf 1.00 104,435

Fire Alarm

104,435 gsf 3.00 313,305

Security System

104,435 gsf 6.00 626,610

SUBTOTAL

2,664,323

**D5040 OTHER ELECTRICAL SYSTEMS**

Common Work Results for Electrical

Lightning prevention

104,435 gsf 0.30 31,331

Grounding

104,435 gsf 0.40 41,774

Misc. demolition work

104,435 gsf 0.25 26,109

Temp power and lights

104,435 gsf 1.20 125,322

Seismic restraints/Coordination/misc.

104,435 gsf 1.00 104,435

SUBTOTAL

328,971

<b>TOTAL - ELECTRICAL</b>						<b>\$7,034,607</b>	
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**E10 EQUIPMENT**

**E10 EQUIPMENT, GENERALLY**

**112000 LOADING DOCK EQUIPMENT**

Loading dock equipment

1 ls 10,000.00 10,000

**110620 THEATRICAL EQUIPMENT**

Allowance for auditorium; lighting/rigging/AV/Seating

1 ls 750,000.00 750,000

**113100 APPLIANCES**

Residential appliances - allowance

1 ls 15,000.00 15,000

**114000 FOOD SERVICE EQUIPMENT**

Kitchen equipment

1 ls 520,000.00 520,000

**115300 EDUCATIONAL EQUIPMENT**

Kiln

1 ea 5,000.00 5,000

Allowance for miscellaneous equipment

1 ls 50,000 50,000

**116600 GYM EQUIPMENT**

Gym Equipment

1 ls 117,000.00 117,000

**126000 SEATING**



PDP Options Cost Estimate

GFA

104,435

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.3**

Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
SUBTOTAL						1,533,000

<b>TOTAL - EQUIPMENT</b>	<b>\$1,533,000</b>
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**E20 FURNISHINGS**

**E2010 FIXED FURNISHINGS**

122100	WINDOW TREATMENT					
	Window shades at exterior glazing including blackout shades at art & science classrooms - allowance	16,385	sf	10.00	163,850	
123553	CASEWORK					
	Casework package	104,435	gsf	12.00	1,253,220	
	SUBTOTAL					1,417,070

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner						NIC
SUBTOTAL						

<b>TOTAL - FURNISHINGS</b>	<b>\$1,417,070</b>
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**F10 SPECIAL CONSTRUCTION**

F10	SPECIAL CONSTRUCTION					
	SUBTOTAL					-

<b>TOTAL - SPECIAL CONSTRUCTION</b>	
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**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

	Remove windows	10,188	sf	12.00	122,256	
	Remove exterior wall for new connection	750	sf	25.00	18,750	
	Gut demolition	78,070	sf	8.00	624,560	
	SUBTOTAL					765,566

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance					See Summary	
SUBTOTAL						

<b>TOTAL - SELECTIVE BUILDING DEMOLITION</b>	<b>\$765,566</b>
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<b>SUBTOTAL</b>	<b>\$49,986,497</b>
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Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 122,630

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.4</b>					
<b>A10</b>	<b>FOUNDATIONS</b>				
A1010	Standard Foundations	\$741,100			
A1020	Special Foundations	\$711,100			
A1030	Lowest Floor Construction	\$1,019,469	<b>\$2,471,669</b>	\$20.16	4.1%
<b>A20</b>	<b>BASEMENT CONSTRUCTION</b>				
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10</b>	<b>SUPERSTRUCTURE</b>				
B1010	Upper Floor Construction	\$2,208,286			
B1020	Roof Construction	\$1,966,500	<b>\$4,174,786</b>	\$34.04	7.0%
<b>B20</b>	<b>EXTERIOR CLOSURE</b>				
B2010	Exterior Walls	\$6,138,092			
B2020	Windows	\$4,910,427			
B2030	Exterior Doors	\$122,630	<b>\$11,171,149</b>	\$91.10	18.6%
<b>B30</b>	<b>ROOFING</b>				
B3010	Roof Coverings	\$4,171,250			
B3020	Roof Openings	\$0	<b>\$4,171,250</b>	\$34.01	6.9%
<b>C10</b>	<b>INTERIOR CONSTRUCTION</b>				
C1010	Partitions	\$4,419,023			
C1020	Interior Doors	\$981,040			
C1030	Specialties/Millwork	\$1,800,533	<b>\$7,200,596</b>	\$58.72	12.0%
<b>C20</b>	<b>STAIRCASES</b>				
C2010	Stair Construction	\$110,000			
C2020	Stair Finishes	\$40,000	<b>\$150,000</b>	\$1.22	0.2%
<b>C30</b>	<b>INTERIOR FINISHES</b>				
C3010	Wall Finishes	\$981,040			
C3020	Floor Finishes	\$1,928,065			
C3030	Ceiling Finishes	\$1,226,300	<b>\$4,135,405</b>	\$33.72	6.9%
<b>D10</b>	<b>CONVEYING SYSTEMS</b>				
D1010	Elevator	\$192,400	<b>\$192,400</b>	\$1.57	0.3%



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 122,630

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.4</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$3,433,640	<b>\$3,433,640</b>	\$28.00	5.7%
<b>D30 HVAC</b>				
D30 HVAC	\$9,810,400	<b>\$9,810,400</b>	\$80.00	16.3%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$981,040	<b>\$981,040</b>	\$8.00	1.6%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$8,222,740	<b>\$8,222,740</b>	\$67.05	13.7%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,623,000	<b>\$1,623,000</b>	\$13.23	2.7%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,690,310			
E2020 Movable Furnishings	NIC	<b>\$1,690,310</b>	\$13.78	2.8%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$638,300			
F2020 Hazardous Components Abatement	\$0	<b>\$638,300</b>	\$5.21	1.1%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$60,066,685</b>	<b>\$489.82</b>	<b>100.0%</b>



PDP Options Cost Estimate

GFA

122,630

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.4**

**GROSS FLOOR AREA CALCULATION**

Level 1	35,555
Level 2	20,300
Level 3	
Building Renovation	66,775

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>122,630</b>	<b>\$f</b>
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**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B

35,555 sf 20.00 711,100

Temporary dewatering for foundation work

1 ls 30,000.00 30,000

SUBTOTAL

741,100

**A1020 SPECIAL FOUNDATIONS**

Structural fill/Ground Improvements Allowance

35,555 sf 20.00 711,100

SUBTOTAL

711,100

**A1030 LOWEST FLOOR CONSTRUCTION**

033000

**CONCRETE**

Vapor barrier, 15mils

35,555 sf 1.25 44,444

Slab on grade

35,555 sf

WWF reinforcement

40,888 sf 1.85 75,643

Concrete - 5" thick

567 cy 170.00 96,390

Placing concrete

567 cy 65.00 36,855

Finishing and curing concrete

35,555 sf 3.00 106,665

Control joints - saw cut

35,555 sf 0.10 3,556

Miscellaneous

Patch existing floors

66,775 sf 5.00 333,875

Equipment pads

1 ls 15,000.00 15,000

Loading dock

1 ls 30,000.00 30,000

Elevator pits

1 ea 40,000.00 40,000

Radon system

Excluded; NR

072100

**THERMAL INSULATION**

Under slab insulation, 2" thick under slab

35,555 sf 3.00 106,665

312000

**EARTHWORK**

Gravel base, 12"

1,317 cy 45.00 59,265

Compact existing sub-grade

35,555 sf 0.50 17,778

Underslab E&B for plumbing

35,555 sf 1.50 53,333

SUBTOTAL

1,019,469

<b>TOTAL - FOUNDATIONS</b>	<b>\$2,471,669</b>
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**A20 BASEMENT CONSTRUCTION**

**A2010 BASEMENT EXCAVATION**

No Work in this section

SUBTOTAL

-

**A2020 BASEMENT WALLS**

No Work in this section

SUBTOTAL

-

<b>TOTAL - BASEMENT CONSTRUCTION</b>
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**B10 SUPERSTRUCTURE**

**B1010 FLOOR CONSTRUCTION**

14.4 lbs/sf  
401 tns excluding canopies + roof screens  
\$6,506 \$/Ton

033000

**CONCRETE**

WWF reinforcement

23,345 sf 1.85 43,188

Concrete Fill to metal deck; lightweight, total thickness 5 1/4"

332 cy 190.00 63,080





PDP Options Cost Estimate

GFA

122,630

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.4</b>							
	Place and finish concrete	20,300	sf	3.00	60,900		
	Rebar to decks	6,090	lbs	2.00	12,180		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF	152	tns	5,200.00	790,400		
	Moment connections	8	ea	750.00	6,000		
	Shear studs	5,075	ea	3.50	17,763		
	2" metal galvanized floor deck	20,300	sf	7.50	152,250		
	Expansion joints	1	ls	50,000.00	NR		
	Seismic upgrades	66,775	sf	15.00	1,001,625		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr	20,300	sf	3.00	60,900		
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00	NR		
	SUBTOTAL					2,208,286	
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00	90,000		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 14 lbs per SF	249	tns	5,200.00	1,294,800		
	Canopy	11	tns	5,500.00	60,500		
	Roof screens	7	tns	5,500.00	38,500		
	<u>Decking</u>						
	1 1/2" galvanized metal deck, typical	35,555	sf	7.00	248,885		
	Premium for acoustic (Gym)	6,000	sf	6.00	36,000		
	Roof deck repair at existing; 2%	1,336	sf	15.00	20,040		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	35,555	sf	5.00	177,775		
	SUBTOTAL					1,966,500	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$4,174,786</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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<b>B2010</b>	<b>EXTERIOR WALLS</b>	72,915	Total closure area
	<b>Exterior Wall Area - 70% solid</b>	51,041	sf total area solid
042000	<b>MASONRY</b>		
	Mockup	1	ls 50,000.00 50,000
	Brick veneer; 60% of Solid	30,625	sf 42.00 1,286,250
	Remove existing brick	15,866	sf 15.00 237,990
	8" Mineral wool at exterior closure (2 layers 4")	51,041	sf 7.50 382,808
	Miscellaneous flashings and sealants	51,041	sf 1.50 76,562
	Staging to exterior wall	51,041	sf 4.00 204,164
055000	<b>MISC. METALS</b>		
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	30,625	sf 1.50 45,938
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>		
	Air barrier	51,041	sf 10.00 510,410
	Miscellaneous sealants to closure	51,041	sf 1.00 51,041
072100	<b>THERMAL INSULATION</b>		
	4" Batt insulation in stud	35,175	sf 4.00 140,700
	Insulation at glazed openings	7,292	lf 6.00 43,752
076400	<b>CLADDING</b>		
	Phenolic Panel Rainscreen; 40% of solid	20,416	sf 100.00 2,041,600
	12' high Acoustic Equipment Screen	1,440	sf 95.00 136,800



PDP Options Cost Estimate

GFA

122,630

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.4**

	<i>EXPANSION JOINT COVERS</i>						
	Expansion joints	1	ls	25,000.00	25,000		
092900	<i>GYPSUM BOARD ASSEMBLIES</i>						
	Exterior wall;						
	6" Stud backup	35,175	sf	16.00	562,800		
	Gypsum Sheathing	35,175	sf	3.50	123,113		
	Drywall lining to interior face of stud backup	51,041	sf	4.00	204,164		
101400	<i>SIGNAGE</i>						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					6,138,092	
<b>B2020</b>	<b>WINDOWS</b>						
	<b>Exterior Wall Area; 30%</b>	21,875	sf				
061000	<i>ROUGH CARPENTRY</i>						
	Wood blocking at openings	7,292	lf	10.00	72,920		
070001	<i>WATERPROOFING, DAMPPROOFING AND CAULKING</i>						
	Air barrier/flashing at windows	7,292	lf	10.00	72,920		
	Backer rod & double sealant	7,292	lf	11.00	80,212		
080001	<i>METAL WINDOWS</i>						
	Aluminum windows, triple glazed	17,875	sf	205.00	3,664,375		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	<i>LOUVERS</i>						
	Louvers				N/A		
	SUBTOTAL					4,910,427	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	122,630	gsf	1.00	122,630		
	SUBTOTAL					122,630	

<b>TOTAL - EXTERIOR CLOSURE</b>	<b>\$11,171,149</b>
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**B30 ROOFING**

055000	<i>MISCELLANEOUS METALS</i>						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	<i>ROUGH CARPENTRY</i>						
	Rough carpentry and blocking @ roof	102,330	sf	1.50	153,495		
070002	<i>ROOFING AND FLASHING</i>						
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	102,330	total area				
	Plaza deck pavers system at terrace	102,330	sf	32.00	3,274,560		
	<u>Miscellaneous Roofing</u>				Assumed NR		
	Demo existing roofing	66,775	sf	5.00	333,875		
	Miscellaneous flashings/copings/walkway pads etc.	102,330	sf	4.00	409,320		
	SUBTOTAL					4,171,250	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	<i>ROOF SKYLIGHTS</i>						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>	<b>\$4,171,250</b>
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**C10 INTERIOR CONSTRUCTION**

**C1010 PARTITIONS**



PDP Options Cost Estimate

GFA

122,630

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.4</b>							
040001	MASONRY						
	Allowance for masonry partitions	122,630	gsf	2.00	245,260		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		
	Wood blocking at interiors	122,630	gsf	0.50	61,315		
078400	FIREPROOFING/FIRESTOPPING						
	Fire stopping including slab edges and core	122,630	gsf	1.00	122,630		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Miscellaneous sealants throughout building	122,630	gsf	1.25	153,288		
078150	EXPANSION JOINTS						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	INTERIOR GLAZING						
	Allowance for interior glazing	122,630	gsf	5.00	613,150		
092900	GYPSUM BOARD ASSEMBLIES						
	Allowance for GWB partitions	122,630	gsf	26.00	3,188,380		
	SUBTOTAL					4,419,023	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	122,630	gsf	8.00	981,040		
	SUBTOTAL					981,040	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	MISCELLANEOUS METALS						
	Miscellaneous metals throughout building	122,630	gsf	5.00	613,150		
061000	ROUGH CARPENTRY						
062000	INTERIOR ARCHITECTURAL WOODWORK						
	Interior millwork package	122,630	gsf	3.00	367,890		
101100	VISUAL DISPLAY SURFACES						
	Markerboard and tackboard package	122,630	gsf	2.00	245,260		
101400	SIGNAGE						
	Room identification, directional & safety signage, building directory + environmental graphics	122,630	gsf	2.00	245,260		
102800	TOILET ACCESSORIES						
	Toilet accessories/compartments	122,630	gsf	1.00	122,630		
104400	FIRE PROTECTION SPECIALTIES						
	Fire extinguisher cabinets	1	ls	20,397.57	20,398		
	AED cabinets	1	ls	2,000.00	2,000		
105000	LOCKERS						
	Student lockers	122,630	gsf	1.50	183,945		
	SUBTOTAL					1,800,533	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$7,200,596</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	CONCRETE						
	Concrete to stairs	2	flt	5,000.00	10,000		
055000	MISCELLANEOUS METALS						
	Egress stairs w/ stainless steel rails and handrails	2	flt	50,000.00	100,000		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair		flt	80,000.00	NR		
	SUBTOTAL					110,000	



PDP Options Cost Estimate

GFA

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.4**

**C2020 STAIR FINISHES**

**090005 RESILIENT FLOORS**

Stair finishes	2	flts	20,000.00	40,000		
SUBTOTAL						40,000

**TOTAL - STAIRCASES**

**\$150,000**

**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package	122,630	gsf	8.00	981,040		
SUBTOTAL						981,040

**C3020 FLOOR FINISHES**

Floor finishes complete package	122,630	gsf	13.00	1,594,190		
Floor prep at existing	66,775	sf	5.00	333,875		
SUBTOTAL						1,928,065

**C3030 CEILING FINISHES**

Ceiling finishes complete package	122,630	gsf	10.00	1,226,300		
SUBTOTAL						1,226,300

**TOTAL - INTERIOR FINISHES**

**\$4,135,405**

**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

**055000 MISCELLANEOUS METALS**

Pit ladder and miscellaneous metals	1	ea	900.00	900		
Sill angles	1	ls	1,500.00	1,500		

**142100 ELEVATOR**

HC lift at stage	1	ea	55,000.00	NR		
Electric traction elevator, 2 stop, 4,000lbs	1	ea	190,000.00	190,000		
SUBTOTAL						192,400

**TOTAL - CONVEYING SYSTEMS**

**\$192,400**

**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete	122,630	gsf	28.00	3,433,640		
SUBTOTAL						3,433,640

**TOTAL - PLUMBING**

**\$3,433,640**

**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium	122,630	gsf	40.00	ALT		
HVAC System; ASHP	122,630	gsf	80.00	9,810,400		
SUBTOTAL						9,810,400

**TOTAL - HVAC**

**\$9,810,400**

**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

<u>Fire Equipment</u>						
Fire pump with controller 75GPM, incl Jockey pump with controller	1	ea	80,000.00	Assumed NR		
Sprinkler system; complete	122,630	gsf	8.00	981,040		
SUBTOTAL						981,040

**TOTAL - FIRE PROTECTION**

**\$981,040**



PDP Options Cost Estimate

GFA

122,630

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.4**

**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard

1 ea 125,000.00 125,000

Panelboards/feeders

122,630 gsf 6.00 735,780

Emergency power

Emergency Generator

1 ls Included Below

Emergency power feeders

122,630 gsf 6.50 797,095

Photovoltaic

PV system equipment; roof top

Excluded

Battery Storage

Excluded

Equipment Wiring

Feeders + Electrical to equipment

122,630 gsf 7.00 858,410

SUBTOTAL

2,516,285

**D5020 LIGHTING & POWER**

Lighting, Controls + Power

122,630 gsf 18.00 2,207,340

SUBTOTAL

2,207,340

**D5030 COMMUNICATION & SECURITY SYSTEMS**

Telecommunications/PA + Clock

122,630 gsf 4.00 490,520

Performance lighting

Platform dimming panelboard with feeders

1 ls 15,000.00 15,000

Platform/performance lighting system

1 ls 75,000.00 75,000

Audio Visual Systems/Speech Reinforcement

122,630 gsf 10.00 1,226,300

Specialty Communications Systems

BDA system, antenna and annunciator

122,630 sf 0.65 79,710

Cell repeater/Distributed antenna system, not specified

122,630 sf 1.00 122,630

Fire Alarm

122,630 gsf 3.00 367,890

Security System

122,630 gsf 6.00 735,780

SUBTOTAL

3,112,830

**D5040 OTHER ELECTRICAL SYSTEMS**

Common Work Results for Electrical

Lightning prevention

122,630 gsf 0.30 36,789

Grounding

122,630 gsf 0.40 49,052

Misc. demolition work

122,630 gsf 0.25 30,658

Temp power and lights

122,630 gsf 1.20 147,156

Seismic restraints/Coordination/misc.

122,630 gsf 1.00 122,630

SUBTOTAL

386,285

<b>TOTAL - ELECTRICAL</b>						<b>\$8,222,740</b>
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**E10 EQUIPMENT**

**E10 EQUIPMENT, GENERALLY**

**112000 LOADING DOCK EQUIPMENT**

Loading dock equipment

1 ls 10,000.00 10,000

**110620 THEATRICAL EQUIPMENT**

Allowance for auditorium; lighting/rigging/AV/Seating

1 ls 750,000.00 750,000

**113100 APPLIANCES**

Residential appliances - allowance

1 ls 15,000.00 15,000

**114000 FOOD SERVICE EQUIPMENT**

Kitchen equipment

1 ls 610,000.00 610,000

**115300 EDUCATIONAL EQUIPMENT**

Kiln

1 ea 5,000.00 5,000

Allowance for miscellaneous equipment

1 ls 50,000 50,000

**116600 GYM EQUIPMENT**

Gym Equipment

1 ls 117,000.00 117,000

**126000 SEATING**



PDP Options Cost Estimate

GFA

122,630

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.4**

Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
SUBTOTAL						1,623,000

<b>TOTAL - EQUIPMENT</b>	<b>\$1,623,000</b>
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**E20 FURNISHINGS**

**E2010 FIXED FURNISHINGS**

122100	WINDOW TREATMENT					
	Window shades at exterior glazing including blackout shades at art & science classrooms - allowance	21,875	sf	10.00	218,750	
123553	CASEWORK					
	Casework package	122,630	gsf	12.00	1,471,560	
	SUBTOTAL					1,690,310

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner						NIC
SUBTOTAL						

<b>TOTAL - FURNISHINGS</b>	<b>\$1,690,310</b>
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**F10 SPECIAL CONSTRUCTION**

F10	SPECIAL CONSTRUCTION					
	SUBTOTAL					-

<b>TOTAL - SPECIAL CONSTRUCTION</b>	
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**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

	Remove windows	6,800	sf	12.00	81,600	
	Remove exterior wall for new connection	900	sf	25.00	22,500	
	Gut demolition	66,775	sf	8.00	534,200	
	SUBTOTAL					638,300

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance					See Summary	
SUBTOTAL						

<b>TOTAL - SELECTIVE BUILDING DEMOLITION</b>	<b>\$638,300</b>
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<b>SUBTOTAL</b>	<b>\$60,066,685</b>
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Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 130,782

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.5</b>				
<b>A10 FOUNDATIONS</b>				
A1010 Standard Foundations	\$557,120			
A1020 Special Foundations	\$527,120			
A1030 Lowest Floor Construction	\$880,471	<b>\$1,964,711</b>	\$15.02	3.2%
<b>A20 BASEMENT CONSTRUCTION</b>				
A2010 Basement Excavation	\$0			
A2020 Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10 SUPERSTRUCTURE</b>				
B1010 Upper Floor Construction	\$2,740,604			
B1020 Roof Construction	\$1,521,487	<b>\$4,262,091</b>	\$32.59	6.9%
<b>B20 EXTERIOR CLOSURE</b>				
B2010 Exterior Walls	\$5,987,528			
B2020 Windows	\$4,845,386			
B2030 Exterior Doors	\$130,782	<b>\$10,963,696</b>	\$83.83	17.7%
<b>B30 ROOFING</b>				
B3010 Roof Coverings	\$4,306,325			
B3020 Roof Openings	\$0	<b>\$4,306,325</b>	\$32.93	6.9%
<b>C10 INTERIOR CONSTRUCTION</b>				
C1010 Partitions	\$4,710,457			
C1020 Interior Doors	\$1,046,256			
C1030 Specialties/Millwork	\$1,919,901	<b>\$7,676,614</b>	\$58.70	12.4%
<b>C20 STAIRCASES</b>				
C2010 Stair Construction	\$110,000			
C2020 Stair Finishes	\$40,000	<b>\$150,000</b>	\$1.15	0.2%
<b>C30 INTERIOR FINISHES</b>				
C3010 Wall Finishes	\$1,046,256			
C3020 Floor Finishes	\$2,090,516			
C3030 Ceiling Finishes	\$1,307,820	<b>\$4,444,592</b>	\$33.98	7.2%
<b>D10 CONVEYING SYSTEMS</b>				
D1010 Elevator	\$192,400	<b>\$192,400</b>	\$1.47	0.3%



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 130,782

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION B.5</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$3,661,896	<b>\$3,661,896</b>	\$28.00	5.9%
<b>D30 HVAC</b>				
D30 HVAC	\$10,462,560	<b>\$10,462,560</b>	\$80.00	16.9%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$1,046,256	<b>\$1,046,256</b>	\$8.00	1.7%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$8,755,065	<b>\$8,755,065</b>	\$66.94	14.1%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,623,000	<b>\$1,623,000</b>	\$12.41	2.6%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,785,114			
E2020 Movable Furnishings	NIC	<b>\$1,785,114</b>	\$13.65	2.9%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$784,316			
F2020 Hazardous Components Abatement	\$0	<b>\$784,316</b>	\$6.00	1.3%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$62,078,636</b>	<b>\$474.67</b>	<b>100.0%</b>



PDP Options Cost Estimate

GFA

130,782

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.5**

**GROSS FLOOR AREA CALCULATION**

Level 1	26,356
Level 2	26,356
Level 3	
Building Renovation	78,070

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>130,782 sf</b>
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**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B

26,356 sf 20.00 527,120

Temporary dewatering for foundation work

1 ls 30,000.00 30,000

SUBTOTAL

557,120

**A1020 SPECIAL FOUNDATIONS**

Structural fill/Ground Improvements Allowance

26,356 sf 20.00 527,120

SUBTOTAL

527,120

**A1030 LOWEST FLOOR CONSTRUCTION**

033000

**CONCRETE**

Vapor barrier, 15mils

26,356 sf 1.25 32,945

Slab on grade

26,356 sf

WWF reinforcement

30,309 sf 1.85 56,072

Concrete - 5" thick

420 cy 170.00 71,400

Placing concrete

420 cy 65.00 27,300

Finishing and curing concrete

26,356 sf 3.00 79,068

Control joints - saw cut

26,356 sf 0.10 2,636

Miscellaneous

Patch existing floors

78,070 sf 5.00 390,350

Equipment pads

1 ls 15,000.00 15,000

Loading dock

1 ls 30,000.00 30,000

Elevator pits

1 ea 40,000.00 NR

Radon system

Excluded; NR

072100

**THERMAL INSULATION**

Under slab insulation, 2" thick under slab

26,356 sf 3.00 79,068

312000

**EARTHWORK**

Gravel base, 12"

976 cy 45.00 43,920

Compact existing sub-grade

26,356 sf 0.50 13,178

Underslab E&B for plumbing

26,356 sf 1.50 39,534

SUBTOTAL

880,471

<b>TOTAL - FOUNDATIONS</b>	<b>\$1,964,711</b>
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**A20 BASEMENT CONSTRUCTION**

**A2010 BASEMENT EXCAVATION**

No Work in this section

SUBTOTAL

-

**A2020 BASEMENT WALLS**

No Work in this section

SUBTOTAL

-

<b>TOTAL - BASEMENT CONSTRUCTION</b>	
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**B10 SUPERSTRUCTURE**

**B1010 FLOOR CONSTRUCTION**

14.5 lbs/sf  
382 tns excluding canopies + roof screens  
\$6,540 \$/Ton

033000

**CONCRETE**

WWF reinforcement

30,309 sf 1.85 56,072

Concrete Fill to metal deck; lightweight, total thickness 5 1/4"

430 cy 190.00 81,700



PDP Options Cost Estimate

GFA

130,782

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.5</b>							
	Place and finish concrete	26,356	sf	3.00	79,068		
	Rebar to decks	7,907	lbs	2.00	15,814		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF	198	tns	5,200.00	1,029,600		
	Moment connections	10	ea	750.00	7,500		
	Shear studs	6,589	ea	3.50	23,062		
	2" metal galvanized floor deck	26,356	sf	7.50	197,670		
	Expansion joints	1	ls	50,000.00	NR		
	Seismic upgrades	78,070	sf	15.00	1,171,050		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr	26,356	sf	3.00	79,068		
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00	NR		
	SUBTOTAL					2,740,604	
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00	90,000		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 14 lbs per SF	184	tns	5,200.00	956,800		
	Canopy	11	tns	5,500.00	60,500		
	Roof screens	7	tns	5,500.00	38,500		
	<u>Decking</u>						
	1 1/2" galvanized metal deck, typical	26,356	sf	7.00	184,492		
	Premium for acoustic (Gym)	6,000	sf	6.00	36,000		
	Roof deck repair at existing; 2%	1,561	sf	15.00	23,415		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	26,356	sf	5.00	131,780		
	SUBTOTAL					1,521,487	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$4,262,091</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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<b>B2010</b>	<b>EXTERIOR WALLS</b>	71,910	Total closure area
	<b>Exterior Wall Area - 70% solid</b>	50,337	sf total area solid
042000	<b>MASONRY</b>		
	Mockup	1	ls 50,000.00 50,000
	Brick veneer; 60% of Solid	30,202	sf 1,268,484
	Remove existing brick	23,772	sf 356,580
	8" Mineral wool at exterior closure (2 layers 4")	50,337	sf 377,528
	Miscellaneous flashings and sealants	50,337	sf 75,506
	Staging to exterior wall	50,337	sf 201,348
055000	<b>MISC. METALS</b>		
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	30,202	sf 45,303
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>		
	Air barrier	50,337	sf 503,370
	Miscellaneous sealants to closure	50,337	sf 50,337
072100	<b>THERMAL INSULATION</b>		
	4" Batt insulation in stud	26,565	sf 106,260
	Insulation at glazed openings	7,191	lf 43,146
076400	<b>CLADDING</b>		
	Phenolic Panel Rainscreen; 40% of solid	20,135	sf 2,013,500
	12' high Acoustic Equipment Screen	1,440	sf 136,800



PDP Options Cost Estimate

GFA

130,782

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.5**

	<i>EXPANSION JOINT COVERS</i>						
	Expansion joints	1	ls	25,000.00	25,000		
092900	<i>GYPSUM BOARD ASSEMBLIES</i>						
	Exterior wall;						
	6" Stud backup	26,565	sf	16.00	425,040		
	Gypsum Sheathing	26,565	sf	3.50	92,978		
	Drywall lining to interior face of stud backup	50,337	sf	4.00	201,348		
101400	<i>SIGNAGE</i>						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					5,987,528	
<b>B2020</b>	<b>WINDOWS</b>						
	<b>Exterior Wall Area; 30%</b>	21,573	sf				
061000	<i>ROUGH CARPENTRY</i>						
	Wood blocking at openings	7,191	lf	10.00	71,910		
070001	<i>WATERPROOFING, DAMPPROOFING AND CAULKING</i>						
	Air barrier/flashng at windows	7,191	lf	10.00	71,910		
	Backer rod & double sealant	7,191	lf	11.00	79,101		
080001	<i>METAL WINDOWS</i>						
	Aluminum windows, triple glazed	17,573	sf	205.00	3,602,465		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	<i>LOUVERS</i>						
	Louvers				N/A		
	SUBTOTAL					4,845,386	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	130,782	gsf	1.00	130,782		
	SUBTOTAL					130,782	

<b>TOTAL - EXTERIOR CLOSURE</b>	<b>\$10,963,696</b>
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**B30 ROOFING**

055000	<i>MISCELLANEOUS METALS</i>						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	<i>ROUGH CARPENTRY</i>						
	Rough carpentry and blocking @ roof	104,426	sf	1.50	156,639		
070002	<i>ROOFING AND FLASHING</i>						
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	104,426	total area				
	Plaza deck pavers system at terrace	104,426	sf	32.00	3,341,632		
	<u>Miscellaneous Roofing</u>						
	Demo existing roofing	78,070	sf	5.00	390,350		
	Miscellaneous flashings/copings/walkway pads etc.	104,426	sf	4.00	417,704		
	SUBTOTAL					4,306,325	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	<i>ROOF SKYLIGHTS</i>						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>	<b>\$4,306,325</b>
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**C10 INTERIOR CONSTRUCTION**

**C1010 PARTITIONS**



PDP Options Cost Estimate

GFA

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION B.5</b>							
040001	MASONRY						
	Allowance for masonry partitions	130,782	gsf	2.00	261,564		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		
	Wood blocking at interiors	130,782	gsf	0.50	65,391		
078400	FIREPROOFING/FIRESTOPPING						
	Fire stopping including slab edges and core	130,782	gsf	1.00	130,782		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Miscellaneous sealants throughout building	130,782	gsf	1.25	163,478		
078150	EXPANSION JOINTS						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	INTERIOR GLAZING						
	Allowance for interior glazing	130,782	gsf	5.00	653,910		
092900	GYPSUM BOARD ASSEMBLIES						
	Allowance for GWB partitions	130,782	gsf	26.00	3,400,332		
	SUBTOTAL					4,710,457	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	130,782	gsf	8.00	1,046,256		
	SUBTOTAL					1,046,256	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	MISCELLANEOUS METALS						
	Miscellaneous metals throughout building	130,782	gsf	5.00	653,910		
061000	ROUGH CARPENTRY						
062000	INTERIOR ARCHITECTURAL WOODWORK						
	Interior millwork package	130,782	gsf	3.00	392,346		
101100	VISUAL DISPLAY SURFACES						
	Markerboard and tackboard package	130,782	gsf	2.00	261,564		
101400	SIGNAGE						
	Room identification, directional & safety signage, building directory + environmental graphics	130,782	gsf	2.00	261,564		
102800	TOILET ACCESSORIES						
	Toilet accessories/compartments	130,782	gsf	1.00	130,782		
104400	FIRE PROTECTION SPECIALTIES						
	Fire extinguisher cabinets	1	ls	21,562.14	21,562		
	AED cabinets	1	ls	2,000.00	2,000		
105000	LOCKERS						
	Student lockers	130,782	gsf	1.50	196,173		
	SUBTOTAL					1,919,901	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$7,676,614</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	CONCRETE						
	Concrete to stairs	2	flt	5,000.00	10,000		
055000	MISCELLANEOUS METALS						
	Egress stairs w/ stainless steel rails and handrails	2	flt	50,000.00	100,000		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair		flt	80,000.00	NR		
	SUBTOTAL					110,000	





PDP Options Cost Estimate

GFA

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.5**

**C2020 STAIR FINISHES**

090005 RESILIENT FLOORS

Stair finishes	2	flts	20,000.00	40,000		
SUBTOTAL						40,000

<b>TOTAL - STAIRCASES</b>						<b>\$150,000</b>
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**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package	130,782	gsf	8.00	1,046,256		
SUBTOTAL						1,046,256

**C3020 FLOOR FINISHES**

Floor finishes complete package	130,782	gsf	13.00	1,700,166		
Floor prep at existing	78,070	sf	5.00	390,350		
SUBTOTAL						2,090,516

**C3030 CEILING FINISHES**

Ceiling finishes complete package	130,782	gsf	10.00	1,307,820		
SUBTOTAL						1,307,820

<b>TOTAL - INTERIOR FINISHES</b>						<b>\$4,444,592</b>
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**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

055000 MISCELLANEOUS METALS

Pit ladder and miscellaneous metals	1	ea	900.00	900		
Sill angles	1	ls	1,500.00	1,500		

142100 ELEVATOR

HC lift at stage	1	ea	55,000.00	NR		
Electric traction elevator, 2 stop, 4,000lbs	1	ea	190,000.00	190,000		
SUBTOTAL						192,400

<b>TOTAL - CONVEYING SYSTEMS</b>						<b>\$192,400</b>
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**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete	130,782	gsf	28.00	3,661,896		
SUBTOTAL						3,661,896

<b>TOTAL - PLUMBING</b>						<b>\$3,661,896</b>
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**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium	130,782	gsf	40.00	ALT		
HVAC System; ASHP	130,782	gsf	80.00	10,462,560		
SUBTOTAL						10,462,560

<b>TOTAL - HVAC</b>						<b>\$10,462,560</b>
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**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire Equipment

Fire pump with controller 75GPM, incl Jockey pump with controller	1	ea	80,000.00	Assumed NR		
Sprinkler system; complete	130,782	gsf	8.00	1,046,256		
SUBTOTAL						1,046,256

<b>TOTAL - FIRE PROTECTION</b>						<b>\$1,046,256</b>
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PDP Options Cost Estimate

GFA

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.5**

**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard

1 ea 125,000.00 125,000

Panelboards/feeders

130,782 gsf 6.00 784,692

Emergency power

Emergency Generator

1 ls Included Below

Emergency power feeders

130,782 gsf 6.50 850,083

Photovoltaic

PV system equipment; roof top

Excluded

Battery Storage

Excluded

Equipment Wiring

Feeders + Electrical to equipment

130,782 gsf 7.00 915,474

SUBTOTAL

2,675,249

**D5020 LIGHTING & POWER**

Lighting, Controls + Power

130,782 gsf 18.00 2,354,076

SUBTOTAL

2,354,076

**D5030 COMMUNICATION & SECURITY SYSTEMS**

Telecommunications/PA + Clock

130,782 gsf 4.00 523,128

Performance lighting

Platform dimming panelboard with feeders

1 ls 15,000.00 15,000

Platform/performance lighting system

1 ls 75,000.00 75,000

Audio Visual Systems/Speech Reinforcement

130,782 gsf 10.00 1,307,820

Specialty Communications Systems

BDA system, antenna and annunciator

130,782 sf 0.65 85,008

Cell repeater/Distributed antenna system, not specified

130,782 sf 1.00 130,782

Fire Alarm

130,782 gsf 3.00 392,346

Security System

130,782 gsf 6.00 784,692

SUBTOTAL

3,313,776

**D5040 OTHER ELECTRICAL SYSTEMS**

Common Work Results for Electrical

Lightning prevention

130,782 gsf 0.30 39,235

Grounding

130,782 gsf 0.40 52,313

Misc. demolition work

130,782 gsf 0.25 32,696

Temp power and lights

130,782 gsf 1.20 156,938

Seismic restraints/Coordination/misc.

130,782 gsf 1.00 130,782

SUBTOTAL

411,964

<b>TOTAL - ELECTRICAL</b>						<b>\$8,755,065</b>
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**E10 EQUIPMENT**

**E10 EQUIPMENT, GENERALLY**

**112000 LOADING DOCK EQUIPMENT**

Loading dock equipment

1 ls 10,000.00 10,000

**110620 THEATRICAL EQUIPMENT**

Allowance for auditorium; lighting/rigging/AV/Seating

1 ls 750,000.00 750,000

**113100 APPLIANCES**

Residential appliances - allowance

1 ls 15,000.00 15,000

**114000 FOOD SERVICE EQUIPMENT**

Kitchen equipment

1 ls 610,000.00 610,000

**115300 EDUCATIONAL EQUIPMENT**

Kiln

1 ea 5,000.00 5,000

Allowance for miscellaneous equipment

1 ls 50,000 50,000

**116600 GYM EQUIPMENT**

Gym Equipment

1 ls 117,000.00 117,000

**126000 SEATING**



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION B.5**

Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
SUBTOTAL						1,623,000

<b>TOTAL - EQUIPMENT</b>	<b>\$1,623,000</b>
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**E20 FURNISHINGS**

**E2010 FIXED FURNISHINGS**

**122100 WINDOW TREATMENT**

Window shades at exterior glazing including blackout shades at art & science classrooms - allowance	21,573	sf	10.00	215,730		
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**123553 CASEWORK**

Casework package	130,782	gsf	12.00	1,569,384		
SUBTOTAL						1,785,114

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner						
SUBTOTAL						NIC

<b>TOTAL - FURNISHINGS</b>	<b>\$1,785,114</b>
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**F10 SPECIAL CONSTRUCTION**

**F10 SPECIAL CONSTRUCTION**

SUBTOTAL						-
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<b>TOTAL - SPECIAL CONSTRUCTION</b>	
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**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

Remove windows	10,188	sf	12.00	122,256		
Remove exterior wall for new connection	1,500	sf	25.00	37,500		
Gut demolition	78,070	sf	8.00	624,560		
SUBTOTAL						784,316

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance					See Summary	
SUBTOTAL						

<b>TOTAL - SELECTIVE BUILDING DEMOLITION</b>	<b>\$784,316</b>
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<b>SUBTOTAL</b>	<b>\$62,078,636</b>
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Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 78,405

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.1</b>					
<b>A10 FOUNDATIONS</b>					
A1010	Standard Foundations	\$1,598,100			
A1020	Special Foundations	\$1,568,100			
A1030	Lowest Floor Construction	\$1,369,325	<b>\$4,535,525</b>	\$57.85	10.5%
<b>A20 BASEMENT CONSTRUCTION</b>					
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10 SUPERSTRUCTURE</b>					
B1010	Upper Floor Construction	\$0			
B1020	Roof Construction	\$4,020,660	<b>\$4,020,660</b>	\$51.28	9.3%
<b>B20 EXTERIOR CLOSURE</b>					
B2010	Exterior Walls	\$4,358,683			
B2020	Windows	\$3,419,018			
B2030	Exterior Doors	\$78,405	<b>\$7,856,106</b>	\$100.20	18.1%
<b>B30 ROOFING</b>					
B3010	Roof Coverings	\$2,940,188			
B3020	Roof Openings	\$0	<b>\$2,940,188</b>	\$37.50	6.8%
<b>C10 INTERIOR CONSTRUCTION</b>					
C1010	Partitions	\$2,837,979			
C1020	Interior Doors	\$627,240			
C1030	Specialties/Millwork	\$1,152,953	<b>\$4,618,172</b>	\$58.90	10.7%
<b>C20 STAIRCASES</b>					
C2010	Stair Construction	\$0			
C2020	Stair Finishes	\$0	<b>\$0</b>	\$0.00	0.0%
<b>C30 INTERIOR FINISHES</b>					
C3010	Wall Finishes	\$627,240			
C3020	Floor Finishes	\$1,019,265			
C3030	Ceiling Finishes	\$784,050	<b>\$2,430,555</b>	\$31.00	5.6%
<b>D10 CONVEYING SYSTEMS</b>					
D1010	Elevator	\$0	<b>\$0</b>	\$0.00	0.0%



Neary Elementary School  
Southborough, MA

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GFA 78,405

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.1</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$2,195,340	<b>\$2,195,340</b>	\$28.00	5.1%
<b>D30 HVAC</b>				
D30 HVAC	\$6,272,400	<b>\$6,272,400</b>	\$80.00	14.5%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$627,240	<b>\$627,240</b>	\$8.00	1.4%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$5,334,847	<b>\$5,334,847</b>	\$68.04	12.3%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,433,000	<b>\$1,433,000</b>	\$18.28	3.3%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,090,350			
E2020 Movable Furnishings	NIC	<b>\$1,090,350</b>	\$13.91	2.5%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$0			
F2020 Hazardous Components Abatement	\$0	<b>\$0</b>	\$0.00	0.0%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$43,354,383</b>	\$552.95	100.0%



PDP Options Cost Estimate

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.1**

**GROSS FLOOR AREA CALCULATION**

Level 1 78,405  
Level 2  
Level 3

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>78,405 sf</b>
-------------------------------------	------------------

**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B

78,405 sf 20.00 1,568,100

Temporary dewatering for foundation work

1 ls 30,000.00 30,000

SUBTOTAL

1,598,100

**A1020 SPECIAL FOUNDATIONS**

Structural fill/Ground Improvements Allowance

78,405 sf 20.00 1,568,100

SUBTOTAL

1,568,100

**A1030 LOWEST FLOOR CONSTRUCTION**

033000

**CONCRETE**

Vapor barrier, 15mils

78,405 sf 1.25 98,006

Slab on grade

78,405 sf

WWF reinforcement

90,166 sf 1.85 166,807

Concrete - 5" thick

1,250 cy 170.00 212,500

Placing concrete

1,250 cy 65.00 81,250

Finishing and curing concrete

78,405 sf 3.00 235,215

Control joints - saw cut

78,405 sf 0.10 7,841

Miscellaneous

Equipment pads

1 ls 15,000.00 15,000

Loading dock

1 ls 30,000.00 30,000

Elevator pits

1 ea 40,000.00 NR

Radon system

Excluded; NR

072100

**THERMAL INSULATION**

Under slab insulation, 2" thick under slab

78,405 sf 3.00 235,215

312000

**EARTHWORK**

Gravel base, 12"

2,904 cy 45.00 130,680

Compact existing sub-grade

78,405 sf 0.50 39,203

Underslab E&B for plumbing

78,405 sf 1.50 117,608

SUBTOTAL

1,369,325

<b>TOTAL - FOUNDATIONS</b>	<b>\$4,535,525</b>
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**A20 BASEMENT CONSTRUCTION**

**A2010 BASEMENT EXCAVATION**

No Work in this section

SUBTOTAL

-

**A2020 BASEMENT WALLS**

No Work in this section

SUBTOTAL

-

<b>TOTAL - BASEMENT CONSTRUCTION</b>
--------------------------------------

**B10 SUPERSTRUCTURE**

**B1010 FLOOR CONSTRUCTION**

14.0 lbs/sf  
549 tns excluding canopies + roof screens  
\$6,380 \$/Ton

033000

**CONCRETE**

WWF reinforcement

sf 1.85

Concrete Fill to metal deck; lightweight, total thickness 5 1/4"

cy 190.00

Place and finish concrete

sf 3.00





PDP Options Cost Estimate

GFA

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.1</b>							
	Rebar to decks		lbs	2.00			
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF		tns	5,200.00			
	Moment connections		ea	750.00			
	Shear studs		ea	3.50			
	2" metal galvanized floor deck		sf	7.50			
	Expansion joints	1	ls	50,000.00		NR	
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr		sf	3.00			
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00		NR	
	SUBTOTAL					-	
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00	90,000		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 14 lbs per SF	549	tns	5,200.00	2,854,800		
	Canopy	11	tns	5,500.00	60,500		
	Roof screens	7	tns	5,500.00	38,500		
	<u>Decking</u>						
	1 1/2" galvanized metal deck, typical	78,405	sf	7.00	548,835		
	Premium for acoustic (Gym)	6,000	sf	6.00	36,000		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	78,405	sf	5.00	392,025		
	SUBTOTAL					4,020,660	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$4,020,660</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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<b>B2010</b>	<b>EXTERIOR WALLS</b>	49,830	Total closure area
	<b>Exterior Wall Area - 70% solid</b>	34,881	sf total area solid
042000	<b>MASONRY</b>		
	Mockup	1	ls
	Brick veneer; 60% of Solid	20,929	sf
	8" Mineral wool at exterior closure (2 layers 4")	34,881	sf
	Miscellaneous flashings and sealants	34,881	sf
	Staging to exterior wall	34,881	sf
055000	<b>MISC. METALS</b>		
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	20,929	sf
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>		
	Air barrier	34,881	sf
	Miscellaneous sealants to closure	34,881	sf
072100	<b>THERMAL INSULATION</b>		
	4" Batt insulation in stud	34,881	sf
	Insulation at glazed openings	4,983	lf
076400	<b>CLADDING</b>		
	Phenolic Panel Rainscreen; 40% of solid	13,952	sf
	12' high Acoustic Equipment Screen	1,440	sf
	<b>EXPANSION JOINT COVERS</b>		
	Expansion joints	1	ls
092900	<b>GYPSUM BOARD ASSEMBLIES</b>		



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.1**

	Exterior wall; 6" Stud backup	34,881	sf	16.00	558,096		
	Gypsum Sheathing	34,881	sf	3.50	122,084		
	Drywall lining to interior face of stud backup	34,881	sf	4.00	139,524		
101400	SIGNAGE						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					4,358,683	
<b>B2020</b>	<b>WINDOWS</b>						
	Exterior Wall Area; 30%	14,949	sf				
061000	ROUGH CARPENTRY						
	Wood blocking at openings	4,983	lf	10.00	49,830		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Air barrier/flashing at windows	4,983	lf	10.00	49,830		
	Backer rod & double sealant	4,983	lf	11.00	54,813		
080001	METAL WINDOWS						
	Aluminum windows, triple glazed	10,949	sf	205.00	2,244,545		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	LOUVERS						
	Louvers				N/A		
	SUBTOTAL					3,419,018	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	78,405	gsf	1.00	78,405		
	SUBTOTAL					78,405	

<b>TOTAL - EXTERIOR CLOSURE</b>						<b>\$7,856,106</b>
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**B30 ROOFING**

055000	MISCELLANEOUS METALS						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	ROUGH CARPENTRY						
	Rough carpentry and blocking @ roof	78,405	sf	1.50	117,608		
070002	ROOFING AND FLASHING	78,405	total area				
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	78,405	sf	32.00	2,508,960		
	Plaza deck pavers system at terrace				Assumed NR		
	Miscellaneous Roofing						
	Miscellaneous flashings/copings/walkway pads etc.	78,405	sf	4.00	313,620		
	SUBTOTAL					2,940,188	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	ROOF SKYLIGHTS						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>						<b>\$2,940,188</b>
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**C10 INTERIOR CONSTRUCTION**

<b>C1010</b>	<b>PARTITIONS</b>						
040001	MASONRY						
	Allowance for masonry partitions	78,405	gsf	2.00	156,810		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.1</b>							
	Wood blocking at interiors	78,405	gsf	0.50	39,203		
078400	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire stopping including slab edges and core	78,405	gsf	1.00	78,405		
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>						
	Miscellaneous sealants throughout building	78,405	gsf	1.25	98,006		
078150	<b>EXPANSION JOINTS</b>						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	<b>INTERIOR GLAZING</b>						
	Allowance for interior glazing	78,405	gsf	5.00	392,025		
092900	<b>GYPSUM BOARD ASSEMBLIES</b>						
	Allowance for GWB partitions	78,405	gsf	26.00	2,038,530		
	SUBTOTAL					2,837,979	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	78,405	gsf	8.00	627,240		
	SUBTOTAL					627,240	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	<b>MISCELLANEOUS METALS</b>						
	Miscellaneous metals throughout building	78,405	gsf	5.00	392,025		
061000	<b>ROUGH CARPENTRY</b>						
062000	<b>INTERIOR ARCHITECTURAL WOODWORK</b>						
	Interior millwork package	78,405	gsf	3.00	235,215		
101100	<b>VISUAL DISPLAY SURFACES</b>						
	Markerboard and tackboard package	78,405	gsf	2.00	156,810		
101400	<b>SIGNAGE</b>						
	Room identification, directional & safety signage, building directory + environmental graphics	78,405	gsf	2.00	156,810		
102800	<b>TOILET ACCESSORIES</b>						
	Toilet accessories/compartments	78,405	gsf	1.00	78,405		
104400	<b>FIRE PROTECTION SPECIALTIES</b>						
	Fire extinguisher cabinets	1	ls	14,079.71	14,080		
	AED cabinets	1	ls	2,000.00	2,000		
105000	<b>LOCKERS</b>						
	Student lockers	78,405	gsf	1.50	117,608		
	SUBTOTAL					1,152,953	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$4,618,172</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	<b>CONCRETE</b>						
	Concrete to stairs		flt	5,000.00	NR		
055000	<b>MISCELLANEOUS METALS</b>						
	Egress stairs w/ stainless steel rails and handrails		flt	50,000.00	NR		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair		flt	80,000.00	NR		
	SUBTOTAL					-	

<b>C2020</b>	<b>STAIR FINISHES</b>
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090005	<b>RESILIENT FLOORS</b>						
	Stair finishes		flts	20,000.00	NR		
	SUBTOTAL					-	



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.1**

**TOTAL - STAIRCASES**

**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package 78,405 gsf 8.00 627,240  
SUBTOTAL 627,240

**C3020 FLOOR FINISHES**

Floor finishes complete package 78,405 gsf 13.00 1,019,265  
SUBTOTAL 1,019,265

**C3030 CEILING FINISHES**

Ceiling finishes complete package 78,405 gsf 10.00 784,050  
SUBTOTAL 784,050

**TOTAL - INTERIOR FINISHES \$2,430,555**

**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

**055000 MISCELLANEOUS METALS**

Pit ladder and miscellaneous metals 1 ea 900.00 NR  
Sill angles 1 ls 1,500.00 NR

**142100 ELEVATOR**

Electric traction elevator, 2 stop, 4,000lbs 1 ea 190,000.00 NR  
SUBTOTAL -

**TOTAL - CONVEYING SYSTEMS**

**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete 78,405 gsf 28.00 2,195,340  
SUBTOTAL 2,195,340

**TOTAL - PLUMBING \$2,195,340**

**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium 78,405 gsf 40.00 ALT  
HVAC System; ASHP 78,405 gsf 80.00 6,272,400  
SUBTOTAL 6,272,400

**TOTAL - HVAC \$6,272,400**

**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire Equipment

Fire pump with controller 75GPM, incl Jockey pump with controller 1 ea 80,000.00 Assumed NR  
Sprinkler system; complete 78,405 gsf 8.00 627,240  
SUBTOTAL 627,240

**TOTAL - FIRE PROTECTION \$627,240**

**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard 1 ea 125,000.00 125,000



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.1</b>							
	Panelboards/feeders	78,405	gsf	6.00	470,430		
	<u>Emergency power</u>						
	Emergency Generator	1	ls		Included Below		
	Emergency power feeders	78,405	gsf	6.50	509,633		
	<u>Photovoltaic</u>						
	PV system equipment; roof top				Excluded		
	Battery Storage				Excluded		
	<u>Equipment Wiring</u>						
	Feeders + Electrical to equipment	78,405	gsf	7.00	548,835		
	SUBTOTAL					1,653,898	
<b>D5020</b>	<b>LIGHTING &amp; POWER</b>						
	Lighting, Controls + Power	78,405	gsf	18.00	1,411,290		
	SUBTOTAL					1,411,290	
<b>D5030</b>	<b>COMMUNICATION &amp; SECURITY SYSTEMS</b>						
	Telecommunications/PA + Clock	78,405	gsf	4.00	313,620		
	<u>Performance lighting</u>						
	Platform dimming panelboard with feeders	1	ls	15,000.00	15,000		
	Platform/performance lighting system	1	ls	75,000.00	75,000		
	<u>Audio Visual Systems/Speech Reinforcement</u>	78,405	gsf	10.00	784,050		
	<u>Specialty Communications Systems</u>						
	BDA system, antenna and annunciator	78,405	sf	0.65	50,963		
	Cell repeater/Distributed antenna system, not specified	78,405	sf	1.00	78,405		
	<u>Fire Alarm</u>	78,405	gsf	3.00	235,215		
	<u>Security System</u>	78,405	gsf	6.00	470,430		
	SUBTOTAL					2,022,683	
<b>D5040</b>	<b>OTHER ELECTRICAL SYSTEMS</b>						
	<u>Common Work Results for Electrical</u>						
	Lightning prevention	78,405	gsf	0.30	23,522		
	Grounding	78,405	gsf	0.40	31,362		
	Misc. demolition work	78,405	gsf	0.25	19,601		
	Temp power and lights	78,405	gsf	1.20	94,086		
	Seismic restraints/Coordination/misc.	78,405	gsf	1.00	78,405		
	SUBTOTAL					246,976	
<b>TOTAL - ELECTRICAL</b>							<b>\$5,334,847</b>
<b>E10</b>	<b>EQUIPMENT</b>						
<b>E10</b>	<b>EQUIPMENT, GENERALLY</b>						
<b>112000</b>	<b>LOADING DOCK EQUIPMENT</b>						
	Loading dock equipment	1	ls	10,000.00	10,000		
<b>110620</b>	<b>THEATRICAL EQUIPMENT</b>						
	Allowance for auditorium; lighting/rigging/AV/Seating	1	ls	750,000.00	750,000		
<b>113100</b>	<b>APPLIANCES</b>						
	Residential appliances - allowance	1	ls	15,000.00	15,000		
<b>114000</b>	<b>FOOD SERVICE EQUIPMENT</b>						
	Kitchen equipment	1	ls	420,000.00	420,000		
<b>115300</b>	<b>EDUCATIONAL EQUIPMENT</b>						
	Kiln	1	ea	5,000.00	5,000		
	Allowance for miscellaneous equipment	1	ls	50,000	50,000		
<b>116600</b>	<b>GYM EQUIPMENT</b>						
	Gym Equipment	1	ls	117,000.00	117,000		
<b>126000</b>	<b>SEATING</b>						
	Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
	SUBTOTAL					1,433,000	
<b>TOTAL - EQUIPMENT</b>							<b>\$1,433,000</b>
<b>E20</b>	<b>FURNISHINGS</b>						



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.1**

**E2010 FIXED FURNISHINGS**

**122100 WINDOW TREATMENT**

Window shades at exterior glazing including blackout shades at art & science classrooms - allowance **14,949** sf 10.00 149,490

**123553 CASEWORK**

Casework package **78,405** gsf 12.00 940,860

SUBTOTAL 1,090,350

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner

SUBTOTAL NIC

**TOTAL - FURNISHINGS**

**\$1,090,350**

**F10 SPECIAL CONSTRUCTION**

**F10 SPECIAL CONSTRUCTION**

SUBTOTAL -

**TOTAL - SPECIAL CONSTRUCTION**

**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

SUBTOTAL -

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance See Summary

SUBTOTAL

**TOTAL - SELECTIVE BUILDING DEMOLITION**

SUBTOTAL

**\$43,354,383**





Neary Elementary School  
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## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.2</b>					
<b>A10 FOUNDATIONS</b>					
A1010	Standard Foundations	\$1,598,100			
A1020	Special Foundations	\$1,568,100			
A1030	Lowest Floor Construction	\$1,409,325	<b>\$4,575,525</b>	\$45.66	8.7%
<b>A20 BASEMENT CONSTRUCTION</b>					
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10 SUPERSTRUCTURE</b>					
B1010	Upper Floor Construction	\$1,368,991			
B1020	Roof Construction	\$3,853,860	<b>\$5,222,851</b>	\$52.12	9.9%
<b>B20 EXTERIOR CLOSURE</b>					
B2010	Exterior Walls	\$5,081,425			
B2020	Windows	\$3,982,125			
B2030	Exterior Doors	\$100,200	<b>\$9,163,750</b>	\$91.45	17.4%
<b>B30 ROOFING</b>					
B3010	Roof Coverings	\$2,940,188			
B3020	Roof Openings	\$0	<b>\$2,940,188</b>	\$29.34	5.6%
<b>C10 INTERIOR CONSTRUCTION</b>					
C1010	Partitions	\$3,617,150			
C1020	Interior Doors	\$801,600			
C1030	Specialties/Millwork	\$1,472,093	<b>\$5,890,843</b>	\$58.79	11.2%
<b>C20 STAIRCASES</b>					
C2010	Stair Construction	\$280,000			
C2020	Stair Finishes	\$80,000	<b>\$360,000</b>	\$3.59	0.7%
<b>C30 INTERIOR FINISHES</b>					
C3010	Wall Finishes	\$801,600			
C3020	Floor Finishes	\$1,302,600			
C3030	Ceiling Finishes	\$1,002,000	<b>\$3,106,200</b>	\$31.00	5.9%
<b>D10 CONVEYING SYSTEMS</b>					
D1010	Elevator	\$192,400	<b>\$192,400</b>	\$1.92	0.4%



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## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.2</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$2,805,600	<b>\$2,805,600</b>	\$28.00	5.3%
<b>D30 HVAC</b>				
D30 HVAC	\$8,016,000	<b>\$8,016,000</b>	\$80.00	15.2%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$801,600	<b>\$801,600</b>	\$8.00	1.5%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$6,758,060	<b>\$6,758,060</b>	\$67.45	12.8%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,533,000	<b>\$1,533,000</b>	\$15.30	2.9%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,378,040			
E2020 Movable Furnishings	NIC	<b>\$1,378,040</b>	\$13.75	2.6%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$0			
F2020 Hazardous Components Abatement	\$0	<b>\$0</b>	\$0.00	0.0%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$52,744,057</b>	<b>\$526.39</b>	<b>100.0%</b>



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.2**

**GROSS FLOOR AREA CALCULATION**

Level 1	78,405
Level 2	21,795
Level 3	

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>100,200</b>	<b>sf</b>
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**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B

78,405 sf 20.00 1,568,100

Temporary dewatering for foundation work

1 ls 30,000.00 30,000

SUBTOTAL

1,598,100

**A1020 SPECIAL FOUNDATIONS**

Structural fill/Ground Improvements Allowance

78,405 sf 20.00 1,568,100

SUBTOTAL

1,568,100

**A1030 LOWEST FLOOR CONSTRUCTION**

033000

**CONCRETE**

Vapor barrier, 15mils

78,405 sf 1.25 98,006

Slab on grade

78,405 sf

WWF reinforcement

90,166 sf 1.85 166,807

Concrete - 5" thick

1,250 cy 170.00 212,500

Placing concrete

1,250 cy 65.00 81,250

Finishing and curing concrete

78,405 sf 3.00 235,215

Control joints - saw cut

78,405 sf 0.10 7,841

Miscellaneous

Equipment pads

1 ls 15,000.00 15,000

Loading dock

1 ls 30,000.00 30,000

Elevator pits

1 ea 40,000.00 40,000

Radon system

Excluded; NR

072100

**THERMAL INSULATION**

Under slab insulation, 2" thick under slab

78,405 sf 3.00 235,215

312000

**EARTHWORK**

Gravel base, 12"

2,904 cy 45.00 130,680

Compact existing sub-grade

78,405 sf 0.50 39,203

Underslab E&B for plumbing

78,405 sf 1.50 117,608

SUBTOTAL

1,409,325

<b>TOTAL - FOUNDATIONS</b>	<b>\$4,575,525</b>
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**A20 BASEMENT CONSTRUCTION**

**A2010 BASEMENT EXCAVATION**

No Work in this section

SUBTOTAL

-

**A2020 BASEMENT WALLS**

No Work in this section

SUBTOTAL

-

<b>TOTAL - BASEMENT CONSTRUCTION</b>
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**B10 SUPERSTRUCTURE**

**B1010 FLOOR CONSTRUCTION**

13.4 lbs/sf  
673 tns excluding canopies + roof screens  
\$6,443 \$/Ton

033000

**CONCRETE**

WWF reinforcement

25,064 sf 1.85 46,368

Concrete Fill to metal deck; lightweight, total thickness 5 1/4"

356 cy 190.00 67,640

Place and finish concrete

21,795 sf 3.00 65,385



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.2</b>							
	Rebar to decks	6,539	lbs	2.00	13,078		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF	163	tns	5,200.00	847,600		
	Moment connections	8	ea	750.00	6,000		
	Shear studs	5,449	ea	3.50	19,072		
	2" metal galvanized floor deck	21,795	sf	7.50	163,463		
	Expansion joints	1	ls	50,000.00	50,000		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr	21,795	sf	3.00	65,385		
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00	25,000		
	SUBTOTAL					1,368,991	
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00	90,000		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 13 lbs per SF	510	tns	5,200.00	2,652,000		
	Canopy	11	tns	5,500.00	60,500		
	Roof screens	7	tns	5,500.00	38,500		
	<b>Decking</b>						
	1 1/2" galvanized metal deck, typical	78,405	sf	7.00	548,835		
	Premium for acoustic (Gym + Café)	12,000	sf	6.00	72,000		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	78,405	sf	5.00	392,025		
	SUBTOTAL					3,853,860	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$5,222,851</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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B2010	EXTERIOR WALLS	58,545	Total closure area		
	Exterior Wall Area - 70% solid	40,982	sf total area solid		
042000	MASONRY				
	Mockup	1	ls	50,000.00	50,000
	Brick veneer; 60% of Solid	24,589	sf	42.00	1,032,738
	8" Mineral wool at exterior closure (2 layers 4")	40,982	sf	7.50	307,365
	Miscellaneous flashings and sealants	40,982	sf	1.50	61,473
	Staging to exterior wall	40,982	sf	4.00	163,928
055000	MISC. METALS				
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	24,589	sf	1.50	36,884
070001	WATERPROOFING, DAMPPROOFING AND CAULKING				
	Air barrier	40,982	sf	10.00	409,820
	Miscellaneous sealants to closure	40,982	sf	1.00	40,982
072100	THERMAL INSULATION				
	4" Batt insulation in stud	40,982	sf	4.00	163,928
	Insulation at glazed openings	5,855	lf	6.00	35,130
076400	CLADDING				
	Phenolic Panel Rainscreen; 40% of solid	16,393	sf	100.00	1,639,300
	12' high Acoustic Equipment Screen	1,440	sf	95.00	136,800
	EXPANSION JOINT COVERS				
	Expansion joints	1	ls	25,000.00	25,000
092900	GYPSUM BOARD ASSEMBLIES				



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.2**

	Exterior wall; 6" Stud backup	40,982	sf	16.00	655,712		
	Gypsum Sheathing	40,982	sf	3.50	143,437		
	Drywall lining to interior face of stud backup	40,982	sf	4.00	163,928		
101400	SIGNAGE						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					5,081,425	
<b>B2020</b>	<b>WINDOWS</b>						
	Exterior Wall Area; 30%	17,564	sf				
061000	ROUGH CARPENTRY						
	Wood blocking at openings	5,855	lf	10.00	58,550		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Air barrier/flashing at windows	5,855	lf	10.00	58,550		
	Backer rod & double sealant	5,855	lf	11.00	64,405		
080001	METAL WINDOWS						
	Aluminum windows, triple glazed	13,564	sf	205.00	2,780,620		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	LOUVERS						
	Louvers				N/A		
	SUBTOTAL					3,982,125	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	100,200	gsf	1.00	100,200		
	SUBTOTAL					100,200	

<b>TOTAL - EXTERIOR CLOSURE</b>	<b>\$9,163,750</b>
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**B30 ROOFING**

055000	MISCELLANEOUS METALS						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	ROUGH CARPENTRY						
	Rough carpentry and blocking @ roof	78,405	sf	1.50	117,608		
070002	ROOFING AND FLASHING	78,405	total area				
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	78,405	sf	32.00	2,508,960		
	Plaza deck pavers system at terrace				Assumed NR		
	Miscellaneous Roofing						
	Miscellaneous flashings/copings/walkway pads etc.	78,405	sf	4.00	313,620		
	SUBTOTAL					2,940,188	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	ROOF SKYLIGHTS						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>	<b>\$2,940,188</b>
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**C10 INTERIOR CONSTRUCTION**

<b>C1010</b>	<b>PARTITIONS</b>						
040001	MASONRY						
	Allowance for masonry partitions	100,200	gsf	2.00	200,400		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.2</b>							
	Wood blocking at interiors	100,200	gsf	0.50	50,100		
078400	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire stopping including slab edges and core	100,200	gsf	1.00	100,200		
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>						
	Miscellaneous sealants throughout building	100,200	gsf	1.25	125,250		
078150	<b>EXPANSION JOINTS</b>						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	<b>INTERIOR GLAZING</b>						
	Allowance for interior glazing	100,200	gsf	5.00	501,000		
092900	<b>GYPSUM BOARD ASSEMBLIES</b>						
	Allowance for GWB partitions	100,200	gsf	26.00	2,605,200		
	SUBTOTAL					3,617,150	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	100,200	gsf	8.00	801,600		
	SUBTOTAL					801,600	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	<b>MISCELLANEOUS METALS</b>						
	Miscellaneous metals throughout building	100,200	gsf	5.00	501,000		
061000	<b>ROUGH CARPENTRY</b>						
062000	<b>INTERIOR ARCHITECTURAL WOODWORK</b>						
	Interior millwork package	100,200	gsf	3.00	300,600		
101100	<b>VISUAL DISPLAY SURFACES</b>						
	Markerboard and tackboard package	100,200	gsf	2.00	200,400		
101400	<b>SIGNAGE</b>						
	Room identification, directional & safety signage, building directory + environmental graphics	100,200	gsf	2.00	200,400		
102800	<b>TOILET ACCESSORIES</b>						
	Toilet accessories/compartments	100,200	gsf	1.00	100,200		
104400	<b>FIRE PROTECTION SPECIALTIES</b>						
	Fire extinguisher cabinets	1	ls	17,193.29	17,193		
	AED cabinets	1	ls	2,000.00	2,000		
105000	<b>LOCKERS</b>						
	Student lockers	100,200	gsf	1.50	150,300		
	SUBTOTAL					1,472,093	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$5,890,843</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	<b>CONCRETE</b>						
	Concrete to stairs	4	flt	5,000.00	20,000		
055000	<b>MISCELLANEOUS METALS</b>						
	Egress stairs w/ stainless steel rails and handrails	2	flt	50,000.00	100,000		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair	2	flt	80,000.00	160,000		
	SUBTOTAL					280,000	

<b>C2020</b>	<b>STAIR FINISHES</b>
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090005	<b>RESILIENT FLOORS</b>						
	Stair finishes	4	flts	20,000.00	80,000		
	SUBTOTAL					80,000	





PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.2**

<b>TOTAL - STAIRCASES</b>							<b>\$360,000</b>
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**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package	100,200	gsf	8.00	801,600		801,600
SUBTOTAL						

**C3020 FLOOR FINISHES**

Floor finishes complete package	100,200	gsf	13.00	1,302,600		1,302,600
SUBTOTAL						

**C3030 CEILING FINISHES**

Ceiling finishes complete package	100,200	gsf	10.00	1,002,000		1,002,000
SUBTOTAL						

<b>TOTAL - INTERIOR FINISHES</b>							<b>\$3,106,200</b>
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**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

**055000 MISCELLANEOUS METALS**

Pit ladder and miscellaneous metals	1	ea	900.00	900		
Sill angles	1	ls	1,500.00	1,500		

**142100 ELEVATOR**

Electric traction elevator, 2 stop, 4,000lbs	1	ea	190,000.00	190,000		192,400
SUBTOTAL						

<b>TOTAL - CONVEYING SYSTEMS</b>							<b>\$192,400</b>
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**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete	100,200	gsf	28.00	2,805,600		2,805,600
SUBTOTAL						

<b>TOTAL - PLUMBING</b>							<b>\$2,805,600</b>
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**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium	100,200	gsf	40.00	ALT		
HVAC System; ASHP	100,200	gsf	80.00	8,016,000		8,016,000
SUBTOTAL						

<b>TOTAL - HVAC</b>							<b>\$8,016,000</b>
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**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire Equipment

Fire pump with controller 75GPM, incl Jockey pump with controller	1	ea	80,000.00	Assumed NR		
Sprinkler system; complete	100,200	gsf	8.00	801,600		801,600
SUBTOTAL						

<b>TOTAL - FIRE PROTECTION</b>							<b>\$801,600</b>
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**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard	1	ea	125,000.00	125,000		
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PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.2</b>							
	Panelboards/feeders	100,200	gsf	6.00	601,200		
	<u>Emergency power</u>						
	Emergency Generator	1	ls		Included Below		
	Emergency power feeders	100,200	gsf	6.50	651,300		
	<u>Photovoltaic</u>						
	PV system equipment; roof top				Excluded		
	Battery Storage				Excluded		
	<u>Equipment Wiring</u>						
	Feeders + Electrical to equipment	100,200	gsf	7.00	701,400		
	SUBTOTAL					2,078,900	
<b>D5020</b>	<b>LIGHTING &amp; POWER</b>						
	Lighting, Controls + Power	100,200	gsf	18.00	1,803,600		
	SUBTOTAL					1,803,600	
<b>D5030</b>	<b>COMMUNICATION &amp; SECURITY SYSTEMS</b>						
	Telecommunications/PA + Clock	100,200	gsf	4.00	400,800		
	<u>Performance lighting</u>						
	Platform dimming panelboard with feeders	1	ls	15,000.00	15,000		
	Platform/performance lighting system	1	ls	75,000.00	75,000		
	<u>Audio Visual Systems/Speech Reinforcement</u>	100,200	gsf	10.00	1,002,000		
	<u>Specialty Communications Systems</u>						
	BDA system, antenna and annunciator	100,200	sf	0.65	65,130		
	Cell repeater/Distributed antenna system, not specified	100,200	sf	1.00	100,200		
	<u>Fire Alarm</u>	100,200	gsf	3.00	300,600		
	<u>Security System</u>	100,200	gsf	6.00	601,200		
	SUBTOTAL					2,559,930	
<b>D5040</b>	<b>OTHER ELECTRICAL SYSTEMS</b>						
	<u>Common Work Results for Electrical</u>						
	Lightning prevention	100,200	gsf	0.30	30,060		
	Grounding	100,200	gsf	0.40	40,080		
	Misc. demolition work	100,200	gsf	0.25	25,050		
	Temp power and lights	100,200	gsf	1.20	120,240		
	Seismic restraints/Coordination/misc.	100,200	gsf	1.00	100,200		
	SUBTOTAL					315,630	
<b>TOTAL - ELECTRICAL</b>							<b>\$6,758,060</b>
<b>E10</b>	<b>EQUIPMENT</b>						
<b>E10</b>	<b>EQUIPMENT, GENERALLY</b>						
112000	<i>LOADING DOCK EQUIPMENT</i>						
	Loading dock equipment	1	ls	10,000.00	10,000		
110620	<i>THEATRICAL EQUIPMENT</i>						
	Allowance for auditorium; lighting/rigging/AV/Seating	1	ls	750,000.00	750,000		
113100	<i>APPLIANCES</i>						
	Residential appliances - allowance	1	ls	15,000.00	15,000		
114000	<i>FOOD SERVICE EQUIPMENT</i>						
	Kitchen equipment	1	ls	520,000.00	520,000		
115300	<i>EDUCATIONAL EQUIPMENT</i>						
	Kiln	1	ea	5,000.00	5,000		
	Allowance for miscellaneous equipment	1	ls	50,000	50,000		
116600	<i>GYM EQUIPMENT</i>						
	Gym Equipment	1	ls	117,000.00	117,000		
126000	<i>SEATING</i>						
	Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
	SUBTOTAL					1,533,000	
<b>TOTAL - EQUIPMENT</b>							<b>\$1,533,000</b>
<b>E20</b>	<b>FURNISHINGS</b>						



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.2**

**E2010 FIXED FURNISHINGS**

**122100 WINDOW TREATMENT**

Window shades at exterior glazing including blackout shades at art & science classrooms - allowance

17,564	sf	10.00	175,640
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**123553 CASEWORK**

Casework package

100,200	gsf	12.00	1,202,400
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SUBTOTAL 1,378,040

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner

SUBTOTAL NIC

**TOTAL - FURNISHINGS**

**\$1,378,040**

**F10 SPECIAL CONSTRUCTION**

**F10 SPECIAL CONSTRUCTION**

SUBTOTAL -

**TOTAL - SPECIAL CONSTRUCTION**

**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

SUBTOTAL -

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance See Summary

SUBTOTAL

**TOTAL - SELECTIVE BUILDING DEMOLITION**

SUBTOTAL

**\$52,744,057**



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 100,200

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.3</b>					
<b>A10</b>	<b>FOUNDATIONS</b>				
A1010	Standard Foundations	\$1,592,700			
A1020	Special Foundations	\$1,562,700			
A1030	Lowest Floor Construction	\$1,404,836	<b>\$4,560,236</b>	\$45.51	8.8%
<b>A20</b>	<b>BASEMENT CONSTRUCTION</b>				
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10</b>	<b>SUPERSTRUCTURE</b>				
B1010	Upper Floor Construction	\$1,384,768			
B1020	Roof Construction	\$3,840,220	<b>\$5,224,988</b>	\$52.15	10.1%
<b>B20</b>	<b>EXTERIOR CLOSURE</b>				
B2010	Exterior Walls	\$4,649,742			
B2020	Windows	\$3,645,764			
B2030	Exterior Doors	\$100,200	<b>\$8,395,706</b>	\$83.79	16.2%
<b>B30</b>	<b>ROOFING</b>				
B3010	Roof Coverings	\$2,930,063			
B3020	Roof Openings	\$0	<b>\$2,930,063</b>	\$29.24	5.6%
<b>C10</b>	<b>INTERIOR CONSTRUCTION</b>				
C1010	Partitions	\$3,617,150			
C1020	Interior Doors	\$801,600			
C1030	Specialties/Millwork	\$1,472,093	<b>\$5,890,843</b>	\$58.79	11.3%
<b>C20</b>	<b>STAIRCASES</b>				
C2010	Stair Construction	\$280,000			
C2020	Stair Finishes	\$80,000	<b>\$360,000</b>	\$3.59	0.7%
<b>C30</b>	<b>INTERIOR FINISHES</b>				
C3010	Wall Finishes	\$801,600			
C3020	Floor Finishes	\$1,302,600			
C3030	Ceiling Finishes	\$1,002,000	<b>\$3,106,200</b>	\$31.00	6.0%
<b>D10</b>	<b>CONVEYING SYSTEMS</b>				
D1010	Elevator	\$192,400	<b>\$192,400</b>	\$1.92	0.4%



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 100,200

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.3</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$2,805,600	<b>\$2,805,600</b>	\$28.00	5.4%
<b>D30 HVAC</b>				
D30 HVAC	\$8,016,000	<b>\$8,016,000</b>	\$80.00	15.4%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$801,600	<b>\$801,600</b>	\$8.00	1.5%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$6,758,060	<b>\$6,758,060</b>	\$67.45	13.0%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,533,000	<b>\$1,533,000</b>	\$15.30	3.0%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,362,420			
E2020 Movable Furnishings	NIC	<b>\$1,362,420</b>	\$13.60	2.6%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$0			
F2020 Hazardous Components Abatement	\$0	<b>\$0</b>	\$0.00	0.0%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$51,937,116</b>	<b>\$518.33</b>	<b>100.0%</b>



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.3**

**GROSS FLOOR AREA CALCULATION**

Level 1	78,135
Level 2	22,065
Level 3	

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>100,200</b>	<b>sf</b>
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**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B

78,135 sf 20.00 1,562,700

Temporary dewatering for foundation work

1 ls 30,000.00 30,000

SUBTOTAL

1,592,700

**A1020 SPECIAL FOUNDATIONS**

Structural fill/Ground Improvements Allowance

78,135 sf 20.00 1,562,700

SUBTOTAL

1,562,700

**A1030 LOWEST FLOOR CONSTRUCTION**

033000

**CONCRETE**

Vapor barrier, 15mils

78,135 sf 1.25 97,669

Slab on grade

78,135 sf

WWF reinforcement

89,855 sf 1.85 166,232

Concrete - 5" thick

1,246 cy 170.00 211,820

Placing concrete

1,246 cy 65.00 80,990

Finishing and curing concrete

78,135 sf 3.00 234,405

Control joints - saw cut

78,135 sf 0.10 7,814

Miscellaneous

Equipment pads

1 ls 15,000.00 15,000

Loading dock

1 ls 30,000.00 30,000

Elevator pits

1 ea 40,000.00 40,000

Radon system

Excluded; NR

072100

**THERMAL INSULATION**

Under slab insulation, 2" thick under slab

78,135 sf 3.00 234,405

312000

**EARTHWORK**

Gravel base, 12"

2,894 cy 45.00 130,230

Compact existing sub-grade

78,135 sf 0.50 39,068

Underslab E&B for plumbing

78,135 sf 1.50 117,203

SUBTOTAL

1,404,836

<b>TOTAL - FOUNDATIONS</b>	<b>\$4,560,236</b>
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**A20 BASEMENT CONSTRUCTION**

**A2010 BASEMENT EXCAVATION**

No Work in this section

SUBTOTAL

-

**A2020 BASEMENT WALLS**

No Work in this section

SUBTOTAL

-

<b>TOTAL - BASEMENT CONSTRUCTION</b>
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**B10 SUPERSTRUCTURE**

**B1010 FLOOR CONSTRUCTION**

13.4 lbs/sf  
673 tns excluding canopies + roof screens  
\$6,443 \$/Ton

033000

**CONCRETE**

WWF reinforcement

25,375 sf 1.85 46,944

Concrete Fill to metal deck; lightweight, total thickness 5 1/4"

360 cy 190.00 68,400

Place and finish concrete

22,065 sf 3.00 66,195





PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.3</b>							
	Rebar to decks	6,620	lbs	2.00	13,240		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF	165	tns	5,200.00	858,000		
	Moment connections	8	ea	750.00	6,000		
	Shear studs	5,516	ea	3.50	19,306		
	2" metal galvanized floor deck	22,065	sf	7.50	165,488		
	Expansion joints	1	ls	50,000.00	50,000		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr	22,065	sf	3.00	66,195		
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00	25,000		
	SUBTOTAL					1,384,768	
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00	90,000		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 13 lbs per SF	508	tns	5,200.00	2,641,600		
	Canopy	11	tns	5,500.00	60,500		
	Roof screens	7	tns	5,500.00	38,500		
	<b>Decking</b>						
	1 1/2" galvanized metal deck, typical	78,135	sf	7.00	546,945		
	Premium for acoustic (Gym + Café)	12,000	sf	6.00	72,000		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	78,135	sf	5.00	390,675		
	SUBTOTAL					3,840,220	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$5,224,988</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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B2010	EXTERIOR WALLS	53,340	Total closure area		
	Exterior Wall Area - 70% solid	37,338	sf total area solid		
042000	MASONRY				
	Mockup	1	ls	50,000.00	50,000
	Brick veneer; 60% of Solid	22,403	sf	42.00	940,926
	8" Mineral wool at exterior closure (2 layers 4")	37,338	sf	7.50	280,035
	Miscellaneous flashings and sealants	37,338	sf	1.50	56,007
	Staging to exterior wall	37,338	sf	4.00	149,352
	055000	MISC. METALS			
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	22,403	sf	1.50	33,605
070001	WATERPROOFING, DAMPPROOFING AND CAULKING				
	Air barrier	37,338	sf	10.00	373,380
	Miscellaneous sealants to closure	37,338	sf	1.00	37,338
072100	THERMAL INSULATION				
	4" Batt insulation in stud	37,338	sf	4.00	149,352
	Insulation at glazed openings	5,334	lf	6.00	32,004
076400	CLADDING				
	Phenolic Panel Rainscreen; 40% of solid	14,935	sf	100.00	1,493,500
	12' high Acoustic Equipment Screen	1,440	sf	95.00	136,800
	EXPANSION JOINT COVERS				
	Expansion joints	1	ls	25,000.00	25,000
092900	GYPSUM BOARD ASSEMBLIES				



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.3**

	Exterior wall; 6" Stud backup	37,338	sf	16.00	597,408		
	Gypsum Sheathing	37,338	sf	3.50	130,683		
	Drywall lining to interior face of stud backup	37,338	sf	4.00	149,352		
101400	SIGNAGE						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					4,649,742	
<b>B2020</b>	<b>WINDOWS</b>						
	Exterior Wall Area; 30%	16,002	sf				
061000	ROUGH CARPENTRY						
	Wood blocking at openings	5,334	lf	10.00	53,340		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Air barrier/flashing at windows	5,334	lf	10.00	53,340		
	Backer rod & double sealant	5,334	lf	11.00	58,674		
080001	METAL WINDOWS						
	Aluminum windows, triple glazed	12,002	sf	205.00	2,460,410		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	LOUVERS						
	Louvers				N/A		
	SUBTOTAL					3,645,764	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	100,200	gsf	1.00	100,200		
	SUBTOTAL					100,200	

<b>TOTAL - EXTERIOR CLOSURE</b>	<b>\$8,395,706</b>
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**B30 ROOFING**

055000	MISCELLANEOUS METALS						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	ROUGH CARPENTRY						
	Rough carpentry and blocking @ roof	78,135	sf	1.50	117,203		
070002	ROOFING AND FLASHING	78,135	total area				
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	78,135	sf	32.00	2,500,320		
	Plaza deck pavers system at terrace				Assumed NR		
	Miscellaneous Roofing						
	Miscellaneous flashings/copings/walkway pads etc.	78,135	sf	4.00	312,540		
	SUBTOTAL					2,930,063	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	ROOF SKYLIGHTS						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>	<b>\$2,930,063</b>
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**C10 INTERIOR CONSTRUCTION**

<b>C1010</b>	<b>PARTITIONS</b>						
040001	MASONRY						
	Allowance for masonry partitions	100,200	gsf	2.00	200,400		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.3</b>							
	Wood blocking at interiors	100,200	gsf	0.50	50,100		
078400	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire stopping including slab edges and core	100,200	gsf	1.00	100,200		
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>						
	Miscellaneous sealants throughout building	100,200	gsf	1.25	125,250		
078150	<b>EXPANSION JOINTS</b>						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	<b>INTERIOR GLAZING</b>						
	Allowance for interior glazing	100,200	gsf	5.00	501,000		
092900	<b>GYPSUM BOARD ASSEMBLIES</b>						
	Allowance for GWB partitions	100,200	gsf	26.00	2,605,200		
	SUBTOTAL					3,617,150	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	100,200	gsf	8.00	801,600		
	SUBTOTAL					801,600	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	<b>MISCELLANEOUS METALS</b>						
	Miscellaneous metals throughout building	100,200	gsf	5.00	501,000		
061000	<b>ROUGH CARPENTRY</b>						
062000	<b>INTERIOR ARCHITECTURAL WOODWORK</b>						
	Interior millwork package	100,200	gsf	3.00	300,600		
101100	<b>VISUAL DISPLAY SURFACES</b>						
	Markerboard and tackboard package	100,200	gsf	2.00	200,400		
101400	<b>SIGNAGE</b>						
	Room identification, directional & safety signage, building directory + environmental graphics	100,200	gsf	2.00	200,400		
102800	<b>TOILET ACCESSORIES</b>						
	Toilet accessories/compartments	100,200	gsf	1.00	100,200		
104400	<b>FIRE PROTECTION SPECIALTIES</b>						
	Fire extinguisher cabinets	1	ls	17,193.29	17,193		
	AED cabinets	1	ls	2,000.00	2,000		
105000	<b>LOCKERS</b>						
	Student lockers	100,200	gsf	1.50	150,300		
	SUBTOTAL					1,472,093	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$5,890,843</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	<b>CONCRETE</b>						
	Concrete to stairs	4	flt	5,000.00	20,000		
055000	<b>MISCELLANEOUS METALS</b>						
	Egress stairs w/ stainless steel rails and handrails	2	flt	50,000.00	100,000		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair	2	flt	80,000.00	160,000		
	SUBTOTAL					280,000	
<b>C2020</b>	<b>STAIR FINISHES</b>						
090005	<b>RESILIENT FLOORS</b>						
	Stair finishes	4	flts	20,000.00	80,000		
	SUBTOTAL					80,000	



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.3**

<b>TOTAL - STAIRCASES</b>							<b>\$360,000</b>
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**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package	100,200	gsf	8.00	801,600		801,600
SUBTOTAL						

**C3020 FLOOR FINISHES**

Floor finishes complete package	100,200	gsf	13.00	1,302,600		1,302,600
SUBTOTAL						

**C3030 CEILING FINISHES**

Ceiling finishes complete package	100,200	gsf	10.00	1,002,000		1,002,000
SUBTOTAL						

<b>TOTAL - INTERIOR FINISHES</b>							<b>\$3,106,200</b>
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**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

**055000 MISCELLANEOUS METALS**

Pit ladder and miscellaneous metals	1	ea	900.00	900		
Sill angles	1	ls	1,500.00	1,500		

**142100 ELEVATOR**

Electric traction elevator, 2 stop, 4,000lbs	1	ea	190,000.00	190,000		192,400
SUBTOTAL						

<b>TOTAL - CONVEYING SYSTEMS</b>							<b>\$192,400</b>
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**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete	100,200	gsf	28.00	2,805,600		2,805,600
SUBTOTAL						

<b>TOTAL - PLUMBING</b>							<b>\$2,805,600</b>
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**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium	100,200	gsf	40.00	ALT		
HVAC System; ASHP	100,200	gsf	80.00	8,016,000		8,016,000
SUBTOTAL						

<b>TOTAL - HVAC</b>							<b>\$8,016,000</b>
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**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire Equipment

Fire pump with controller 75GPM, incl Jockey pump with controller	1	ea	80,000.00	Assumed NR		
Sprinkler system; complete	100,200	gsf	8.00	801,600		801,600
SUBTOTAL						

<b>TOTAL - FIRE PROTECTION</b>							<b>\$801,600</b>
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**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard	1	ea	125,000.00	125,000		
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PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.3</b>							
	Panelboards/feeders	100,200	gsf	6.00	601,200		
	<u>Emergency power</u>						
	Emergency Generator	1	ls		Included Below		
	Emergency power feeders	100,200	gsf	6.50	651,300		
	<u>Photovoltaic</u>						
	PV system equipment; roof top				Excluded		
	Battery Storage				Excluded		
	<u>Equipment Wiring</u>						
	Feeders + Electrical to equipment	100,200	gsf	7.00	701,400		
	SUBTOTAL					2,078,900	
<b>D5020</b>	<b>LIGHTING &amp; POWER</b>						
	Lighting, Controls + Power	100,200	gsf	18.00	1,803,600		
	SUBTOTAL					1,803,600	
<b>D5030</b>	<b>COMMUNICATION &amp; SECURITY SYSTEMS</b>						
	Telecommunications/PA + Clock	100,200	gsf	4.00	400,800		
	<u>Performance lighting</u>						
	Platform dimming panelboard with feeders	1	ls	15,000.00	15,000		
	Platform/performance lighting system	1	ls	75,000.00	75,000		
	<u>Audio Visual Systems/Speech Reinforcement</u>	100,200	gsf	10.00	1,002,000		
	<u>Specialty Communications Systems</u>						
	BDA system, antenna and annunciator	100,200	sf	0.65	65,130		
	Cell repeater/Distributed antenna system, not specified	100,200	sf	1.00	100,200		
	<u>Fire Alarm</u>	100,200	gsf	3.00	300,600		
	<u>Security System</u>	100,200	gsf	6.00	601,200		
	SUBTOTAL					2,559,930	
<b>D5040</b>	<b>OTHER ELECTRICAL SYSTEMS</b>						
	<u>Common Work Results for Electrical</u>						
	Lightning prevention	100,200	gsf	0.30	30,060		
	Grounding	100,200	gsf	0.40	40,080		
	Misc. demolition work	100,200	gsf	0.25	25,050		
	Temp power and lights	100,200	gsf	1.20	120,240		
	Seismic restraints/Coordination/misc.	100,200	gsf	1.00	100,200		
	SUBTOTAL					315,630	
<b>TOTAL - ELECTRICAL</b>							<b>\$6,758,060</b>
<b>E10</b>	<b>EQUIPMENT</b>						
<b>E10</b>	<b>EQUIPMENT, GENERALLY</b>						
112000	<i>LOADING DOCK EQUIPMENT</i>						
	Loading dock equipment	1	ls	10,000.00	10,000		
110620	<i>THEATRICAL EQUIPMENT</i>						
	Allowance for auditorium; lighting/rigging/AV/Seating	1	ls	750,000.00	750,000		
113100	<i>APPLIANCES</i>						
	Residential appliances - allowance	1	ls	15,000.00	15,000		
114000	<i>FOOD SERVICE EQUIPMENT</i>						
	Kitchen equipment	1	ls	520,000.00	520,000		
115300	<i>EDUCATIONAL EQUIPMENT</i>						
	Kiln	1	ea	5,000.00	5,000		
	Allowance for miscellaneous equipment	1	ls	50,000	50,000		
116600	<i>GYM EQUIPMENT</i>						
	Gym Equipment	1	ls	117,000.00	117,000		
126000	<i>SEATING</i>						
	Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
	SUBTOTAL					1,533,000	
<b>TOTAL - EQUIPMENT</b>							<b>\$1,533,000</b>
<b>E20</b>	<b>FURNISHINGS</b>						



PDP Options Cost Estimate

GFA

100,200

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.3**

**E2010 FIXED FURNISHINGS**

**122100 WINDOW TREATMENT**

Window shades at exterior glazing including blackout shades at art & science classrooms - allowance **16,002** sf 10.00 160,020

**123553 CASEWORK**

Casework package **100,200** gsf 12.00 1,202,400

SUBTOTAL 1,362,420

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner

SUBTOTAL NIC

**TOTAL - FURNISHINGS**

**\$1,362,420**

**F10 SPECIAL CONSTRUCTION**

**F10 SPECIAL CONSTRUCTION**

SUBTOTAL -

**TOTAL - SPECIAL CONSTRUCTION**

**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

SUBTOTAL -

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance

See Summary

SUBTOTAL

**TOTAL - SELECTIVE BUILDING DEMOLITION**

SUBTOTAL

**\$51,937,116**





Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 121,070

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.4</b>					
<b>A10 FOUNDATIONS</b>					
A1010	Standard Foundations	\$1,598,100			
A1020	Special Foundations	\$1,568,100			
A1030	Lowest Floor Construction	\$1,409,325	<b>\$4,575,525</b>	\$37.79	7.5%
<b>A20 BASEMENT CONSTRUCTION</b>					
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10 SUPERSTRUCTURE</b>					
B1010	Upper Floor Construction	\$2,613,109			
B1020	Roof Construction	\$3,853,860	<b>\$6,466,969</b>	\$53.42	10.6%
<b>B20 EXTERIOR CLOSURE</b>					
B2010	Exterior Walls	\$5,704,507			
B2020	Windows	\$4,467,476			
B2030	Exterior Doors	\$121,070	<b>\$10,293,053</b>	\$85.02	16.8%
<b>B30 ROOFING</b>					
B3010	Roof Coverings	\$2,940,188			
B3020	Roof Openings	\$0	<b>\$2,940,188</b>	\$24.29	4.8%
<b>C10 INTERIOR CONSTRUCTION</b>					
C1010	Partitions	\$4,363,253			
C1020	Interior Doors	\$968,560			
C1030	Specialties/Millwork	\$1,777,690	<b>\$7,109,503</b>	\$58.72	11.6%
<b>C20 STAIRCASES</b>					
C2010	Stair Construction	\$335,000			
C2020	Stair Finishes	\$100,000	<b>\$435,000</b>	\$3.59	0.7%
<b>C30 INTERIOR FINISHES</b>					
C3010	Wall Finishes	\$968,560			
C3020	Floor Finishes	\$1,573,910			
C3030	Ceiling Finishes	\$1,210,700	<b>\$3,753,170</b>	\$31.00	6.1%
<b>D10 CONVEYING SYSTEMS</b>					
D1010	Elevator	\$192,400	<b>\$192,400</b>	\$1.59	0.3%



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 121,070

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.4</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$3,389,960	<b>\$3,389,960</b>	\$28.00	5.5%
<b>D30 HVAC</b>				
D30 HVAC	\$9,685,600	<b>\$9,685,600</b>	\$80.00	15.8%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$968,560	<b>\$968,560</b>	\$8.00	1.6%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$8,120,872	<b>\$8,120,872</b>	\$67.08	13.3%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,623,000	<b>\$1,623,000</b>	\$13.41	2.7%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,651,020			
E2020 Movable Furnishings	NIC	<b>\$1,651,020</b>	\$13.64	2.7%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$0			
F2020 Hazardous Components Abatement	\$0	<b>\$0</b>	\$0.00	0.0%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$61,204,820</b>	<b>\$505.53</b>	<b>100.0%</b>



PDP Options Cost Estimate

GFA

121,070

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BUILDING BACKUP - OPTION C.4

**GROSS FLOOR AREA CALCULATION**

Level 1	78,405
Level 2	42,665
Level 3	

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>121,070</b>	<b>sf</b>
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**A10 FOUNDATIONS**

<b>A1010</b>	<b>STANDARD FOUNDATIONS</b>						
	Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B	<b>78,405</b>	sf	20.00	1,568,100		
	Temporary dewatering for foundation work	<b>1</b>	ls	30,000.00	30,000		
	SUBTOTAL					1,598,100	
<b>A1020</b>	<b>SPECIAL FOUNDATIONS</b>						
	Structural fill/Ground Improvements Allowance	<b>78,405</b>	sf	20.00	1,568,100		
	SUBTOTAL					1,568,100	
<b>A1030</b>	<b>LOWEST FLOOR CONSTRUCTION</b>						
<i>033000</i>	<b>CONCRETE</b>						
	Vapor barrier, 15mils	<b>78,405</b>	sf	1.25	98,006		
	<u>Slab on grade</u>	<i>78,405</i>	sf				
	WWF reinforcement	<b>90,166</b>	sf	1.85	166,807		
	Concrete - 5" thick	<b>1,250</b>	cy	170.00	212,500		
	Placing concrete	<b>1,250</b>	cy	65.00	81,250		
	Finishing and curing concrete	<b>78,405</b>	sf	3.00	235,215		
	Control joints - saw cut	<b>78,405</b>	sf	0.10	7,841		
	<u>Miscellaneous</u>						
	Equipment pads	<b>1</b>	ls	15,000.00	15,000		
	Loading dock	<b>1</b>	ls	30,000.00	30,000		
	Elevator pits	<b>1</b>	ea	40,000.00	40,000		
	Radon system					Excluded; NR	
<i>072100</i>	<b>THERMAL INSULATION</b>						
	Under slab insulation, 2" thick under slab	<b>78,405</b>	sf	3.00	235,215		
<i>312000</i>	<b>EARTHWORK</b>						
	Gravel base, 12"	<b>2,904</b>	cy	45.00	130,680		
	Compact existing sub-grade	<b>78,405</b>	sf	0.50	39,203		
	Underslab E&B for plumbing	<b>78,405</b>	sf	1.50	117,608		
	SUBTOTAL					1,409,325	
<b>TOTAL - FOUNDATIONS</b>							<b>\$4,575,525</b>

**A20 BASEMENT CONSTRUCTION**

<b>A2010</b>	<b>BASEMENT EXCAVATION</b>						
	No Work in this section						
	SUBTOTAL					-	
<b>A2020</b>	<b>BASEMENT WALLS</b>						
	No Work in this section						
	SUBTOTAL					-	
<b>TOTAL - BASEMENT CONSTRUCTION</b>							

**B10 SUPERSTRUCTURE**

<b>B1010</b>	<b>FLOOR CONSTRUCTION</b>						
		13.7	lbs/sf				
		830	tns	excluding canopies + roof screens			
		\$6,425	\$/Ton				
<i>033000</i>	<b>CONCRETE</b>						
	WWF reinforcement	<b>49,065</b>	sf	1.85	90,770		
	Concrete Fill to metal deck; lightweight, total thickness 5 1/4"	<b>697</b>	cy	190.00	132,430		
	Place and finish concrete	<b>42,665</b>	sf	3.00	127,995		



PDP Options Cost Estimate

GFA

121,070

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.4</b>							
	Rebar to decks	12,800	lbs	2.00	25,600		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF	320	tns	5,200.00	1,664,000		
	Moment connections	16	ea	750.00	12,000		
	Shear studs	10,666	ea	3.50	37,331		
	2" metal galvanized floor deck	42,665	sf	7.50	319,988		
	Expansion joints	1	ls	50,000.00	50,000		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr	42,665	sf	3.00	127,995		
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00	25,000		
	SUBTOTAL					2,613,109	
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00	90,000		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 13 lbs per SF	510	tns	5,200.00	2,652,000		
	Canopy	11	tns	5,500.00	60,500		
	Roof screens	7	tns	5,500.00	38,500		
	<u>Decking</u>						
	1 1/2" galvanized metal deck, typical	78,405	sf	7.00	548,835		
	Premium for acoustic (Gym + Café)	12,000	sf	6.00	72,000		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	78,405	sf	5.00	392,025		
	SUBTOTAL					3,853,860	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$6,466,969</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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<b>B2010</b>	<b>EXTERIOR WALLS</b>	66,060	Total closure area
	<b>Exterior Wall Area - 70% solid</b>	46,242	sf total area solid
042000	<b>MASONRY</b>		
	Mockup	1	ls
	Brick veneer; 60% of Solid	27,745	sf
	8" Mineral wool at exterior closure (2 layers 4")	46,242	sf
	Miscellaneous flashings and sealants	46,242	sf
	Staging to exterior wall	46,242	sf
055000	<b>MISC. METALS</b>		
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	27,745	sf
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>		
	Air barrier	46,242	sf
	Miscellaneous sealants to closure	46,242	sf
072100	<b>THERMAL INSULATION</b>		
	4" Batt insulation in stud	46,242	sf
	Insulation at glazed openings	6,606	lf
076400	<b>CLADDING</b>		
	Phenolic Panel Rainscreen; 40% of solid	18,497	sf
	12' high Acoustic Equipment Screen	1,440	sf
	<b>EXPANSION JOINT COVERS</b>		
	Expansion joints	1	ls
092900	<b>GYPSUM BOARD ASSEMBLIES</b>		



PDP Options Cost Estimate

GFA

121,070

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.4**

	Exterior wall; 6" Stud backup	46,242	sf	16.00	739,872		
	Gypsum Sheathing	46,242	sf	3.50	161,847		
	Drywall lining to interior face of stud backup	46,242	sf	4.00	184,968		
101400	SIGNAGE						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					5,704,507	
<b>B2020</b>	<b>WINDOWS</b>						
	Exterior Wall Area; 30%	19,818	sf				
061000	ROUGH CARPENTRY						
	Wood blocking at openings	6,606	lf	10.00	66,060		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Air barrier/flashing at windows	6,606	lf	10.00	66,060		
	Backer rod & double sealant	6,606	lf	11.00	72,666		
080001	METAL WINDOWS						
	Aluminum windows, triple glazed	15,818	sf	205.00	3,242,690		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	LOUVERS						
	Louvers				N/A		
	SUBTOTAL					4,467,476	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	121,070	gsf	1.00	121,070		
	SUBTOTAL					121,070	

<b>TOTAL - EXTERIOR CLOSURE</b>	<b>\$10,293,053</b>
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**B30 ROOFING**

055000	MISCELLANEOUS METALS						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	ROUGH CARPENTRY						
	Rough carpentry and blocking @ roof	78,405	sf	1.50	117,608		
070002	ROOFING AND FLASHING						
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	78,405	total area				
	Plaza deck pavers system at terrace	78,405	sf	32.00	2,508,960		
	Miscellaneous Roofing						
	Miscellaneous flashings/copings/walkway pads etc.	78,405	sf	4.00	313,620		
	SUBTOTAL					2,940,188	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	ROOF SKYLIGHTS						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>	<b>\$2,940,188</b>
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**C10 INTERIOR CONSTRUCTION**

<b>C1010</b>	<b>PARTITIONS</b>						
040001	MASONRY						
	Allowance for masonry partitions	121,070	gsf	2.00	242,140		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		



PDP Options Cost Estimate

GFA

121,070

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.4</b>							
	Wood blocking at interiors	121,070	gsf	0.50	60,535		
078400	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire stopping including slab edges and core	121,070	gsf	1.00	121,070		
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>						
	Miscellaneous sealants throughout building	121,070	gsf	1.25	151,338		
078150	<b>EXPANSION JOINTS</b>						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	<b>INTERIOR GLAZING</b>						
	Allowance for interior glazing	121,070	gsf	5.00	605,350		
092900	<b>GYPSUM BOARD ASSEMBLIES</b>						
	Allowance for GWB partitions	121,070	gsf	26.00	3,147,820		
	SUBTOTAL					4,363,253	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	121,070	gsf	8.00	968,560		
	SUBTOTAL					968,560	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	<b>MISCELLANEOUS METALS</b>						
	Miscellaneous metals throughout building	121,070	gsf	5.00	605,350		
061000	<b>ROUGH CARPENTRY</b>						
062000	<b>INTERIOR ARCHITECTURAL WOODWORK</b>						
	Interior millwork package	121,070	gsf	3.00	363,210		
101100	<b>VISUAL DISPLAY SURFACES</b>						
	Markerboard and tackboard package	121,070	gsf	2.00	242,140		
101400	<b>SIGNAGE</b>						
	Room identification, directional & safety signage, building directory + environmental graphics	121,070	gsf	2.00	242,140		
102800	<b>TOILET ACCESSORIES</b>						
	Toilet accessories/compartments	121,070	gsf	1.00	121,070		
104400	<b>FIRE PROTECTION SPECIALTIES</b>						
	Fire extinguisher cabinets	1	ls	20,174.71	20,175		
	AED cabinets	1	ls	2,000.00	2,000		
105000	<b>LOCKERS</b>						
	Student lockers	121,070	gsf	1.50	181,605		
	SUBTOTAL					1,777,690	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$7,109,503</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	<b>CONCRETE</b>						
	Concrete to stairs	5	flt	5,000.00	25,000		
055000	<b>MISCELLANEOUS METALS</b>						
	Egress stairs w/ stainless steel rails and handrails	3	flt	50,000.00	150,000		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair	2	flt	80,000.00	160,000		
	SUBTOTAL					335,000	

<b>C2020</b>	<b>STAIR FINISHES</b>
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090005	<b>RESILIENT FLOORS</b>						
	Stair finishes	5	flts	20,000.00	100,000		
	SUBTOTAL					100,000	





PDP Options Cost Estimate

GFA

121,070

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.4**

<b>TOTAL - STAIRCASES</b>							<b>\$435,000</b>
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**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package	121,070	gsf	8.00	968,560		968,560
SUBTOTAL						

**C3020 FLOOR FINISHES**

Floor finishes complete package	121,070	gsf	13.00	1,573,910		1,573,910
SUBTOTAL						

**C3030 CEILING FINISHES**

Ceiling finishes complete package	121,070	gsf	10.00	1,210,700		1,210,700
SUBTOTAL						

<b>TOTAL - INTERIOR FINISHES</b>							<b>\$3,753,170</b>
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**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

**055000 MISCELLANEOUS METALS**

Pit ladder and miscellaneous metals	1	ea	900.00	900		
Sill angles	1	ls	1,500.00	1,500		

**142100 ELEVATOR**

Electric traction elevator, 2 stop, 4,000lbs	1	ea	190,000.00	190,000		192,400
SUBTOTAL						

<b>TOTAL - CONVEYING SYSTEMS</b>							<b>\$192,400</b>
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**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete	121,070	gsf	28.00	3,389,960		3,389,960
SUBTOTAL						

<b>TOTAL - PLUMBING</b>							<b>\$3,389,960</b>
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**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium	121,070	gsf	40.00	ALT		
HVAC System; ASHP	121,070	gsf	80.00	9,685,600		9,685,600
SUBTOTAL						

<b>TOTAL - HVAC</b>							<b>\$9,685,600</b>
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**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire Equipment

Fire pump with controller 75GPM, incl Jockey pump with controller	1	ea	80,000.00	Assumed NR		
Sprinkler system; complete	121,070	gsf	8.00	968,560		968,560
SUBTOTAL						

<b>TOTAL - FIRE PROTECTION</b>							<b>\$968,560</b>
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**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard	1	ea	125,000.00	125,000		
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PDP Options Cost Estimate

GFA

121,070

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.4</b>							
	Panelboards/feeders	121,070	gsf	6.00	726,420		
	<u>Emergency power</u>						
	Emergency Generator	1	ls		Included Below		
	Emergency power feeders	121,070	gsf	6.50	786,955		
	<u>Photovoltaic</u>						
	PV system equipment; roof top				Excluded		
	Battery Storage				Excluded		
	<u>Equipment Wiring</u>						
	Feeders + Electrical to equipment	121,070	gsf	7.00	847,490		
	SUBTOTAL					2,485,865	
<b>D5020</b>	<b>LIGHTING &amp; POWER</b>						
	Lighting, Controls + Power	121,070	gsf	18.00	2,179,260		
	SUBTOTAL					2,179,260	
<b>D5030</b>	<b>COMMUNICATION &amp; SECURITY SYSTEMS</b>						
	Telecommunications/PA + Clock	121,070	gsf	4.00	484,280		
	<u>Performance lighting</u>						
	Platform dimming panelboard with feeders	1	ls	15,000.00	15,000		
	Platform/performance lighting system	1	ls	75,000.00	75,000		
	<u>Audio Visual Systems/Speech Reinforcement</u>	121,070	gsf	10.00	1,210,700		
	<u>Specialty Communications Systems</u>						
	BDA system, antenna and annunciator	121,070	sf	0.65	78,696		
	Cell repeater/Distributed antenna system, not specified	121,070	sf	1.00	121,070		
	<u>Fire Alarm</u>	121,070	gsf	3.00	363,210		
	<u>Security System</u>	121,070	gsf	6.00	726,420		
	SUBTOTAL					3,074,376	
<b>D5040</b>	<b>OTHER ELECTRICAL SYSTEMS</b>						
	<u>Common Work Results for Electrical</u>						
	Lightning prevention	121,070	gsf	0.30	36,321		
	Grounding	121,070	gsf	0.40	48,428		
	Misc. demolition work	121,070	gsf	0.25	30,268		
	Temp power and lights	121,070	gsf	1.20	145,284		
	Seismic restraints/Coordination/misc.	121,070	gsf	1.00	121,070		
	SUBTOTAL					381,371	
<b>TOTAL - ELECTRICAL</b>							<b>\$8,120,872</b>
<b>E10</b>	<b>EQUIPMENT</b>						
<b>E10</b>	<b>EQUIPMENT, GENERALLY</b>						
112000	<i>LOADING DOCK EQUIPMENT</i>						
	Loading dock equipment	1	ls	10,000.00	10,000		
110620	<i>THEATRICAL EQUIPMENT</i>						
	Allowance for auditorium; lighting/rigging/AV/Seating	1	ls	750,000.00	750,000		
113100	<i>APPLIANCES</i>						
	Residential appliances - allowance	1	ls	15,000.00	15,000		
114000	<i>FOOD SERVICE EQUIPMENT</i>						
	Kitchen equipment	1	ls	610,000.00	610,000		
115300	<i>EDUCATIONAL EQUIPMENT</i>						
	Kiln	1	ea	5,000.00	5,000		
	Allowance for miscellaneous equipment	1	ls	50,000	50,000		
116600	<i>GYM EQUIPMENT</i>						
	Gym Equipment	1	ls	117,000.00	117,000		
126000	<i>SEATING</i>						
	Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
	SUBTOTAL					1,623,000	
<b>TOTAL - EQUIPMENT</b>							<b>\$1,623,000</b>
<b>E20</b>	<b>FURNISHINGS</b>						



PDP Options Cost Estimate

GFA

121,070

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.4**

**E2010 FIXED FURNISHINGS**

**122100 WINDOW TREATMENT**

Window shades at exterior glazing including blackout shades at art & science classrooms - allowance **19,818** sf 10.00 198,180

**123553 CASEWORK**

Casework package **121,070** gsf 12.00 1,452,840

SUBTOTAL 1,651,020

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner

SUBTOTAL NIC

**TOTAL - FURNISHINGS**

**\$1,651,020**

**F10 SPECIAL CONSTRUCTION**

**F10 SPECIAL CONSTRUCTION**

SUBTOTAL -

**TOTAL - SPECIAL CONSTRUCTION**

**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

SUBTOTAL -

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance See Summary

SUBTOTAL

**TOTAL - SELECTIVE BUILDING DEMOLITION**

SUBTOTAL

**\$61,204,820**



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 121,010

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.5</b>				
<b>A10 FOUNDATIONS</b>				
A1010 Standard Foundations	\$1,592,700			
A1020 Special Foundations	\$1,562,700			
A1030 Lowest Floor Construction	\$1,404,836	<b>\$4,560,236</b>	\$37.68	7.5%
<b>A20 BASEMENT CONSTRUCTION</b>				
A2010 Basement Excavation	\$0			
A2020 Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10 SUPERSTRUCTURE</b>				
B1010 Upper Floor Construction	\$2,627,672			
B1020 Roof Construction	\$3,840,220	<b>\$6,467,892</b>	\$53.45	10.7%
<b>B20 EXTERIOR CLOSURE</b>				
B2010 Exterior Walls	\$5,338,820			
B2020 Windows	\$4,182,590			
B2030 Exterior Doors	\$121,010	<b>\$9,642,420</b>	\$79.68	15.9%
<b>B30 ROOFING</b>				
B3010 Roof Coverings	\$2,930,063			
B3020 Roof Openings	\$0	<b>\$2,930,063</b>	\$24.21	4.8%
<b>C10 INTERIOR CONSTRUCTION</b>				
C1010 Partitions	\$4,361,108			
C1020 Interior Doors	\$968,080			
C1030 Specialties/Millwork	\$1,776,811	<b>\$7,105,999</b>	\$58.72	11.7%
<b>C20 STAIRCASES</b>				
C2010 Stair Construction	\$335,000			
C2020 Stair Finishes	\$100,000	<b>\$435,000</b>	\$3.59	0.7%
<b>C30 INTERIOR FINISHES</b>				
C3010 Wall Finishes	\$968,080			
C3020 Floor Finishes	\$1,573,130			
C3030 Ceiling Finishes	\$1,210,100	<b>\$3,751,310</b>	\$31.00	6.2%
<b>D10 CONVEYING SYSTEMS</b>				
D1010 Elevator	\$192,400	<b>\$192,400</b>	\$1.59	0.3%



Neary Elementary School  
Southborough, MA

09-May-24

PDP Options Cost Estimate

GFA 121,010

## CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
<b>BUILDING SUMMARY - OPTION C.5</b>				
<b>D20 PLUMBING</b>				
D20 Plumbing	\$3,388,280	<b>\$3,388,280</b>	\$28.00	5.6%
<b>D30 HVAC</b>				
D30 HVAC	\$9,680,800	<b>\$9,680,800</b>	\$80.00	16.0%
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$968,080	<b>\$968,080</b>	\$8.00	1.6%
<b>D50 ELECTRICAL</b>				
D5010 Complete System	\$8,116,954	<b>\$8,116,954</b>	\$67.08	13.4%
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$1,623,000	<b>\$1,623,000</b>	\$13.41	2.7%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$1,637,070			
E2020 Movable Furnishings	NIC	<b>\$1,637,070</b>	\$13.53	2.7%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>				
F2010 Building Elements Demolition	\$0			
F2020 Hazardous Components Abatement	\$0	<b>\$0</b>	\$0.00	0.0%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$60,499,504</b>	<b>\$499.95</b>	<b>100.0%</b>



PDP Options Cost Estimate

GFA

121,010

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.5**

**GROSS FLOOR AREA CALCULATION**

Level 1	78,135
Level 2	42,875
Level 3	

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>121,010 sf</b>
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**A10 FOUNDATIONS**

<b>A1010</b>	<b>STANDARD FOUNDATIONS</b>						
	Foundations complete; spread footings, continuous footings, foundation walls; includes all E&B	<b>78,135</b>	sf	20.00	1,562,700		
	Temporary dewatering for foundation work	<b>1</b>	ls	30,000.00	30,000		
	SUBTOTAL					1,592,700	
<b>A1020</b>	<b>SPECIAL FOUNDATIONS</b>						
	Structural fill/Ground Improvements Allowance	<b>78,135</b>	sf	20.00	1,562,700		
	SUBTOTAL					1,562,700	
<b>A1030</b>	<b>LOWEST FLOOR CONSTRUCTION</b>						
<i>033000</i>	<b>CONCRETE</b>						
	Vapor barrier, 15mils	<b>78,135</b>	sf	1.25	97,669		
	<u>Slab on grade</u>	<i>78,135</i>	sf				
	WWF reinforcement	<b>89,855</b>	sf	1.85	166,232		
	Concrete - 5" thick	<b>1,246</b>	cy	170.00	211,820		
	Placing concrete	<b>1,246</b>	cy	65.00	80,990		
	Finishing and curing concrete	<b>78,135</b>	sf	3.00	234,405		
	Control joints - saw cut	<b>78,135</b>	sf	0.10	7,814		
	<u>Miscellaneous</u>						
	Equipment pads	<b>1</b>	ls	15,000.00	15,000		
	Loading dock	<b>1</b>	ls	30,000.00	30,000		
	Elevator pits	<b>1</b>	ea	40,000.00	40,000		
	Radon system					Excluded; NR	
<i>072100</i>	<b>THERMAL INSULATION</b>						
	Under slab insulation, 2" thick under slab	<b>78,135</b>	sf	3.00	234,405		
<i>312000</i>	<b>EARTHWORK</b>						
	Gravel base, 12"	<b>2,894</b>	cy	45.00	130,230		
	Compact existing sub-grade	<b>78,135</b>	sf	0.50	39,068		
	Underslab E&B for plumbing	<b>78,135</b>	sf	1.50	117,203		
	SUBTOTAL					1,404,836	
<b>TOTAL - FOUNDATIONS</b>							<b>\$4,560,236</b>

**A20 BASEMENT CONSTRUCTION**

<b>A2010</b>	<b>BASEMENT EXCAVATION</b>						
	No Work in this section						
	SUBTOTAL					-	
<b>A2020</b>	<b>BASEMENT WALLS</b>						
	No Work in this section						
	SUBTOTAL					-	
<b>TOTAL - BASEMENT CONSTRUCTION</b>							

**B10 SUPERSTRUCTURE**

<b>B1010</b>	<b>FLOOR CONSTRUCTION</b>						
		13.7	lbs/sf				
		830	tns		excluding canopies + roof screens		
		\$6,425	\$/Ton				
<i>033000</i>	<b>CONCRETE</b>						
	WWF reinforcement	<b>49,306</b>	sf	1.85	91,216		
	Concrete Fill to metal deck; lightweight, total thickness 5 1/4"	<b>700</b>	cy	190.00	133,000		
	Place and finish concrete	<b>42,875</b>	sf	3.00	128,625		





PDP Options Cost Estimate

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.5</b>							
	Rebar to decks	12,863	lbs	2.00	25,726		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 15 lbs per SF	322	tns	5,200.00	1,674,400		
	Moment connections	16	ea	750.00	12,000		
	Shear studs	10,719	ea	3.50	37,517		
	2" metal galvanized floor deck	42,875	sf	7.50	321,563		
	Expansion joints	1	ls	50,000.00	50,000		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire proofing to columns and beams; 2 hr	42,875	sf	3.00	128,625		
	Intumescent paint @ architecturally exposed beams and columns - allow	1	ls	25,000.00	25,000		
	SUBTOTAL					2,627,672	
<b>B1020</b>	<b>ROOF CONSTRUCTION</b>						
033000	<b>CONCRETE</b>						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	10,000	sf	9.00	90,000		
051200	<b>STRUCTURAL STEEL FRAMING</b>						
	Structural steel framing; Complete; 13 lbs per SF	508	tns	5,200.00	2,641,600		
	Canopy	11	tns	5,500.00	60,500		
	Roof screens	7	tns	5,500.00	38,500		
	<u>Decking</u>						
	1 1/2" galvanized metal deck, typical	78,135	sf	7.00	546,945		
	Premium for acoustic (Gym + Café)	12,000	sf	6.00	72,000		
078100	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	78,135	sf	5.00	390,675		
	SUBTOTAL					3,840,220	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$6,467,892</b>

<b>B20</b>	<b>EXTERIOR CLOSURE</b>
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<b>B2010</b>	<b>EXTERIOR WALLS</b>	61,650	Total closure area
	<b>Exterior Wall Area - 70% solid</b>	43,155	sf total area solid
042000	<b>MASONRY</b>		
	Mockup	1	ls 50,000.00 50,000
	Brick veneer; 60% of Solid	25,893	sf 42.00 1,087,506
	8" Mineral wool at exterior closure (2 layers 4")	43,155	sf 7.50 323,663
	Miscellaneous flashings and sealants	43,155	sf 1.50 64,733
	Staging to exterior wall	43,155	sf 4.00 172,620
055000	<b>MISC. METALS</b>		
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	25,893	sf 1.50 38,840
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>		
	Air barrier	43,155	sf 10.00 431,550
	Miscellaneous sealants to closure	43,155	sf 1.00 43,155
072100	<b>THERMAL INSULATION</b>		
	4" Batt insulation in stud	43,155	sf 4.00 172,620
	Insulation at glazed openings	6,165	lf 6.00 36,990
076400	<b>CLADDING</b>		
	Phenolic Panel Rainscreen; 40% of solid	17,262	sf 100.00 1,726,200
	12' high Acoustic Equipment Screen	1,440	sf 95.00 136,800
	<b>EXPANSION JOINT COVERS</b>		
	Expansion joints	1	ls 25,000.00 25,000
092900	<b>GYPSUM BOARD ASSEMBLIES</b>		



PDP Options Cost Estimate

GFA

121,010

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.5**

	Exterior wall; 6" Stud backup	43,155	sf	16.00	690,480		
	Gypsum Sheathing	43,155	sf	3.50	151,043		
	Drywall lining to interior face of stud backup	43,155	sf	4.00	172,620		
101400	SIGNAGE						
	Exterior signage - allowance	1	ls	15,000.00	15,000		
	SUBTOTAL					5,338,820	
<b>B2020</b>	<b>WINDOWS</b>						
	Exterior Wall Area; 30%	18,495	sf				
061000	ROUGH CARPENTRY						
	Wood blocking at openings	6,165	lf	10.00	61,650		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Air barrier/flashing at windows	6,165	lf	10.00	61,650		
	Backer rod & double sealant	6,165	lf	11.00	67,815		
080001	METAL WINDOWS						
	Aluminum windows, triple glazed	14,495	sf	205.00	2,971,475		
	Curtainwall, triple glazed	4,000	sf	255.00	1,020,000		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	LOUVERS						
	Louvers				N/A		
	SUBTOTAL					4,182,590	
<b>B2030</b>	<b>EXTERIOR DOORS</b>						
	Allowance for exterior doors	121,010	gsf	1.00	121,010		
	SUBTOTAL					121,010	

<b>TOTAL - EXTERIOR CLOSURE</b>	<b>\$9,642,420</b>
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**B30 ROOFING**

055000	MISCELLANEOUS METALS						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	ROUGH CARPENTRY						
	Rough carpentry and blocking @ roof	78,135	sf	1.50	117,203		
070002	ROOFING AND FLASHING	78,135	total area				
	PVC roof membrane system, white or gray, 1/2" coverboard, 10" polyiso insulation, vapor barrier	78,135	sf	32.00	2,500,320		
	Plaza deck pavers system at terrace				Assumed NR		
	Miscellaneous Roofing						
	Miscellaneous flashings/copings/walkway pads etc.	78,135	sf	4.00	312,540		
	SUBTOTAL					2,930,063	
<b>B3020</b>	<b>ROOF OPENINGS</b>						
086300	ROOF SKYLIGHTS						
	Aluminum framed skylight	1,500	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	

<b>TOTAL - ROOFING</b>	<b>\$2,930,063</b>
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**C10 INTERIOR CONSTRUCTION**

<b>C1010</b>	<b>PARTITIONS</b>						
040001	MASONRY						
	Allowance for masonry partitions	121,010	gsf	2.00	242,020		
061000	ROUGH CARPENTRY						
	Backer panels in electrical closets	1	ls	10,000.00	10,000		



PDP Options Cost Estimate

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121,010

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.5</b>							
	Wood blocking at interiors	121,010	gsf	0.50	60,505		
078400	<b>FIREPROOFING/FIRESTOPPING</b>						
	Fire stopping including slab edges and core	121,010	gsf	1.00	121,010		
070001	<b>WATERPROOFING, DAMPPROOFING AND CAULKING</b>						
	Miscellaneous sealants throughout building	121,010	gsf	1.25	151,263		
078150	<b>EXPANSION JOINTS</b>						
	Allowance for expansion joint covers	1	ls	25,000.00	25,000		
081110	<b>INTERIOR GLAZING</b>						
	Allowance for interior glazing	121,010	gsf	5.00	605,050		
092900	<b>GYPSUM BOARD ASSEMBLIES</b>						
	Allowance for GWB partitions	121,010	gsf	26.00	3,146,260		
	SUBTOTAL					4,361,108	
<b>C1020</b>	<b>INTERIOR DOORS</b>						
	Doors, frames, hardware; complete	121,010	gsf	8.00	968,080		
	SUBTOTAL					968,080	
<b>C1030</b>	<b>SPECIALTIES / MILLWORK</b>						
055000	<b>MISCELLANEOUS METALS</b>						
	Miscellaneous metals throughout building	121,010	gsf	5.00	605,050		
061000	<b>ROUGH CARPENTRY</b>						
062000	<b>INTERIOR ARCHITECTURAL WOODWORK</b>						
	Interior millwork package	121,010	gsf	3.00	363,030		
101100	<b>VISUAL DISPLAY SURFACES</b>						
	Markerboard and tackboard package	121,010	gsf	2.00	242,020		
101400	<b>SIGNAGE</b>						
	Room identification, directional & safety signage, building directory + environmental graphics	121,010	gsf	2.00	242,020		
102800	<b>TOILET ACCESSORIES</b>						
	Toilet accessories/compartments	121,010	gsf	1.00	121,010		
104400	<b>FIRE PROTECTION SPECIALTIES</b>						
	Fire extinguisher cabinets	1	ls	20,166.14	20,166		
	AED cabinets	1	ls	2,000.00	2,000		
105000	<b>LOCKERS</b>						
	Student lockers	121,010	gsf	1.50	181,515		
	SUBTOTAL					1,776,811	
<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$7,105,999</b>

<b>C20</b>	<b>STAIRCASES</b>
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<b>C2010</b>	<b>STAIR CONSTRUCTION</b>
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033000	<b>CONCRETE</b>						
	Concrete to stairs	5	flt	5,000.00	25,000		
055000	<b>MISCELLANEOUS METALS</b>						
	Egress stairs w/ stainless steel rails and handrails	3	flt	50,000.00	150,000		
	<u>Monumental stair</u>						
	Framing + premium finishes at monumental stair	2	flt	80,000.00	160,000		
	SUBTOTAL					335,000	
<b>C2020</b>	<b>STAIR FINISHES</b>						
090005	<b>RESILIENT FLOORS</b>						
	Stair finishes	5	flts	20,000.00	100,000		
	SUBTOTAL					100,000	



PDP Options Cost Estimate

GFA

121,010

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BUILDING BACKUP - OPTION C.5

<b>TOTAL - STAIRCASES</b>							<b>\$435,000</b>
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**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes complete package	121,010	gsf	8.00	968,080		968,080
SUBTOTAL						

**C3020 FLOOR FINISHES**

Floor finishes complete package	121,010	gsf	13.00	1,573,130		1,573,130
SUBTOTAL						

**C3030 CEILING FINISHES**

Ceiling finishes complete package	121,010	gsf	10.00	1,210,100		1,210,100
SUBTOTAL						

<b>TOTAL - INTERIOR FINISHES</b>							<b>\$3,751,310</b>
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**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

**055000 MISCELLANEOUS METALS**

Pit ladder and miscellaneous metals	1	ea	900.00	900		
Sill angles	1	ls	1,500.00	1,500		

**142100 ELEVATOR**

Electric traction elevator, 2 stop, 4,000lbs	1	ea	190,000.00	190,000		192,400
SUBTOTAL						

<b>TOTAL - CONVEYING SYSTEMS</b>							<b>\$192,400</b>
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**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing package complete	121,010	gsf	28.00	3,388,280		3,388,280
SUBTOTAL						

<b>TOTAL - PLUMBING</b>							<b>\$3,388,280</b>
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**D30 HVAC**

**D30 HVAC, GENERALLY**

Geothermal Premium	121,010	gsf	40.00	ALT		
HVAC System; ASHP	121,010	gsf	80.00	9,680,800		9,680,800
SUBTOTAL						

<b>TOTAL - HVAC</b>							<b>\$9,680,800</b>
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**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire Equipment

Fire pump with controller 75GPM, incl Jockey pump with controller	1	ea	80,000.00	Assumed NR		
Sprinkler system; complete	121,010	gsf	8.00	968,080		968,080
SUBTOTAL						

<b>TOTAL - FIRE PROTECTION</b>							<b>\$968,080</b>
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**D50 ELECTRICAL**

**D5010 ELECTRICAL SYSTEMS**

**Gear & Distribution**

Normal power distribution system

2500A 277/480V main switchboard	1	ea	125,000.00	125,000		
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PDP Options Cost Estimate

GFA

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>BUILDING BACKUP - OPTION C.5</b>							
	Panelboards/feeders	121,010	gsf	6.00	726,060		
	<u>Emergency power</u>						
	Emergency Generator	1	ls		Included Below		
	Emergency power feeders	121,010	gsf	6.50	786,565		
	<u>Photovoltaic</u>						
	PV system equipment; roof top				Excluded		
	Battery Storage				Excluded		
	<u>Equipment Wiring</u>						
	Feeders + Electrical to equipment	121,010	gsf	7.00	847,070		
	SUBTOTAL					2,484,695	
<b>D5020</b>	<b>LIGHTING &amp; POWER</b>						
	Lighting, Controls + Power	121,010	gsf	18.00	2,178,180		
	SUBTOTAL					2,178,180	
<b>D5030</b>	<b>COMMUNICATION &amp; SECURITY SYSTEMS</b>						
	Telecommunications/PA + Clock	121,010	gsf	4.00	484,040		
	<u>Performance lighting</u>						
	Platform dimming panelboard with feeders	1	ls	15,000.00	15,000		
	Platform/performance lighting system	1	ls	75,000.00	75,000		
	<u>Audio Visual Systems/Speech Reinforcement</u>	121,010	gsf	10.00	1,210,100		
	<u>Specialty Communications Systems</u>						
	BDA system, antenna and annunciator	121,010	sf	0.65	78,657		
	Cell repeater/Distributed antenna system, not specified	121,010	sf	1.00	121,010		
	<u>Fire Alarm</u>	121,010	gsf	3.00	363,030		
	<u>Security System</u>	121,010	gsf	6.00	726,060		
	SUBTOTAL					3,072,897	
<b>D5040</b>	<b>OTHER ELECTRICAL SYSTEMS</b>						
	<u>Common Work Results for Electrical</u>						
	Lightning prevention	121,010	gsf	0.30	36,303		
	Grounding	121,010	gsf	0.40	48,404		
	Misc. demolition work	121,010	gsf	0.25	30,253		
	Temp power and lights	121,010	gsf	1.20	145,212		
	Seismic restraints/Coordination/misc.	121,010	gsf	1.00	121,010		
	SUBTOTAL					381,182	
<b>TOTAL - ELECTRICAL</b>							<b>\$8,116,954</b>
<b>E10</b>	<b>EQUIPMENT</b>						
<b>E10</b>	<b>EQUIPMENT, GENERALLY</b>						
112000	<i>LOADING DOCK EQUIPMENT</i>						
	Loading dock equipment	1	ls	10,000.00	10,000		
110620	<i>THEATRICAL EQUIPMENT</i>						
	Allowance for auditorium; lighting/rigging/AV/Seating	1	ls	750,000.00	750,000		
113100	<i>APPLIANCES</i>						
	Residential appliances - allowance	1	ls	15,000.00	15,000		
114000	<i>FOOD SERVICE EQUIPMENT</i>						
	Kitchen equipment	1	ls	610,000.00	610,000		
115300	<i>EDUCATIONAL EQUIPMENT</i>						
	Kiln	1	ea	5,000.00	5,000		
	Allowance for miscellaneous equipment	1	ls	50,000	50,000		
116600	<i>GYM EQUIPMENT</i>						
	Gym Equipment	1	ls	117,000.00	117,000		
126000	<i>SEATING</i>						
	Retractable bleachers/auditorium seating	300	seat	220.00	66,000		
	SUBTOTAL					1,623,000	
<b>TOTAL - EQUIPMENT</b>							<b>\$1,623,000</b>
<b>E20</b>	<b>FURNISHINGS</b>						



PDP Options Cost Estimate

GFA

121,010

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**BUILDING BACKUP - OPTION C.5**

**E2010 FIXED FURNISHINGS**

**122100 WINDOW TREATMENT**

Window shades at exterior glazing including blackout shades at art & science classrooms - allowance **18,495** sf 10.00 184,950

**123553 CASEWORK**

Casework package **121,010** gsf 12.00 1,452,120

SUBTOTAL 1,637,070

**E2020 MOVABLE FURNISHINGS**

All movable furnishings to be provided and installed by owner

SUBTOTAL NIC

**TOTAL - FURNISHINGS**

**\$1,637,070**

**F10 SPECIAL CONSTRUCTION**

**F10 SPECIAL CONSTRUCTION**

SUBTOTAL -

**TOTAL - SPECIAL CONSTRUCTION**

**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**

SUBTOTAL -

**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance

See Summary

SUBTOTAL

**TOTAL - SELECTIVE BUILDING DEMOLITION**

SUBTOTAL

**\$60,499,504**

**ARROWSTREET INC.**  
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