3.3.6 APPENDICES

A. MSBA PDP Comments & Project Team Responses

ATTACHMENT A
MODULE 3 – PRELIMINARY DESIGN PROGRAM REVIEW COMMENTS

District: Town of Southborough
School: Margaret A. Neary Elementary School
Owner's Project Manager: Skanska USA Building Inc.
Designer Firm: Arrowstreet Inc.
Submittal Due Date: May 21, 2024
Submittal Received Date: May 21, 2024
Review Date: May 21, 2024 – July 11, 2024
Reviewed by: J. Caron, C. Forde, C. Alles

MSBA REVIEW COMMENTS

The following comments[1] on the Preliminary Design Program ("PDP") submittal are issued pursuant to a review of the project submittal document for the proposed project presented as a part of the Feasibility Study submission in accordance with the MSBA Module 3 Guidelines.

3.1 PRELIMINARY DESIGN PROGRAM

Overview of the Preliminary Design Program Submittal	Complete	Provided; *Refer to comments following each section*	Not Provided; *Refer to comments following each section*	Receipt of District's Response; *To be filled out by MSBA Staff*
OPM Certification of Completeness and Conformity	☒	☐	☐	☐
Table of Contents	☒	☐	☐	☐
3.1.1 Introduction	☐	☒	☐	☐
3.1.2 Educational Program	☐	☒	☐	☐
3.1.3 Initial Space Summary	☐	☒	☐	☐
3.1.4 Evaluation of Existing Conditions	☐	☒	☐	☐
3.1.5 Site Development Requirements	☐	☒	☐	☐
3.1.6 Preliminary Evaluation of Alternatives	☐	☒	☐	☐
3.1.7 Local Actions and Approvals Certification(s)	☒	☐	☐	☐
3.1.8 Appendices	☐	☒	☐	☐

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[1] The written comments provided by the MSBA are solely for purposes of determining whether the submittal documents, analysis process, proposed planning concept and any other design documents submitted for MSBA review appear consistent with the MSBA's guidelines and requirements, and are not for the purpose of determining whether the proposed design and its process may meet any legal requirements imposed by federal, state or local law, including, but not limited to, zoning ordinances and by-laws, environmental regulations, building codes, sanitary codes, safety codes and public procurement laws or for the purpose of determining whether the proposed design and process meet any applicable professional standard of care or any other standard of care. Project designers are obligated to implement detailed planning and technical review procedures to effect coordination of design criteria, buildability, and technical adequacy of project concepts. Each city, town and regional school district shall be solely responsible for ensuring that its project development concepts comply with all applicable provisions of federal, state, and local law. The MSBA recommends that each city, town and regional school district have its legal counsel review its development process and subsequent bid documents to ensure that it is in compliance with all provisions of federal, state and local law, prior to bidding. The MSBA shall not be responsible for any legal fees or costs of any kind that may be incurred by a city, town or regional school district in relation to MSBA requirements or the preparation and review of the project's planning process or plans and specifications.

3.1.1 INTRODUCTION

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Summary of the Facility Deficiencies and Current S.O.I.	☒	☐	☐	☐
2	Date of invitation to conduct a Feasibility Study and MSBA Board Action Letter	☒	☐	☐	☐
3	Executed Design Enrollment Certification	☐	☒	☐	☐
4	Narrative of the Capital Budget Statement and Target Budget	☐	☒	☐	☐
5	Project Directory with contact information	☒	☐	☐	☐
6	Updated Project Schedule	☒	☐	☐	☐

MSBA Review Comments:

3) The information provided includes a copy of the District's Enrollment Letter, dated March 15, 2023; however, a copy of the District's signed Study Enrollment Certification has not been provided. In response to these review comments, please provide a copy of the signed Study Enrollment Certification. Also, please note the District will be required to execute a Design Enrollment Certification based on its Preferred Schematic. The MSBA will prepare a certification to be forwarded for signature upon approval by the MSBA Board of Directors for its Preferred Schematic. Please acknowledge.

District Response: A certified copy of the Design Enrollment is included with this response. Please see Attachment A.

4) The information provided indicates that the proposed project has an estimated total project cost range of $63-$146 million. For reference, the OPM Request for Services indicated an estimated total project cost range of $40-$90 million, and the Designer Request for Services indicated an estimated construction cost $75-$100 million. In response to these review comments, describe this variation and provide additional information that indicates that the District has discussed and acknowledged the increase in estimated costs. Also, please indicate how the District and design team intend to maintain the District's project budget through schematic design.

Additionally, the information provided within the Capital Budget Statement letter states:

> *"MSBA grant support is anticipated for this project at an effective reimbursement rate of approximately 18%, which establishes a target budget range for the Owner's share of approximately $51,660,000 to $119,720,000."*

In response to these review comments, please note and acknowledge that a potential grant from the MSBA is calculated at the conclusion of the schematic design phase and the District and its project team should be cautious in how this is communicated as the project further develops.

Response: Acknowledged

No further review comments for this section.

District Response: The original project budget was based on the limited data available to the committee at the time of submission to the MSBA. With the help of the OPM, Designer and their consultants, and in concert with MSBA guidelines, a more defined knowledge of the current building and additional requirements has been developed. Utilizing the Option 1: Code Upgrade/Base Repair it became clear to the District the comprehensive nature of work required to repair the existing building. The District's not-to exceed budget is going to be dependent on the estimated costs for the design alternatives which are being developed during the Preferred Schematic study. It will be through this design alternative evaluation (base repair, addition/renovation, and new construction) in which the District, OPM, and Design Team will establish and maintain the project budget range. Once the Preferred Schematic is identified, the project budget range will be set for the remainder of the project going forward.

3.1.2 EDUCATIONAL PROGRAM

Provide a summary and description of the existing educational program, and the new or expanded educational vision, specifications, process, teaching philosophy statement, as well as the District's curriculum goals and objectives of the program. Include description of the following items:

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Grade and School Configuration Policies	☐	☒	☐	☐
2	Class Size Policies	☒	☐	☐	☐
3	School Scheduling Method	☐	☒	☐	☐
4	Teaching Methodology and Structure				
	a) Administrative and Academic Organization/Structure	☒	☐	☐	☐
	b) Curriculum Delivery Methods and Practices	☒	☐	☐	☐
	c) English Language Arts/Literacy	☒	☐	☐	☐
	d) Mathematics	☐	☒	☐	☐
	e) Science	☐	☒	☐	☐
	f) Social Studies	☒	☐	☐	☐
	g) World Languages	☐	☒	☐	☐
	h) Academic Support Programming Spaces	☐	☒	☐	☐
	i) Student Guidance and Support Services	☒	☐	☐	☐
5	Teacher Planning and Professional Development	☐	☒	☐	☐
6	Pre-kindergarten	☐	☐	☐	☐
7	Kindergarten	☐	☐	☐	☐
8	Lunch Programs	☐	☒	☐	☐
9	Technology Instruction Policies and Program Requirements	☐	☒	☐	☐
10	Media Center/Library	☐	☒	☐	☐
11	Visual Arts Programs	☐	☒	☐	☐

12	Performing Arts Programs	☐	☒	☐	☐
13	Physical Education Programs	☐	☒	☐	☐
14	Special Education Programs	☐	☒	☐	☐
15	Vocation and Technology Programs				
	a) Non-Chapter 74 Programming	☐	☐	☐	☐
	b) Chapter 74 Programming	☐	☐	☐	☐
16	Transportation Policies	☐	☒	☐	☐
17	Functional and Spatial Relationships	☐	☒	☐	☐
18	Security and Visual Access Requirements	☐	☒	☐	☐

MSBA Review Comments:

In response to these review comments address the comments below. Additionally, as part of the District's Preferred Schematic Report ("PSR") submittal, include (2) copies of the updated educational program, (1) redlined copy and (1) clean copy. The updated educational program must address the comments below, include District updates, provide a Designer response for each component of the educational program, and align with the District's Preferred Schematic. Please acknowledge.

District Response: Acknowledged.

1) In response to these review comments, please provide additional information that describes the instructional technology specialist and the library media specialist's credentials, licensing, training, experience and the difference between these two positions.

Response: The library media specialist has a library license. In recent years we have looked for librarians who are dual-certified in library and digital literacy and computer science. The library media specialists have completed graduate programs in library sciences and are typically experienced librarians. In recent years, there has been a lot of collaboration between the library media specialists and the instructional technology specialists (ITS) as there are distinct overlaps in the national library standards and the digital literacy and computer science state standards. The instructional technology specialist has either the Instructional technology specialist teacher license or the digital literacy and computer science license. In many cases our ITS teachers are former classroom teachers and also hold general education teacher licenses as well. The ITS does not have experience in library sciences and is not responsible for managing the school library media center. The ITS serves as a coach and collaborator with educators and administrators to fully integrate the DLCS standards into other disciplines and at times to teach lessons to students in relation to digital literacy and computer science standards. At times this is in collaboration with the library media specialist and at other times it is with general education teachers or taught independently with a group of students.

3) The images of the Neary and Woodward master schedules provided on page 34 and 35 of the submittal are illegible. In response to these review comments, please provide a clear image of the Neary and Woodword master schedule.

Response: Refer to Attachment B

Additionally, in the proposed scheduling narratives states: "Design Alternative 2 and 3 would impact the start and end time of the day." However, the proposed start and end time of the school day for each design alternative is identical. Please clarify if there will be different start and end times of the school day for Designer Alternative 2 and 3.

Response: Refer to Attachment B

4d) In response to these review comments, please describe whether the District has considered using rugs, floor mats and seats that are easily moved and removed for flexibility of space use and health and sanitation needs.

Response: Yes, the District is open to using rugs, floor mats and seats that are easily moved and removed for flexibility of space use and health and sanitation needs. It prefers tile or laminate flooring in lieu of carpeted learning spaces. It plans on using area rugs, floor mats, or flexible seatings.

4e) The proposed Science, Technology and Engineering narrative on page 43 of the submittal states:

> *"General education teachers are responsible for teaching science and engineering lessons, and they would be able to take their students to the STE Learning Lab for hands-on experiments and design projects."*

The information provided in Digital Literacy, Computer Science and Instructional Technology on page 45 of the submittal states:

> *"The ITS (Instructional Technology Specialist) also staff the STE lab where they will provide direct instruction to students and can support teachers who use the resource available."*

In response to these review comments, please review the following:

- *Per the MSBA's STE Guidelines, the District must describe the need for the STE room within the education program and provide budget confirmation that the STE will have a dedicated teacher that has been trained in science and safety. Please provide additional information that describes whether the District has budgeted for a dedicated teacher that has been trained in science and safety for the proposed STE lab.*
  Response: See District response below.
- *Please note and acknowledge if the District cannot indicate the STE will be properly staffed in this way, the MSBA may decline to participate in funding for this space, at the MSBA's discretion. Refer to MSBA's STE Guidelines for details.*

  Response: Acknowledged.

Additionally, there are discrepancies regarding the proposed number of STE labs between the proposed space summary and the chart listed on page 43 of the District's PDP submittal for Enrollment 3. There are (2) STE labs identified in the space summary; however, there is (1) STE lab identified in the educational program. In response to these review comments, please confirm the number of proposed STE labs for Enrollment 3 and coordinate accordingly.

Response: See District response below.

Lastly, in response to these review comments, please describe if the District has considered to include multiple sinks and appropriate student accessible storage and work spaces in the regular classrooms and neighborhoods so that students can observe and investigate anytime in lieu of waiting for access to the STE facility.

Response: After the PDP was submitted, the District re-evaluated and identified a different approach to support STE learning for students. In a revision to the space summary, the District has determined that it is favorable to eliminate the STE Lab and instead include multiple sinks and appropriate storage and work spaces in general education classrooms and in the Learning Commons of each neighborhood. The general education teachers are trained in science education and safety and will more readily engage students in inquiry and engineering projects with greater proximity to the tools, spaces and storage. They will only need to coordinate with grade level colleagues, with whom they may want to collaborate, when using the grade level Learning Commons and will not be competing with other grade levels for use of the space. They can also use their own classroom in conjunction with the Learning Commons.

4g) The information provided in proposed world languages on page 45 of the submittal states:

"The language classroom will be an adaptable classroom layout that can be easily reconfigured to accommodate different learning activities and dynamic group activities including art projects, singing, and dancing to learn about world cultures."

In response to these review comments, please provide additional information whether the District has considered having the world language room equipped with musical instruments, audio players and easily pushed-back furnishing to support dynamic group activities that are described in the District's educational program.

Response: The district does not anticipate needing musical instruments for the World Language Classroom. The room would be outfitted with the same technology and sound system as other classrooms which would suffice for the music and dance activities that are integrated into the cultural explorations. The room would benefit from easily movable furnishing to support dynamic group activities

4h) The information provided in the proposed English Language Development narratives states:

> *"Additionally, students who are English Language Learners ("ELLs") benefit from extended learning opportunities during the summer and this space would be pivotal for this offering as well."*

In response to these review comments, please provide additional information describing how this space will be monitored and secured during summer programs.

Response: In the summer, the District runs a three week summer program. There is a designated coordinator on-site during the three week program as well as a set of teachers who meet with students. This program is funded through TItle III funds each year. The District will work with the Design Team to identify potential security protocol during the Schematic Design phase of the work.

5) There are discrepancies regarding the proposed number of Staff Lunch Rooms and Teacher Preparation and Teacher Collaboration Rooms between the proposed space summary and the chart listed on page 58 of the District's PDP submittal for Enrollment 1. There are (2) Staff Lunch Rooms and Teacher Preparation areas and (1) Teacher Collaboration area listed in the *space summary. However, there is (1) Staff Lunch Room and Teacher Preparation area and (1) Teacher Collaboration area and (1) Teacher Collaboration Room listed in the educational program. In response to these review comments, please confirm the number of the proposed Staff Lunch Rooms, Teacher Preparation areas, and Teacher Collaboration Rooms and update accordingly.*

Response: After the PDP was submitted, the District re-evaluated and reduced the number of staff lunchrooms, teacher preparation and teacher collaboration rooms. The reduction of these spaces locates the proposed spaces in alignment with MSBA's allowable space. The reduction does not impact the education plan and goal of ensuring collaborative teacher planning and preparation. These changes have been reflected in the updated Space Summaries.

8) In response to these review comments, please provide additional information that describes the current and proposed number of lunch servings. As part of the design response for the District's PSR submittal, please include additional information but not limited to the proposed number of lunch servings, desired features, and layout considerations into the updated educational program.

Response: Currently, there are two lunch serving times at Neary, approximately 30 minutes in length. In a two-grade model, two lunch servings would continue to be the standard. In a four-grade model, there will be three lunch servings, twenty-five minutes in length. In both grade configuration models, the cafeteria design would allow for flexible seating options, which will include round tables, flexible seating, such as booths around the periphery of the cafeteria, and a smaller space for a quiet dining option for students. The design of the serving space would allow for efficient queuing of lunch lines and ample space for displaying food options. Additional information will be provided in the Preferred Schematic Report.

9) The information provided states:

> *"The goal is for educators and students to be able to move throughout the building and use projection systems, wifi systems and other technology systems with ease."*

In response to these review comments, please provide additional information that describes how updated equipment and system would be managed and maintained by the District, and how the equipment system would be used in the school and plans for professional development.

Response: The District has a Director of Information Technology and a Director of Instructional Technology and Science. These directors collaborate to lead all of the work with technology in the district. They supervise teams of System Administrators, Technology Support Specialists and Instructional Technology Specialists who all play roles in supporting the use of technology in the schools. These teams are currently responsible for maintaining all systems and providing teachers with the professional development and technical support to best access and integrate the tools into their daily work. The District has designated professional development time each year as well as faculty meetings, grade level team meetings, and other professional collaborations that could be designated as time to provide them with learning opportunities to support appropriate and effective use of new technology systems. In addition, tech support and instructional technology specialists are available during the school day to provide just-in-time support for either technological support or instructional support. The district has an established digital ticket system for educators or staff to submit a request for help related to technology.

10) In response to these review comments, please describe the current hours, scheduling of use during school and non-school hours for group and individual use of the media center/library.

Response: The school library is currently used throughout the school day for classes to attend library/ IT class. (Please see Neary Master Schedule - Attachment B for details). In addition, general education teachers are able to sign-up to bring their students to the library media center during times when it is not occupied. Before-school and after-school, the library is sometimes used for educator meetings or for student club meetings and periodically for professional development sessions, although group size is limited due to the size of the existing library. In a new Neary library media center, the space would be large enough and well-equipped technologically to host faculty meetings regularly as well as professional development sessions. The community could also use the library space during non-school hours to hold community events, meetings, etc. The goal is also to work with the Southborough Public Library to extend the children's library to remote locations.

11) In response to these review comments, please describe how the curriculum is currently delivered, the number of periods per academic cycle, and the number of students participating in the art programs.

Additionally, the information provided in the proposed Visual Arts Programs on page 47 of the submittal states:

> *"A spacious, open area with a rug for whole-class discussions and activities."*

In response to these review comments, please provide additional information if the District has considered using carpeting in lieu of rugs for ease of cleaning and replacement.

Lastly, please confirm that hazardous and/or toxic art materials and supplies are kept to a minimum and will be stored securely and safely.

Response: . The District prefers tile or laminate flooring in lieu of carpeted learning spaces. It plans on using area rugs, floor mats, or flexible seatings.

In addition, hazardous and/or toxic art materials and supplies will be kept to a minimum and will be stored securely and safely as they currently are.

12) There are discrepancies regarding the proposed number of Music Classrooms between the proposed space summary and the chart listed on page 48 of the District's PDP submittal for each study enrollment option. There is (1) Music Classroom for Enrollment 1, (2) Music Classrooms for Enrollment 2 and Enrollment 3 listed within the proposed space summary. However, there are (2) Music Classrooms for Enrollment 1, (3) Music Classrooms for Enrollment 2 and Enrollment 3 listed in the educational program. In response to these review comments, please confirm the number of music classrooms that is sufficient for the District's current and future educational program and update accordingly.

Response: After submitting the PDP, revisions to the proposed Space Summary included changes to the music spaces. The revised Space Summary no longer includes an auditorium. For enrollment 1, there is a large group music classroom that is 1,800 sq feet and an ensemble music classroom (900 sq feet) for two full-time music teachers. For enrollment 3, there would be one large group music room (1,800 sq feet) and two ensemble music rooms (900 sq feet each) and there would be three full-time music teachers. In lieu of the auditorium there would be a *cafetorium which would include a stage for performances and assemblies. The District is no longer proposing small practice rooms and will be able to meet the needs of the instrumental lessons, ensembles sessions, and general music education classes using the music spaces described above as well as the stage in the cafetorium.*

Additionally, information provided on page 49 of the educational program regarding the proposed music education design states:

> *"Dedicated spaces for small group lessons, particularly for band and orchestra students allowing for focused instruction and practice that is critical for developing instrumental skills."*

However, the space summary indicates the District is proposing (1) 150 nsf Music Practice/Ensemble for each study enrollment option. In response to these review comments, please confirm if the proposed number of Music Practice/Ensemble meets the District's current and future needs of education program.

> *Response: After further review with the music educators, the practice/ensemble space has been removed from the project .*

Lastly, in response to these review comments, please provide additional information for the following:

- *Describe if there is a need for electronic or hard-copy music sheets and other such materials. If so, please confirm if there is appropriate storage for these materials provided in the proposed project.*

  Response: There is not a need for storage of hard-copy or electronic music sheets.

- *Describe if the District provides access for all students that cannot afford to own or rent instruments to fully participate in the instrumental music program.*

  Response: The District has a music-specific revolving fund to support families and students who are not able to afford to own or rent instruments.

13) There are discrepancies regarding the proposed number of Health Classrooms between the proposed space summary and the chart listed on page 49 of the District's PDP submittal for Enrollment 3. There is (1) Health Classroom identified on the space summary. However, there are (2) Health Classrooms noted in the educational program. In response to these review comments, please confirm the number of Health Classrooms for Enrollment 3 is sufficient to meet the need of the District's current and future educational program and update accordingly.

Additionally, the information provided in the proposed Wellness-Physical Education and Health narrative states:

> *"Given the gymnasium's role as a hub for after-school and weekend events, the design must include robust security measures and the ability to access this part of the building without having access to the rest of the building."*

In response to these review comments, provide additional information that demonstrates how the proposed gymnasium will be scheduled, monitored, and secured during and after school.

Response: After the PDP was submitted, the District re-evaluated and made revisions to the space summary in the area of physical education. In the revised Space Summary, for enrollment

1 and 3, the District proposes one gymnasium at 6,000 sq feet, gym storage and a health instructor office for a total sq footage of 6,450. The health classroom has been eliminated from the program.

The gymnasium will be available for community use and can be requested via the online facilities use request form. When used by outside organizations, the District requires the custodial staff to be present and monitor the space during its use. The design allows the gymnasium to be accessed by community groups during non-school hours and restricts access to the rest of the building. The space will also be monitored by video surveillance.

14) There are discrepancies regarding the proposed number of Testing Rooms and Small Group Meeting Rooms between the proposed space summary and the chart listed on page 54 of the District's PDP submittal for Enrollment 2 and Enrollment 3. There is (1) Testing Room and (1) Small Group Meeting Room identified in the space summary for Enrollment 2 and Enrollment 3. However, there are (2) Testing Rooms and (2) Small Group Meeting Rooms listed in the educational program. In response to these review comments, please confirm the number of proposed Testing Rooms and Small Group Meeting Rooms for Enrollment 2 and 3 and update and coordinate the narratives and space summary accordingly.

Response: After the PDP was submitted, the District re-evaluated and made revisions to Testing Rooms and Small Group Meeting Rooms. These spaces are no longer part of the program, so the space summary now aligns with MSBA's allowable space. The change does not impact the educational plan of providing testing and small group meeting rooms for instruction.

16) The information provided states:

> *"The proposal to consolidate schools would improve the efficiency and complexity of the bus system."*

In response to these review comments, please confirm if there are any proposed changes to the transportation policies as a result of potentially consolidating schools.

Response: In the two-grade option, there are no efficiencies gained. Buses would continue on their current routes to serve the Neary School and the two other schools in the District. In the four-grade option, one of the other schools would be closed, making the bus routes more efficient. The design of routes and the use of buses would be much more efficient, reducing the amount of time students spend on buses and benefiting families that currently have children at all three schools and have three different bus times to manage.

17) In response to these review comments, please describe the District's preferred site adjacencies and the reasons for those adjacencies if any.

Response: The key site adjacencies are the library being central to the building and located toward the front of the building and adjacent to the art room. Also, located toward the front of the building would be the cafetorium, which would be adjacent to the music spaces, and the gymnasium. The classroom neighborhoods should be located to limit the distance traveled to common spaces (i.e., cafeteria) and travel through other grade level neighborhoods.

18) The date of the most recent Medical Emergency Response Plan that was submitted to the DESE was not provided in the submittal. In response to these comments, provide the date.

Response: The District submitted the MERP in the fall of 2021. In September, an updated MBHERP will be submitted to DESE to meet the three year update requirement.

Additionally, please confirm that the first responding emergency representatives will be consulted in the planning process and associated requirements will be incorporated into the Preferred Schematic.

Please note additional comments may be forthcoming.

Response: The District has a strong partnership with the Town's safety officials who have been and will be consulted throughout the design process. Egress, location of common spaces, traffic patterns, etc., have all been discussed with safety officials. The District will continue to consult with first responders during the Schematic Design phase of the project.

3.1.3 INITIAL SPACE SUMMARY

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Space summary; one per approved design enrollment	☐	☒	☐	☐
2	Floor plans of the existing facility	☒	☐	☐	☐
3	Narrative description of reasons for all variances (if any) between proposed net and gross areas as compared to MSBA guidelines	☐	☒	☐	☐

MSBA Review Comments:

1) The MSBA has performed a preliminary review of the space summaries for new construction for three study enrollment options and offers the following:

- ***Study Enrollment Options**:*
  - *Enrollment 1: 305 students in grades 4-5 at the Margaret A. Neary Elementary School.*
  - *Enrollment 2: 450 students in grades 3-5 at a consolidated Margaret A. Neary Elementary School and Albert S. Woodward Memorial School.*
  - *Enrollment 3: 610 students in grades 2-5 at a consolidated Margaret A. Neary Elementary School and Albert S. Woodward Memorial School.*

- ***Core Academic** – The overall proposed square footage for this category exceeds the MSBA guidelines by 6,000 net square feet ("nsf") for Enrollment 1; by 9,350 nsf for Enrollment 2; and by 14,650 nsf for Enrollment 3. Based on the information provided, the following spaces have been proposed in order for the District to deliver its educational program:*

Core Academic Spaces	***Enrollment 1: Grades 4-5 for 305 students***			***Enrollment 2: Grades 3-5 for 450 students***			***Enrollment 3: Grades 2-5 for 610 students***		
	Proposed No. Rooms	*MSBA Guidelines No. Rooms*	*Variance*	*Proposed No. Rooms*	*MSBA Guidelines No. Rooms*	*Variance*	*Proposed No. Rooms*	*MSBA Guidelines No. Rooms*	*Variance*
General Classrooms	*14*	*13*	*+1*	*21*	*20*	*+1*	*28*	*27*	*+1*
STE Room- Grade 3-6	*1*	*0*	*+1*	*1*	*0*	*+1*	*2*	*0*	*+2*

STE Storage Room	*1*	*0*	*+1*	*1*	*0*	*+1*	*2*	*0*	*+2*
Learning Commons (Breakout)	*2*	*0*	*+2*	*3*	*0*	*+3*	*4*	*0*	*+4*
English Language Development Office	*1*	*0*	*+1*	*2*	*0*	*+2*	*3*	*0*	*+3*
Instructional Suite (Reading, Math)	*2*	*0*	*+2*	*4*	*0*	*+4*	*4*	*0*	*+4*
World Language	*1*	*0*	*+1*	*2*	*0*	*+2*	*2*	*0*	*+2*
Health/Wellness Classroom	*1*	*0*	*+1*	*1*	*0*	*+1*	*1*	*0*	*+1*
Teacher Collaboration Room	*1*	*0*	*+1*	*3*	*0*	*+3*	*4*	*0*	*+4*

The District is proposing the following spaces:

- ***General Classrooms** – The District is proposing (14) 950 nsf General Classrooms totaling 13,300 nsf for Enrollment 1, which exceeds MSBA guidelines by (1) classroom and 950 nsf. For Enrollment 2, the District is proposing (21) 950 nsf General Classrooms totaling 19,950 nsf, which exceeds the MSBA guidelines by (1) classroom and 950 nsf. For Enrollment 3, the District is proposing (28) 950 nsf General Classrooms totaling 26,600 nsf, which exceeds the MSBA guidelines by (1) classroom and 950 nsf. Based on the grade and team configuration for each grade as described in the educational program, the MSBA does not object to the proposed number of General Classrooms for each study enrollment option. Additionally, please review and respond to the following items in response to these review comments:*

    - *As the project further develops, please note and acknowledge that 900 nsf is the minimum size for all newly constructed General Classrooms in an elementary school.*
      Response: Acknowledged. As a result of further discussions about the size of the classrooms and the activities planned for the Learning Commons in each classroom neighborhood, the District has decided to reduce the classroom size to 900 SF, reflected in the updated Space Summary attached.

    - *Please note and acknowledge that the MSBA's STE Guidelines require all elementary school general classrooms to have a minimum of (2) sinks to facilitate STE exploration and project-based learning within the classrooms. One sink must be accessible, and one must be deep and wide to accommodate buckets or containers.*
      Response: The District acknowledges that 900 nsf is the minimum size for all newly constructed General Classrooms in an elementary school. As further noted above, the District has decided to reduce the classroom size to 900 SF. Please see revised space summary attached.

      The District also recognizes that the MSBA's STE Guidelines require all elementary school general classrooms have a minimum of (2) sinks to facilitate STE exploration and project-based learning within the classrooms. One sink must be accessible, and one must be deep and wide *to accommodate buckets or containers. As further described below, the District has decided not to include a dedicated STE Room in the project.*

- ***Science, Technology, Engineering ("STE") Room** – The District is proposing (1) 1,080 nsf STE Room for Enrollment 1 and Enrollment 2, which exceeds the MSBA guidelines. For Enrollment 3, the District is proposing (2) 1,080 nsf STE Room totaling 2,160 nsf which exceeds the MSBA guidelines. In response to these review comments, please provide the following information:*

  - *Describe the scheduling and utilization of the proposed areas, and how this space will be supervised and staffed.*
  - *Provide an example of activities that will occur in this area that cannot be delivered within an appropriately sized and fit-out General Classroom.*
  - *Describe why these activities are better suited in a separate area rather than in a larger General Classroom.*

  Response: Since submitting the PDP, the District has made revisions to the Space Summary and no longer proposes an STE classroom or an STE storage space.

- ***STE Storage Room** – The District is proposing (1) 120 nsf STE Storage Room associated with the STE Room for Enrollment 1 and Enrollment 2, which exceeds the MSBA guidelines. For Enrollment 3, the District is proposing (2) 120 nsf STE Storage Rooms totaling 240 nsf associated with each STE Room which exceeds the MSBA guidelines.*

  Response: See Response above.

- ***Learning Commons (Breakout)** – The District is proposing (2) 750 nsf Learning Commons totaling 1,500 nsf for Enrollment 1, which exceeds the MSBA guidelines. For Enrollment 2, the District is proposing (3) 750 nsf Learning Commons totaling 2,250 nsf, which exceeds the MSBA guidelines. For Enrollment 3, the District is proposing (4)750 nsf Learning Commons totaling 3,000 nsf which exceeds the MSBA guidelines. In response to these review comments, please provide the following information:*

  - *Describe the anticipated adjacencies, the scheduling and utilization of the proposed areas, and how these areas will be supervised and staffed.*
  - *Provide examples of activities that will occur in these areas.*
  - *Describe why these activities are better suited in a separate area rather than in larger General Classrooms (MSBA guidelines allow up to 1,000 nsf for a newly constructed elementary school classroom).*

  Response: In the revised Space Summary the District proposes that the Learning Commons be in the neighborhood of each grade level and therefore adjacent to the general education classrooms and one special education classroom as well as small group learning spaces. The Learning Commons provides a space where multiple classes can meet under the supervision of the general education teachers for activities that might involve a large group of students. In addition, the Learning Commons is a place where small groups of students from multiple *classes might "spill out" of the classroom to accommodate students working with peers or independently.*

An example of when this might occur is when small groups are exploring primary sources in a social studies lesson and need more space to spread out the sources. The same space could be used by multiple teachers at the grade level over time.

Another example would be when the fourth grade students dissect owl pellets in science class. The teachers could set up for this investigation in the Learning Commons or a combination of the classroom and the Learning Commons if a second adult is differentiating the experience for some students. The general education teachers and educational support professionals along with special education teachers are often co-teaching groups of students which will allow for adult supervision when learning is happening in the Learning Commons. The Learning Commons would also be outfitted with the technology and furniture to support instruction so a group of teachers could decide to set up a Science experiment in the Commons and then allow multiple classes to interact with the materials at different times. As a result of further discussions, the size of the Learning Commons has been reduced to 900 SF in the attached Space Summary.

- ***English Language Development Office** – The District is proposing (1) 200 nsf English Language Development Office for Enrollment 1, which exceeds the MSBA guidelines. For Enrollment 2, the District is proposing (2) 200 nsf English Language Development Offices totaling 400 nsf, which exceeds the MSBA guidelines. For Enrollment 3, the District is proposing (3) 200 nsf English Language Development Offices totaling 600 nsf which exceeds the MSBA guidelines. The information provided on page 52 of the submittal states:*

> *"This instructional space would be constant use throughout the school day based on current and projected enrollment, not only by the English Language Development (ELD) teachers, but also potentially by English Language Learners (ELL) tutors providing targeted small group lessons."*

In response to these review comments, please provide additional information that describes the scheduling and utilization of the proposed areas, and how these areas will be supervised and staffed between the ELD teacher and ELL tutors.

Response: In the Space Summary revised after the PDP was submitted, the District is proposing one (1) ELD small classroom at 200 sq. ft for enrollment 1 and two (2) ELD small classrooms at 200 sq ft each for enrollment 3. For enrollment 1 there would be one full time ELD teacher who would use the classroom throughout the day to teach small groups of students. It is required by DESE regulations that level 1 and 2 ELL students receive their Tier 1 English instruction outside of the general education classroom at least two to three periods per day. ELL students who are level 3 and 4 receive a minimum of one period per day of ESL instruction from the ELD teacher outside of the general education classroom. The ELD teacher has a full set of curriculum resources and materials that would be in his/her classroom for these lessons. In addition, students who are levels 3 and above also receive some of their English instruction in this classroom space in small groups. Finally, once a year ELL students are *assessed using ACCESS which is a multi-week process and requires students to be in a quiet space in small groups for this standardized assessment. This happens in the ELD classroom as well. In enrollment scenario 3, there would be two full time ELD teachers or an ELD teacher and an ELD tutor so that they could each teach groups simultaneously which is why a second small classroom has been proposed to meet the needs of the population.*

- ***Instructional Suite (Reading, Math)*** *– The District is proposing (2) 200 nsf Instructional Suites totaling 400 nsf for Enrollment 1, which exceeds the MSBA guidelines. For Enrollment 2 and Enrollment 3, the District is proposing (4) 200 nsf Instructional Suites totaling 800 nsf, which exceeds the MSBA guidelines.*

  The information provided on page 52 of the submittal states:

  > *"The District plans to expand for students and educators in the area of mathematics by hiring a mathematics specialist in 2025-2026 when the District adopts new high-quality instructional materials."*

  In response to these review comments, please provide additional information that describes the scheduling and utilization of the proposed Instructional Suite for reading and math, and how these areas will be supervised and staffed.

  Response: The District already has a reading specialist for every two grade levels. The reading specialist meets with small groups of general education students to provide reading intervention on a regular basis and to assess student's progress. This is done in the reading specialist's small classroom where he/she has specialized curriculum resources. This intervention support is in addition to ELA instruction in the general education classroom and therefore is pull-out rather than push-in. In enrollment scenario 3, there would be two reading specialists, one for every two grade levels and therefore two small classrooms. In the area of mathematics, we have been working with the School Committee in long-range budget discussions to plan for adding math specialists in the 2025-2026 school year which will coincide with full-scale implementation of a new set of math curriculum resources which will require additional math support for teachers and students. There will be a math specialist for every two grade levels, mirroring the level of support already present for reading. For this reason, the same space requirements exist for the math specialist as the reading specialist. The District already has a K-8 ELA Coordinator and a K-5 Math Coordinator who supervise the reading and math specialists respectively.

- ***World Language*** *– The District is proposing (1) 500 nsf World Language Classroom for Enrollment 1, which exceeds the MSBA guidelines. For Enrollment 2 and Enrollment 3, the District is proposing (2) 950 nsf World Language Classrooms totaling 1,900 nsf, which exceeds the MSBA guidelines. In response to these review comments, please provide the following information:*

  - *Describe the anticipated adjacencies, the scheduling and utilization of the proposed areas, and how these areas will be supervised and staffed.*

Response: As a result of the continuing discussion about the District's space needs, the proposed square footage in the PDP has been revised. In the revised Space Summary, enrollment 1 there is one World Language classroom at 900 sq ft and for enrollment 3 there are two World Language classrooms at 900 square feet each. With two grade levels there will be one World Language teacher providing each class with 45 minutes of language instruction twice per week. This means that the classroom will be in use throughout the school day with the general education classes coming to the World Language teacher. This is important so that the World Language teacher can establish an appropriate learning environment with a calendar bulletin board in Spanish, posters in Spanish and a classroom library in Spanish, for example. These aspects of the World Language classroom cannot be re-created if the teacher travels to the students and does not have his/her own classroom. The World Language Classroom will be embedded in one of the Learning Neighborhoods to signal that it is part of the core curriculum. For enrollment 3, with four grade levels, there would be two World Language teachers each with full schedules and therefore two World Language classrooms.

- *Per the proposed space summary for each study enrollment option, the proposed square footage for Enrollment 1 is 500 nsf, however, the proposed square footage for Enrollment 2 and 3 is 950 nsf. Please describe why the proposed square footage for Enrollment 1 is different from Enrollment 2 and 3.*

Response: The nsf for all options has been corrected. Refer to updated Space Summaries.

- ***Health/ Wellness Classroom** – The District is proposing (1) 950 nsf Health/Wellness Classroom for each study enrollment option, which exceeds the MSBA guidelines. In response to these review comments, please provide the following information:*

  - *Describe the anticipated adjacencies, the scheduling and utilization of the proposed areas, and how this area will be supervised and staffed.*

    Response: After the PDP was submitted, the District made revisions to the Space Summary which includes removing the Health and Wellness Classroom. In the revised Space Summary there is no Health and Wellness classroom for any of the enrollment scenarios. Health and Wellness classes will be taught either in the gymnasium or in the general education classrooms.

  - *Additionally, there are discrepancies for the purposed number of Health/ Wellness Classroom for Enrollment 3. There is (1) listed under the new construction column. However, there are (4) listed under the total column. In response to these review comments, please confirm which is accurate and update the space summary accordingly.*

Response: The calculations for the total column have been corrected. Refer to updated Space Summaries.

- *Teacher Collaboration Room – The District is proposing (1) 300 nsf Teacher Collaboration Room for Enrollment 1, which exceeds the MSBA guidelines. For Enrollment 2, the District is proposing (3) 300 nsf Teacher Collaboration rooms totaling 900 nsf, which exceeds the MSBA guidelines. For Enrollment 3, the District is proposing (4) 300 nsf Teacher Collaboration rooms totaling 1,200 nsf, which exceeds the MSBA guidelines. In response to these review comments, provide additional information that describes the scheduling, staffing, and overall utilization of these spaces.*

  Response: In the revisions to the Space Summary which were completed after submitting the PDP to the MSBA, the District reduced the amount of space for teacher collaboration rooms. In the new Space Summary, the District proposes one (1) teacher collaboration room (300 sq ft) for enrollment 1 and two (2) teacher collaboration rooms (300 sq ft each) for enrollment 3. Teacher collaboration is a key component of how the Neary School and all schools in the District function. Grade level teams meet weekly, specialists meet regularly, special educators meet weekly, team leaders meet weekly, and additional combinations of teachers meet for data analyses, curriculum planning, student placement meetings, scheduling meetings and other professional activities. Having a dedicated space for these professional collaborations allows more efficient meetings so that teachers are not looking for a free space to meet. In addition, the space would be outfitted with the technology and materials to support professional activities. The teacher collaboration rooms would also be used for professional development workshops. The school would use a Google calendar or similar scheduling software to schedule time in the teacher collaboration rooms which would be overseen by the administrative assistants for the school.

- ***Special Education** – The overall proposed square footage for this category exceeds the MSBA guidelines by 4,160 nsf for Enrollment 1; 5,260 nsf for Enrollment 2; and by 3,290 nsf for Enrollment 3.*

  - *As the project further develops, please note and acknowledge that 900 nsf is the minimum size for all newly constructed Sub-Separate or Self-Contained Special Education Classrooms in an elementary school.*

  - *Please note that the Special Education program is subject to approval by the Department of Elementary and Secondary Education ("DESE"). The District should provide the required information required with the Schematic Design submittal. Formal approval of the District's proposed Special Education program by the DESE is a prerequisite for executing a Project Funding Agreement with the MSBA.*

  - *Additionally, there are discrepancies for the proposed number of small group rooms and the Testing spaces for Enrollment 3. There is (1) small group room and (1) Testing space listed under new construction column. However, there are (2) small group rooms and (2) Testing spaces listed under the total column. In response to these review comments, please identify which information is accurate and update the space summary accordingly.*

Response: After submitting the PDP, revisions to the Space Summary included changes in special education spaces including overall reduction in square footage.

The District acknowledges that 900 nsf is the minimum size for all newly constructed Sub-Separate or Self-Contained Special Education Classrooms in an elementary school. The proposed sub-separate classrooms are 900 sq feet plus a bathroom at 75 sq feet. The District also realizes that the Special Education program is subject to approval by the Department of Elementary and Secondary Education ("DESE"). The District will provide the required information and the Schematic Design to DESE. The District understands that formal approval of the District's proposed Special Education program by the DESE is a prerequisite for executing a Project Funding Agreement with the MSBA.

In the Student Support Services Suite, in the revised space summary for enrollment 1, there is one (1) small group room and zero (0) testing spaces. Testing will take place in practitioners' offices or small group rooms. The same allocation is proposed for enrollment 3 (1 small group room and 0 testing spaces).

- ***Art & Music** – The overall proposed square footage for this category exceeds the MSBA guidelines by 3,650 nsf for Enrollment 1; 4,775 nsf for Enrollment 2; and by 3,500 nsf for Enrollment 3. Please note and acknowledge square footage exceeding the MSBA guidelines will be considered ineligible for reimbursement. In response to these review comments, provide additional information for the following:*
  - *The District is proposing (1) 3,500 nsf auditorium for each study enrollment option. Please note MSBA guidelines do not include square footage associated with auditoriums for elementary or middle school projects, and all costs associated with an auditorium will be considered ineligible for reimbursement. Also, community support must be demonstrated prior to MSBA approval of the District's proposed project scope and budget; and the MSBA will exclude from its grant the cost of the total gross square footage in excess of the MSBA guidelines for these areas. Refer to the attached memorandum which outlines MSBA's policy regarding auditorium spaces beyond those included in the guidelines.*

    Response: After submitting the PDP, revisions to the proposed Space Summary included changes to the music spaces. The District has decided not to proceed with the auditorium, so the revised Space Summary no longer includes an auditorium. For enrollment 1, there is a large group music classroom that is 1,800 sq feet and an ensemble music classroom (900 sq feet) for two full-time music teachers. For enrollment 3 there would be one large group music room (1,800 sq feet) and two (2) ensemble music rooms (900 sq feet each) and there would be three full-time music teachers. In lieu of the auditorium there would be a cafetorium which would include a stage for performances and assemblies.

  - *Describe why a cafetorium could not be designed to meet the needs of the District's elementary school curriculum. Provide examples of the types of educational activities intended for the auditorium, and anticipated utilization rates for the proposed auditorium as part of the District's response to these review comments.*

Response: As noted above, the District has decided not to include an auditorium in the project and will include a cafetorium instead.

- *As part of the PSR submittal, please provide the following items with an updated space summary:*

  - *Relocate the proposed Instrument Storage to 'Non-Programmed Spaces' category*
    Response: Instrument Storage has been recategorized as stated.

  - *Relocate the proposed Auditorium to 'Other' category for each study enrollment option.*
    Response: Auditorium has been recategorized as stated but has been eliminated from the project, as further noted above.

  - *Provide an additional space summary for each study enrollment option that does not include an Auditorium.*

    Response: Refer to updated Space Summaries provided. Since the auditorium is no longer included in the project, no additional space summary is necessary.

- ***Health & Physical Education** – The overall proposed square footage for this category exceeds the MSBA guidelines by 150 nsf for each study enrollment option. The information provided indicates the additional square footage is associated with the Gym Storeroom. Please note that the MSBA does not object to the additional square footage; however, all square footage exceeding the MSBA guidelines will be considered ineligible for reimbursement. Please acknowledge. Also, please refer to the attached memorandum which outlines MSBA's policy regarding gym spaces beyond those included in the guidelines.*

  Response: The Gym Storeroom has been adjusted to meet the guidelines. Refer to updated Space Summaries provided.

- ***Media Center** – The overall proposed square footage for this category exceeds the MSBA guidelines by 2 nsf for Enrollment 1 and meets the MSBA guidelines for Enrollment 2 and Enrollment 3. Please note that the MSBA does not object to the additional square footage; however, all square footage exceeding the MSBA guidelines will be considered ineligible for reimbursement. Consider adjusting the size of this space to align with MSBA guidelines for Enrollment 1. Please acknowledge.*

  Response: Media Center nsf has been adjusted for Enrollment 1 to meet guidelines. Refer to updated Space Summaries provided.

  ***Dining & Food Service** – The overall proposed square footage for this category is below the MSBA guidelines by 4 nsf for Enrollment 1; exceeds the MSBA guidelines by 2 nsf for Enrollment 2; and meets the MSBA guidelines for Enrollment 3. In response to these review comments, please note and acknowledge that the MSBA encourages the District to more closely align with MSBA guidelines. However, please note that the MSBA does not object to the additional square footage for Enrollment 2; however, all square footage exceeding the MSBA guidelines will be considered ineligible for reimbursement. Consider adjusting the size of these spaces to align with MSBA guidelines for Enrollment 1 and2. Please acknowledge.*

Response: Dining & Food Service nsf has been adjusted for Enrollments still under consideration to meet guidelines. Refer to updated Space Summaries provided.

- ***Medical*** *– The overall proposed square footage for this category meets the MSBA guidelines for each study enrollment option. No further preliminary comments.*
- ***Administration & Guidance*** *– The overall proposed square footage for this category is below the MSBA guidelines by 6 nsf for Enrollment 1; meets the MSBA guidelines for Enrollments 2 and 3. No further preliminary comments.*

  Response: The square footage has been corrected for Enrollment 1 to meet MSBA guidelines.
- ***Custodial & Maintenance*** *– The overall proposed square footage for this category is below the MSBA guidelines by 5 nsf for Enrollment 1; meets the MSBA guidelines for Enrollments 2 and 3. No further preliminary comments.*

  Response: Custodial & Maintenance nsf has been adjusted for Enrollment 1 to meet guidelines. Refer to updated Space Summaries provided.
- ***Other*** *– The District is proposing 500 nsf which exceeds the MSBA guidelines for each study enrollment option. The District is proposing the following:*
  - ***Extended Day Program Storage*** *– The District is proposing (1) 300 nsf Extended Day Program Storage which exceeds the MSBA guidelines for each study enrollment option. In response to these review comments, please review the following:*
    - *As part of the PSR submittal, relocate the proposed Extended Day Program Storage area to the 'Non-Programmed Spaces' category with an updated space summary.*
      Response: Extended Day Program Storage area has been recategorized. See updated space summary.
    - *Please note and acknowledge that the MSBA does not object to the additional square footage; however, all square footage exceeding the MSBA guidelines will be considered ineligible for reimbursement.*
      Response: After submitting the PDP, revisions to the proposed Space Summary include removing Extended Day Program Storage from the project.
  - ***Extended Day Program Office*** *– The District is proposing (1) 200 nsf Extended Day Program Office which exceeds the MSBA guidelines for each study enrollment option. Please note and acknowledge that the MSBA does not object to the additional square footage; however, all square footage exceeding the MSBA guidelines will be considered ineligible for reimbursement.*

    Response: The District acknowledges that the Extended Day Program Office exceeds the MSBA guidelines and recognizes that all square footage exceeding the MSBA guidelines will be considered ineligible for reimbursement. As a result of further discussions, the dedicated Extended Day Program Office has been eliminated from the project. Please see revised space summary.

Please note that upon selection of a preferred solution, the District may be required to adjust spaces/square footage that exceeds the MSBA guidelines and is not supported by the Educational Program provided.

3) The narrative provided in Art and Music category for Enrollment 1 states:

> *"All students are offered opportunities for music education including traditional ensembles of chorus, band and orchestra. Students offered opportunities to progress as they grow: third graders participate in group instrument lessons, and fourth and fifth graders participate in larger ensembles."*

However, Enrollment 1 is designed for 305 students in grades 4-5. In response to these review comments, please confirm if the narrative stated regarding the third graders would be applicable to this enrollment option.

Response: In enrollment 1 with 4th and 5th graders, both grade levels participate in instrument lessons as well as ensembles. In enrollment 3, the third graders will participate in instrument lessons and while the fourth and fifth grade will participate in both instrument lessons and ensembles.

No further review comments for this section.

3.1.4 EVALUATION OF EXISTING CONDITIONS

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Confirmation of legal title to the property.	☒	☐	☐	☐
2	Determination that the property is available for development.	☒	☐	☐	☐
3	Existing historically significant features and any related effect on the project design and/or schedule.	☐	☒	☐	☐
4	Determination of any development restrictions that may apply.	☐	☒	☐	☐
5	Initial Evaluation of building code compliance for the existing facility.	☒	☐	☐	☐
6	Initial Evaluation of Architectural Access Board rules and regulations and their application to a potential project.	☒	☐	☐	☐
7	Preliminary evaluation of significant structural, environmental, geotechnical, or other physical conditions that may impact the cost and evaluations of alternatives.	☐	☒	☐	☐
8	Determination for need and schedule for soils exploration and geotechnical evaluation.	☐	☒	☐	☐
9	Environmental site assessments minimally consisting of a Phase I: Initial Site Investigation performed by a licensed site professional.	☐	☒	☐	☐

Provide the following Items		Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
10	Assessment of the school for the presence of hazardous materials.	☐	☒	☐	☐
11	Previous existing building and/or site reports, studies, drawings, etc. provided by the district, if any.	☐	☐	☒	☐

MSBA Review Comments:

The information provided indicates the District is considering the following (2) existing sites: the Margaret A. Neary Elementary School site and the Albert S. Woodward Memorial School site. However, the information provided within this submittal did not include an existing building conditions report associated with the Albert S. Woodward Memorial School. In response to these review comments, please note and acknowledge that the MSBA will require the District and project team provide site and existing building conditions information, as outlined in Module 3, for both the Margaret A. Neary Elementary School and Albert S. Woodward Memorial School as part of the District's PSR submittal.

District Response: Acknowledged. Site and existing building conditions will be submitted with the PSR.

3) The information provided indicates that a Project Notification Form ("PNF") will be filed with the Massachusetts Historical Commission ("MHC") during the next phase of the project. In response to these review comments, please provide an anticipated PNF filing timeline.

Response: The Design Team submitted the PNF on July 12.   Review comments are expected within 4 to 6 weeks.

Additionally, as part of the District's PSR submittal, include the PNF submission date into the project schedule. Also, please note and acknowledge that MHC approval is required prior to construction bids. The District should keep the MSBA informed of any decisions and/or proposed actions and should confirm that the proposed project is in conformance with Massachusetts General Law 950, CRM 71.00.

Response: The District acknowledges that MHC approval is required prior to construction bidding. Given the age and location of the building, the District does not expect any substantial comments from MHC, but will inform the MSBA of any decisions and/or proposed actions.

4) The information provided in the 'Development Restrictions & Permits' narrative for the existing Margaret A. Neary Elementary School site states the following:

- *"A potential vernal pool was identified at the south of the site straddling the boundary with the parcel at 55 Parkerville Rd."*
- *"FEMA AE flood zones are located along the river and to the east of the access road from Parkerville Road and the existing school buildings. Work on the site will likely require oversight from the Southborough Conservation Commission."*

- *"It is not anticipated that a renovation, addition or new construction project will trigger any thresholds for MEPA regulations. A full analysis will be performed as part of the next phase of this study."*

*As part of the District's **PSR submittal**, please provide the following:*

- *Analysis performed by the design team intended to determine the outcome associated with the requirements of a MEPA review and a workplan and timeline associated with a MEPA review and approval.*
- *Also, please note that if MEPA review and approval is required for the proposed project, the MSBA Board's authorization to enter a Project Scope and Budget Agreement ("PSBA") and a Project Funding Agreement ("PFA") will be conditioned upon the District fulfilling the applicable MEPA requirements associated with the MEPA review.*
- *A timeline associated with any potential filings with the Southborough Conservation Commission review and approval.*

Response: These items will be addressed in the PSR submittal.

7) The information provided in the 'Structural Conditions' narrative notes the structural conditions will require further investigation and potentially, remedial reinforcing if the building is renovated.

The information provided in the 'Architectural Conditions' narrative notes the following:

- *Further investigation of materials and construction method is required if any portion of the existing building is preserved as part of an addition/renovation option.*
- *Flooring throughout the school is mainly VCT tile with asbestos-containing mastic.*
- *Existing acoustic ceiling tiles most likely contain asbestos.*

The information provided in the 'Civil Report' states the following:

- *If the school enrollment is increased as one of the options under consideration, further investigation will be required to determine whether the existing sanitary sewer system can be enlarged or will need to be replaced.*
- *Further investigation is required to confirm the existing water service's location and the existing condition of the water main.*
- *A hydrant flow test is recommended to determine the amount of water available in the public system to serve the site for fire protection and domestic use.*
- *The existing drainage system and the existing roof drainage will require analysis during the design phase to determine whether it provides adequate stormwater management.*
- *Further investigation will be required to confirm the gas service for the building.*

***As part of the PSR submittal**, please provide a timeline associated with the work listed above and incorporate it into the overall project schedule and any additional findings that may have impact on the total project budget or project schedule.*

Response: These items will be addressed in the PSR submittal.

Furthermore, the narrative provided in the 'Existing Security Report' states:

> *"The security report is confidential and will be issued under separate cover to the District and public safety providers."*

In response to these review comments, please provide the timing of when the security report will be issued to the District and public safety providers. Also, please confirm that first responding emergency representatives have been and will be consulted in the planning process and associated requirements will be incorporated into the District's Preferred Schematic.

> *Response: The Design Team provided the results of the security report to the District on May 16, 2024.*
>
> *District Response: The District has a strong partnership with the Town's safety officials who have been and will be consulted throughout the design process. Egress, location of common spaces, traffic patterns, etc., have all been discussed with safety officials. Further discussions will continue in the Schematic Design phase of the project.*

8) The information provided in LGCI's 'Geotechnical Report 'states the following:

- *"Based on the groundwater levels measured in our borings, we anticipate that ground water control procedures will be needed during construction."*
- *"Perform additional explorations at the site and update the geotechnical report."*

In response to these comments, provide the timeline associated with any additional site testing and analysis. Note and acknowledge that all cost increases subsequent to a Project Scope and Budget Approval from the MSBA's Board of Directors will be the sole responsibility of the District.

Response: These items will be addressed in the PSR submittal.

9) The information provided in the 'PEER Consultant's Preliminary Site Assessment' states the following regarding the Margaret A. Neary Elementary School site:

- *"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."*
- *"PEER recommends considering the implantation 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 development."*

In response to these review comments, provide the timeline associated with any additional site testing into overall schedule. Please note and acknowledge that all cost increases subsequent to a Project Scope and Budget Approval from the MSBA's Board of Directors will be the sole responsibility of the District.

Response: Since the PDP was submitted, the District is undertaking a percolation test for the septic system and scheduling additional geotechnical borings in the immediate vicinity of the existing building to document the underlying soil conditions. In addition, the District has been conferring with the Town's DPW department and their environmental engineer, on the condition and testing protocol and results for the existing landfill located adjacent to the Neary school site. Additional site investigations and testing are currently in discussion and will be further described in the PSR submission, including an updated schedule.

Also, please note and acknowledge, if an alternate site is selected for the District's Preferred Schematic, the District and project team will be required to provide at minimum a Phase 1 Environmental Site Assessment for the selected site in the PSR submittal.

Response: These items will be addressed in the PSR submittal. There are no alternative sites being considered.

10) Please note the project team should be aware of the current policies associated with MSBA's participation in the abatement and removal of hazardous materials. In response to these review comments, please note and acknowledge that all costs associated with the removal of asbestos containing floor materials and ceiling tiles are considered ineligible for reimbursement.

Response: The project team acknowledges that removal of hazardous materials is not eligible for reimbursement.

11) In response to these review comments, provide any previous existing building and/or site reports, studies, drawings, etc. provided by the District, if any.

No further review comments for this section.

3.1.5 SITE DEVELOPMENT REQUIREMENTS

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	A narrative describing project requirements related to site development to be considered during the preliminary and final evaluation of alternatives.	☐	☒	☐	☐
2	Existing site plan(s)	☐	☒	☐	☐

MSBA Review Comments:

1) The information provided regarding the Margaret A. Neary Elementary School site indicates the following:

- *Due to the proximity to the Sudbury Reservoir, there is a FEMA designated flood zone that follows portions of the stream through the northern part of the Neary Elementary School site. A further study will be required to map the location of the wetlands and other environmental constraints.*
- *"The Woodward School is located in the Southborough Center Historic district, which is listed in the National Register of Historic Places. The historic district designation could further restrict development on the site and will be reviewed further during the next phase of this study."*

Additionally, the information provided in the introduction of the Site Development Requirements section states the following:

- *"The team has begun a conversation with the Conservation Commission about understanding their requirements and wetlands so this will be an important consideration that will be further delineated during the PSR."*
- *"The septic system is believed to be undersized and will likely need to be relocated."*

In response to these review comments, please provide the timeline associated with the work listed above.

Response: As noted above, the District continues to investigate the site issues and will provide additional information with the PSR submission.

As part of the District's PSR submittal, please provide additional information for Albert S. Woodward Memorial School site.

Additionally, provide a site section(s) that illustrates how the Preferred Schematic sits on the site and how the proposed location impacts drainage, access, and circulation as part of the District's PSR submittal.

Response: A site section will be submitted with the PSR.

2) The information provided indicates the District is considering the following (2) site options: Margaret A. Neary Elementary School site and Albert S. Woodward Memorial School site. However, the information provided in the submittal did not include site narratives or an existing site plan associated with the Albert S. Woodward Memorial School site. In response to these review comments, please provide site narratives and an existing site plan of Albert S. Woodward Memorial School.

Response: The Albert S Woodward Memorial School is located on Cordaville Road with the Choate Memorial Field occupying the land between the school and the road. (Please reference Attachment C) This field is restricted by a deed which limits the use of the deeded property to recreational use only (the area labeled A on the site plan in the Attachment). The portion of the land which is currently occupied by the existing school (labeled C) fills a large portion of the area.

No further review comments for this section.

3.1.6 PRELIMINARY EVALUATION OF ALTERNATIVES

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Analysis of school district student school assignment practices and available space in other schools in the district	☒	☐	☐	☐
2	Tuition agreement with adjacent school districts	☒	☐	☐	☐
3	Rental or acquisition of existing buildings that could be made available for school use	☒	☐	☐	☐
4	Code Upgrade option that includes repair of systems and/or scope required for purposes of code compliance; with no modification of existing spaces or their function	☒	☐	☐	☐
5	Renovation(s) and/or addition(s) of varying degrees to the existing building(s)	☐	☒	☐	☐
6	Construction of new building and the evaluation of potential locations	☒	☐	☐	☐

7	List of 3 distinct alternatives (including at least 1 renovation and/or addition option) are recommended for further development and evaluation.	☒	☐	☐	☐

MSBA Review Comments:

5) The information provided in the 'Summary of Preliminary Pricing' on page 242 of the submittal indicates Option B.2 has an estimated total project cost range of $125-$130 million. However, the narrative provided for Option B.2 on page 227 indicates an estimated total project cost range of $124-$129 million. In response to these review comments, please clarify the estimated total project cost range for Option B.2 and update accordingly.

Response: Please refer to the narrative summary on Page 227 as the cost range is $124-$129 million. Note that this option has been eliminated by the Neary Building Committee.

7) As part of the Preliminary Evaluation of Alternatives, the District explored the following (12) options. Please note the District intends to further study and evaluate all (12) preliminary options as part of the Final Evaluation of Alternatives included in the District's PSR submittal.

ARROWSTREET

- ***Option A.1**: Base Repair for grades 4-5 with an enrollment of 305 students at the existing Margaret A. Neary Elementary School; with an estimated total project cost range of $59-$62 million.*
- ***Option A.2**: Base Repair for grades 4-5 with an enrollment of 305 students at the existing Albert S. Woodward Memorial School; with an estimated total project cost range of $64-$66 million.*
- ***Option B.1**: Addition/ Renovation for grades 4-5 with an enrollment of 305 students at the existing Margaret A. Neary Elementary School; with an estimated total project cost range of $103-$107 million.*
- ***Option B.2**: Addition/ Renovation for grades 3-5 with an enrollment of 450 students at the existing Margaret A. Neary Elementary School; with an estimated total project cost range of $124-$129 million.*
- ***Option B.3**: Addition/ Renovation for grades 3-5 with an enrollment of 450 students at the existing Albert S. Woodward Memorial School; with an estimated total project cost range of $119-$124 million.*
- ***Option B.4**: Addition/ Renovation for grades 2-5 with an enrollment of 610 students at the existing Margaret A. Neary Elementary School; with an estimated total project cost range of $143-$149 million.*
- ***Option B.5**: Addition/ Renovation for grades 2-5 with an enrollment of 610 students at the existing Albert S. Woodward Memorial School; with an estimated total project cost range of $142-$147 million.*
- ***Option C.1**: New Construction for grades 4-5 with an enrollment of 305 students at the existing Margaret A. Neary Elementary School site; with an estimated total project cost range of $105-$109 million.*

- ***Option C.2***: *New Construction for grades 3-5 with an enrollment of 450 students at the existing Margaret A. Neary Elementary School site; with an estimated total project cost of $124-$129 million.*
- ***Option C.3***: *New Construction for grades 3-5 with an enrollment of 450 students at the existing Albert S. Woodward Memorial School site; with an estimated total project cost range of $123-$128 million.*
- ***Option C.4***: *New Construction for grades 2-5 with an enrollment of 610 students at the existing Margaret A. Neary Elementary School site; with an estimated total project cost range of $141-$146 million.*
- ***Option C.5***: *New Construction for grades 2-5 with an enrollment of 610 students at the existing Albert S. Woodward Memorial School site; with an estimated total project cost range of $140-$145 million.*

As part of the District's PSR submittal please provide the following information:

- *Ensure that further detail is provided in the subsequent phases of the project that clearly describes and illustrates the separation, safety provisions, and possible construction laydown areas that will be applied during construction on the occupied site. Please acknowledge.*
  Response: This will be included in the PSR submission.
- *Continue to use the same naming convention of options for clarity and consistency. Please acknowledge.*
  Response: Confirmed.
- *For all options and sites that are not selected by the District, provide detailed narratives that describe why options and sites were eliminated from further consideration.*

  Response: Acknowledged. Further information will be provided in the PSR Submission.

No further review comments for this section.

3.1.7 LOCAL ACTIONS AND APPROVAL

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Signed Local Actions and Approvals Certification: (original)	☒	☐	☐	☐
2	Certified copies of the School Building Committee meeting notes showing specific submittal approval vote language and voting results, and a list of associated School Building Committee meeting dates, agenda, attendees and description of the presentation materials	☒	☐	☐	☐

MSBA Review Comments:

No review comments for this section.

3.1.8 APPENDICES

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Current Statement of Interest	☒	☐	☐	☐
2	MSBA Board Action Letter including the invitation to conduct a Feasibility Study	☒	☐	☐	☐
3	Design Enrollment Certification	☐	☒	☐	☐

MSBA Review Comments:

3) Please refer to the comment above in Section 3.1.1, Item 3.

No further review comments for this section.

Response: A signed Study Enrollment Certification was completed and is attached hereto in Attachment A..

Additional Comments:

- *MSBA would like to inform you of MSBA's recent Project Advisory #88, posted on July 1, 2024, and linked* here *which describes changes to the MSBA submittal documents relating to required state site approvals and site resiliency. We ask you to review this Project Advisory and forward any questions you may have about these requirements to your MSBA Project Coordinator. These documents will assist your client and the MSBA to understand your project's status relating to the various required state site approvals and any design considerations pertaining to resiliency for your selected project site. We ask that all members of your design team use the information indicated in Project Advisory #88 for your project, including the following updated MSBA documents:*
  - *Module 3 Feasibility Study Guidelines*
  - *Module 4 Schematic Design Guidelines*
  - *Module 6 (Design Development, 60%, and 90% Construction Documents)*

  Incomplete submittals or submittals not reviewed by the OPM will not be accepted. This includes the information described in Project Advisory #88.

  District Response: Confirmed.

- *Please note that as part of the upcoming Preferred Schematic submittal process, districts and their consultants are required to provide a summary overview of the proposed project to the MSBA Facilities Assessment Subcommittee (the "FAS"). In preparation, the MSBA requests that the District submit a complete PowerPoint of the FAS presentation with the PSR submittal. For your reference, the guidance memorandum for preparing an FAS presentation is attached.*

- *The MSBA issues project advisories from time to time, as informational updates for Districts, Owner's Project Managers ("OPM"), and Designers in an effort to facilitate the efficient and effective administration of proposed projects currently pending review by the MSBA. The advisories can be found on the MSBA's website. In response to these review comments, please confirm that the District's consultants have reviewed all project advisories and they have been incorporated into the proposed project as applicable.*

Regarding Past Projects:

Both the MSBA's enabling legislation, M.G.L. c. 70B, and the MSBA's regulations, 963 CMR 2.00 et seq. specifically address the issue of past projects. MSBA records show a total MSBA payment of $10,646,010 for the Woodward Elementary School New Construction Project #W20014208 completed in September 2004. Additionally, the MSBA records do not indicate any previous grants associated with Margaret A. Neary Elementary School.

Pursuant to these requirements and depending on the School District's ultimate plan for the School, the MSBA may recover a pro-rated portion of the financial assistance that the School District has received for previous renovation grants. The exact amount recovered will be established at the conclusion of the Schematic Design / Total Project Budget phase. Please see the MSBA website to view the MSBA's regulations, statute and closed school bulletin for additional information.

End

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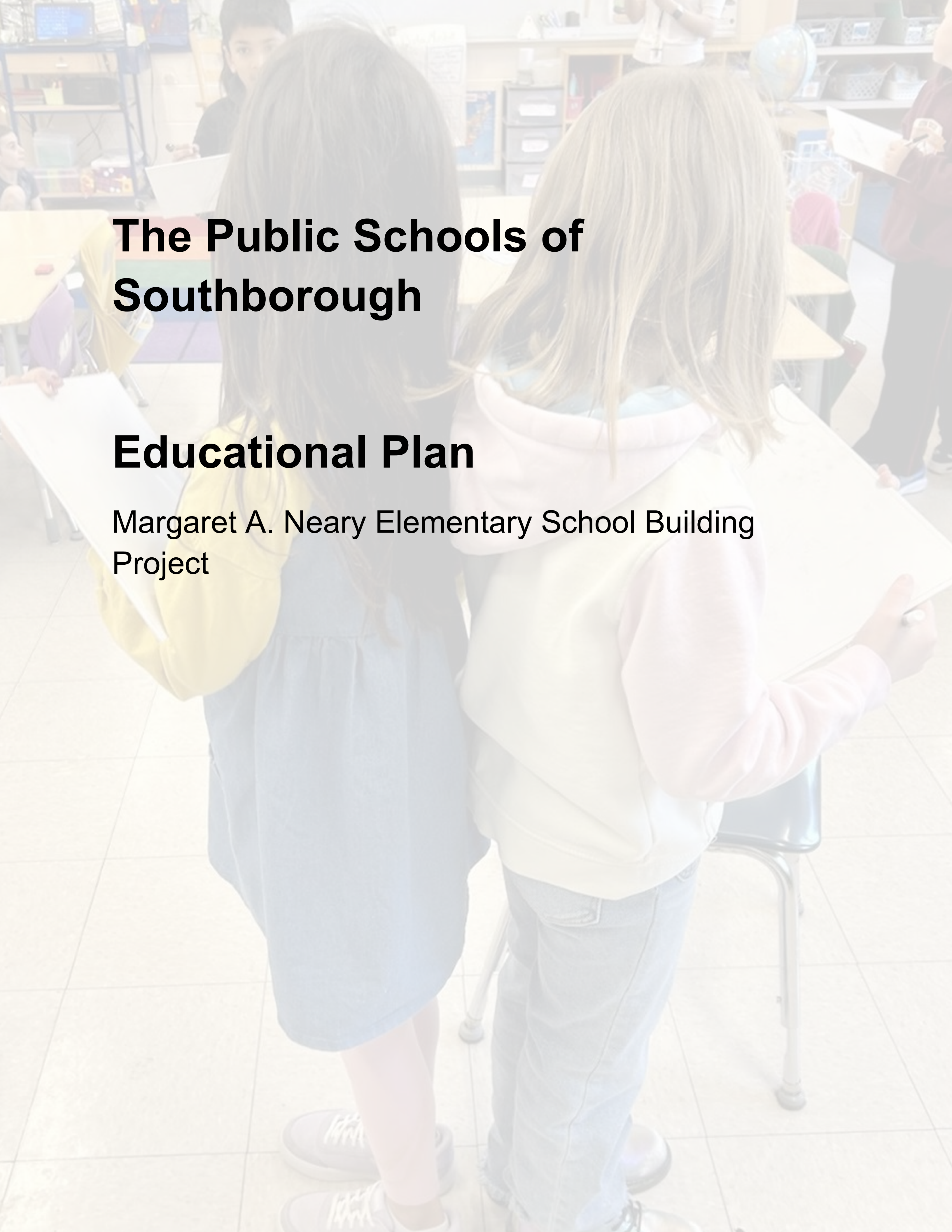
B. Educational Plan (Clean)



The Public Schools of Southborough

Educational Plan

Margaret A. Neary Elementary School Building Project

MODULE 3: PRELIMINARY DESIGN PROGRAM

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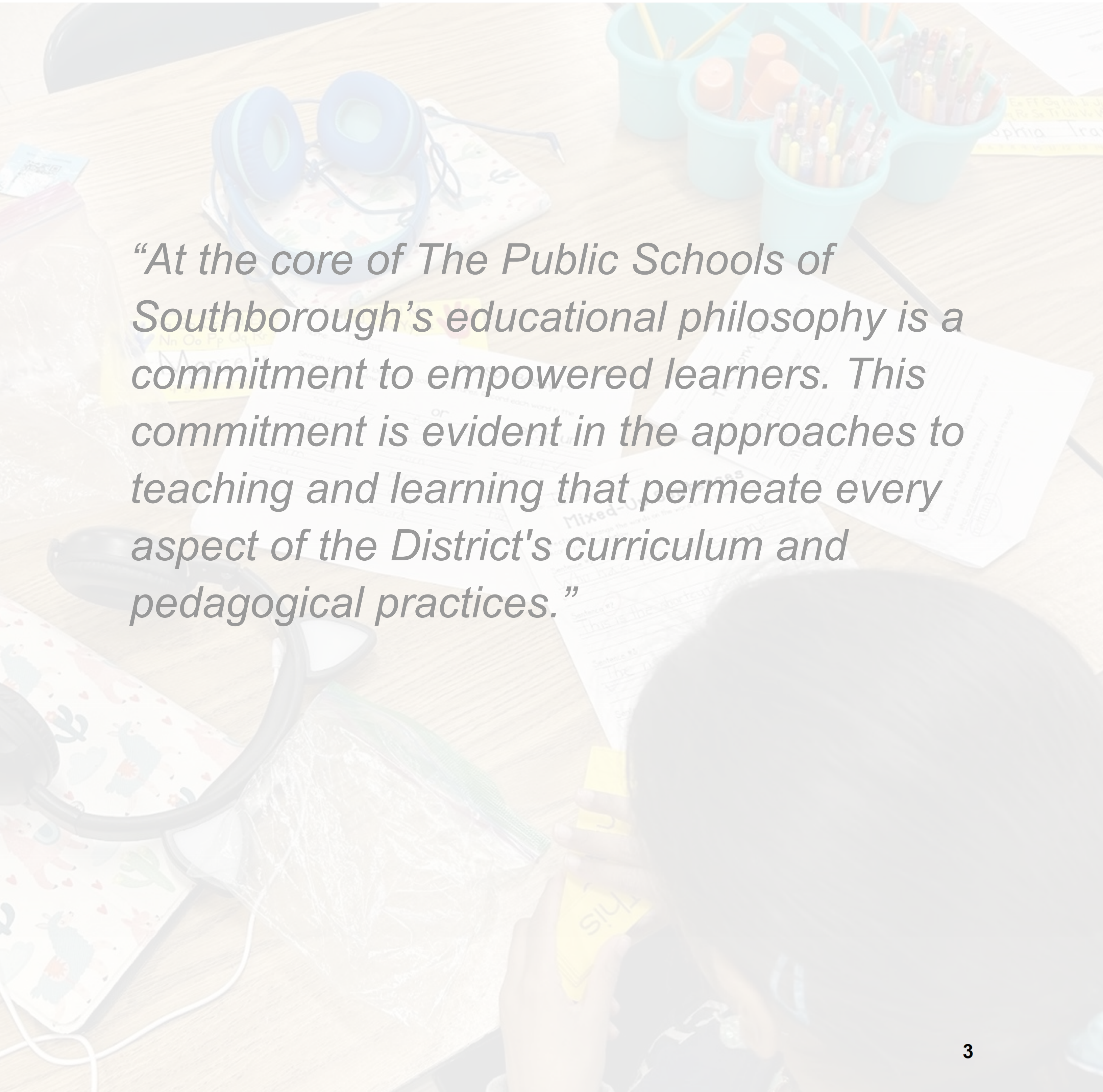
10. EXTENDED DAY
11. TRANSPORTATION POLICIES
12. FUNCTIONAL AND SPATIAL RELATIONSHIPS AND KEY ADJACENCIES
13. SECURITY AND VISUAL ACCESS REQUIREMENTS



“At the core of The Public Schools of Southborough’s educational philosophy is a commitment to empowered learners. This commitment is evident in the approaches to teaching and learning that permeate every aspect of the District's curriculum and pedagogical practices.”

INTRODUCTION

The Public Schools of Southborough, guided by its mission to Educate, Inspire, and Challenge, embarked on a forward-looking journey in the 2019-2020 academic year with the strategic planning process culminating in *Vision 2026: Educate, Inspire, Challenge*. This roadmap, crafted through the collaborative efforts of a broad spectrum of stakeholders—including parents, community members, educators, students, and school and District leadership—sets the course for an educational experience that not only meets today's standards but anticipates the needs and possibilities of tomorrow.

In the subsequent year, the District's commitment to inclusivity and excellence prompted a District equity audit in partnership with an outside consulting group, a critical step toward understanding and enhancing how the District's policies, practices, and systems affect all members of the school community, especially those historically marginalized.

In *Vision 2026: Educate, Inspire, Challenge*, the District articulates the profile of a learner who will navigate the complexities of the modern world as:

Collaborators
- Enrich the learning of self and others through teamwork.
- Solicit and respect diverse perspectives and contributions.
- Seek, contribute, and react to feedback to achieve shared outcomes.
- Recognize and leverage strengths to build collective commitment, action, and understanding.

Critical and Creative Thinkers
- Transfer and connect knowledge and skills to deepen understanding.
- Demonstrate thinking that is clear, rational, open-minded, and informed by evidence.
- Use disciplinary knowledge and skills in routine and innovative ways.
- Make informed decisions, solve problems, and use a variety of tools to deepen learning.

Communicators
- Articulate thoughts and ideas using oral, written, and non-verbal communication skills for a range of purposes and audiences.
- Listen to decipher meaning, including knowledge, values, attitudes, and intentions.
- Use technological skills and contemporary digital tools to explore and exchange ideas.

Socially and Civically Engaged
- Demonstrate personal, civic, and social integrity through ethical and empathetic behaviors.
- Recognize individual and communal impact on others and the natural world.
- Value and embrace diverse cultures and unique perspectives through mutual respect and open dialogue.

Growth-Oriented

- Cultivate positive attitudes and habits about learning.
- Pursue one's own interests and curiosity to experience new learning.
- Consistently improve the quality of one's own thinking by skillfully analyzing, assessing, and reconstructing.
- Persist to accomplish difficult tasks and to overcome academic and personal barriers to meet goals.

Healthy and Balanced

- Develop and demonstrate awareness, sensitivity, concern, and respect to connect with self and others' feelings, opinions, experiences, and cultures.
- Use reflective practices to understand one's personal strengths, challenges, and passions.
- Make choices to support a lifestyle that is healthy, both physically and mentally.
- Demonstrate resilience through the ability to manage emotions, stress, and challenges.

The Public Schools of Southborough's work is anchored by six core values that guide all members of the learning organization: Integrity, Empathy, Inclusivity, Equity, Perseverance, and Respect. These values guide all interactions and inform its policies and practices, ensuring that the educational environment is supportive, challenging, and accessible to all.

To realize the District's vision, the District's work is centered around five strategic objectives:

- <u>Empowering Learners</u>**:** Implement instructional practices that engage students in developing and demonstrating their knowledge and skills through rigorous, innovative, and relevant learning experiences.
- <u>Equity of Opportunity</u>**:** Provide all students access to challenging and culturally responsive learning experiences that meet their individual needs.
- <u>Healthy and Balanced Learners</u>**:** Prioritize the social, emotional, and physical well-being of students.
- <u>Educator Learning and Leadership</u>**:** Demonstrate continual growth through professional collaboration.
- <u>Finance and Operations to Support Teaching and Learning</u>**:** Develop, support, and operate sustainable, functional, and well-maintained schools.

In the District's commitment to continuous improvement, it completed an equity audit to better understand and address the disparities within its systems, policies, and practices. Recognizing that true equity is an ongoing process, the District is committed to fostering an environment where every member of the community is equipped to view their roles through an equity lens, continuously working towards an inclusive and equitable educational landscape.

In a time of rapid change and complex challenges, The Public Schools of Southborough remain committed to educating, inspiring, and challenging ALL students to be prepared for a modern world.

The Statement of Interest submitted to the Massachusetts School Building Authority (MSBA) in 2022 articulates that the current Margaret A. Neary Elementary School building only allows for basic functionality and is insufficient for the delivery of the educational program. While maintained over the years, the majority of the facility's building systems and components are nearing the end of life expectancy. To support this determination, the District contracted with Vertex Companies, Inc. to complete a Facilities Conditions Assessment (March 2021). This assessment confirmed the need for renovation or replacement of the roof, electrical, and other building modifications to meet building code requirements. The District's priority is to modernize the Margaret A. Neary Elementary School to a condition that rectifies current deficiencies and satisfies projected future requirements for educational programs, such as spaces with integrity for world language, art, music, science, and technology.

At the core of The Public Schools of Southborough's educational philosophy is a commitment to empowered learners. This commitment is evident in the approaches to teaching and learning that permeate every aspect of the District's curriculum and pedagogical practices. By infusing technology seamlessly into daily activities, the District enables students to explore and pursue their interests and allows teachers to provide all students access to learning. This educational philosophy is further enriched by an integrated curriculum that promotes inquiry-based and interdisciplinary experiences, seamlessly incorporating STEAM (Science, Technology, Engineering, Arts, and Mathematics) principles.

Central to the District's approach is the application of Universal Design for Learning (UDL) principles and a multi-tiered system of support. These frameworks ensure that instruction is accessible and challenging for all learners, providing multiple pathways to understanding, engagement, and expression. By doing so, the District guarantees that every student has the opportunity to exercise agency in their learning journey.

Small group instruction is pivotal to ensure the success of each student. Through targeted and responsive teaching methods, students receive the support and enrichment they need to thrive socially, emotionally, and academically.

Recognizing the essential role of professional collaboration, The Public Schools of Southborough have invested significantly in developing a culture of professional collaboration among educators. Teacher teams are an integral part of our educational ecosystem, regularly convening to analyze achievement data, exchange insights on student work, develop instructional resources, and plan coherent and impactful lessons.

To further support this culture of collaboration, it is essential that a new facility is designed with the dual purpose of enhancing professional collaboration among staff during the school day and providing versatile spaces for educators to engage with families in both private and public settings. A design needs to include spaces that are adaptable and promote effective collaboration.

In 2022, The Public Schools of Southborough, in collaboration with the Town of Southborough's Capital Planning Committee - School Research Subcommittee, completed a Grade Level Configuration Evaluation. The evaluation took into consideration current facilities, enrollment, and educational programming. The evaluation resulted in a recommendation to study the reduction of the number of elementary school transitions from two transitions to one transition. Currently, elementary students experience school transitions from grades 1-2 and grades 3-4.

As part of the feasibility study, the District is required to study three enrollment alternatives: 1) Grades 4-5, 2) Grade 3-5, and 3) Grades 2-5.

Alternative 1:
Grades PreK-1: Mary E. Finn Elementary School
Grade 2-3: Albert S. Woodward Memorial Elementary School
Grades 4-5: Margaret A. Neary Elementary School

Alternative 2:
Grades PreK-1: Mary E. Finn Elementary School
Grade 2: Albert S. Woodward Memorial Elementary School
Grades 3-5: Margaret A. Neary Elementary School

Alternative 3:
Grades K-1: Albert S. Woodward Memorial Elementary School
Grades 2-5: Margaret A. Neary Elementary School

The District's recommendation, which was considered during MSBA's Eligibility Phase, was the 2-5 grade configuration as it provides benefits, which include:

1. Provides for greater collaboration and vertical curriculum alignment between grades 2-5;
2. Allows and maximizes District resources and builds a greater sense of school community;
3. Reduces the number of school transitions;
4. Provides more opportunity to maximize resources (people and materials);
5. siblings within the grade range to be at the same school, facilitating both bus transportation for children in the same family as well as parental transportation to and from school and/or extended care and;
6. Reduces the amount of time students are on buses and the number of transportation routes, which is a logistical benefit as well as an avoidance of significant additional costs that would require financial resources to be redirected from the educational program (see accompanying document);

Visioning Summary

In the winter of 2024, members of The Public Schools of Southborough – including leadership, staff, parents, and community members – participated in visioning and programming sessions led by Educational Planner Mike Pirollo (MLP Integrated Design) and Arrowstreet. Each session was part of a collaborative process designed to inform the Margaret A. Neary Elementary School Massachusetts School Building Authority (MSBA) Feasibility Study and pre-design process.

Utilizing school tours, observational building walk-throughs, program verification meetings, and visioning sessions, participants worked through a step-by-step process aimed at capturing their thinking around the following key areas:

- Educational, architectural, and community goals and priorities
- Child development, including the physical, academic, and social-emotional needs of the elementary learner
- Impacts of various grade configurations and design enrollments
- Vision of teaching and learning, including practices, strategies, programs, and structures
- A vision of the ideal learning environment, including space types, design features, and adjacencies

Overarching Project Goals & Priorities:

At the core of the District's educational vision are a series of overarching goals:
- Students and teachers are at the heart
- Spaces and instructional practices that support innovation in education
- Supporting a climate of belonging, community, connection, and well-being
- Flexible, adaptable space to support equitable and active access
- Opportunities for outdoor and indoor connection
- An academically, financially, and environmentally sustainable building
- Long-term adaptability
- A logical and efficient building

Participants

Name	**Title:**
Greg Martineau	Superintendent
Stefanie Reinhorn	Assistant Superintendent
Kathleen Valenti	Principal
Steve Mucci	Principal
Clayton Ryan	Principal
Megan Kelty	ELA Coordinator
Helene Desjardins	Assistant Director of Student Support
Jennifer Lipton-O'connor	Coordinator of SEL
Kathy Lizotte	Mathematics Coordinator
Julie Doyle	Director of Instructional Technology
Mary Ellen Duggan	District Wellness Coordinator and Nurse Leader
Selvi Oyola	Director of Multilingual Learners & Equity
Jennifer Henry	Early Childhood Administrator
Jason Malinowski	Neary Building Committee Chairperson
Roger Challen	School Committee Member

Chelsea Malinowski	School Committee Member
David Finneran	Neary Teacher & STA Representative
Kristin Theve	Neary Teacher
Jen Turieo	Neary Teacher
Lisa Goulet	Woodward Teacher
Jill Henebury	Woodward Teacher
Kristin Peterson	Finn K Teacher (K Team Leader)
Alysun Stephens	Finn Teacher
Nutan Mathew	Specialist
Tiffany Goode	Specialist
Jeanette Morgan	Finn Music Teacher (Specialist Team Leader)
Gela Ebert	ELPAC Co-Chair
Marie Sajous	ELPAC Co-Chair
Sarah Fulton	PTO
Stephanie Iodice	PTO
Kristin Gould	PTO
Matt Gilmore	NSPAC
Andrea Hamilton	NSPAC
Tim Davis	Director of Southborough Recreation
Kathy Cook	Select Board Member
Ryan Newell	Police Chief

GRADE & SCHOOL CONFIGURATION

School Facilities Summary

The Public Schools of Southborough has four school facilities, serving grades PreK-8. All of the District's schools have strong school cultures, exceptional faculties and staff dedicated to students, and parents and guardians who are invested in The Public Schools of Southborough.

Mary E. Finn Elementary School

The Mary E. Finn Elementary School is an early childhood center currently serving students in grades Pre-Kindergarten to Grade One. The building was originally constructed in 1967 and was then renovated and expanded in 2000 to 76,000 square feet. The building's renovation was designed for the District's youngest learners.

Albert S. Woodward Memorial Elementary School

The Albert S. Woodward Memorial Elementary School currently serves students in Grade Two and Grade Three. The building site was the original middle school for Southborough until the P. Brent Trottier Middle School was built in 1998. The original building was torn down and the footprint was used to build the 68,000-square-foot facility, which opened in 2004.

Margaret A. Neary Elementary School

Originally constructed in 1970, the Margaret A. Neary Elementary School currently serves Grade Four and Grade Five. The building is a 62,736 gross square foot facility on a single level located on an eighty-one (81) acre site. The Margaret A. Neary Elementary School is the only

Southborough school that has not yet been renovated.

P. Brent Trottier Middle School
The P. Brent Trottier Middle School established in 1998 and expanded in 2004 is a 130,000 square foot middle school for students in Grade Six, Grade Seven, and Grade Eight. The three-year experience provides students with the skills and knowledge to be successful in high school.

Current student enrollment in the five schools as of March 2024 is:

School	Current Grade Configuration	Current Enrollment
Mary E. Finn Elementary School (Finn)	PreK-1	260
Albert S. Woodward Memorial Elementary School (Woodward)	2-3	248
Margaret A. Neary Elementary School (Neary)	4-5	282
P. Brent Trottier Middle School (Trottier)	6-8	409

Current
The Margaret A. Neary Elementary School has nineteen classrooms, fourteen of the classrooms are split evenly between fourth and fifth grades, and five of the classrooms are designated as Central Office. Each classroom, designed with a dividing wall for coats and student belongings results in a reduced instructional area. This constraint, coupled with limited storage within classrooms, necessitates the use of additional spaces within the school to house curriculum supplies and materials.

Class sizes at Neary average between 18 to 22 students, yet the infrastructure, particularly in specialty areas like art and music, falls short of optimal educational environments. These subjects are taught in spaces not originally intended for their respective disciplines, affecting the quality of instruction and student engagement. There are no designated spaces for string lessons and instruments can be found lining the hallways. Similarly, the library's inadequate wiring and infrastructure hinder the library media specialist in offering STE infused media classes, failing to align with the educational needs of both teachers and students.

Physical education faces its own set of challenges, with two small gymnasiums that complicate the delivery of indoor PE classes.

The English Language Development Program relies on modular classrooms that, despite being over two decades old and initially intended for temporary use, are still in operation today. These modules fall short of the spatial and environmental standards required for effective learning.

Special education and related services grapple with spatial constraints, utilizing whatever spaces are available, including areas not designed for instructional purposes. Meetings and administrative tasks often take place in less-than-ideal conditions, such as unheated conference spaces, shared offices, or converted closets used as offices. Grade-level teacher meetings are confined to the limited space of available classrooms.

The electrical infrastructure across Neary is antiquated, with a scarcity of outlets hampering the use of modern technological tools, thereby impacting teaching and learning.

Culinary services are compromised by an inoperative kitchen, including inadequate refrigeration and cooking appliances, requiring the P. Brent Trottier Middle School to function as a satellite kitchen, with meals being transported to Neary.

Lastly, parent pickup and drop-off is currently situated in the main parking lot and presents issues for pedestrian safety.

The District-run Southborough Extended Day Program functions as a before and after-school program for Southborough students. Currently, there is no office space for the program nor designated storage. The extended day educators use a partitioned portion of the faculty lunch room for storage and other make-shift spaces.

In the current grade configuration, school transitions demand significant efforts from the dedicated teachers and staff at Finn, Woodward, and Neary. They invest considerable time and energy in welcoming new families and ensuring a smooth progression for outgoing students. Since each elementary school is a two-year span, grade levels move quickly from entry to exit in the transition process. The process, starting as early as January, involves extensive inter-school meetings aimed at fostering a seamless transition, reflecting the commitment of District educators to student welfare.

However, this essential transitional phase also brings to light certain challenges that impact the efficiency of these endeavors. The different start and end times between schools complicate collaboration, making it difficult to synchronize efforts and share resources. This scheduling discrepancy not only hinders staff coordination but also affects vertical alignment meetings, which are crucial for maintaining continuity in educational objectives and strategies across grades.

For many students and their families, these transitions, although well-intentioned, can result in anxiety and stress. Despite the efforts to ease these shifts, the varied experiences of students indicate that transitions are still emotionally and educationally challenging.

Parents and guardians, especially those with children across all three elementary levels, often express concerns regarding the logistical difficulties posed by disparate schedules, which complicate daily routines such as drop-offs and pickups.

In response to these challenges, it is essential to explore strategies that can streamline the transition process and enhance collaboration between the schools involved. This may include aligning school schedules to facilitate easier transitions for families and enabling more frequent and effective vertical alignment meetings. By doing so, we can minimize the disruption to students' educational experiences and alleviate the concerns of their families.

Improving the transition experience in The Southborough Public Schools is not just about logistics and scheduling; it is about creating a cohesive, supportive environment that nurtures student growth and reduces anxiety. Through improved communication, collaboration, and coordination, we can ensure that every student feels prepared, supported, and confident as they progress through their elementary school journey.

Proposed:
Design Alternative 1: Grades 4 and 5

School	Grade Span	Alt. 1 Enrollment
Mary E. Finn Elementary School	PreK-1	260
Albert S. Woodward Memorial Elementary School	2-3	248
Margaret A. Neary Elementary School	4-5	305
P. Brent Trottier Middle School	6-8	409

The vision for Margaret A. Neary Elementary School encompasses a redesign to foster an educational environment where every space is purposefully crafted to support and enhance the learning journey.

There is a strong desire within our community for the construction of a school that preserves a close-knit atmosphere. This vision includes the implementation of learning neighborhoods. Such a structural and pedagogical arrangement supports a sense of community even in configurations with multiple grade levels. By embracing this model, we aim to enhance educational experiences in a way that is both innovative and deeply aligned with the values of the Southborough community. More details of the composition of the learning neighborhood follows.

Classroom design would prioritize flexibility, accommodating diverse groupings of students to support differentiated instruction and collaborative learning projects. Modern infrastructure would be a given, with classrooms outfitted to seamlessly incorporate technology into daily learning, ensuring that students are prepared for the digital age. Furthermore, small group rooms would be located between general education classrooms in each learning neighborhood, to support collaborative group work in break-out spaces and provision of specially designed instruction, academic intervention or extension lessons in close proximity to the classroom. Each learning neighborhood would include a learning commons that would serve as breakout space for differentiated learning science, technology, engineering, and media lessons and as a gathering space for larger groups of students and teachers. In the learning commons, flexible furniture and appropriate technology would support these goals.

Central to this vision is a library transformed into a modern media center, suited for fostering 21st-century media literacy skills. This space would become the heart of the school, a hub for innovation, learning, and discovery. This space would be staffed by a library media specialist, both current members of the faculty. The art room would also be located adjacent to the media center and would be fully outfitted for technology infused art and digital literacy projects not only allowing for a STE inquiry focus but also providing for future flexibility in how spaces are used as educational demands and goals evolve. The art room would also be designed to meet the specific needs of the discipline with sufficient storage and space for creative endeavors.

In this design, music classrooms would be specifically planned to cater to their unique instructional needs, equipped with sufficient storage and spacious areas for students to freely explore. The gymnasium would be expansive, accommodating a comprehensive wellness program that nurtures students' physical education (PE), health education, and social emotional development. The gym would have a smaller space that can accommodate adaptive PE as well as yoga and dance.

Special education classrooms would be thoughtfully located in learning neighborhoods adjacent to general education classrooms, promoting inclusivity and allowing for a fluid transition between small-group instruction and mainstream classroom activities. These special education classrooms would include two substantially separate programs and learning centers for students on individualized education plans that require pull-out services. Adjacent to each substantially separate classroom would be a calming room that is available to all students in the learning neighborhoods. Related service providers (OT, PT, SLP) would benefit from designated spaces that ensure privacy and proximity to classroom activities, facilitating collaboration and accessibility. The school would feature dedicated areas for special education team meetings, assessments, and ensuring the highest quality continuum of services and appropriate levels of confidentiality.

The proposed Neary School would also include designated offices for the school psychologist, team chairperson, and behavior specialist. Importantly, there would be a conference room dedicated to special education meetings.

The proposed design would also include an instructional suite to support literacy, math and English Language Development (ELD) instruction. The instructional suite would have offices for the reading and math specialists that could accommodate small group instruction or small professional planning sessions with educators. English Language Development (ELD) teachers would each have a dedicated space sufficient to function as an office and an instructional classroom space for providing Tier 1 English Language Development instruction which must be provided outside the general education classroom. However, placing this classroom in close proximity to the general education classes promotes the inclusive culture to which the community is committed. With increasing numbers of English Language Learners (ELLs) in our community, an ELD classroom would be located between every two learning neighborhoods, able to service two grade levels. By being in close proximity to the learning neighborhoods, we would achieve our goals of inclusivity.

The instructional suite would be adjacent to a teacher collaboration space for each learning neighborhood. Educators would benefit from dedicated spaces for grade-level planning, professional learning, data analysis, and professional collaboration, enhancing the quality of instruction through improved instructional practices as well as shared resources and strategies. Between learning neighborhoods, a staff lunchroom would also serve as a teacher preparation space and provide workstations for educational support professionals and itinerant employees who do not have dedicated offices or classrooms within the building.

The cafeteria would not only house a fully operational kitchen but also offer flexible and efficient dining arrangements, making meal times a more enjoyable and social experience for all students. Furthermore, the redesign of the Neary Office space would prioritize a welcoming atmosphere that underscores the importance of safety,security and confidentiality for the entire school community.

This reimagined Margaret A. Neary Elementary School would stand as a testament to the exceptional teaching and learning that occurs within its walls. Every aspect of the building's design would reflect a commitment to safety, inclusivity, wellness, and the highest standards of educational excellence, creating a nurturing and dynamic environment where students, faculty, and staff can thrive.

Design Alternative 2: Grades 3-5 at a Consolidated Margaret A. Neary Elementary School and Grade 2 at Woodward Elementary School

School	Grade Span	Alt. 2 Enrollment
Mary E. Finn Elementary School	PreK-1	260

Albert S. Woodward Memorial Elementary School	2	124
Margaret A. Neary Elementary School	3-5	429
P. Brent Trottier Middle School	6-8	409

*The proposed Neary school Design Alternative 2 matches the description for Design Alternative 1 scaled to accommodate three grade levels.

Reconfiguring the grade levels to encompass grades 3-5 at Margaret A. Neary Elementary School presents an opportunity to significantly enhance the educational journey for students. This adjustment promises a multitude of benefits stemming from a more stable and extended period at a single institution. Over the course of three years, students and their families have the opportunity to forge deeper and more meaningful relationships with faculty and staff, fostering a sense of belonging and community that is essential for a supportive learning environment.

This extended tenure at Neary would facilitate unparalleled collaboration among educators across the third, fourth, and fifth grades. Such collaboration is crucial for creating a cohesive and aligned educational experience, enabling teachers to build upon each other's work, share insights, and develop strategies that address the needs of all students more effectively. In turn, this unified approach can significantly enhance the consistency and quality of instruction that students receive.

Furthermore, a three-year span at Neary would allow for a more seamless continuum of services, particularly in areas such as special education. This stability is key for students requiring additional support, as it ensures they have sustained access to familiar resources and personnel dedicated to their success, minimizing disruptions and maximizing the effectiveness of individualized education programs.

The benefits of this grade-level configuration extend beyond the classroom. Neary educators, families and students have an additional year at the Neary school to build relationships and focus on teaching and learning.
A three-year grade configuration fosters greater curricular coherence. With educators working closely within the same school, there is a greater opportunity to align curricula, ensuring that learning objectives are met sequentially and systematically. This alignment supports a more integrated and comprehensive approach to education, laying a strong foundation for student learning and achievement.

With this proposed reconfiguration, students and families would still experience two school transitions during their time, once from grade 1 to 2 and another from grade 2 to 3. Students and families would experience the Albert S. Woodward Memorial Elementary School for one year as it would house Grade 2.

Design Alternative 3: Grades 2-5 at a Consolidated Margaret A. Neary Elementary School and Woodward Elementary School

Proposed:

School	Grade Span	Alt 3 Enrollment
Mary E. Finn Elementary School	0	0
Albert S. Woodward Memorial Elementary School	K-1	260
Margaret A. Neary Elementary School	2-5	610
P. Brent Trottier Middle School	6-8	409

*The proposed Neary school Design Alternative 3 matches the description for Design Alternative 1 scaled to accommodate four grade levels.

Reconfiguring the grade levels to encompass grades two-five at Margaret A. Neary Elementary School presents an opportunity to significantly enhance the educational journey for students. The benefits include an extended period at a single school and the ability to maximize resources at the Neary School. Over the course of four years, students and their families have the opportunity to forge deeper and more meaningful relationships with faculty and staff, fostering a sense of belonging and community that is essential for a supportive learning environment.

In this configuration, collaboration among educators would span across second, third, fourth, and fifth grades. Such collaboration is crucial for crafting a coherent and aligned educational experience, enabling teachers to build upon each other's work, share insights, and develop strategies that address the needs of all students more effectively. This is true in the arts, music, physical education, library media, and health classes, and all other academic subjects. There are also increased opportunities for sustained, embedded professional learning and collaboration. This alignment supports a more integrated and comprehensive approach to education, laying a strong foundation for student learning and achievement.

Furthermore, a four-year span at Neary would allow for a seamless continuum of services, particularly in areas such as special education and English Language Development. This stability is key for students requiring specially designed instruction, as it ensures they have access to familiar resources and personnel dedicated to their success, minimizing disruptions and maximizing the effectiveness of individualized education programs. Additionally, this configuration allows for cross-grade level groupings to support students with intensive special needs and for students to have more appropriate cohorts of peers with whom they work.

The benefits of this grade-level configuration extend beyond the classroom. In this configuration, students would transition once during their elementary school years. As a result, the time investment for transitioning students can be shifted to a focus on teaching and learning.

In summary, transitioning to a grades two-five configuration at Margaret A. Neary Elementary School offers a strategic approach to enriching the educational experience. It also achieves important goals of maximizing collaboration, achieving curriculum coherence, and reducing school transitions by one.

SCHOOL COMMITTEE CLASS SIZE POLICY

Current

The Public Schools of Southborough's *Class Size Policy* sets forth guidelines for determining class sizes for core courses in grades K-8, grounded in the school district's Core Values, Mission Statement, and Budget Priorities as established by the School Committee. It takes into account several criteria when deciding on class sizes, including class composition (which encompasses academics, behaviors, emotional support, language needs, and social aspects), class enrollments, educational philosophy, facility and financial constraints, and legal mandates.

The School Committee has recommended desirable class size ranges that vary by grade level: 16-20 students for grades K-2, 16-22 students for grades 3-5, and 18-22 students for grades 6-8, aiming to optimize the learning environment and educational outcomes.

The process for implementing these desirable class size ranges involves a yearly assessment during the budgetary process, where each school's principal, in collaboration with onsite staff, proposes staffing needs to the Superintendent in alignment with the Class Size Policy. Should class sizes exceed these desirable ranges due to various constraints or changes in student numbers, a thorough review process is initiated. This involves gathering input from teachers and administrators to make informed decisions on how to best support the affected classes, possibly including recommendations for additional resources or support. Moreover, should unforeseen conditions arise during the school year that impact the policy's implementation, principals are tasked with developing action plans, in consultation with teaching staff, to address these challenges, thereby ensuring that class sizes remain conducive to effective teaching and learning.

Proposed
Regardless of the preferred option, there is not a planned change to the District's Class Size Policy. The District is committed to fostering an inclusive educational setting, as emphasized in its Class Size Policy. Adhering to the policy is essential to accommodate the varied learning profiles present within each classroom, enabling educators to effectively engage and educate every student. Recognizing the legal and ethical mandate for placing students in the least restrictive environment possible, our classrooms have become increasingly diverse. This diversity underscores the importance of smaller class sizes, which are pivotal in allowing teachers to craft and deliver lessons that cater to the unique needs of each student, thereby maximizing their potential. The community is committed to maintaining small class sizes so we will design to remain consistent with the District's policy language, 16-20 students for grades K-2, 16-22 students for grades 3-5, and 18-22 students for grades 6-8.

SCHOOL SCHEDULING METHODS

Current
The process of crafting elementary school schedules is a thoughtful and dynamic exercise, undertaken annually with a commitment to continuous improvement and alignment with the District's educational priorities and District time on learning guidelines. District administrators and school leaders convene in collaborative sessions to ensure that the scheduling framework not only reflects the overarching goals and guiding principles of the District's educational mission but also optimizes the learning experience for every student. This partnership extends to include a dedicated committee of teachers, allowing for a broad spectrum of insights and expertise to guide decision-making, ensuring that the schedules are crafted with a keen awareness of both student needs and educational standards.

Elementary Time on Learning Guidelines

Content Area (K-2)	Minutes each Day (Minimum)	Notes
ELA (Reading and Writing)	120	*Integrating Science and History/Social Science, Digital Literacy and Computer Science (DLCS), Social Emotional Learning (SEL)*
Mathematics	75	
Science or History/Social Science	45 mins, 3 days per week	*Integrating Reading and Writing, DLCS, SEL*
Specials/World Language	45 - 60	
Lunch/Recess	Up to 50	
Snack/ Stretch	Up to 10	

Morning Meeting	30	
	375	

Content Area (Gr. 3-5)	Minutes Per Day (Minimum)	Notes
ELA (Reading and Writing)	120	*Integrating Science and History/Social Science, Digital Literacy and Computer Science (DLCS), Social Emotional Learning (SEL)*
Mathematics	75	
Science or History/Social Science	45 mins, 3 days per week	*Integrating Reading and Writing, DLCS, SEL*
Specials/ World Language	45 - 60	
Lunch/Recess	Up to 50	
Snack/ Stretch	Up to 10	
Morning Meeting	30	
	375	

As the student experience is designed, it is done with the understanding of the pace of learning, the importance of balance, and the necessity of providing an environment conducive to social emotional and academic growth. The structured student day is designed to maximize engagement, foster educational exploration, and support the well-being of every learner.

In addition, scheduling endeavors to maximize time for grade-level educators' common planning, data teams, and cross-grade level educator collaboration. Currently, with the varying start and end times, cross-grade collaboration between schools happens infrequently.

The scheduling process within each school adopts a collaborative team-based methodology, emphasizing the strategic timing of grade-level specials to coincide across each grade level. This alignment is designed to provide teachers the opportunity for weekly common planning time, facilitating cross-curricular planning initiatives and enabling a consistent and collective review of data. The approach enhances the coordination and quality of instruction and creates a more unified and integrated educational experience for students. Furthermore, this scheduling strategy benefits service providers by creating dedicated time slots to engage with specific grade levels for specific disciplines as required, ensuring that the needs of all students are met more efficiently and effectively. Through this approach to scheduling, schools are able to optimize instructional support and foster a more cohesive learning environment.

For the successful inclusion of subjects like art, music, physical education, library, and world language classes within the new scheduling framework, the specific design alternative chosen will directly influence the number of dedicated teaching spaces required, as noted in each of the subsections below. This provision is essential to support the scheduling of Specials, guaranteeing that each discipline benefits from an environment designed to meet its distinct instructional demands. The decision on the precise number of teaching stations necessary will be based on the design alternative selected, showcasing the District's commitment to offering a balanced and enriched educational experience for students through thoughtfully designed and equipped spaces.

NEARY MASTER SCHEDULE

	Monday	Tuesday	Wednesday	Thursday	Friday
8:50- 9:35	Art- Dolan PE- Schwepp Music- Soldo Lib/ IT- Finneran	Art - Grenier PE- Turieo Lib/ IT - Wallack	Art- Theve PE- Finneran Lib.IT - Ahearn Music- Collins	Music- Grenier Lib/IT - Turieo PE - Wallack	Music - Ahearn PE - Finneran Lib/ IT - Theve
9:35 - 10:20	Art- Schwepp PE - Dolan Music- Finneran Lib/IT - Soldo	PLC Grade 5/ SEL + Stretch Led by Grade4	Lib/IT- Head Music- Dolan PE- Schwepp	PLC Grade 4 / SEL + Stretch Led by Grade5	Lib/ IT - Head Music - Schwepp PE- Dolan
10:20- 10:30	Stretch		Stretch		Stretch
10:30- 11:15	Art- Wallack Lib/ IT - Tureio	Art- Soldo PE- Flannigan Lib/IT - Schwepp	Lib/IT - Gernier PE - Fisher Art - Turieo Music - Wallack	Music- Head Lib/IT - Schwepp PE Collins	Lib/ IT - Fisher Music- Turieo PE - Wallack
11:15- 12:00		Art- Finneran Lib/ IT- Theve PE- Ahearn	Lib/ IT - Fisher PE - Grenier Art -Gardula	Music- Gardula PE- Finnegan Lib/ IT - Soldo	Lib/ IT - Grenier
12:00- 12:45 (Grade 4 lunch)		Fourth Grade Art Studio	Lib/ IT - Wallack PE- Turieo		PE- Soldo Lib/ IT - Finnegan
12:45 - 1:30 (Grade 5 lunch)	Art- Fisher PE- Grenier Lib/ IT - Gardula	PE Fisher	Fifth Grade Art Studio	Music - Theve Lib/ IT- Finneran PE - Gardula	
1:30 - 2:15	Lib/IT- Finneran PE Theve Art - Ahern	PE Head Lib/ IT - Dolan	Art- Finnegan PE -Soldo	Music - Finneran PE - Theve Lib/ IT - Ahearn	Lib/ IT - Gardula PE Collins
2:15 - 3:00	PE- Head Lib/ IT - Collins	Art - Head PE- Gardula Lib/iT - Collins	Art- Collins	Music Fisher PE- Ahearn Lib/ IT -- Dolan	Band / Orchestra
3:00 -					

3:10					

- Instrumental Lessons are scheduled throughout the day.

Woodward Master Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
8:55-9:25		Gr 2 Enrichment	Gr 3 Enrichment		9:00- CARE
9:30 - 10:15	Art-McLean Lib Media- Farrar PE-Serra	Art- Farrar Library Media- Kelleher PE McLean	Art-Serra Lib Media - McLean PE Farrar	Lib Media- Serra Music: McLean PE: Farrar	Lib Media: Coyle PE: McLean Music: Farrar
10:15-11:00	Art-Kelleher Lib Media - Farrar PE Coyle Strings- Lehane	Art- Coyle Lib Media - Kelleher PE- Serra Strings McLean/Lehane	Lib Media- McLean PE Kelleher Music Coyle	Lib Media- Serra Music: Kelleher PE: Coyle	Lib Media: Coyle PE: Kelleher Music: Serra
11:45	Art-Lehane PE-Robison Music:	Art-Robison Lib Media- Lehane PE- Henebury	Lib media- Henebury PE Robison Music- Lehane	Lib Media - Robison PE: Lehane Music:	Music: Robison PE - Lehane
11:45 - 12:30	Art-Henebury Strings: Kelly	Lib Media- Lehane Strings: Kelly	Lib media - Henebury	Music - Henebury	PE- Henebury Lib Media- Kelly
Grade 2 lunch 11:45					
Grade 3 Lunch 12:30					
12:45 - 1:30	Lib Media: Black PE Guccione	Art: Black	Music: Black PE: Guccione	PE: Black Lib Media: Robison	Music: Guccione
1:30 - 2:15	Art: Duchane Lib Media: Black PE: Foy Strings: McLean	Art-Foy Lib Media - Duchane Strings:	Lib Media- Foy PE: Duchane Strings: Henebury	Lib Media - Guccione Music Duchane PE: Foy	Lib media: Kelly PE: Black Music: Foy

		Henebury			
2:15 - 3:00	Art: Kelly Strings: Kelleher	Art- Guccione Lib Media- Duchane Music Kelly	Lib media: Foy PE: Kelly Strings: Kelleher	PE: Kelly Lib Media: Guccione Strings: Duchane	PE: Duchane
3:00 - 3:10					

The current scheduling model for supporting students with special needs at Neary and Woodward involves collaboration among classroom teachers and special educators, and the plans for the new Neary School are designed to continue this approach. Emphasizing an inclusive philosophy, the majority of academic support and interventions are scheduled to be integrated within the classroom setting to ensure all students' needs are met in a least restrictive environment. For students requiring a quieter space for concentration or multilingual learners in need of specialized language instruction, additional support outside the classroom is scheduled. Consequently, the new Neary design would include smaller, strategically placed learning spaces within each learning neighborhood for focused and targeted instruction. These spaces would be intentionally located near general education classrooms to optimize learning time for all students, and best support students' schedules.

Additionally, the District acknowledges that the educational landscape of tomorrow may diverge significantly from today's practices. Therefore, it is imperative to prioritize a facility design for forthcoming schools that can adapt to these evolving requirements. An illustrative focus lies in fostering an environment conducive to nurturing students' capacities in digital literacy, communication, and collaboration. Consequently, the District commits to revisiting scheduling procedures and time allocations, ensuring ample opportunities for students to engage in learning in dynamic, adaptable spaces. These spaces will empower students to intricately plan, execute, and articulate their learning experiences through flexible configurations tailored to their needs.

Proposed
There are no proposed changes to the Time on Learning expectations or the approach to student and educator schedules. However, the District continues to support educators in collaborating across disciplines for integration across subjects. This is a crucial component of the District's approach to scheduling and professional planning in order to meet the time on learning guidelines and addressing the full array of standards while also provided a well-rounded experience that includes world language and the fine and performing arts.

Design Alternatives 2 and 3 would impact the start and end time of the school day.

Design Alternative 1: Grades 4-5 at Margaret A. Neary Elementary Elementary School

School	Start Time	School End Time
Finn	9:10 AM	3:25 PM
Woodward	8:55 AM	3:10 PM
Neary	8:45 AM	3:00 PM

Design Alternative 2: Grades 3-5 at a Consolidated Margaret A. Neary Elementary School

School	Start Time	School End Time
Finn	9:10 AM	3:25 PM
Woodward	8:55 AM	3:10 PM
Neary	8:45 AM	3:00 PM

Design Alternative 3: Grades 2-5 at a Consolidated Margaret A. Neary Elementary School

School	Start Time	School End Time
Woodward (PK-1)	9:10 AM	3:25 PM
Neary (2-5)	8:45 AM	3:00 PM

TEACHING AND LEARNING

Administrative and Academic Organization

Current

At the Margaret A. Neary Elementary School, educators are on grade-level teams, each composed of six to eight teachers responsible for teaching core subjects such as math, science, social studies, and English Language Arts (ELA). However, the building does not support logical groupings of grade level classrooms by teams. The school operates under the guidance of a full-time principal who oversees both the teaching and the academic support staff.

Proposed

	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Learning Neighborhoods	0	2	3	4
Administrative Structure	1 principal	1 principal	1 principal 1 AP	1 principal 1 AP

A redesign of the Margaret A. Neary Elementary School would include the introduction of learning neighborhoods to support interconnected learning communities within the school. Each learning neighborhood would have a learning commons equipped with technology and flexible furniture to support small group breakout sessions, collaborative projects, and independent work and learning experiences related to science, technology and engineering. In addition, small group rooms will be located between general education classrooms to provide a quiet, distraction-free setting for targeted instruction for small groups, collaboration among peers or pull-out services close to the general education setting. Learning centers and substantially separate special education rooms would also be located in the learning neighborhoods to promote a more inclusive environment. These learning neighborhoods would support collaboration, relationship building, and flexible grouping across classrooms. This strategy is aimed at breaking down the barriers presented by the traditional school layout, paving the way for a more inclusive, dynamic, and collaborative educational setting that enriches the learning experience for all students.

In Design Alternatives 2 and 3, the principal would be supported by an assistant principal in leading the school.

<u>Curriculum and Instructional Practices</u>
Overview, Mathematics, English Language Arts/Literacy, Social Studies, Science, Technology, and Engineering, World Languages, Digital Literacy, Computer Science and Instructional Technology, Library Media Science, Visual Arts, Performing Arts, Physical Education and Wellness

Current
The District collaborates closely with educators to design lessons, assessments, and learning environments grounded in the principles of Universal Design for Learning (UDL), ensuring accessibility for all students. This comprehensive framework focuses on setting rigorous goals

for all students and designing learning experiences with flexible means for learners to achieve these goals. Educators plan in ways that reduce students' barriers to engaging in learning, recognizing and comprehending knowledge, and demonstrating their understanding and skills.

The existing infrastructure at Neary School, however, limits the flexibility of teaching methods due to its traditional design, which does not accommodate modern educational models emphasizing hands-on projects, group work, and student-driven learning choices.

Proposed
The District will continue to support educators in using the UDL framework to provide inclusive and engaging learning experiences that help students develop into expert learners who exercise agency and increase independence over time. In pursuit of full accessibility, classrooms should be designed with voice amplification systems to support all learners.

In addition, the District is continuing to support the adoption of new high-quality instructional materials in ELA, a multi-year implementation process that involves ongoing professional learning, and preparing to adopt new instructional materials in mathematics in 2025. In addition, the District is planning to update instructional methods in the area of science to align with the state frameworks and a national focus on phenomenon-based science inquiry. The design implications of these curriculum and instruction foci are detailed by discipline below.

Mathematics:

Current
Elementary mathematics education emphasizes providing students with enriching experiences in grade-level math, connecting content standards to mathematical practices. The District's approach to elementary math instruction, delivered by grade-level teachers in general education classrooms for 75 minutes daily, is designed to be inviting and engaging. Students are actively encouraged to engage in mathematical discourse with both their teachers and peers, fostering collaboration, problem-solving skills, and mutual learning. Teachers cultivate an environment that nurtures student confidence and independence, enabling them to become adept problem-solvers who can work collaboratively. Educators work with students as a whole class, in small groups and provide opportunities for individual work time. On a daily basis, students interact with a supplemental, adaptive technology on a Chromebook that supports their individual journey to develop conceptual understanding and procedural fluency with math concepts while engaging in productive struggle with challenging puzzles. It is currently challenging to accommodate the different configurations called for by the District's math program in the Neary classrooms.

Proposed
The requirements of an elementary mathematics classroom are diverse, with a wide array of activities occurring throughout the day, week, and month. An adaptable space that provides flexibility for mathematics learning is essential. This includes a large gathering area where students can congregate without desks or chairs to engage in classroom routines like counting

exercises, number talks, and strategy sharing. Ideally, this area should be situated near a screen for projecting student work, problems to consider, videos, or other visuals to facilitate mathematical discussions.

There should also be ample space for teachers to work with small groups of students, while other groups engage in activities throughout the room. These groups may utilize manipulatives and vertical whiteboards for problem-solving. Technology should be readily available for explaining concepts, practicing skills, or displaying student work. The classroom space should also support independent work which might involve students working at individual work stations, collaborating at tables, on rugs or floor spaces, standing at counters or working in the learning commons with peers or another educator, such as a math specialist or an educational support professional (ESP) supporting intervention or extension of learning. Some students will choose a distraction-free space in the classroom or a small group room to support their ability to access the learning with a math specialist, a special educator, or an ESP.

English Language Arts/Literacy

Current

Elementary educators use the comprehensive Great Minds' *Wit & Wisdom* core curriculum to deliver ELA instruction. This curriculum provides a robust framework for teaching literacy skills and engaging students in meaningful reading, writing, and oral language experiences.

To ensure a strong foundation in literacy, teachers integrate various instructional approaches and resources. Foundational skills development is supported by programs such as *Project Read Phonics*, *Haggerty Phonemic Awareness*, and *Phonics and Spelling Through Phoneme-Grapheme Mapping*. These resources offer systematic and explicit instruction to help students master essential phonics and spelling concepts.

In the delivery of literacy instruction, teachers employ a diverse range of strategies to cater to the needs of all learners. Whole-class instruction allows for the exploration of complex texts and the introduction of new concepts, fostering shared experiences and discussions among students. Small group activities provide opportunities for targeted instruction and differentiated support, allowing educators to address individual learning needs more effectively. Additionally, independent work time encourages students to apply their skills and creativity in reading and writing tasks, promoting autonomy and self-expression.

Teachers may lead whole-class lessons with students seated at desks and chairs, providing structured guidance and direct instruction. Alternatively, teachers may facilitate small group discussions or activities with students gathered on the floor in circles or groups, promoting collaboration and peer interaction. This flexible approach to classroom organization enables educators to adapt their teaching methods to suit the specific objectives of each lesson and the learning preferences of their students.

Overall, the implementation of the *Wit & Wisdom* curriculum alongside targeted foundational skills instruction creates a rich and engaging learning environment for students, fostering their development as proficient readers, writers, and communicators.

Proposed
The District will continue to support educators in implementing the *Wit & Wisdom* curriculum as well as the foundational skills programs currently in use. The District will also seek to create more interdisciplinary lessons where literacy themes overlap with science and social studies topics.

Literacy instruction requires a classroom that is designed to foster a productive learning environment, where teachers serve as facilitators and students develop the essential skills needed for success in secondary school and ultimately the workplace. In addition to traditional classroom spaces, small breakout rooms adjacent to general education classrooms will support differentiation of learning with support from reading specialists, special educators and ESPs. This type of targeted instruction or peer collaboration will also happen in the learning commons and may draw students from multiple general education classrooms.

Flexibility within the classroom layout is paramount to enhance student productivity and foster collaboration and communication. Key design elements include:

- A literacy-rich environment characterized by a diverse array of books spanning various levels and genres. Bookshelves should be accessible at an age-appropriate height, creating an inviting atmosphere conducive to reading.
- Ample wall space for displaying anchor charts, comfortable seating arrangements, abundant natural light, and inviting baskets filled with high-quality literature.
- Provision of audiobooks and headphones to accommodate diverse learning preferences and abilities.
- Access to books in multiple languages to reflect the cultural diversity of the classroom, ensuring that all students feel represented in the reading materials.
- Inclusion of titles that showcase diverse cultures and neurodiversity, allowing children to see themselves reflected in the stories they read.
- Dedicated space for dramatic interpretations of literature and drama, featuring a stage, microphone, recording technology, and seating for an audience. Dramatization of literature may take place in the classroom or in the learning commons for larger audiences or cross-class groups.
- An adaptable classroom layout that can be easily reconfigured to accommodate different learning activities and group dynamics, facilitating personalized and collaborative learning experiences.

The classroom will incorporate diverse seating options to promote collaboration when students work in small groups or pairs. This includes high tables, low tables, round and square tables, as well as flexible seating choices such as large pillows, couches, bean bags, stools, and tables.

Other essential features encompass a designated space for mini-lessons, read-aloud, and group discussions, complete with a rug and comfortable seating. A small teacher work area with a kidney-shaped table serves multiple purposes for collaborating with students and having supplies readily available. Additionally, reading, writing, and general materials are stored in an easily accessible area, along with access to technology to support instruction and research purposes.

Social Studies

Current

The social studies curriculum is designed to encompass civic knowledge, dispositions, and skills, reflecting the diverse range of disciplinary skills. The curriculum is aligned with Content Standards and Literacy Standards for history and social science, and emphasizes seven practices essential for inquiry and research. The District curriculum strives to empower students to navigate democracy's potential and challenges effectively. Moreover, it prepares them to engage in societies with demographic and cultural diversity. Teachers have developed interdisciplinary units that integrate literacy and social studies standards. Students are developing their reading, writing, listening and speaking, research skills while learning history content. Students are also often engaged with primary sources which may include texts, art, and photographs. When students are working in small groups on projects you will often see some students in the hallways working on the floor or at makeshift work stations.

In addition, teachers currently seek opportunities to integrate Digital Literacy and Computer Science Standards into their science curriculum units.

Proposed

Central to the new design is the provisioning of spaces that are rich with information, imagery, and artifacts relevant to social studies concepts. This approach aims to immerse students in environments where learning materials deepen their understanding and connection to the subject matter. This will be accomplished both in the classroom and in the media center.

The ideal classroom layout emphasizes flexibility and adaptability, incorporating a variety of work spaces and seating arrangements to facilitate student collaboration. High tables, low tables, round, and square tables are considered essential to accommodate diverse learning and teaching styles, promoting active engagement and interaction among students.

A dedicated area within the classroom will serve as a resource hub, allowing students easy access to materials essential for exploration and learning. The strategic use of wall space for displaying timelines, maps, and charts is highlighted as a method to integrate social studies into daily classroom dialogues, fostering cross-curricular connections. Bookshelves, thoughtfully placed at student-friendly heights, will house a broad range of resources, from historical documents to multimedia, catering to varied reading levels and interests.

Furthermore, the integration of technology is essential to the history curriculum. Accessible technology will not only support instruction and enhance digital literacy but also open doors for students to engage in virtual explorations, craft their timelines, and pursue social studies-related interests in innovative ways.

Teachers will continue to provide opportunities for interdisciplinary study and project based learning. This will continue to include opportunities for the inclusion of Digital Literacy and Computer Science Standards in the social studies lessons. At times this involves robots and other computing devices that are shared across classrooms and use of the learning commons will be a key option to support this. Options to break out into small group rooms between general education classrooms or working in the learning commons where flexible furniture and appropriate technology will support effective learning. The learning commons and breakout rooms will also allow teachers to flexible group students across general education classrooms.

In summary, The Public Schools of Southborough's vision for social studies classrooms marries traditional learning tools with modern technology and flexible design principles.

Science, Technology, and Engineering

Current

Elementary teachers foster engagement in science and technology/engineering (STE) education among their students using Carolina Science curriculum *Engineering is Elementary* (EIE) units developed by the Boston Museum of Science. These units provide STE curriculum that encompasses hands-on activities, investigations, and design challenges, which ignite students' curiosity and cultivate their analytical skills for scientific inquiry. They actively promote student involvement in learning, aiming to instill a growth mindset that empowers students to take ownership of their learning and excel in STE subjects.

In their teaching, elementary teachers prioritize relevance, ensuring that STE education is meaningful and applicable to students' lives. They emphasize the practical application of knowledge and skills to real-world situations, equipping students with the analytical thinking and problem-solving abilities necessary for success in today's world. Additionally, they strive to support high levels of achievement for all students, including females, racially and ethnically diverse populations and those with varied learning needs, to create an inclusive learning environment. In addition, teachers currently seek opportunities to integrate Digital Literacy and Computer Science (DLCS) standards into their science curriculum units.

Through purposeful integration of science and engineering practices with core concepts, elementary teachers ensure that students develop increasingly sophisticated skills and are equipped to apply scientific reasoning effectively across various contexts and situations, laying a strong foundation for their future success.

Currently, general education teachers make do with a typical general education classroom as the space where students conduct science and engineering experiments. The instructional technology specialist teaches specific DLCS skills in the general education classroom and brings materials with her for each lesson, moving around the building. In addition, the instructional technology specialist and library media specialist teach DLCS enriched lessons in the library which is not currently properly provisioned for these high-tech activities.

Proposed

Space Summary	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Science Technology and Engineering (STE) Learning Lab	0	0	0	0

The new design would provide adequate space to facilitate experiments and inquiry work within the learning commons. .
In addition, teachers will continue to integrate Digital Literacy and Computer Science (DLCS) Standards in many disciplines which may involve robots and other computing devices that are shared across classrooms. This could take place in the classrooms, media center, and the learning commons and might involve co-teaching with the instructional technology specialist who has specialized skills in this area.. In addition, the instructional technology specialists and the library media specialist each teach some of the DLCS standards and technology skills during designated times in the schedule and would do this in the media center, Learning Commons, or general education classrooms.
Key design components for the learning commons to be used to spuport STE experiences include:

- Provision of water in multiple locations, with at least one deep/work sink to facilitate cleaning and activities such as density investigations.
- The safe availability of electricity is crucial for activities involving digital technology.
- Inclusion of large, deep cabinetry units to store STE investigations and large-scale models, along with ample counter space for project setups.
- Furniture featuring adjustable height tables on wheels and stools promoting core strength, facilitating multiple student group configurations.
- Easy access to outdoor environments and open-air meeting spaces, fostering connections with nature and real-world learning experiences.

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The learning commons in learning neighborhoods will provide many of the same design features listed below to ensure STE-related learning activities can happen anywhere including classrooms, within extended learning spaces, and in the Learnig Commons.
The District plans to integrate numerous "green building" features into the improved facility to enhance efficiency and sustainability, intending to label and identify these features as real-world applications of science, technology, and engineering for student understanding.

World Languages

Current
The Public Schools of Southborough provides students in kindergarten and grade one with Spanish classes twice a week for 30 minutes each. The Spanish program provides students the opportunity to learn about others' cultures and develop proficiency in a language other than English at a developmentally critical time. Currently, there is not a dedicated classroom and the educator teaches within each teacher's classroom. This limits the teacher's ability to create a language-rich environment for the students. Spanish classes will be added to second and third grade in 2024-2025 at 60 - 90 minutes per week and to fourth and fifth grade in 2025-2026 for 90 minutes per week.

Proposed

Space Summary	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
World Language Classroom	0	1	2	2

The new design will include a dedicated world language classroom to improve language skills through a language-rich environment that supports small group and whole group lessons as well as individual work space. The language classroom will support students learning and improving their proficiency in Spanish language and have augmented acoustics. The language classroom will have technology, books, and a variety of Spanish language resources that engage students in interactive activities, enhancing their Spanish listening, speaking, reading, and writing skills. The language classroom will be an adaptable classroom layout that can be easily reconfigured to accommodate different learning activities and dynamic group activities including art projects, singing, and dancing to learn about world cultures.

Digital Literacy, Computer Science and Instructional Technology

Current

The Public Schools of Southborough is committed to a 21st century education that is enriched by technology across disciplines. The District has a one-to-one device program that provides all students access to a Chromebook and teachers rely heavily on projection systems, document cameras and augmented acoustics in all disciplines. The Instructional Technology Specialist (ITS) assists teachers in infusing DLCS standards into lessons across disciplines.

In addition, the ITS teaches students directly in collaboration with the library media specialist and by pushing into general education classrooms because there is not a dedicated location for this instruction.

Proposed

The vision for a future Neary Elementary School assumes seamless integration of technology throughout the building. The goal is for educators and students to be able to move throughout the building and use projection systems, wifi systems and other technology systems with ease.

Further details about DLCS and technology instruction are detailed in other subjects especially the science, technology and engineering section and the Library Media Sciences section of the academic program descriptions.

Library Media Sciences

Current:
The library at Neary is a pivotal component of students' education. Students visit the library at least twice per week for a curriculum that includes traditional library standards, DLCS standards and a commitment to teaching inquiry skills. The Neary Elementary School has a traditional library which is inadequate in several respects. The space has insufficient lighting and airflow and was not designed for the infusion of digital literacy and computer science in the library curriculum. The library media specialist and the instructional technology specialist often collaborate in this space. In addition, the library is often used for meetings but does not have sufficient seating or an appropriate set-up to comfortably and effectively accommodate staff meetings. Professional development is occasionally held in the library but it is only appropriate for small group professional learning due to the configuration of the space and the limited projection system available despite having significant square footage in the library.

Proposed:
In the digital age, where information is ubiquitous and learning extends beyond traditional classroom walls, the Media Center's role within the educational landscape of The Public Schools of Southborough is pivotal. This evolution reflects the District's broader educational vision, where information literacy becomes a cornerstone, equipping students not just with the ability to gather information but also to critically assess and utilize it effectively across various domains. This approach aligns with the District's commitment to wellness and the holistic development of students, integrating digital citizenship, media literacy, and a love for lifelong learning.

The District's vision for the new school's Media Center transcends traditional boundaries, aspiring to be a dynamic hub that supports the Digital Literacy and Computer Science (DLCS) Standards alongside the AASL/MSLA frameworks. It aims to cultivate an environment where exploratory learning, critical digital literacy, and media literacy skills are not just encouraged but are integral to the student experience. The Media Center will be a hub of creativity and innovation, offering a vast, flexible, and area designed for multifunctional use. The space will also celebrate literature, fostering a lifelong love of reading through engaging read-aloud

sessions and literature-based lessons connected to the ELA, Social Studies, and Science Massachusetts State Frameworks.
To meet the needs of a diverse student population and reflect society's rich cultural diversity, the Media Center must:

- Provide a welcoming common area with access to digital devices and flexible seating, allowing students to explore, research, communicate, and collaborate effectively.
- Feature a collection of materials that mirrors a diverse society, supporting inclusive learning experiences.
- Accommodate flexible learning spaces for individual and group instruction.
- Technology will be seamlessly infused, with mobile devices distributed throughout the building to foster a community where information access, collaboration, and independent work are supported.

This envisioned Media Center will be a cornerstone for academic and personal growth.

Visual Arts Programs

Space Summary	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Art	1	1	1	1

Current
At the elementary level, students are engaged in exploring their creativity in visual arts across a diverse range of projects. These projects span various media, including drawing, painting, sculpture, ceramics, textiles, digital art, and interdisciplinary endeavors that weave together elements of STE, humanities, and performing arts. The curriculum prioritizes the development of specific artistic skills while placing a strong emphasis on cultivating lifelong learning skills such as creative problem-solving, observation, teamwork, and exploratory play. The current art room at Neary is a general education classroom that has been converted to an art room and therefore lacks storage and sufficient work space.

Proposed
To realize this educational vision, the visual arts classroom must be a dynamic space that could be used for different teaching methodologies and artistic media. Essential features of this classroom include:

- A spacious, open area with a rug for whole-class discussions and activities.
- Sizable tables with stools to support both collaborative and solo artistic endeavors.
- A suite of equipment including a whiteboard, ceiling-mounted projector, document camera, projection screen, bulletin boards, drying racks, and readily available laptops and tablets.

- Ample storage to keep art materials and student projects organized, including an art workroom with storage and a kiln.
-
- Equipped with technology resources to support inquiry and the engineering design process.
- Spaces that facilitate an integration of visual and performing arts throughout the curriculum, the school should feature a dedicated, versatile space—distinct from the cafeteria or gymnasium—for showcasing visual arts, hosting intimate performances, and presenting student projects.

Performing Arts Programs

	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Performing Arts (Music)	2	2 (Includes larger performance area)	3	3

Current
Music education is offered to all students, with classes that enrich the traditional ensemble experiences of chorus, band, and orchestra. The music curriculum offers opportunities for ensemble singing, instrument playing, physical movement, dramatic expression, music reading and writing, analytical listening, and composition.

Students engage in general music education classes once per week. In addition, students in grade three participate in weekly small group instrumental lessons. In grades four and five, many students participate in ensembles, including band, orchestra, and chorus, with instruction encompassing both large-group and small-group instrumental lessons. The band experiences include Blues Band, Beginners Band, and 5th Grade Band as well as full band rehearsals. Between band, orchestra and chorus, there is currently a music ensemble practicing every day either before or after school at Neary. This comprehensive approach not only nurtures musical skills but also enriches the students' cultural and emotional development.

Current levels of participation in music beyond general music class		
Music Activity	**Third grade (currently at Woodward)**	**Fourth and fifth grade (currently at Neary)**
Chorus		72
Instrumental lessons	67 students	38 small groups for band

		23 small groups for orchestra
Band (rehearse in various configurations)		145
Orchestra (rehearse both grades together)		65

The current music rooms at Neary have significant limitations and are in constant use throughout the school days as well as before and after school. One of the music rooms is not ADA accessible due to stairs at the entrance. In addition, there is insufficient storage and therefore musical instruments are often in hallways or the edges of general education classrooms during the school day. There is no performance area so all community music events are hosted at Trottier Middle School.

Proposed
The design would include spaces that are tailor-made for music education, featuring:

- A spacious, adaptable area that is carpeted, with ceilings higher than standard to facilitate a range of activities, including classroom learning, music practice, choral singing, performances for parents and the community, and instrumental instruction. Such a space benefits from extensive acoustic treatments to enhance sound quality and ensure a versatile environment for various musical pursuits.
- Incorporating acoustical enhancements is crucial for protecting students' hearing and enhancing the effectiveness of curriculum delivery. These features are key to creating a conducive learning environment that prioritizes student safety and educational quality.
- A designated space for instrument storage.

Wellness - Physical Education And Health

	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Physical Education (Gymnasium)	2	1	1	1
Adaptive PE/PT	0	1	1	1
Health Classroom	0	0	0	0

Current

The Public Schools of Southborough prioritize wellness, reflecting this commitment through the District's values. The Wellness Curriculum encompasses health, physical education, social emotional learning, and overall personal wellness, aiming to cultivate physical competencies and enhance fitness among students. The Public Schools of Southborough integrates health education across classroom teaching, nursing, counseling, and physical education. Collaboratively, educators and health professionals develop activities that promote physical, social and emotional health and well-being.

Physical education is a staple of the curriculum for all students from kindergarten through eighth grade. Students in grades K-5 enjoy a 45-minute session twice per week. Physical education takes place in versatile settings, including gymnasiums and outdoor areas such as fields and blacktops.

The school's playground includes play structures, a blacktop area with play lines, and fields. Recess is a dynamic outdoor time for students, utilizing fields, swings, blacktop areas, playgrounds, and nature play spaces. It's also a time for relaxation and nature observation, underscoring the District's holistic approach to wellness and outdoor learning.

Proposed
In the future design, spaces support all aspects of the Wellness Curriculum. To support physical education, the gymnasium will offer a safe environment for both students and spectators. To embody the district's dedication to wellness, the gymnasium's design should integrate specific features tailored to accommodate a wide range of activities.

- Adjustable Basketball Backboards: To cater to various age groups and skill levels, promoting inclusivity and physical development.
- Volleyball Standards: Either wall-mounted or equipped with floor sleeves to facilitate easy setup and versatility for volleyball games and practice.
- Outdoor Fitness Circuit/Stations: Encouraging holistic wellness and physical fitness through a variety of engaging outdoor activities.
- Projection system and appropriate technology to support school assemblies, professional learning and community events in the gymnasium.
- Storage for physical education materials and equipment.
- Separate storage for extended day program equipment and materials.
- Dedicated Room for Physical Therapy and Adaptive PE and Yoga: A tranquil, soundproof space for adaptive PE exercises, yoga and relaxation activities, supporting mental and physical well-being adjacent to the gymnasium.
- Dedicated space for Occupational Therapy in close proximity to the gymnasium and the Physical Therapy/adaptive PE space.

Given the gymnasium's role as a hub for after-school and weekend events, the design must include robust security measures and the ability to access this part of the building without having access to the rest of the building. These measures will manage access to the gymnasium and associated facilities, like restrooms, ensuring these areas are secure while still accessible during designated times outside of regular school hours. This thoughtful approach to design will ensure that the gymnasium is a versatile, welcoming, and safe space for the entire school and community.

ACADEMIC SUPPORT PROGRAMMING

Current
The English Language Development (ELD) teacher provides support in the general education classroom and in the "temporary" modular classroom at Neary Elementary School depending on the student's English proficiency level. Students in the early stages of learning English require Tier 1 language instruction outside the general education classroom for a prescribed number of hours according to the language acquisition regulations. The location of the current ELD classroom is isolated as compared to the general education classrooms and does not contribute to a feeling of inclusivity.

The reading specialist who provides general education support to students in literacy instruction is currently using a general education classroom that also serves as a make-shift science laboratory and is at the farthest end of the building away from general education classrooms. The reading specialist often works with students in hallways when administering assessments or providing intervention supports in order to remain in closer proximity to the general education classrooms.

Proposed

	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
English Language Development (ELD) Space	0	1	2	2
Reading Specialist Office	0	1	2	2
Math Specialist Office	0	1	2	2

In the proposed design for Neary Elementary School, an instructional suite would be strategically located in close proximity to the learning neighborhoods to provide general education academic supports to students through push-in instruction or through use of the small group rooms situated in the learning neighborhoods. In addition, the instructional suite would be adjacent to the teacher collaboration space since these specially trained educators often meet with grade level teams to support data analysis and curriculum and instructional planning.

English Language Development

With students who are English Language Learners (ELLs) making up 31% of the student body in The Public Schools of Southborough, the provision of designated classroom spaces for small group instruction in the instructional suite will be crucial for delivering an inclusive, effective, explicit, systematic, and sustained systematic English Language Development (ELD) curriculum. This instructional space would be in constant use throughout the school day based on current and projected enrollment, not only by the English Language Development (ELD) teachers, but also potentially by ELL tutors providing targeted small group lessons. ELD teachers would also provide language instruction in small group rooms in learning neighborhoods and in the general education classrooms when appropriate for the students' needs. Additionally, students who are ELLs benefit from extended learning opportunities during the summer and this space would be pivotal for this offering as well.

Reading Specialist

Reading specialists will continue to provide targeted general education support to students and professional learning guidance to educators. A reading specialist office that can also serve as a small group learning space will support this educator and reading tutors in supporting students who often need a distraction-free environment and frequent progress monitoring assessments. In addition, this space will serve as a place for professional collaboration and data analysis with small groups of educators. The reading specialists meet frequently with grade-level colleagues to support their implementation of the Tier 1 and Tier 2 instruction and also collaboratively analyze data so that they can maintain a dynamic approach to the multi-tiered supports.

Mathematics Specialist

The District plans to expand support for students and educators in the area of mathematics by hiring a mathematics specialist in 2025-2026 when the District adopts new high-quality instructional materials. The math specialist will support small groups of students with intervention or extension in the general education classroom, in small breakout rooms, in the math specialist's office. In addition, the math specialist will meet with colleagues to provide professional learning guidance and instructional coaching. This support will be especially important as the District takes on the implementation of new high-quality instructional materials. Again, proximity of the instructional suite to learning neighborhoods will be important to support an inclusive culture and the proximity to the teacher collaboration space will support professional learning goals.

STUDENT SUPPORT SERVICES PROGRAMMING

Current

Special Education services within The Public Schools of Southborough are designed to meet the individualized academic, social, and emotional needs of students who require specially designed instruction or related services to effectively access the educational curriculum. These services are delivered through a collaborative effort between special education and general education teachers, employing evidence-based instructional strategies.

Currently, 17% of the student body requires an Individual Education Program (IEP). The array of special education services are delivered in the least restrictive environment which ranges from full inclusion to substantially separate classrooms, demonstrating a flexible and responsive approach to each student's needs.

At the elementary level, the District embraces various teaching models-including whole group instruction, small group instruction, and one-on-one teaching to support student needs. The curriculum is delivered through specialized programs, pull-out services, and inclusion services, all designed to provide both academic and social-emotional support tailored to student needs.

Currently, some students are in need of the Communication, Access, Socialization, Transition, Learning, and Emotional Regulation (CASTLE) Program. The CASTLE Program provides intensive, specialized instruction throughout the school day to assist students with unique and significant learning challenges. This program is designed to meet the individual needs of each student, utilizing the principles and procedures of Applied Behavior Analysis (ABA) to guide its instructional strategies. Whether within the inclusivity of the general education classroom or through more focused settings for small group or one-on-one instruction, the program emphasizes the use of ABA principles and systematic teaching to enable students to generalize their skills across various settings. **At this time, Neary students in the CASTLE program are placed in a CASTLE classroom in a Northborough elementary school.** Families perceive this to be a challenge because Southborough students are not placed with their Southborough peers in these situations.`

Additionally, Southborough elementary students in need of the Therapeutic Learning Program (TLP), which is a specialized academic and therapeutic classroom, tailored for students with emotional, behavioral and social disabilities **are placed in a Northborough elementary school,** apart from their Southborough peers. This comprehensive program offers personalized instruction aimed at addressing the unique learning profiles of each student, coupled with continuous therapeutic support throughout the school day. Key to the TLP's philosophy is the integration of students into inclusive classroom settings whenever possible, providing them with the supports necessary to engage with the curriculum alongside their peers.

The expertise within the special education department is supported by an array of specialists, including speech-language pathologists, school psychologists, occupational and physical therapists, board certified behavior analysts, behavior specialists, adaptive physical education teachers, and team chairpersons.

Many of these professionals support the specific Social Emotional Learning (SEL) needs of students. General education teachers use the Second Step curriculum and the Collaborative for Academic Social Emotional Learning (CASEL) framework to guide students' learning in this area. Educators support students in developing SEL competencies through morning meetings, class lessons and integration of topics into all disciplines. The school psychologist, behavior analyst, and behavior specialist support the needs of students on individualized education plans and general education students.

Currently at Neary, the physical spaces allocated for Special Education faculty and related service staff present challenges. Many educators are assigned to shared instructional areas that are hindering the delivery of high-quality, consistent instruction aligned with the District's vision. In addition, special education providers often struggle to secure private spaces for assessments or for confidential parent meetings. The spatial limitations not only affects the quality of instruction but also poses significant accessibility challenges for students with physical disabilities, impacting their ability to participate fully in the school community. Issues such as restricted bathroom access, the inaccessibility of certain rooms like the music room, and limited outdoor play spaces underscore the urgent need for infrastructure enhancements to ensure all students can benefit equally from the educational opportunities provided by The Public Schools of Southborough.

Addressing these infrastructural and spatial challenges is critical for upholding the District's commitment to providing an inclusive, supportive, and accessible learning environment for all students, particularly those requiring specialized education services.

Proposed

	Current	**Design Alt 1 (4-5)**	**Design Alt 2 (3-5)**	**Design Alt 3 (2-5)**
CASTLE classroom	0	1	1	1
Therapeutic Learning Program (TLP) Classroom	0	1	1	1
Learning Centers	1	2	3	4
Calming Room	2	2	2	2
Testing Room	0	0	0	0
Small Group Meeting Room	*0*	*0*	*0*	*0*

The Future Design Needs for the Special Education Program emphasize a strategic integration of special education learning environments within the broader educational framework, ensuring seamless communication and collaboration between special education staff and their general education counterparts. Integration would support even greater levels of inclusivity. The design would include specialized spaces in each learning neighborhood tailored to the unique needs of special education students. Key to this approach is the creation of a small group room between and adjoining to paired academic classrooms to facilitate small group instruction in a manner that minimizes travel and disruption, thereby optimizing the educational experience for these students. Another key feature is the placement of learning centers and substantially separate classrooms within learning neighborhoods. Furthermore, the design calls for the establishment of calming/sensory spaces that would be adjacent to specialized programs, CASTLE and TLP. These spaces are essential for providing a tranquil environment for students needing sensory regulation.

The sensory design of all learning spaces is important. Attention to detail in the selection of views, control of sightlines, and the minimization of potentially disruptive auditory and olfactory stimuli are crucial considerations. These measures aim to create an environment that supports the sensory needs of students, avoiding overstimulation or understimulation. The mechanical and lighting systems are to be meticulously planned to reduce visual distractions, regulate airflow, and minimize ambient noise, incorporating full-spectrum, dimmable lighting solutions to create a visually comfortable space that avoids sensory overload.

The new design would include office space for the school psychologist, certified behavior analyst, behavior specialist, speech and language pathologist, occupational and physical therapists, and the special education team chair. The design would also include a special education conference room with the space to host up to 15 adults. The conference area will support the functional needs of IEP meetings and special education team collaborations, ensuring that the infrastructure fully supports the department's operational and strategic needs.

This design framework supports a comprehensive approach to creating an inclusive and supportive learning environment for special education students, affirming the district's commitment to fostering academic excellence and personal growth for all students.

The organization and color scheme of the rooms are to be carefully considered to reduce visual clutter and create a serene, engaging learning environment. Proximity and accessibility to other programmatic areas are also critical to ensure ease of access for students and to support optimal acoustic conditions within these special education spaces.

CASTLE Program

Additionally, the design would include a classroom space for a CASTLE Program so that Southborough CASTLE students remain with their peers in town. Central to the CASTLE Program is the creation of a personalized curriculum for every student, utilizing the advanced, web-based Autism Curriculum Encyclopedia (ACE) curriculum. This curriculum addresses a comprehensive range of developmental areas, including functional communication, daily living activities, academic skills, use of Augmentative and Assistive Communication (AAC) devices, vocational training, communication strategies, and social-pragmatic skills. The program champions a collaborative team approach to service delivery, comprising a lead special education teacher, educational support professionals, and specialists in speech and language therapy, physical therapy, and occupational therapy. Enhanced by the support of a Board

Certified Behavior Analyst (BCBA), Assistive Technology Specialist, AAC consultant, and School Psychologist, the program ensures a holistic educational experience.

In terms of infrastructure, the CASTLE Program necessitates specific design features to support its educational model effectively:

- A versatile classroom that can be divided into two distinct areas for grade-specific teaching and to allow for adaptive instructional group sizes as required.
- Proximity to single-stall restrooms to accommodate privacy and ease of access for students.
- An adjoining calming space for students to de-escalate when necessary, allowing for a smoother transition back into the classroom environment.
- Dynamic workspaces that support one-on-one and small group instruction, enabling personalized learning experiences.
- Multi-sensory work areas are designed to engage students through a variety of stimuli, fostering an inclusive learning environment for all.
- Adaptive use of wall space for educational tools like word walls and visual cues, enhancing memory and learning through accessible whiteboards and other aids.
- Incorporation of the same technological resources found in general education classrooms ensures that students in the CASTLE Program have access to cutting-edge educational tools.
- Through these dedicated spaces and resources, the CASTLE Program aspires to provide a nurturing, effective, and inclusive educational setting that meets the diverse needs of its students, setting the stage for their success both within the school environment and beyond.

The CASTLE classroom would be on the edge of another learning neighborhood with a calming room adjacent that could be accessed, not only by CASTLE students but also by students from other classes in the learning neighborhood. This location would facilitate inclusion when appropriate and support a quieter environment at other times.

The Therapeutic Learning Program (TLP)

The new design would have space for the Therapeutic Learning Program (TLP). The physical environment of the TLP would be designed to be conducive to both learning and emotional support. It encompasses a tranquil space conducive to academic pursuits, areas for students to take breaks and engage in self-regulation strategies. The design specifications for the TLP's special education facilities emphasize several key features:

- Accessibility to physical activity spaces, such as a gym, to allow for movement breaks.
- Close proximity to learning neighborhoods to facilitate integration and a sense of belonging.
- An adjoining calming space for students to de-escalate when necessary, allowing for a smoother transition back into the classroom environment.

- Consideration of acoustics to reduce noise disturbances from adjacent areas, creating a quieter, more focused learning environment.
- Close proximity to counseling services in the social-emotional learning suite to ensure students have immediate access to emotional and behavioral support.
- A dedicated sensory room within the TLP, accessible directly from the program area, provides a safe and supportive space for sensory regulation.

The design would foster an inclusive, supportive environment that meets the comprehensive needs of students within the TLP, facilitating their academic achievement and emotional development in a setting that respects and responds to their individual challenges. The TLP classroom would be on the edge of a learning neighborhood with a calming room adjacent that could be accessed, not only by TLP students but also by students from other classes in the learning neighborhood. This location would facilitate inclusion when appropriate and support a quieter environment at other times.

This design framework supports a comprehensive approach to creating an inclusive and supportive learning environment for special education students, affirming the district's commitment to fostering academic excellence and personal growth for all students.

TEACHER PLANNING, COLLABORATION AND PROFESSIONAL DEVELOPMENT

Current

Professional collaboration stands as a cornerstone of the educational philosophy in The Public Schools of Southborough. The schedule is built to support grade-level teams having shared preparation time each week. Despite this commitment to collaborative planning, the District lacks designated teacher planning spaces. Teachers often resort to meeting within their own classrooms, seated at student desks, contingent upon space availability, which is far from ideal.

The District's professional development program is designed to foster growth for educators at every career stage and embedded into their professional experience so that it is sustained and relevant to their daily practice. Elementary teachers weekly convene by grade level and periodically participate in workshops aimed at enhancing teaching efficacy, curriculum implementation and student learning outcomes.

Faculty meetings and district-wide professional development sessions are currently held in less-than-ideal locations such as the building's library, classrooms, or cafeteria. These settings often suffer from issues like overcrowding, uncomfortable temperatures, and insufficient technological resources for presentations, detracting from the quality of these important gatherings.

Proposed

	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)

Staff Lunch Room and Teacher Preparation	1	1	1	1
Teacher Collaboration Room	0	2	2	2

In order to foster collaboration among educator teams, the District will provide flexible professional learning spaces for varying size groups. These spaces will empower educators to collaboratively design lessons, units, projects, and investigations. Additionally, they will support ongoing examination of student learning data and the ability to provide timely feedback and support for students. The ongoing analysis of data is a cornerstone of the multi-tiered systems of support that reading specialists, math specialists and SEL professionals guide. These collaboration rooms will also serve as venues for professional development workshops.

These teacher collaboration spaces would be strategically positioned near each learning neighborhood and near the instructional suite to facilitate easy access. By placing these rooms just outside of learning neighborhoods, it may be possible to have a removable wall between teacher collaboration rooms making them adaptable to host larger professional development sessions or staff meetings. It is important that teacher collaboration rooms are distinct from staff lunchrooms which also support teacher preparation such as photocopying, lamination and other tasks. This distinction ensures that teacher collaboration rooms are used exclusively for professional collaboration and not for breaks or social gatherings. The teacher preparation room would also include workstations where educational support professionals and itinerant employees can complete tasks given that they do not have dedicated classrooms or offices.

Future teacher collaboration rooms should include:

- Smaller, Collaborative Spaces: Areas where grade-level teams can gather for focused planning sessions, ensuring privacy and promoting efficiency in curriculum development and teaching strategy discussions.

- Larger, Open Areas: Spacious venues equipped for whole-faculty professional development activities, designed to accommodate larger groups comfortably. The larger area may be achieved by joining smaller spaces together.

- Comfort and Accessibility: Meeting spaces should offer a comfortable environment, equipped with adequate heating, cooling, and lighting to facilitate year-round use without discomfort.

- Technological Integration: Equipping these areas with the latest in presentation technology, including high-quality projectors, sound systems, and internet connectivity to support a wide range of professional development activities.

By prioritizing the creation of these dedicated spaces, The Public Schools of Southborough can further enhance their commitment to professional excellence, fostering an environment where educators are equipped, encouraged, and empowered to grow professionally, for the benefit of students.

LUNCH PROGRAMS

Current

Meals for Neary School students are prepared off-site at the P. Brent Trottier Middle School kitchen, due to Neary's lack of facilities for food preparation and cooking. After preparation, these meals are transported to Neary School, where they are served to approximately 125 students per lunch period in a communal dining area. This setup sees large groups of students moving in and out of the cafeteria space, a bustling hub of activity during meal times.

The District is committed to promoting health and wellness through nutrition, prioritizing the provision of healthy, locally sourced food options. In line with this commitment, the District actively seeks to include locally grown produce in its meal offerings, taking advantage of vegetables harvested from school gardens when possible. There's a vision to further engage students in this initiative by establishing a garden on the grounds of the new school, fostering a hands-on learning experience that connects students directly with the source of their food.

Currently, lunch periods at the District's elementary schools are limited to 20-25 minutes. The cafeteria is a large open space and can be over-stimulating for some students. There are no alternative spaces designed for dining.

Proposed

The new design would include a variety of seating options for students, including smaller breakout spaces to support sensory-sensitive options for students. Furthermore, the new site would include the introduction of on-site kitchen facilities. This would enable the preparation and safe storage of meals within the school, allowing for a wider range of healthy options on the menu. In addition, the new kitchen would provide ample space and design to support traffic flow and strategic service areas organized for efficiency. A new kitchen would also support the District's vision of integrating educational programs focused on health, nutrition, and agriculture directly into the students' learning environment.

HEALTH OFFICE

Current

At the Neary School, the health and wellness of students and staff are under the care of a Commonwealth of Massachusetts and Department of Elementary and Secondary Education licensed RN School Nurse, whose responsibilities extend beyond the traditional confines of medication administration and minor health assessments. The Health Office is a critical hub for evaluating and triaging health concerns, liaising with families and healthcare providers, managing health records, conducting screenings for various physical parameters, and addressing the emotional well-being of the school community. Furthermore, the school nurse plays a crucial role in collaborating with district nursing staff on health education, grant writing, and leading emergency response training for staff.

However, the current Health Office space is notably inadequate for the breadth of services required. In the current space, there is no waiting area or provision for isolating contagious individuals. The sole lavatory, doubling as a changing area and staff restroom, cannot meet the diverse needs of the school population, from toilet training to health-related toileting supervision. The absence of a dedicated handwashing sink outside this lavatory further complicates hygiene practices. Additionally, storage space is severely limited, impacting the secure storage of medications and medical equipment. The lack of a private area for confidential conversations with parents or consultations with staff is another significant shortfall.

Proposed
In envisioning a new design for Neary's Health Office, the goal is to create a space that adequately supports the complex health and wellness landscape of the school community. This includes a larger, more versatile area that can accommodate multiple resting spaces, a dedicated waiting area, and isolation zones for contagious students. Essential facility improvements must include lavatories to serve diverse needs effectively, additional sinks for handwashing outside the lavatories, and expanded secure storage for medications and medical supplies. A private consultation area is also critical, ensuring confidentiality and support for sensitive discussions. This enhanced design will align the physical environment of the Health Office with the expansive role of the school nurse, ensuring optimal health and wellness support for the entire school population

SOUTHBOROUGH EXTENDED SCHOOL CARE

Current:
The district-run Southborough Extended Day (SEDP) Program is designed to serve the needs of the District's students and families before and after school hours. There are dedicated staff for this program that work separately but in concert with school staff. However, although students are enrolled in the program after the end of the school day staff arrives earlier, so a dedicated space is needed to accommodate SEDP staff. The chart below depicts well the existing numbers of students supported by the SEDP, as well as the demand for spots in the program both before and after school:

Current SEDP Families Accessing SEDP

Finn (K-1)	**Woodward (2-3)**	**Neary (4,5)**
60 Families	75 Families	35 Families

Proposed

An alternative office space for SEDP has been identified in a different school building.

TRANSPORTATION POLICIES

Current

In The Public Schools of Southborough, transportation is provided at no cost for ALL students in grades K-8. Combining schools or adjusting grade configurations would not increase bus traffic at the schools, but would reduce the bus traffic on the main roads and in the surrounding areas.

Currently, the District operates a fleet that includes 14 full-size buses and one half-size bus, catering to the transportation needs of both regular and Special Education students. As of now, 212 (K-5) students do not qualify (residing within a mile of their respective school) for daily bus transportation provided by the District, however, it is the long-standing practice of the District that all students are offered school bus transportation regardless of their residence's distance from school.

Given that the elementary schools do not serve exclusively neighborhood zones and specialized programs are not uniformly distributed across all schools, the District employs a sophisticated transfer bus system. This system facilitates the movement of students between the three elementary schools for both morning arrivals and afternoon departures. Bus routes are designed to accommodate students attending any of the three schools, utilizing the transfer system. Transportation is organized in two tiers: middle and high school students are transported first, followed by the elementary students, optimizing the efficiency of school commutes.

Proposed

The proposal to consolidate schools would improve the efficiency and complexity of the bus system. By reducing the locations that need to be supported, we will gain valuable AM and PM minutes to reduce the overall commute time. The consolidation would also pool vehicles so that they could support multiple functions and won't be displaced to the extent they are in the current configuration.

The new school's parking facilities will be designed to meet the daily needs of the school and accommodate community events outside school hours. This planning includes:

- Ensuring safe bus access routes that do not conflict with areas designated for student drop-offs and pickups.
- Maintaining secure and controlled zones for deliveries.
- Designing recess and recreational spaces away from traffic, safeguarding the well-being of students during outdoor activities.
- Optimizing traffic flow to avoid confluence at the same locations during peak drop-off/pick-up times as well as special events.

- Reduce bus route lengths for students and reduce overall school related traffic.

FUNCTIONAL & SPATIAL RELATIONSHIPS

The school's design vision is centered around creating an adaptable environment that reflects the community's values, prioritizes the well-being of its members, and fosters student learning. The aim is for the entire building to maintain a sense of physical unity, with thoughtful consideration given to the internal and external flow, ensuring that the spaces within are conducive to both movement and connection. Student achievements will be proudly displayed throughout, making the celebration of learning a visible and integral part of the school's atmosphere.

The design will include careful choices regarding design aesthetics, natural light, finishes, and furniture, all tailored to create a welcoming and appropriate environment for the students.

The Media Center will be adjacent to the art room to support inquiry across disciplines. The school's layout will thoughtfully separate academic areas from spaces designated for community use, an aspect critical for maintaining security and functionality.

Classroom organization will be strategically designed in learning neighborhoods to promote collaboration, with classrooms and specialized education areas distributed throughout the building to support integrated and inclusive education. Small group rooms between general education classrooms will allow for special education academic support and peer to peer collaboration to happen in quiet settings but close to the general education classroom. Furthermore, the learning commons, directly outside of and visible from grade-level classrooms, will also facilitate shared educational initiatives, allowing for flexible grouping of students and targeted instructional experiences. This space might also accommodate multiple classes to gather for presentations, performances, or community meetings.

Specialty classrooms, including those for art, world language, music, and media will be purposefully located to support interdisciplinary learning. By placing the art room adjacent to the media center, students will engage in inquiry that bridges these spaces and is supported by multiple educators. In addition, the instructional support suite and teacher collaboration spaces will be strategically located at the edges of learning neighborhoods to support targeted academic support for students as well as embedded and sustained professional learning. The locations of components of the special education program will allow for inclusion and seamless integration, while parts of the program will be situated in a special education suite that allows for confidentiality and distraction-free assessments and support when needed. This layout is intended to enhance cross-disciplinary collaboration and ensure all students have equal access to the rich array of educational resources and opportunities the school offers.

The design would incorporate gathering spaces for various groups within the community. While grade levels or cross-grade level groups might gather in the learning commons of a learning neighborhood, a larger contingent of the school could gather in the auditorium, which will also serve as a music learning space. For whole school or larger community events, the gymnasium will serve as a communal space.

The design would embody the community's overarching objectives and priorities and adhere to the District's core design principles, outlined as follows:

- Purposeful Outdoor Environments: Dedicated spaces outdoors for academic pursuits, social-emotional development, and recreation in a safe and secure manner
- Promoting Unity Across Grade Levels: A focus on fostering connections and a sense of unity within and across different grades.
- Adaptable Learning Environments: Ensuring spaces are versatile enough to accommodate the diverse needs of every learner.
- Forward-Thinking Design: Creating spaces and adopting practices that not only address current educational requirements but are also adaptable to future needs.
- Community and Culture at the Forefront: Envisioning the project as a means to protect, connect, and cultivate the school's community and cultural heritage.
- Foundational Emphasis on Elementary Education: Recognizing elementary education as crucial for laying the groundwork for academic achievement and social-emotional well-being.
- A Model of Sustainability: Championing a school facility that serves as a dynamic educational resource, promoting sustainability and environmental stewardship.
- A Model of Safety and Security: Providing flexibility while maintaining safety and security protocols will be part of the design.

SECURITY & VISUAL ACCESS REQUIREMENTS

Current

The Public Schools of Southborough prioritizes the safety and security of all students and staff, aiming to enhance public safety for all community members who interact with or utilize school facilities. This commitment extends to minimizing risks to individuals and preventing damage or loss to district property. The school has established a comprehensive approach to building security, underscored by the following key elements:

- Structured Safety and Security Governance: The district has implemented clear administrative guidelines and policies dedicated to supervising safety and security initiatives across all schools and works closely with the Town's Police and Fire Departments safety officials to coordinate.
- Continuous Security Assessments: The district undertakes ongoing evaluations to scrutinize existing security measures, identify any shortcomings, assess the requisite level of security, and propose enhancements.
- Integrated Security Management: A multi-faceted approach to security is employed, incorporating diverse communication channels, detailed policies and protocols, physical

security measures, staff training, and well-defined response strategies. The buildings are locked throughout the school day, and staff use key access cards to enter the building. This approach fosters collaboration among administrators, staff, parents, and students.
- Comprehensive Background Checks: All school personnel, including faculty, staff, volunteers, contractors, and vendors present on school grounds, undergo CORI checks, SORI checks, and FBI Fingerprinting checks to ensure the safety of the school environment. Additionally, staff members are mandated to wear identification badges visibly during school hours.
- Regular Safety Drills: The school routinely conducts fire alarm and active intruder drills to guarantee that faculty and staff are proficient in accounting for all students swiftly and effectively.
- Staff Preparedness Training: Staff members receive ongoing training to adeptly enact the Emergency Response Plan, ensuring readiness in case of emergencies.
- Cultivating a Vigilant Community: The school community, including students, faculty, and staff, is educated and encouraged to remain vigilant and report any suspicious or concerning activities or behaviors.

This comprehensive approach speaks to The Public Schools of Southborough's commitment to creating and maintaining a secure educational environment where learning and growth can flourish unimpeded by concerns for personal safety or property protection.
Proposed

The future design of the school's security system aims to strike a balance between fostering a welcoming atmosphere for students, families, and the broader community and integrating a comprehensive suite of advanced security measures. These features, while not exhaustive, are crucial for ensuring a protected learning environment:

- Enhanced Entrance and Lobby Security: Implement a secure, single-entry door system for each school or program, equipped with a door-release mechanism, intercom, video surveillance, and a sophisticated visitor management system. All additional exterior doors should be locked at the commencement of the school day, with exit-only functionality and surveillance.
- Dedicated Access Points for Operational Needs: Ensure separate and safe access routes for kitchen operations, facilities management, and shipping/receiving, distinct from the main entrance, to alleviate congestion and enhance security.
- Clear and Informative Signage: Install signage to guide visitors, contractors, and vendors directly to the administration area for secure entry processing. Identification markers on doors and windows, along with evacuation maps in all occupied rooms, will enhance navigation and safety.
- Defined School Perimeter: The school's boundaries should be distinctly marked from public areas, with landscaping designed to maintain unobstructed views of the school’s exterior for surveillance purposes.
- Strategically Planned Vehicular Access: Design vehicular access that incorporates safety measures such as bollards, no-parking zones, and specified drop-off points,

ensuring a clear separation between general traffic and buses. Safe routes should be established for pedestrians and cyclists, with unambiguous access for emergency and public safety vehicles.
- Access Control Systems: Adopt best practices in access control technologies for entrances to the building, classrooms, and other critical areas to manage entry efficiently.
- Optimal Exterior Lighting: Install adequate lighting around walkways, entrances, and parking areas, focusing on reducing spill-over lighting into neighboring areas and maximizing energy efficiency.
- Coordinated Video Surveillance: Establish a video surveillance system with clear protocols for operation and maintenance in collaboration with local law enforcement agencies.
- Segmented spaces for community use (i.e., gymnasium)

By incorporating these strategic security enhancements in the design, the school not only ensures the safety of its inhabitants but also maintains an inviting environment conducive to learning and community engagement.

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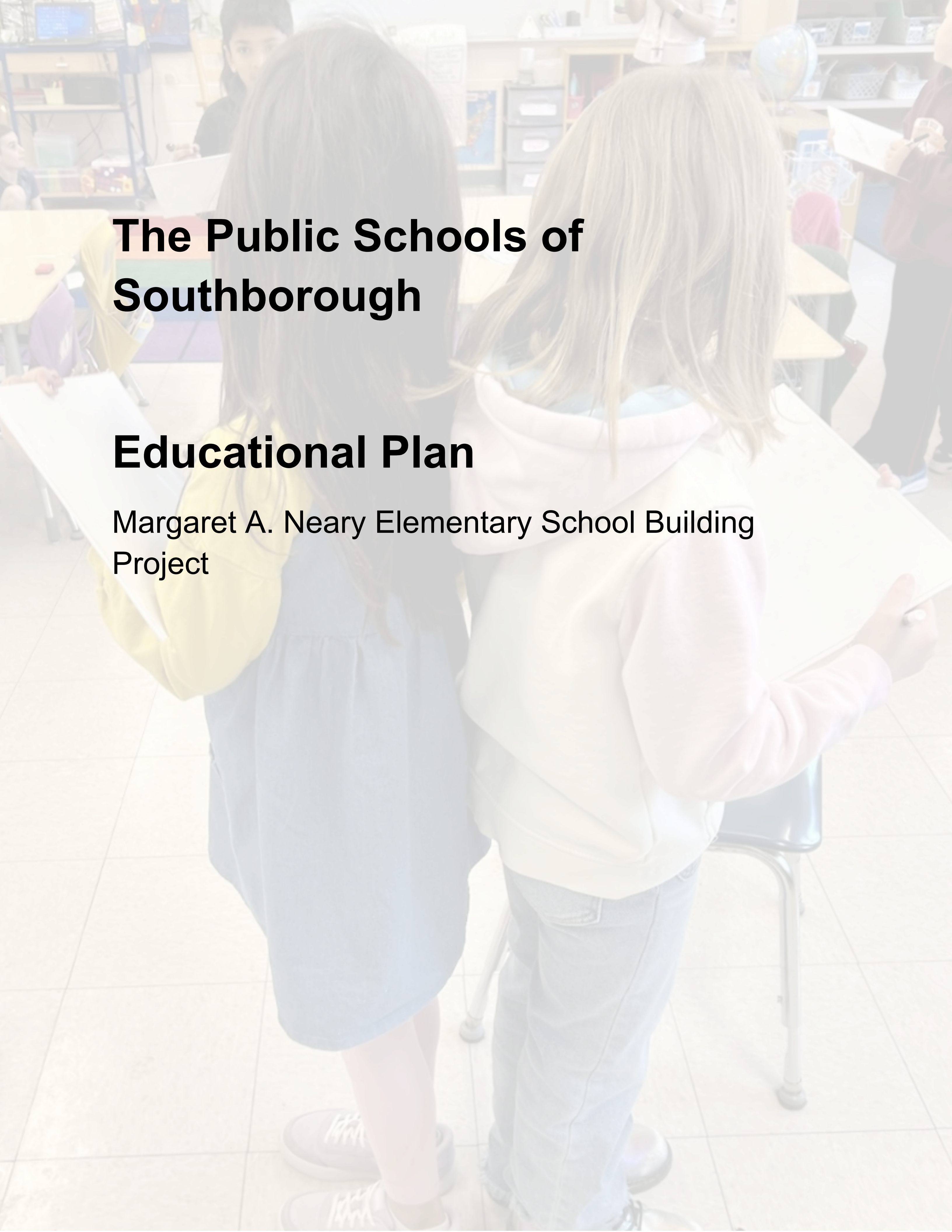
C. Educational Plan (Red-Lined)



The Public Schools of Southborough

Educational Plan

Margaret A. Neary Elementary School Building Project

MODULE 3: PRELIMINARY DESIGN PROGRAM

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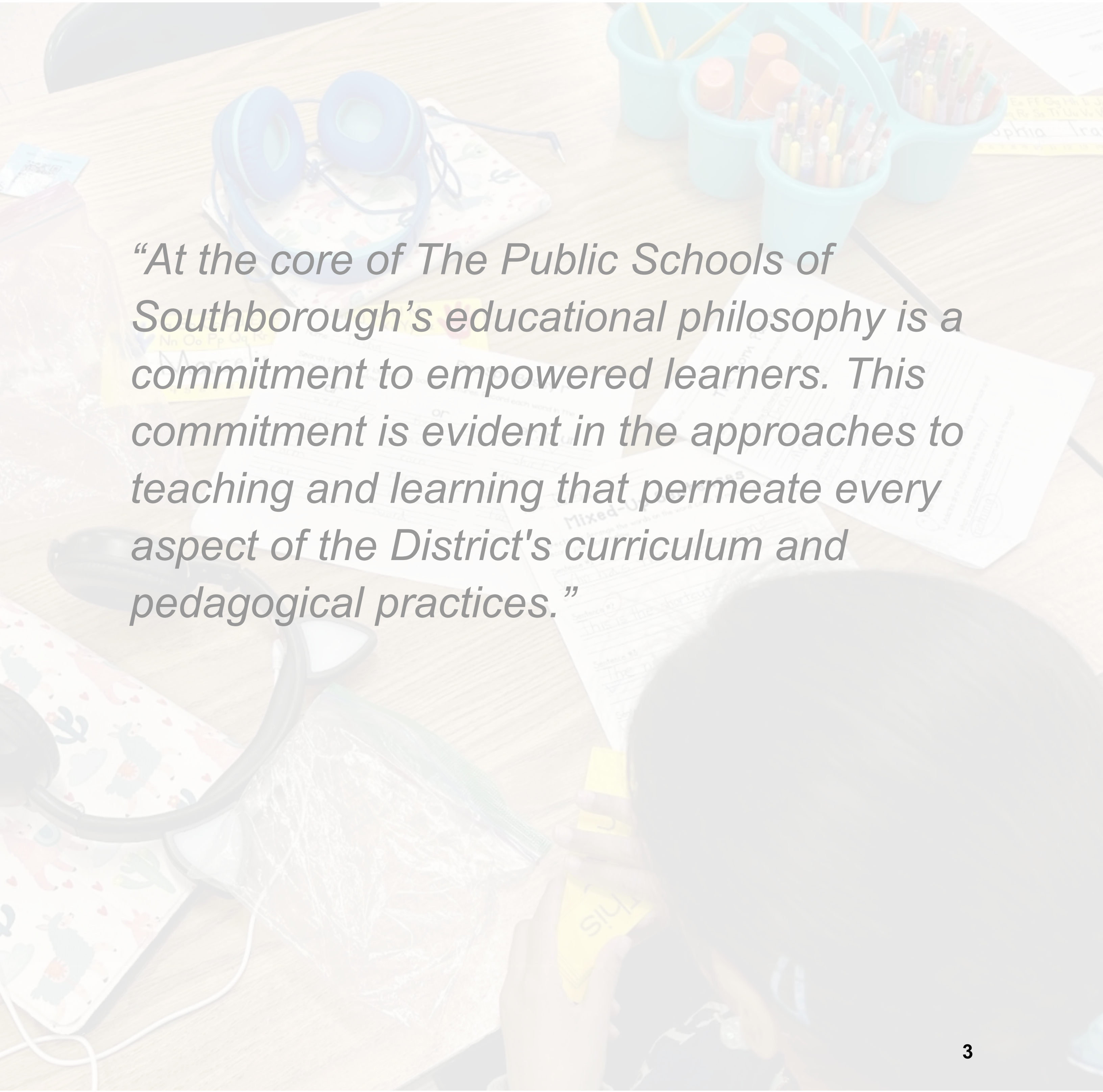

"At the core of The Public Schools of Southborough's educational philosophy is a commitment to empowered learners. This commitment is evident in the approaches to teaching and learning that permeate every aspect of the District's curriculum and pedagogical practices."

INTRODUCTION

The Public Schools of Southborough, guided by its mission to Educate, Inspire, and Challenge, embarked on a forward-looking journey in the 2019-2020 academic year with the strategic planning process culminating in *Vision 2026: Educate, Inspire, Challenge*. This roadmap, crafted through the collaborative efforts of a broad spectrum of stakeholders—including parents, community members, educators, students, and school and District leadership—sets the course for an educational experience that not only meets today's standards but anticipates the needs and possibilities of tomorrow.

In the subsequent year, the District's commitment to inclusivity and excellence prompted a District equity audit in partnership with an outside consulting group, a critical step toward understanding and enhancing how the District's policies, practices, and systems affect all members of the school community, especially those historically marginalized.

In *Vision 2026: Educate, Inspire, Challenge*, the District articulates the profile of a learner who will navigate the complexities of the modern world as:

Collaborators
- Enrich the learning of self and others through teamwork.
- Solicit and respect diverse perspectives and contributions.
- Seek, contribute, and react to feedback to achieve shared outcomes.
- Recognize and leverage strengths to build collective commitment, action, and understanding.

Critical and Creative Thinkers
- Transfer and connect knowledge and skills to deepen understanding.
- Demonstrate thinking that is clear, rational, open-minded, and informed by evidence.
- Use disciplinary knowledge and skills in routine and innovative ways.
- Make informed decisions, solve problems, and use a variety of tools to deepen learning.

Communicators
- Articulate thoughts and ideas using oral, written, and non-verbal communication skills for a range of purposes and audiences.
- Listen to decipher meaning, including knowledge, values, attitudes, and intentions.
- Use technological skills and contemporary digital tools to explore and exchange ideas.

Socially and Civically Engaged
- Demonstrate personal, civic, and social integrity through ethical and empathetic behaviors.
- Recognize individual and communal impact on others and the natural world.
- Value and embrace diverse cultures and unique perspectives through mutual respect and open dialogue.

Growth-Oriented

- Cultivate positive attitudes and habits about learning.
- Pursue one's own interests and curiosity to experience new learning.
- Consistently improve the quality of one's own thinking by skillfully analyzing, assessing, and reconstructing.
- Persist to accomplish difficult tasks and to overcome academic and personal barriers to meet goals.

Healthy and Balanced

- Develop and demonstrate awareness, sensitivity, concern, and respect to connect with self and others' feelings, opinions, experiences, and cultures.
- Use reflective practices to understand one's personal strengths, challenges, and passions.
- Make choices to support a lifestyle that is healthy, both physically and mentally.
- Demonstrate resilience through the ability to manage emotions, stress, and challenges.

The Public Schools of Southborough's work is anchored by six core values that guide all members of the learning organization: Integrity, Empathy, Inclusivity, Equity, Perseverance, and Respect. These values guide all interactions and inform its policies and practices, ensuring that the educational environment is supportive, challenging, and accessible to all.

To realize the District's vision, the District's work is centered around five strategic objectives:

- Empowering Learners**:** Implement instructional practices that engage students in developing and demonstrating their knowledge and skills through rigorous, innovative, and relevant learning experiences.
- Equity of Opportunity**:** Provide all students access to challenging and culturally responsive learning experiences that meet their individual needs.
- Healthy and Balanced Learners**:** Prioritize the social, emotional, and physical well-being of students.
- Educator Learning and Leadership**:** Demonstrate continual growth through professional collaboration.
- Finance and Operations to Support Teaching and Learning**:** Develop, support, and operate sustainable, functional, and well-maintained schools.

In the District's commitment to continuous improvement, it completed an equity audit to better understand and address the disparities within its systems, policies, and practices. Recognizing that true equity is an ongoing process, the District is committed to fostering an environment where every member of the community is equipped to view their roles through an equity lens, continuously working towards an inclusive and equitable educational landscape.

In a time of rapid change and complex challenges, The Public Schools of Southborough remain committed to educating, inspiring, and challenging ALL students to be prepared for a modern world.

The Statement of Interest submitted to the Massachusetts School Building Authority (MSBA) in 2022 articulates that the current Margaret A. Neary Elementary School building only allows for basic functionality and is insufficient for the delivery of the educational program. While maintained over the years, the majority of the facility's building systems and components are nearing the end of life expectancy. To support this determination, the District contracted with Vertex Companies, Inc. to complete a Facilities Conditions Assessment (March 2021). This assessment confirmed the need for renovation or replacement of the roof, electrical, and other building modifications to meet building code requirements. The District's priority is to modernize the Margaret A. Neary Elementary School to a condition that rectifies current deficiencies and satisfies projected future requirements for educational programs, such as spaces with integrity for world language, art, music, science, and technology.

At the core of The Public Schools of Southborough's educational philosophy is a commitment to empowered learners. This commitment is evident in the approaches to teaching and learning that permeate every aspect of the District's curriculum and pedagogical practices. By infusing technology seamlessly into daily activities, the District enables students to explore and pursue their interests and allows teachers to provide all students access to learning. This educational philosophy is further enriched by an integrated curriculum that promotes inquiry-based and interdisciplinary experiences, seamlessly incorporating STEAM (Science, Technology, Engineering, Arts, and Mathematics) principles.

Central to the District's approach is the application of Universal Design for Learning (UDL) principles and a multi-tiered system of support. These frameworks ensure that instruction is accessible and challenging for all learners, providing multiple pathways to understanding, engagement, and expression. By doing so, the District guarantees that every student has the opportunity to exercise agency in their learning journey.

Small group instruction is pivotal to ensure the success of each student. Through targeted and responsive teaching methods, students receive the support and enrichment they need to thrive socially, emotionally, and academically.

Recognizing the essential role of professional collaboration, The Public Schools of Southborough have invested significantly in developing a culture of professional collaboration among educators. Teacher teams are an integral part of our educational ecosystem, regularly convening to analyze achievement data, exchange insights on student work, develop instructional resources, and plan coherent and impactful lessons.

To further support this culture of collaboration, it is essential that a new facility is designed with the dual purpose of enhancing professional collaboration among staff during the school day and providing versatile spaces for educators to engage with families in both private and public settings. A design needs to include spaces that are adaptable and promote effective collaboration.

In 2022, The Public Schools of Southborough, in collaboration with the Town of Southborough's Capital Planning Committee - School Research Subcommittee, completed a Grade Level Configuration Evaluation. The evaluation took into consideration current facilities, enrollment, and educational programming. The evaluation resulted in a recommendation to study the reduction of the number of elementary school transitions from two transitions to one transition. Currently, elementary students experience school transitions from grades 1-2 and grades 3-4.

As part of the feasibility study, the District is required to study three enrollment alternatives: 1) Grades 4-5, 2) Grade 3-5, and 3) Grades 2-5.

Alternative 1:
Grades PreK-1: Mary E. Finn Elementary School
Grade 2-3: Albert S. Woodward Memorial Elementary School
Grades 4-5: Margaret A. Neary Elementary School

Alternative 2:
Grades PreK-1: Mary E. Finn Elementary School
Grade 2: Albert S. Woodward Memorial Elementary School
Grades 3-5: Margaret A. Neary Elementary School

Alternative 3:
Grades K-1: Albert S. Woodward Memorial Elementary School
Grades 2-5: Margaret A. Neary Elementary School

The District's recommendation, which was considered during MSBA's Eligibility Phase, was the 2-5 grade configuration as it provides benefits, which include:

1. Provides for greater collaboration and vertical curriculum alignment between grades 2-5;
2. Allows and maximizes District resources and builds a greater sense of school community;
3. Reduces the number of school transitions;
4. Provides more opportunity to maximize resources (people and materials);
5. siblings within the grade range to be at the same school, facilitating both bus transportation for children in the same family as well as parental transportation to and from school and/or extended care and;
6. Reduces the amount of time students are on buses and the number of transportation routes, which is a logistical benefit as well as an avoidance of significant additional costs that would require financial resources to be redirected from the educational program (see accompanying document);

Visioning Summary

In the winter of 2024, members of The Public Schools of Southborough – including leadership, staff, parents, and community members – participated in visioning and programming sessions led by Educational Planner Mike Pirollo (MLP Integrated Design) and Arrowstreet. Each session was part of a collaborative process designed to inform the Margaret A. Neary Elementary School Massachusetts School Building Authority (MSBA) Feasibility Study and pre-design process.

Utilizing school tours, observational building walk-throughs, program verification meetings, and visioning sessions, participants worked through a step-by-step process aimed at capturing their thinking around the following key areas:

- Educational, architectural, and community goals and priorities
- Child development, including the physical, academic, and social-emotional needs of the elementary learner
- Impacts of various grade configurations and design enrollments
- Vision of teaching and learning, including practices, strategies, programs, and structures
- A vision of the ideal learning environment, including space types, design features, and adjacencies

Overarching Project Goals & Priorities:

At the core of the District's educational vision are a series of overarching goals:

- Students and teachers are at the heart
- Spaces and instructional practices that support innovation in education
- Supporting a climate of belonging, community, connection, and well-being
- Flexible, adaptable space to support equitable and active access
- Opportunities for outdoor and indoor connection
- An academically, financially, and environmentally sustainable building
- Long-term adaptability
- A logical and efficient building

Participants

Name	Title:
Greg Martineau	Superintendent
Stefanie Reinhorn	Assistant Superintendent
Kathleen Valenti	Principal
Steve Mucci	Principal
Clayton Ryan	Principal
Megan Kelty	ELA Coordinator
Helene Desjardins	Assistant Director of Student Support
Jennifer Lipton-O'connor	Coordinator of SEL
Kathy Lizotte	Mathematics Coordinator
Julie Doyle	Director of Instructional Technology
Mary Ellen Duggan	District Wellness Coordinator and Nurse Leader
Selvi Oyola	Director of Multilingual Learners & Equity
Jennifer Henry	Early Childhood Administrator
Jason Malinowski	Neary Building Committee Chairperson
Roger Challen	School Committee Member

Chelsea Malinowski	School Committee Member
David Finneran	Neary Teacher & STA Representative
Kristin Theve	Neary Teacher
Jen Turieo	Neary Teacher
Lisa Goulet	Woodward Teacher
Jill Henebury	Woodward Teacher
Kristin Peterson	Finn K Teacher (K Team Leader)
Alysun Stephens	Finn Teacher
Nutan Mathew	Specialist
Tiffany Goode	Specialist
Jeanette Morgan	Finn Music Teacher (Specialist Team Leader)
Gela Ebert	ELPAC Co-Chair
Marie Sajous	ELPAC Co-Chair
Sarah Fulton	PTO
Stephanie Iodice	PTO
Kristin Gould	PTO
Matt Gilmore	NSPAC
Andrea Hamilton	NSPAC
Tim Davis	Director of Southborough Recreation
Kathy Cook	Select Board Member
Ryan Newell	Police Chief

GRADE & SCHOOL CONFIGURATION

School Facilities Summary

The Public Schools of Southborough has four school facilities, serving grades PreK-8. All of the District's schools have strong school cultures, exceptional faculties and staff dedicated to students, and parents and guardians who are invested in The Public Schools of Southborough.

Mary E. Finn Elementary School

The Mary E. Finn Elementary School is an early childhood center currently serving students in grades Pre-Kindergarten to Grade One. The building was originally constructed in 1967 and was then renovated and expanded in 2000 to 76,000 square feet. The building's renovation was designed for the District's youngest learners.

Albert S. Woodward Memorial Elementary School

The Albert S. Woodward Memorial Elementary School currently serves students in Grade Two and Grade Three. The building site was the original middle school for Southborough until the P. Brent Trottier Middle School was built in 1998. The original building was torn down and the footprint was used to build the 68,000-square-foot facility, which opened in 2004.

Margaret A. Neary Elementary School

Originally constructed in 1970, the Margaret A. Neary Elementary School currently serves Grade Four and Grade Five. The building is a 62,736 gross square foot facility on a single level located on an eighty-one (81) acre site. The Margaret A. Neary Elementary School is the only

Southborough school that has not yet been renovated.

P. Brent Trottier Middle School
The P. Brent Trottier Middle School established in 1998 and expanded in 2004 is a 130,000 square foot middle school for students in Grade Six, Grade Seven, and Grade Eight. The three-year experience provides students with the skills and knowledge to be successful in high school.

Current student enrollment in the five schools as of March 2024 is:

School	Current Grade Configuration	Current Enrollment
Mary E. Finn Elementary School (Finn)	PreK-1	260
Albert S. Woodward Memorial Elementary School (Woodward)	2-3	248
Margaret A. Neary Elementary School (Neary)	4-5	282
P. Brent Trottier Middle School (Trottier)	6-8	409

Current

The Margaret A. Neary Elementary School has nineteen classrooms, fourteen of the classrooms are split evenly between fourth and fifth grades, and five of the classrooms are designated as Central Office. Each classroom, designed with a dividing wall for coats and student belongings results in a reduced instructional area. This constraint, coupled with limited storage within classrooms, necessitates the use of additional spaces within the school to house curriculum supplies and materials.

Class sizes at Neary average between 18 to 22 students, yet the infrastructure, particularly in specialty areas like art and music, falls short of optimal educational environments. These subjects are taught in spaces not originally intended for their respective disciplines, affecting the quality of instruction and student engagement. There are no designated spaces for string lessons and instruments can be found lining the hallways. Similarly, the library's inadequate wiring and infrastructure hinder the library media specialist in offering STE infused media classes, failing to align with the educational needs of both teachers and students.

Physical education faces its own set of challenges, with two small gymnasiums that complicate the delivery of indoor PE classes.

The English Language Development Program relies on modular classrooms that, despite being over two decades old and initially intended for temporary use, are still in operation today. These modules fall short of the spatial and environmental standards required for effective learning.

Special education and related services grapple with spatial constraints, utilizing whatever spaces are available, including areas not designed for instructional purposes. Meetings and administrative tasks often take place in less-than-ideal conditions, such as unheated conference spaces, shared offices, or converted closets used as offices. Grade-level teacher meetings are confined to the limited space of available classrooms.

The electrical infrastructure across Neary is antiquated, with a scarcity of outlets hampering the use of modern technological tools, thereby impacting teaching and learning.

Culinary services are compromised by an inoperative kitchen, including inadequate refrigeration and cooking appliances, requiring the P. Brent Trottier Middle School to function as a satellite kitchen, with meals being transported to Neary.

Lastly, parent pickup and drop-off is currently situated in the main parking lot and presents issues for pedestrian safety.

The District-run Southborough Extended Day Program functions as a before and after-school program for Southborough students. Currently, there is no office space for the program nor designated storage. The extended day educators use a partitioned portion of the faculty lunch room for storage and other make-shift spaces.

In the current grade configuration, school transitions demand significant efforts from the dedicated teachers and staff at Finn, Woodward, and Neary. They invest considerable time and energy in welcoming new families and ensuring a smooth progression for outgoing students. Since each elementary school is a two-year span, grade levels move quickly from entry to exit in the transition process. The process, starting as early as January, involves extensive inter-school meetings aimed at fostering a seamless transition, reflecting the commitment of District educators to student welfare.

However, this essential transitional phase also brings to light certain challenges that impact the efficiency of these endeavors. The different start and end times between schools complicate collaboration, making it difficult to synchronize efforts and share resources. This scheduling discrepancy not only hinders staff coordination but also affects vertical alignment meetings, which are crucial for maintaining continuity in educational objectives and strategies across grades.

For many students and their families, these transitions, although well-intentioned, can result in anxiety and stress. Despite the efforts to ease these shifts, the varied experiences of students indicate that transitions are still emotionally and educationally challenging.

Parents and guardians, especially those with children across all three elementary levels, often express concerns regarding the logistical difficulties posed by disparate schedules, which complicate daily routines such as drop-offs and pickups.

In response to these challenges, it is essential to explore strategies that can streamline the transition process and enhance collaboration between the schools involved. This may include aligning school schedules to facilitate easier transitions for families and enabling more frequent and effective vertical alignment meetings. By doing so, we can minimize the disruption to students' educational experiences and alleviate the concerns of their families.

Improving the transition experience in The Southborough Public Schools is not just about logistics and scheduling; it is about creating a cohesive, supportive environment that nurtures student growth and reduces anxiety. Through improved communication, collaboration, and coordination, we can ensure that every student feels prepared, supported, and confident as they progress through their elementary school journey.

Proposed:
Design Alternative 1: Grades 4 and 5

School	Grade Span	Alt. 1 Enrollment
Mary E. Finn Elementary School	PreK-1	260
Albert S. Woodward Memorial Elementary School	2-3	248
Margaret A. Neary Elementary School	4-5	305
P. Brent Trottier Middle School	6-8	409

The vision for Margaret A. Neary Elementary School encompasses a redesign to foster an educational environment where every space is purposefully crafted to support and enhance the learning journey.

There is a strong desire within our community for the construction of a school that preserves a close-knit atmosphere. This vision includes the implementation of learning neighborhoods. Such a structural and pedagogical arrangement supports a sense of community even in configurations with multiple grade levels. By embracing this model, we aim to enhance educational experiences in a way that is both innovative and deeply aligned with the values of the Southborough community. More details of the composition of the learning neighborhood follows.

Classroom design would prioritize flexibility, accommodating diverse groupings of students to support differentiated instruction and collaborative learning projects. Modern infrastructure would be a given, with classrooms outfitted to seamlessly incorporate technology into daily learning, ensuring that students are prepared for the digital age. Furthermore, small group rooms would be located between general education classrooms in each learning neighborhood, to support collaborative group work in break-out spaces and provision of specially designed instruction, academic intervention or extension lessons in close proximity to the classroom. Each learning neighborhood would include a learning commons that would serve as breakout space for differentiated learning science, technology, engineering, and media lessons and as a gathering space for larger groups of students and teachers. In the learning commons, flexible furniture and appropriate technology would support these goals.

Central to this vision is a library transformed into a modern media center, suited for fostering 21st-century media literacy skills. This space would become the heart of the school, a hub for innovation, learning, and discovery. ~~The traditional library space would be enhanced with multiple learning areas including an adjoining STE classroom to support the specific digital literacy goals and science laboratory needs including sufficient storage for the computing devices, science tools and engineering materials.~~ This space would be staffed by an ~~instructional technology specialist and~~ a library media specialist, both current members of the faculty. The art room would also be located adjacent to the media center and would be fully outfitted for technology infused art and digital literacy projects not only allowing for a STE inquiry focus but also providing for future flexibility in how spaces are used as educational demands and goals evolve. The art room would also be designed to meet the specific needs of the discipline with sufficient storage and space for creative endeavors.

In this design, music classrooms would be specifically planned to cater to their unique instructional needs, equipped with sufficient storage and spacious areas for students to freely explore. The gymnasium would be expansive, accommodating a comprehensive wellness program that nurtures students' physical education (PE), health education, and social emotional development. The gym would have a smaller space that can accommodate adaptive PE as well as yoga and dance.

Special education classrooms would be thoughtfully located in learning neighborhoods adjacent to general education classrooms, promoting inclusivity and allowing for a fluid transition between small-group instruction and mainstream classroom activities. These special education classrooms would include two substantially separate programs and learning centers for students on individualized education plans that require pull-out services. Adjacent to each substantially separate classroom would be a calming room that is available to all students in the learning neighborhoods. Related service providers (OT, PT, SLP) would benefit from designated spaces that ensure privacy and proximity to classroom activities, facilitating collaboration and accessibility. The school would feature dedicated areas for special education team meetings, assessments, and ensuring the highest quality continuum of services and appropriate levels of confidentiality.

The proposed Neary School would also include designated offices for the school psychologist, team chairperson, and behavior specialist ~~as well as a small group room for meeting with students and a testing space for assessing students~~. Importantly, there would be a conference room dedicated to special education meetings.

The proposed design would also include an instructional suite to support literacy, math and English Language Development (ELD) instruction. The instructional suite would have offices for the reading and math specialists that could accommodate small group instruction or small professional planning sessions with educators. English Language Development (ELD) teachers would each have a dedicated space sufficient to function as an office and an instructional classroom space for providing Tier 1 English Language Development instruction which must be provided outside the general education classroom. However, placing this classroom in close proximity to the general education classes promotes the inclusive culture to which the community is committed. With increasing numbers of English Language Learners (ELLs) in our community, an ELD classroom would be located between every two learning neighborhoods, able to service two grade levels. By being in close proximity to the learning neighborhoods, we would achieve our goals of inclusivity.

The instructional suite would be adjacent to a teacher collaboration space for each learning neighborhood. Educators would benefit from dedicated spaces for grade-level planning, professional learning, data analysis, and professional collaboration, enhancing the quality of instruction through improved instructional practices as well as shared resources and strategies. Between learning neighborhoods, a staff lunchroom would also serve as a teacher preparation space and provide workstations for educational support professionals and itinerant employees who do not have dedicated offices or classrooms within the building.

The cafeteria would not only house a fully operational kitchen but also offer flexible and efficient dining arrangements, making meal times a more enjoyable and social experience for all students. Furthermore, the redesign of the Neary Office space would prioritize a welcoming atmosphere that underscores the importance of safety,security and confidentiality for the entire school community.

This reimagined Margaret A. Neary Elementary School would stand as a testament to the exceptional teaching and learning that occurs within its walls. Every aspect of the building's design would reflect a commitment to safety, inclusivity, wellness, and the highest standards of educational excellence, creating a nurturing and dynamic environment where students, faculty, and staff can thrive.

Design Alternative 2: Grades 3-5 at a Consolidated Margaret A. Neary Elementary School and Grade 2 at Woodward Elementary School

School	Grade Span	Alt. 2 Enrollment
Mary E. Finn Elementary School	PreK-1	260
Albert S. Woodward Memorial Elementary School	2	124
Margaret A. Neary Elementary School	3-5	429
P. Brent Trottier Middle School	6-8	409

*The proposed Neary school Design Alternative 2 matches the description for Design Alternative 1 scaled to accommodate three grade levels.

Reconfiguring the grade levels to encompass grades 3-5 at Margaret A. Neary Elementary School presents an opportunity to significantly enhance the educational journey for students. This adjustment promises a multitude of benefits stemming from a more stable and extended period at a single institution. Over the course of three years, students and their families have the opportunity to forge deeper and more meaningful relationships with faculty and staff, fostering a sense of belonging and community that is essential for a supportive learning environment.

This extended tenure at Neary would facilitate unparalleled collaboration among educators across the third, fourth, and fifth grades. Such collaboration is crucial for creating a cohesive and aligned educational experience, enabling teachers to build upon each other's work, share insights, and develop strategies that address the needs of all students more effectively. In turn, this unified approach can significantly enhance the consistency and quality of instruction that students receive.

Furthermore, a three-year span at Neary would allow for a more seamless continuum of services, particularly in areas such as special education. This stability is key for students requiring additional support, as it ensures they have sustained access to familiar resources and personnel dedicated to their success, minimizing disruptions and maximizing the effectiveness of individualized education programs.

The benefits of this grade-level configuration extend beyond the classroom. Neary educators, families and students have an additional year at the Neary school to build relationships and focus on teaching and learning.

A three-year grade configuration fosters greater curricular coherence. With educators working closely within the same school, there is a greater opportunity to align curricula, ensuring that learning objectives are met sequentially and systematically. This alignment supports a more integrated and comprehensive approach to education, laying a strong foundation for student learning and achievement.

With this proposed reconfiguration, students and families would still experience two school transitions during their time, once from grade 1 to 2 and another from grade 2 to 3. Students and families would experience the Albert S. Woodward Memorial Elementary School for one year as it would house Grade 2.

Design Alternative 3: Grades 2-5 at a Consolidated Margaret A. Neary Elementary School and Woodward Elementary School

Proposed:

School	Grade Span	Alt 3 Enrollment
Mary E. Finn Elementary School	0	0
Albert S. Woodward Memorial Elementary School	K-1	260
Margaret A. Neary Elementary School	2-5	610
P. Brent Trottier Middle School	6-8	409

*The proposed Neary school Design Alternative 3 matches the description for Design Alternative 1 scaled to accommodate four grade levels.

Reconfiguring the grade levels to encompass grades two-five at Margaret A. Neary Elementary School presents an opportunity to significantly enhance the educational journey for students. The benefits include an extended period at a single school and the ability to maximize resources at the Neary School. Over the course of four years, students and their families have the opportunity to forge deeper and more meaningful relationships with faculty and staff, fostering a sense of belonging and community that is essential for a supportive learning environment.

In this configuration, collaboration among educators would span across second, third, fourth, and fifth grades. Such collaboration is crucial for crafting a coherent and aligned educational experience, enabling teachers to build upon each other's work, share insights, and develop strategies that address the needs of all students more effectively. This is true in the arts, music, physical education, library media, ~~STE,~~ and health classes, and all other academic subjects. There are also increased opportunities for sustained, embedded professional learning and collaboration. This alignment supports a more integrated and comprehensive approach to education, laying a strong foundation for student learning and achievement.

Furthermore, a four-year span at Neary would allow for a seamless continuum of services, particularly in areas such as special education and English Language Development. This stability is key for students requiring specially designed instruction, as it ensures they have access to familiar resources and personnel dedicated to their success, minimizing disruptions and maximizing the effectiveness of individualized education programs. Additionally, this configuration allows for cross-grade level groupings to support students with intensive special needs and for students to have more appropriate cohorts of peers with whom they work.

The benefits of this grade-level configuration extend beyond the classroom. In this configuration, students would transition once during their elementary school years. As a result, the time investment for transitioning students can be shifted to a focus on teaching and learning.

In summary, transitioning to a grades two-five configuration at Margaret A. Neary Elementary School offers a strategic approach to enriching the educational experience. It also achieves important goals of maximizing collaboration, achieving curriculum coherence, and reducing school transitions by one.

SCHOOL COMMITTEE CLASS SIZE POLICY

Current

The Public Schools of Southborough's *Class Size Policy* sets forth guidelines for determining class sizes for core courses in grades K-8, grounded in the school district's Core Values, Mission Statement, and Budget Priorities as established by the School Committee. It takes into account several criteria when deciding on class sizes, including class composition (which encompasses academics, behaviors, emotional support, language needs, and social aspects), class enrollments, educational philosophy, facility and financial constraints, and legal mandates.

The School Committee has recommended desirable class size ranges that vary by grade level: 16-20 students for grades K-2, 16-22 students for grades 3-5, and 18-22 students for grades 6-8, aiming to optimize the learning environment and educational outcomes.

The process for implementing these desirable class size ranges involves a yearly assessment during the budgetary process, where each school's principal, in collaboration with onsite staff, proposes staffing needs to the Superintendent in alignment with the Class Size Policy. Should class sizes exceed these desirable ranges due to various constraints or changes in student numbers, a thorough review process is initiated. This involves gathering input from teachers and administrators to make informed decisions on how to best support the affected classes, possibly including recommendations for additional resources or support. Moreover, should unforeseen conditions arise during the school year that impact the policy's implementation, principals are tasked with developing action plans, in consultation with teaching staff, to address these challenges, thereby ensuring that class sizes remain conducive to effective teaching and learning.

Proposed
Regardless of the preferred option, there is not a planned change to the District's Class Size Policy. The District is committed to fostering an inclusive educational setting, as emphasized in its Class Size Policy. Adhering to the policy is essential to accommodate the varied learning profiles present within each classroom, enabling educators to effectively engage and educate every student. Recognizing the legal and ethical mandate for placing students in the least restrictive environment possible, our classrooms have become increasingly diverse. This diversity underscores the importance of smaller class sizes, which are pivotal in allowing teachers to craft and deliver lessons that cater to the unique needs of each student, thereby maximizing their potential. The community is committed to maintaining small class sizes so we will design to remain consistent with the District's policy language, 16-20 students for grades K-2, 16-22 students for grades 3-5, and 18-22 students for grades 6-8.

SCHOOL SCHEDULING METHODS

Current
The process of crafting elementary school schedules is a thoughtful and dynamic exercise, undertaken annually with a commitment to continuous improvement and alignment with the District's educational priorities and District time on learning guidelines. District administrators and school leaders convene in collaborative sessions to ensure that the scheduling framework not only reflects the overarching goals and guiding principles of the District's educational mission but also optimizes the learning experience for every student. This partnership extends to include a dedicated committee of teachers, allowing for a broad spectrum of insights and expertise to guide decision-making, ensuring that the schedules are crafted with a keen awareness of both student needs and educational standards.

<u>Elementary Time on Learning Guidelines</u>

Content Area (K-2)	Minutes each Day (Minimum)	Notes
ELA (Reading and Writing)	120	*Integrating Science and History/Social Science, Digital Literacy and Computer Science (DLCS), Social Emotional Learning (SEL)*
Mathematics	75	
Science or History/Social Science	45 mins, 3 days per week	*Integrating Reading and Writing, DLCS, SEL*
Specials/World Language	45 - 60	
Lunch/Recess	Up to 50	

Snack/ Stretch	Up to 10	
Morning Meeting	30	
	375	

Content Area (Gr. 3-5)	Minutes Per Day (Minimum)	Notes
ELA (Reading and Writing)	120	*Integrating Science and History/Social Science, Digital Literacy and Computer Science (DLCS), Social Emotional Learning (SEL)*
Mathematics	75	
Science or History/Social Science	45 mins, 3 days per week	*Integrating Reading and Writing, DLCS, SEL*
Specials/ World Language	45 - 60	
Lunch/Recess	Up to 50	
Snack/ Stretch	Up to 10	
Morning Meeting	30	
	375	

As the student experience is designed, it is done with the understanding of the pace of learning, the importance of balance, and the necessity of providing an environment conducive to social emotional and academic growth. The structured student day is designed to maximize engagement, foster educational exploration, and support the well-being of every learner.

In addition, scheduling endeavors to maximize time for grade-level educators' common planning, data teams, and cross-grade level educator collaboration. Currently, with the varying start and end times, cross-grade collaboration between schools happens infrequently.

The scheduling process within each school adopts a collaborative team-based methodology, emphasizing the strategic timing of grade-level specials to coincide across each grade level. This alignment is designed to provide teachers the opportunity for weekly common planning time, facilitating cross-curricular planning initiatives and enabling a consistent and collective review of data. The approach enhances the coordination and quality of instruction and creates a more unified and integrated educational experience for students. Furthermore, this scheduling strategy benefits service providers by creating dedicated time slots to engage with specific grade levels for specific disciplines as required, ensuring that the needs of all students are met more efficiently and effectively. Through this approach to scheduling, schools are able to optimize instructional support and foster a more cohesive learning environment.

For the successful inclusion of subjects like art, music, physical education, library, and world language classes within the new scheduling framework, the specific design alternative chosen will directly influence the number of dedicated teaching spaces required, as noted in each of the subsections below. This provision is essential to support the scheduling of Specials, guaranteeing that each discipline benefits from an environment designed to meet its distinct instructional demands. The decision on the precise number of teaching stations necessary will be based on the design alternative selected, showcasing the District's commitment to offering a balanced and enriched educational experience for students through thoughtfully designed and equipped spaces.

NEARY MASTER SCHEDULE

	Monday	Tuesday	Wednesday	Thursday	Friday
8:50- 9:35	Art- Dolan PE- Schwepp Music- Soldo Lib/ IT- Finneran	Art - Grenier PE- Turieo Lib/ IT - Wallack	Art- Theve PE- Finneran Lib.IT - Ahearn Music- Collins	Music- Grenier Lib/IT - Turieo PE - Wallack	Music - Ahearn PE - Finneran Lib/ IT - Theve
9:35 - 10:20	Art- Schwepp PE - Dolan Music- Finneran Lib/IT - Soldo	PLC Grade 5/ SEL + Stretch Led by Grade4	Lib/IT- Head Music- Dolan PE- Schwepp	PLC Grade 4 / SEL + Stretch Led by Grade5	Lib/ IT - Head Music - Schwepp PE- Dolan
10:20- 10:30	Stretch		Stretch		Stretch
10:30- 11:15	Art- Wallack Lib/ IT - Tureio	Art- Soldo PE- Flannigan Lib/IT - Schwepp	Lib/IT - Gernier PE - Fisher Art - Turieo Music - Wallack	Music- Head Lib/IT - Schwepp PE Collins	Lib/ IT - Fisher Music- Turieo PE - Wallack
11:15- 12:00		Art- Finneran Lib/ IT- Theve PE- Ahearn	Lib/ IT - Fisher PE - Grenier Art -Gardula	Music- Gardula PE- Finnegan Lib/ IT - Soldo	Lib/ IT - Grenier
12:00- 12:45 (Grade 4 lunch)		Fourth Grade Art Studio	Lib/ IT - Wallack PE- Turieo		PE- Soldo Lib/ IT - Finnegan
12:45 - 1:30 (Grade 5 lunch)	Art- Fisher PE- Grenier Lib/ IT - Gardula	PE Fisher	Fifth Grade Art Studio	Music - Theve Lib/ IT- Finneran PE - Gardula	
1:30 - 2:15	Lib/IT- Finneran PE Theve Art - Ahern	PE Head Lib/ IT - Dolan	Art- Finnegan PE -Soldo	Music - Finneran PE - Theve Lib/ IT - Ahearn	Lib/ IT - Gardula PE Collins
2:15 - 3:00	PE- Head Lib/ IT - Collins	Art - Head PE- Gardula Lib/iT - Collins	Art- Collins	Music Fisher PE- Ahearn Lib/ IT -- Dolan	Band / Orchestra

3:00 - 3:10					

- Instrumental Lessons are scheduled throughout the day.

Woodward Master Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
8:55- 9:25		Gr 2 Enrichment	Gr 3 Enrichment		9:00- CARE
9:30 - 10:15	Art-McLean Lib Media- Farrar PE-Serra	Art- Farrar Library Media- Kelleher PE McLean	Art-Serra Lib Media - McLean PE Farrar	Lib Media- Serra Music: McLean PE: Farrar	Lib Media: Coyle PE: McLean Music: Farrar
10:15- 11:00	Art-Kelleher Lib Media - Farrar PE Coyle Strings- Lehane	Art- Coyle Lib Media - Kelleher PE- Serra Strings McLean/Lehane	Lib Media- McLean PE Kelleher Music Coyle	Lib Media- Serra Music: Kelleher PE: Coyle	Lib Media: Coyle PE: Kelleher Music: Serra
11:45	Art-Lehane PE-Robison Music:	Art-Robison Lib Media-Lehane PE- Henebury	Lib media- Henebury PE Robison Music- Lehane	Lib Media - Robison PE: Lehane Music:	Music: Robison PE - Lehane
11:45 - 12:30	Art-Henebury Strings: Kelly	Lib Media- Lehane Strings: Kelly	Lib media - Henebury	Music - Henebury	PE- Henebury Lib Media- Kelly
Grade 2 lunch 11:45					
Grade 3 Lunch 12:30					
12:45 - 1:30	Lib Media: Black PE Guccione	Art: Black	Music: Black PE: Guccione	PE: Black Lib Media: Robison	Music: Guccione
1:30 - 2:15	Art: Duchane Lib Media: Black PE: Foy	Art-Foy Lib Media - Duchane	Lib Media- Foy PE: Duchane Strings:	Lib Media - Guccione Music Duchane	Lib media: Kelly PE: Black

	Strings: McLean	Strings: Henebury	Henebury	PE: Foy	Music: Foy
2:15 - 3:00	Art: Kelly Strings: Kelleher	Art- Guccione Lib Media- Duchane Music Kelly	Lib media: Foy PE: Kelly Strings: Kelleher	PE: Kelly Lib Media: Guccione Strings: Duchane	PE: Duchane
3:00 - 3:10					

The current scheduling model for supporting students with special needs at Neary and Woodward involves collaboration among classroom teachers and special educators, and the plans for the new Neary School are designed to continue this approach. Emphasizing an inclusive philosophy, the majority of academic support and interventions are scheduled to be integrated within the classroom setting to ensure all students' needs are met in a least restrictive environment. For students requiring a quieter space for concentration or multilingual learners in need of specialized language instruction, additional support outside the classroom is scheduled. Consequently, the new Neary design would include smaller, strategically placed learning spaces within each learning neighborhood for focused and targeted instruction. These spaces would be intentionally located near general education classrooms to optimize learning time for all students, and best support students' schedules.

Additionally, the District acknowledges that the educational landscape of tomorrow may diverge significantly from today's practices. Therefore, it is imperative to prioritize a facility design for forthcoming schools that can adapt to these evolving requirements. An illustrative focus lies in fostering an environment conducive to nurturing students' capacities in digital literacy, communication, and collaboration. Consequently, the District commits to revisiting scheduling procedures and time allocations, ensuring ample opportunities for students to engage in ~~STE~~ l~~L~~earning in~~Labs and~~ dynamic, adaptable spaces. These spaces will empower students to intricately plan, execute, and articulate their learning experiences through flexible configurations tailored to their needs.

Proposed
There are no proposed changes to the Time on Learning expectations or the approach to student and educator schedules. However, the District continues to support educators in collaborating across disciplines for integration across subjects. This is a crucial component of the District's approach to scheduling and professional planning in order to meet the time on learning guidelines and addressing the full array of standards while also provided a well-rounded experience that includes world language and the fine and performing arts. ~~For example, the integration of digital literacy and computer science standards into core subjects may mean that the work that an instructional technology specialists is leading in the STE Lab is co-designed with a general education teacher and addresses social studies standards as well.~~ ¶

Design Alternatives 2 and 3 would impact the start and end time of the school day.

Design Alternative 1: Grades 4-5 at Margaret A. Neary Elementary Elementary School

School	Start Time	School End Time
Finn	9:10 AM	3:25 PM
Woodward	8:55 AM	3:10 PM
Neary	8:45 AM	3:00 PM

Design Alternative 2: Grades 3-5 at a Consolidated Margaret A. Neary Elementary School

School	Start Time	School End Time
Finn	9:10 AM	3:25 PM
Woodward	8:55 AM	3:10 PM
Neary	8:45 AM	3:00 PM

Design Alternative 3: Grades 2-5 at a Consolidated Margaret A. Neary Elementary School

School	Start Time	School End Time
Woodward (PK-1)	9:10 AM	3:25 PM
Neary (2-5)	8:45 AM	3:00 PM

TEACHING AND LEARNING

Administrative and Academic Organization

Current

At the Margaret A. Neary Elementary School, educators are on grade-level teams, each composed of six to eight teachers responsible for teaching core subjects such as math, science, social studies, and English Language Arts (ELA). However, the building does not support logical groupings of grade level classrooms by teams. The school operates under the guidance of a full-time principal who oversees both the teaching and the academic support staff.

Proposed

	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Learning Neighborhoods	0	2	3	4
Administrative Structure	1 principal	1 principal	1 principal 1 AP	1 principal 1 AP

A redesign of the Margaret A. Neary Elementary School would include the introduction of learning neighborhoods to support interconnected learning communities within the school. Each learning neighborhood would have a learning commons equipped with technology and flexible furniture to support small group breakout sessions, collaborative projects, and independent work and learning experiences related to science, technology and engineering~~at times~~. In addition, small group rooms will be located between general education classrooms to provide a quiet, distraction-free setting for targeted instruction for small groups, collaboration among peers or pull-out services close to the general education setting. Learning centers and substantially separate special education rooms would also be located in the learning neighborhoods to promote a more inclusive environment. These learning neighborhoods would support collaboration, relationship building, and flexible grouping across classrooms. This strategy is aimed at breaking down the barriers presented by the traditional school layout, paving the way for a more inclusive, dynamic, and collaborative educational setting that enriches the learning experience for all students.

In Design Alternatives 2 and 3, the principal would be supported by an assistant principal in leading the school.

<u>Curriculum and Instructional Practices</u>
Overview, Mathematics, English Language Arts/Literacy, Social Studies, Science, Technology, and Engineering, World Languages, Digital Literacy, Computer Science and Instructional Technology, Library Media Science, Visual Arts, Performing Arts, Physical Education and Wellness

Current
The District collaborates closely with educators to design lessons, assessments, and learning environments grounded in the principles of Universal Design for Learning (UDL), ensuring accessibility for all students. This comprehensive framework focuses on setting rigorous goals

for all students and designing learning experiences with flexible means for learners to achieve these goals. Educators plan in ways that reduce students' barriers to engaging in learning, recognizing and comprehending knowledge, and demonstrating their understanding and skills.

The existing infrastructure at Neary School, however, limits the flexibility of teaching methods due to its traditional design, which does not accommodate modern educational models emphasizing hands-on projects, group work, and student-driven learning choices.

Proposed
The District will continue to support educators in using the UDL framework to provide inclusive and engaging learning experiences that help students develop into expert learners who exercise agency and increase independence over time. In pursuit of full accessibility, classrooms should be designed with voice amplification systems to support all learners.

In addition, the District is continuing to support the adoption of new high-quality instructional materials in ELA, a multi-year implementation process that involves ongoing professional learning, and preparing to adopt new instructional materials in mathematics in 2025. In addition, the District is planning to update instructional methods in the area of science to align with the state frameworks and a national focus on phenomenon-based science inquiry. The design implications of these curriculum and instruction foci are detailed by discipline below.

Mathematics:

Current
Elementary mathematics education emphasizes providing students with enriching experiences in grade-level math, connecting content standards to mathematical practices. The District's approach to elementary math instruction, delivered by grade-level teachers in general education classrooms for 75 minutes daily, is designed to be inviting and engaging. Students are actively encouraged to engage in mathematical discourse with both their teachers and peers, fostering collaboration, problem-solving skills, and mutual learning. Teachers cultivate an environment that nurtures student confidence and independence, enabling them to become adept problem-solvers who can work collaboratively. Educators work with students as a whole class, in small groups and provide opportunities for individual work time. On a daily basis, students interact with a supplemental, adaptive technology on a Chromebook that supports their individual journey to develop conceptual understanding and procedural fluency with math concepts while engaging in productive struggle with challenging puzzles. It is currently challenging to accommodate the different configurations called for by the District's math program in the Neary classrooms.

Proposed
The requirements of an elementary mathematics classroom are diverse, with a wide array of activities occurring throughout the day, week, and month. An adaptable space that provides flexibility for mathematics learning is essential. This includes a large gathering area where students can congregate without desks or chairs to engage in classroom routines like counting

exercises, number talks, and strategy sharing. Ideally, this area should be situated near a screen for projecting student work, problems to consider, videos, or other visuals to facilitate mathematical discussions.

There should also be ample space for teachers to work with small groups of students, while other groups engage in activities throughout the room. These groups may utilize manipulatives and vertical whiteboards for problem-solving. Technology should be readily available for explaining concepts, practicing skills, or displaying student work. The classroom space should also support independent work which might involve students working at individual work stations, collaborating at tables, on rugs or floor spaces, standing at counters or working in the learning commons with peers or another educator, such as a math specialist or an educational support professional (ESP) supporting intervention or extension of learning. Some students will choose a distraction-free space in the classroom or a small group room to support their ability to access the learning with a math specialist, a special educator, or an ESP.

English Language Arts/Literacy

Current

Elementary educators use the comprehensive Great Minds' *Wit & Wisdom* core curriculum to deliver ELA instruction. This curriculum provides a robust framework for teaching literacy skills and engaging students in meaningful reading, writing, and oral language experiences.

To ensure a strong foundation in literacy, teachers integrate various instructional approaches and resources. Foundational skills development is supported by programs such as *Project Read Phonics*, *Haggerty Phonemic Awareness*, and *Phonics and Spelling Through Phoneme-Grapheme Mapping*. These resources offer systematic and explicit instruction to help students master essential phonics and spelling concepts.

In the delivery of literacy instruction, teachers employ a diverse range of strategies to cater to the needs of all learners. Whole-class instruction allows for the exploration of complex texts and the introduction of new concepts, fostering shared experiences and discussions among students. Small group activities provide opportunities for targeted instruction and differentiated support, allowing educators to address individual learning needs more effectively. Additionally, independent work time encourages students to apply their skills and creativity in reading and writing tasks, promoting autonomy and self-expression.

Teachers may lead whole-class lessons with students seated at desks and chairs, providing structured guidance and direct instruction. Alternatively, teachers may facilitate small group discussions or activities with students gathered on the floor in circles or groups, promoting collaboration and peer interaction. This flexible approach to classroom organization enables educators to adapt their teaching methods to suit the specific objectives of each lesson and the learning preferences of their students.

Overall, the implementation of the *Wit & Wisdom* curriculum alongside targeted foundational skills instruction creates a rich and engaging learning environment for students, fostering their development as proficient readers, writers, and communicators.

Proposed

The District will continue to support educators in implementing the *Wit & Wisdom* curriculum as well as the foundational skills programs currently in use. The District will also seek to create more interdisciplinary lessons where literacy themes overlap with science and social studies topics.

Literacy instruction requires a classroom that is designed to foster a productive learning environment, where teachers serve as facilitators and students develop the essential skills needed for success in secondary school and ultimately the workplace. In addition to traditional classroom spaces, small breakout rooms adjacent to general education classrooms will support differentiation of learning with support from reading specialists, special educators and ESPs. This type of targeted instruction or peer collaboration will also happen in the learning commons and may draw students from multiple general education classrooms.

Flexibility within the classroom layout is paramount to enhance student productivity and foster collaboration and communication. Key design elements include:

- A literacy-rich environment characterized by a diverse array of books spanning various levels and genres. Bookshelves should be accessible at an age-appropriate height, creating an inviting atmosphere conducive to reading.
- Ample wall space for displaying anchor charts, comfortable seating arrangements, abundant natural light, and inviting baskets filled with high-quality literature.
- Provision of audiobooks and headphones to accommodate diverse learning preferences and abilities.
- Access to books in multiple languages to reflect the cultural diversity of the classroom, ensuring that all students feel represented in the reading materials.
- Inclusion of titles that showcase diverse cultures and neurodiversity, allowing children to see themselves reflected in the stories they read.
- Dedicated space for dramatic interpretations of literature and drama, featuring a stage, microphone, recording technology, and seating for an audience. Dramatization of literature may take place in the classroom or in the learning commons for larger audiences or cross-class groups.
- An adaptable classroom layout that can be easily reconfigured to accommodate different learning activities and group dynamics, facilitating personalized and collaborative learning experiences.

The classroom will incorporate diverse seating options to promote collaboration when students work in small groups or pairs. This includes high tables, low tables, round and square tables, as well as flexible seating choices such as large pillows, couches, bean bags, stools, and tables.

Other essential features encompass a designated space for mini-lessons, read-aloud, and group discussions, complete with a rug and comfortable seating. A small teacher work area with a kidney-shaped table serves multiple purposes for collaborating with students and having supplies readily available. Additionally, reading, writing, and general materials are stored in an easily accessible area, along with access to technology to support instruction and research purposes.

Social Studies

Current

The social studies curriculum is designed to encompass civic knowledge, dispositions, and skills, reflecting the diverse range of disciplinary skills. The curriculum is aligned with Content Standards and Literacy Standards for history and social science, and emphasizes seven practices essential for inquiry and research. The District curriculum strives to empower students to navigate democracy's potential and challenges effectively. Moreover, it prepares them to engage in societies with demographic and cultural diversity. Teachers have developed interdisciplinary units that integrate literacy and social studies standards. Students are developing their reading, writing, listening and speaking, research skills while learning history content. Students are also often engaged with primary sources which may include texts, art, and photographs. When students are working in small groups on projects you will often see some students in the hallways working on the floor or at makeshift work stations.

In addition, teachers currently seek opportunities to integrate Digital Literacy and Computer Science Standards into their science curriculum units.

Proposed

Central to the new design is the provisioning of spaces that are rich with information, imagery, and artifacts relevant to social studies concepts. This approach aims to immerse students in environments where learning materials deepen their understanding and connection to the subject matter. This will be accomplished both in the classroom and in the media center.

The ideal classroom layout emphasizes flexibility and adaptability, incorporating a variety of work spaces and seating arrangements to facilitate student collaboration. High tables, low tables, round, and square tables are considered essential to accommodate diverse learning and teaching styles, promoting active engagement and interaction among students.

A dedicated area within the classroom will serve as a resource hub, allowing students easy access to materials essential for exploration and learning. The strategic use of wall space for displaying timelines, maps, and charts is highlighted as a method to integrate social studies into daily classroom dialogues, fostering cross-curricular connections. Bookshelves, thoughtfully placed at student-friendly heights, will house a broad range of resources, from historical documents to multimedia, catering to varied reading levels and interests.

Furthermore, the integration of technology is essential to the history curriculum. Accessible technology will not only support instruction and enhance digital literacy but also open doors for students to engage in virtual explorations, craft their timelines, and pursue social studies-related interests in innovative ways.

Teachers will continue to provide opportunities for interdisciplinary study and project based learning. This will continue to include opportunities for the inclusion of Digital Literacy and Computer Science Standards in the social studies lessons. At times this involves robots and other computing devices that are shared across classrooms and use of the learning commons will be a key option to support this. Options to break out into small group rooms between general education classrooms or working in the learning commons where flexible furniture and appropriate technology will support effective learning. The learning commons and breakout rooms will also allow teachers to flexible group students across general education classrooms.

In summary, The Public Schools of Southborough's vision for social studies classrooms marries traditional learning tools with modern technology and flexible design principles.

Science, Technology, and Engineering

Current

Elementary teachers foster engagement in science and technology/engineering (STE) education among their students using Carolina Science curriculum *Engineering is Elementary* (EIE) units developed by the Boston Museum of Science. These units provide STE curriculum that encompasses hands-on activities, investigations, and design challenges, which ignite students' curiosity and cultivate their analytical skills for scientific inquiry. They actively promote student involvement in learning, aiming to instill a growth mindset that empowers students to take ownership of their learning and excel in STE subjects.

In their teaching, elementary teachers prioritize relevance, ensuring that STE education is meaningful and applicable to students' lives. They emphasize the practical application of knowledge and skills to real-world situations, equipping students with the analytical thinking and problem-solving abilities necessary for success in today's world. Additionally, they strive to support high levels of achievement for all students, including females, racially and ethnically diverse populations and those with varied learning needs, to create an inclusive learning environment. In addition, teachers currently seek opportunities to integrate Digital Literacy and Computer Science (DLCS) standards into their science curriculum units.

Through purposeful integration of science and engineering practices with core concepts, elementary teachers ensure that students develop increasingly sophisticated skills and are equipped to apply scientific reasoning effectively across various contexts and situations, laying a strong foundation for their future success.

Currently, general education teachers make do with a typical general education classroom as the space where students conduct science and engineering experiments. The instructional technology specialist teaches specific DLCS skills in the general education classroom and brings materials with her for each lesson, moving around the building. In addition, the instructional technology specialist and library media specialist teach DLCS enriched lessons in the library which is not currently properly provisioned for these high-tech activities.

Proposed

Space Summary	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Science Technology and Engineering (STE) Learning Lab	0	~~1~~0	~~1~~0	~~1~~0

The new design would provide adequate space to facilitate experiments and inquiry work within the learning commons. ~~the science, technology, and engineering (STE) curriculum. The design would provide a flexible STE Learning Lab that accommodates various learning activities. General education teachers are responsible for teaching science and engineering lessons, and they would be able to take their students to the STE Learning Lab for hands-on experiments and design projects.~~

In addition, teachers will continue to integrate Digital Literacy and Computer Science (DLCS) Standards in many disciplines which may involve robots and other computing devices that are shared across classrooms. This could take place in the classrooms, media center, and the learning commons~~STE Learning Lab~~ and might involve co-teaching with the instructional technology specialist who has specialized skills in this area.~~and would oversee the STE Learning Lab and this room would be their home-base~~. In addition, the instructional technology specialists and the library media specialist each teach some of the DLCS standards and technology skills during designated times in the schedule and would do this in the ~~STE Learning Lab and~~ media center, Learning Commons, or general education classrooms~~r~~. ~~It will be important for the STE Learning Lab to be adjacent to the media center to support this integration of content.~~

Key design components for the learning commons to be used to spuport ~~as~~ STE experiences~~Learning Lab~~ include:

- Provision of water in multiple locations, with at least one deep/work sink to facilitate cleaning and activities such as density investigations.
- The safe availability of electricity ~~at each workstation~~ is crucial for activities involving digital technology.
- Inclusion of large, deep cabinetry units to store STE investigations and large-scale models, along with ample counter space for project setups.
- ~~Adequate room size to allow flexible workstation configurations and whole-group instruction areas, furnished with light-blocking shades for activities involving light and waves.~~

- Furniture featuring adjustable height tables on wheels and stools promoting core strength, facilitating multiple student group configurations.
- Easy access to outdoor environments and open-air meeting spaces, fostering connections with nature and real-world learning experiences.

~~The District aims to incorporate STE Learning Labs to enhance teaching and integration of DLCS standards as well as science, technology, engineering with goals to develop critical thinking skills, create coherent learning experiences, and deepen connections to core values of engagement, equity, and wellness~~.

The~~To the extent possible,~~ learning commons in learning neighborhoods will~~should~~ provide many of the same design features listed below to ensure STE-related learning activities can happen anywhere including classrooms, within extended learning spaces, and in the Learnig Commons~~STE Learning Labs~~. ~~This would allow multiple classes to engage in this type of learning at the same time throughout the building and not vie for usage of the STE Learning Lab as the only location suitable for STE enriched activities. ¶~~

The District plans to integrate numerous "green building" features into the improved facility to enhance efficiency and sustainability, intending to label and identify these features as real-world applications of science, technology, and engineering for student understanding.

World Languages

Current

The Public Schools of Southborough provides students in kindergarten and grade one with Spanish classes twice a week for 30 minutes each. The Spanish program provides students the opportunity to learn about others' cultures and develop proficiency in a language other than English at a developmentally critical time. Currently, there is not a dedicated classroom and the educator teaches within each teacher's classroom. This limits the teacher's ability to create a language-rich environment for the students. Spanish classes will be added to second and third grade in 2024-2025 at 60 - 90 minutes per week and to fourth and fifth grade in 2025-2026 for 90 minutes per week.

Proposed

Space Summary	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
World Language Classroom	0	1	2	2

The new design will include a dedicated world language classroom to improve language skills through a language-rich environment that supports small group and whole group lessons as well as individual work space. The language classroom will support students learning and improving their proficiency in Spanish language and have augmented acoustics. The language classroom will have technology, books, and a variety of Spanish language resources that engage students in interactive activities, enhancing their Spanish listening, speaking, reading, and writing skills. The language classroom will be an adaptable classroom layout that can be easily reconfigured to accommodate different learning activities and dynamic group activities including art projects, singing, and dancing to learn about world cultures.

Digital Literacy, Computer Science and Instructional Technology

Current

The Public Schools of Southborough is committed to a 21st century education that is enriched by technology across disciplines. The District has a one-to-one device program that provides all students access to a Chromebook and teachers rely heavily on projection systems, document cameras and augmented acoustics in all disciplines. The Instructional Technology Specialist (ITS) assists teachers in infusing DLCS standards into lessons across disciplines.

~~The ITS also staff's the STE Lab where they will provide direct instruction to students and can support teachers who use the resources available.~~ In addition, the ITS teaches students directly in collaboration with the library media specialist and by pushing into general education classrooms because there is not a dedicated location for this instruction.~~By having teh STE Lab adjacent to the Media Center, this collaboration can be seamless. ¶~~

Proposed

The vision for a future Neary Elementary School assumes seamless integration of technology throughout the building. The goal is for educators and students to be able to move throughout the building and use projection systems, wifi systems and other technology systems with ease.

Further details about DLCS and technology instruction are detailed in other subjects especially the science, technology and engineering section and the Library Media Sciences section of the academic program descriptions.

<u>Library Media Sciences</u>

Current:

The library at Neary is a pivotal component of students' education. Students visit the library at least twice per week for a curriculum that includes traditional library standards, DLCS standards and a commitment to teaching inquiry skills. The Neary Elementary School has a traditional library which is inadequate in several respects. The space has insufficient lighting and airflow and was not designed for the infusion of digital literacy and computer science in the library curriculum. The library media specialist and the instructional technology specialist often collaborate in this space. In addition, the library is often used for meetings but does not have sufficient seating or an appropriate set-up to comfortably and effectively accommodate staff meetings. Professional development is occasionally held in the library but it is only appropriate for small group professional learning due to the configuration of the space and the limited projection system available despite having significant square footage in the library.

Proposed:
In the digital age, where information is ubiquitous and learning extends beyond traditional classroom walls, the Media Center's role within the educational landscape of The Public Schools of Southborough is pivotal. This evolution reflects the District's broader educational vision, where information literacy becomes a cornerstone, equipping students not just with the ability to gather information but also to critically assess and utilize it effectively across various domains. This approach aligns with the District's commitment to wellness and the holistic development of students, integrating digital citizenship, media literacy, and a love for lifelong learning.

The District's vision for the new school's Media Center transcends traditional boundaries, aspiring to be a dynamic hub that supports the Digital Literacy and Computer Science (DLCS) Standards alongside the AASL/MSLA frameworks. It aims to cultivate an environment where exploratory learning, critical digital literacy, and media literacy skills are not just encouraged but are integral to the student experience. The Media Center will be a hub of creativity and innovation, offering a vast, flexible, and area designed for multifunctional use. The space will also celebrate literature, fostering a lifelong love of reading through engaging read-aloud sessions and literature-based lessons connected to the ELA, Social Studies, and Science Massachusetts State Frameworks. ~~The media center will be alongside a STE Learning Lab that enables students to engage in hands-on activities, integrating content areas and applying technology creatively to solve complex problems. The STE Learning Lab would be supervised by the Instructional Technology Specialist while the media center would be supervised by the library media specialist. These professionals regularly collaborate in the current configuration.~~ ¶

To meet the needs of a diverse student population and reflect society's rich cultural diversity, the Media Center must:

- Provide a welcoming common area with access to digital devices and flexible seating, allowing students to explore, research, communicate, and collaborate effectively.
- Feature a collection of materials that mirrors a diverse society, supporting inclusive learning experiences.
- Accommodate flexible learning spaces for individual and group instruction.
- Technology will be seamlessly infused, with mobile devices distributed throughout the building to foster a community where information access, collaboration, and independent work are supported.

This envisioned Media Center will be a cornerstone for academic and personal growth.

Visual Arts Programs

Space Summary	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Art	1	1	1	1~~2~~

Current
At the elementary level, students are engaged in exploring their creativity in visual arts across a diverse range of projects. These projects span various media, including drawing, painting, sculpture, ceramics, textiles, digital art, and interdisciplinary endeavors that weave together elements of STE, humanities, and performing arts. The curriculum prioritizes the development of specific artistic skills while placing a strong emphasis on cultivating lifelong learning skills such as creative problem-solving, observation, teamwork, and exploratory play. The current art room at Neary is a general education classroom that has been converted to an art room and therefore lacks storage and sufficient work space.

Proposed
To realize this educational vision, the visual arts classroom must be a dynamic space that could be used for different teaching methodologies and artistic media. Essential features of this classroom include:

- A spacious, open area with a rug for whole-class discussions and activities.
- Sizable tables with stools to support both collaborative and solo artistic endeavors.
- A suite of equipment including a whiteboard, ceiling-mounted projector, document camera, projection screen, bulletin boards, drying racks, and readily available laptops and tablets.
- Ample storage to keep art materials and student projects organized, including an art workroom with storage and a kiln.
- ~~Provisions for STEAM integration would be facilitated by locating the art room near the media center and STE Learning Lab.~~
- Equipped with technology resources to support inquiry and the engineering design process.
- Spaces that facilitate an integration of visual and performing arts throughout the curriculum, the school should feature a dedicated, versatile space—distinct from the cafeteria or gymnasium—for showcasing visual arts, hosting intimate performances, and presenting student projects.

Performing Arts Programs

	Current	Design Alt	Design Alt	Design Alt

		1 (4-5)	2 (3-5)	3 (2-5)
Performing Arts (Music)	2	2 (Includes larger performance area)	3 ~~(including 1 large performance area)~~	3 ~~(including 1 large performance area)~~

Current
Music education is offered to all students, with classes that enrich the traditional ensemble experiences of chorus, band, and orchestra. The music curriculum offers opportunities for ensemble singing, instrument playing, physical movement, dramatic expression, music reading and writing, analytical listening, and composition.

Students engage in general music education classes once per week. In addition, students in grade three participate in weekly small group instrumental lessons. In grades four and five, many students participate in ensembles, including band, orchestra, and chorus, with instruction encompassing both large-group and small-group instrumental lessons. The band experiences include Blues Band, Beginners Band, and 5th Grade Band as well as full band rehearsals. Between band, orchestra and chorus, there is currently a music ensemble practicing every day either before or after school at Neary. This comprehensive approach not only nurtures musical skills but also enriches the students' cultural and emotional development.

Current levels of participation in music beyond general music class		
Music Activity	**Third grade (currently at Woodward)**	**Fourth and fifth grade (currently at Neary)**
Chorus		72
Instrumental lessons	67 students	38 small groups for band 23 small groups for orchestra
Band (rehearse in various configurations)		145
Orchestra (rehearse both grades together)		65

The current music rooms at Neary have significant limitations and are in constant use throughout the school days as well as before and after school. One of the music rooms is not ADA accessible due to stairs at the entrance. In addition, there is insufficient storage and therefore musical instruments are often in hallways or the edges of general education classrooms during the school day. There is no performance area so all community music events are hosted at Trottier Middle School.

Proposed
The design would include spaces that are tailor-made for music education, featuring:

- A spacious, adaptable area that is carpeted, with ceilings higher than standard to facilitate a range of activities, including classroom learning, music practice, choral singing, performances for parents and the community, and instrumental instruction. Such a space benefits from extensive acoustic treatments to enhance sound quality and ensure a versatile environment for various musical pursuits.
- Incorporating acoustical enhancements is crucial for protecting students' hearing and enhancing the effectiveness of curriculum delivery. These features are key to creating a conducive learning environment that prioritizes student safety and educational quality.
- ~~A sufficiently large performance area that can accommodate ensemble rehearsals and enable the hosting of both formal and informal concerts, providing students with essential experiences in performance and audience engagement. ¶~~
- ~~Dedicated spaces for small group lessons, particularly for band and orchestra students, allowing for focused instruction and practice that is critical for developing instrumental skills. ¶~~
- A designated space for instrument storage.

Wellness - Physical Education And Health

	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Physical Education (Gymnasium)	2	1	1	1
Adaptive PE/PT~~Yoga~~	0	1	1	1
Health Classroom	0	0~~1~~	0~~1~~	0~~2~~

Current

The Public Schools of Southborough prioritize wellness, reflecting this commitment through the District's values. The Wellness Curriculum encompasses health, physical education, social emotional learning, and overall personal wellness, aiming to cultivate physical competencies and enhance fitness among students. The Public Schools of Southborough integrates health education across classroom teaching, nursing, counseling, and physical education. Collaboratively, educators and health professionals develop activities that promote physical, social and emotional health and well-being.

Physical education is a staple of the curriculum for all students from kindergarten through eighth grade. Students in grades K-5 enjoy a 45-minute session twice per week. Physical education takes place in versatile settings, including gymnasiums and outdoor areas such as fields and blacktops.

The school's playground includes play structures, a blacktop area with play lines, and fields. Recess is a dynamic outdoor time for students, utilizing fields, swings, blacktop areas, playgrounds, and nature play spaces. It's also a time for relaxation and nature observation, underscoring the District's holistic approach to wellness and outdoor learning.

Proposed
In the future design, spaces support all aspects of the Wellness Curriculum. To support physical education, the gymnasium will offer a safe environment for both students and spectators. To embody the district's dedication to wellness, the gymnasium's design should integrate specific features tailored to accommodate a wide range of activities.

- Adjustable Basketball Backboards: To cater to various age groups and skill levels, promoting inclusivity and physical development.
- Volleyball Standards: Either wall-mounted or equipped with floor sleeves to facilitate easy setup and versatility for volleyball games and practice.
- Outdoor Fitness Circuit/Stations: Encouraging holistic wellness and physical fitness through a variety of engaging outdoor activities.
- ~~Dedicated Room for Physical Therapy and Adaptive PE and Yoga: A tranquil, soundproof space for adaptive PE exercises, yoga and relaxation activities, supporting mental and physical well-being adjacent to the gymnasium.¶~~
- ~~Dedicated classroom space for health education classes provided by school nurse and health educator in the vicinity of the gymnasium.¶~~
- Projection system and appropriate technology to support school assemblies, professional learning and community events in the gymnasium.
- Storage for physical education materials and equipment.
- Separate storage for extended day program equipment and materials.
- Dedicated Room for Physical Therapy and Adaptive PE and Yoga: A tranquil, soundproof space for adaptive PE exercises, yoga and relaxation activities, supporting mental and physical well-being adjacent to the gymnasium.
- Dedicated space for Occupational Therapy ~~and Physical Therapy~~ in close proximity to the gymnasium and the Physical Therapy/adaptive PE space.

Given the gymnasium's role as a hub for after-school and weekend events, the design must include robust security measures and the ability to access this part of the building without having access to the rest of the building. These measures will manage access to the gymnasium and associated facilities, like restrooms, ensuring these areas are secure while still accessible during designated times outside of regular school hours. This thoughtful approach to design will ensure that the gymnasium is a versatile, welcoming, and safe space for the entire school and community.

ACADEMIC SUPPORT PROGRAMMING

Current
The English Language Development (ELD) teacher provides support in the general education classroom and in the “temporary” modular classroom at Neary Elementary School depending on the student’s English proficiency level. Students in the early stages of learning English require Tier 1 language instruction outside the general education classroom for a prescribed number of hours according to the language acquisition regulations. The location of the current ELD classroom is isolated as compared to the general education classrooms and does not contribute to a feeling of inclusivity.

The reading specialist who provides general education support to students in literacy instruction is currently using a general education classroom that also serves as a make-shift science laboratory and is at the farthest end of the building away from general education classrooms. The reading specialist often works with students in hallways when administering assessments or providing intervention supports in order to remain in closer proximity to the general education classrooms.

Proposed

	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
English Language Development (ELD) Space	0	1	2	2~~3~~
Reading Specialist Office	0	1	2	2
Math Specialist Office	0	1	2	2

In the proposed design for Neary Elementary School, an instructional suite would be strategically located in close proximity to the learning neighborhoods to provide general education academic supports to students through push-in instruction or through use of the small group rooms situated in the learning neighborhoods. In addition, the instructional suite would be adjacent to the teacher collaboration space since these specially trained educators often meet with grade level teams to support data analysis and curriculum and instructional planning.

English Language Development
With students who are English Language Learners (ELLs) making up 31% of the student body in The Public Schools of Southborough, the provision of designated classroom spaces for small group instruction in the instructional suite will be crucial for delivering an inclusive, effective,

explicit, systematic, and sustained systematic English Language Development (ELD) curriculum. This instructional space would be in constant use throughout the school day based on current and projected enrollment, not only by the English Language Development (ELD) teachers, but also potentially by ELL tutors providing targeted small group lessons. ELD teachers would also provide language instruction in small group rooms in learning neighborhoods and in the general education classrooms when appropriate for the students' needs. Additionally, students who are ELLs benefit from extended learning opportunities during the summer and this space would be pivotal for this offering as well.

Reading Specialist
Reading specialists will continue to provide targeted general education support to students and professional learning guidance to educators. A reading specialist office that can also serve as a small group learning space will support this educator and reading tutors in supporting students who often need a distraction-free environment and frequent progress monitoring assessments. In addition, this space will serve as a place for professional collaboration and data analysis with small groups of educators. The reading specialists meet frequently with grade-level colleagues to support their implementation of the Tier 1 and Tier 2 instruction and also collaboratively analyze data so that they can maintain a dynamic approach to the multi-tiered supports.

Mathematics Specialist
The District plans to expand support for students and educators in the area of mathematics by hiring a mathematics specialist in 2025-2026 when the District adopts new high-quality instructional materials. The math specialist will support small groups of students with intervention or extension in the general education classroom, in small breakout rooms, in the math specialist's office. In addition, the math specialist will meet with colleagues to provide professional learning guidance and instructional coaching. This support will be especially important as the District takes on the implementation of new high-quality instructional materials. Again, proximity of the instructional suite to learning neighborhoods will be important to support an inclusive culture and the proximity to the teacher collaboration space will support professional learning goals.

STUDENT SUPPORT SERVICES PROGRAMMING

Current

Special Education services within The Public Schools of Southborough are designed to meet the individualized academic, social, and emotional needs of students who require specially designed instruction or related services to effectively access the educational curriculum. These services are delivered through a collaborative effort between special education and general education teachers, employing evidence-based instructional strategies.

Currently, 17% of the student body requires an Individual Education Program (IEP). The array of special education services are delivered in the least restrictive environment which ranges from full inclusion to substantially separate classrooms, demonstrating a flexible and responsive approach to each student's needs.

At the elementary level, the District embraces various teaching models-including whole group instruction, small group instruction, and one-on-one teaching to support student needs. The curriculum is delivered through specialized programs, pull-out services, and inclusion services, all designed to provide both academic and social-emotional support tailored to student needs.

Currently, some students are in need of the Communication, Access, Socialization, Transition, Learning, and Emotional Regulation (CASTLE) Program. The CASTLE Program provides intensive, specialized instruction throughout the school day to assist students with unique and significant learning challenges. This program is designed to meet the individual needs of each student, utilizing the principles and procedures of Applied Behavior Analysis (ABA) to guide its instructional strategies. Whether within the inclusivity of the general education classroom or through more focused settings for small group or one-on-one instruction, the program emphasizes the use of ABA principles and systematic teaching to enable students to generalize their skills across various settings. **At this time, Neary students in the CASTLE program are placed in a CASTLE classroom in a Northborough elementary school.** Families perceive this to be a challenge because Southborough students are not placed with their Southborough peers in these situations.`

Additionally, Southborough elementary students in need of the Therapeutic Learning Program (TLP), which is a specialized academic and therapeutic classroom, tailored for students with emotional, behavioral and social disabilities **are placed in a Northborough elementary school,** apart from their Southborough peers. This comprehensive program offers personalized instruction aimed at addressing the unique learning profiles of each student, coupled with continuous therapeutic support throughout the school day. Key to the TLP's philosophy is the integration of students into inclusive classroom settings whenever possible, providing them with the supports necessary to engage with the curriculum alongside their peers.

The expertise within the special education department is supported by an array of specialists, including speech-language pathologists, school psychologists, occupational and physical therapists, board certified behavior analysts, behavior specialists, adaptive physical education teachers, and team chairpersons.

Many of these professionals support the specific Social Emotional Learning (SEL) needs of students. General education teachers use the Second Step curriculum and the Collaborative for Academic Social Emotional Learning (CASEL) framework to guide students' learning in this area. Educators support students in developing SEL competencies through morning meetings, class lessons and integration of topics into all disciplines. The school psychologist, behavior analyst, and behavior specialist support the needs of students on individualized education plans and general education students.

Currently at Neary, the physical spaces allocated for Special Education faculty and related service staff present challenges. Many educators are assigned to shared instructional areas that are hindering the delivery of high-quality, consistent instruction aligned with the District's vision. In addition, special education providers often struggle to secure private spaces for assessments or for confidential parent meetings. The spatial limitations not only affects the quality of instruction but also poses significant accessibility challenges for students with physical disabilities, impacting their ability to participate fully in the school community. Issues such as restricted bathroom access, the inaccessibility of certain rooms like the music room, and limited outdoor play spaces underscore the urgent need for infrastructure enhancements to ensure all students can benefit equally from the educational opportunities provided by The Public Schools of Southborough.

Addressing these infrastructural and spatial challenges is critical for upholding the District's commitment to providing an inclusive, supportive, and accessible learning environment for all students, particularly those requiring specialized education services.

Proposed

	Current	**Design Alt 1 (4-5)**	**Design Alt 2 (3-5)**	**Design Alt 3 (2-5)**
CASTLE classroom	0	1	1	1
Therapeutic Learning Program (TLP) Classroom	0	1	1	1
Learning Centers	1	2	3	4
Calming Room	2	2	2	2
Testing Room	0	0~~1~~	0~~2~~	0~~2~~
Small Group Meeting Room	*0*	*0*~~1~~	*0*~~2~~	*0*~~2~~

The Future Design Needs for the Special Education Program emphasize a strategic integration of special education learning environments within the broader educational framework, ensuring seamless communication and collaboration between special education staff and their general education counterparts. Integration would support even greater levels of inclusivity. The design would include specialized spaces in each learning neighborhood tailored to the unique needs of special education students. Key to this approach is the creation of a small group room between and adjoining to paired academic classrooms to facilitate small group instruction in a manner that minimizes travel and disruption, thereby optimizing the educational experience for these students. Another key feature is the placement of learning centers and substantially separate classrooms within learning neighborhoods. Furthermore, the design calls for the establishment of calming/sensory spaces that would be adjacent to specialized programs, CASTLE and TLP. These spaces are essential for providing a tranquil environment for students needing sensory regulation.

The sensory design of all learning spaces is important. Attention to detail in the selection of views, control of sightlines, and the minimization of potentially disruptive auditory and olfactory stimuli are crucial considerations. These measures aim to create an environment that supports the sensory needs of students, avoiding overstimulation or understimulation. The mechanical and lighting systems are to be meticulously planned to reduce visual distractions, regulate airflow, and minimize ambient noise, incorporating full-spectrum, dimmable lighting solutions to create a visually comfortable space that avoids sensory overload.

The new design would include office space for the school psychologist, certified behavior analyst, behavior specialist, speech and language pathologist, occupational and physical therapists, and the special education team chair. ~~The design would also include a small group room for meeting with small groups of students and a testing space for assessing students as part of the special education process.~~ The design would also include a special education conference room with the space to host up to 15 adults. The conference area will support the functional needs of IEP meetings and special education team collaborations, ensuring that the infrastructure fully supports the department's operational and strategic needs.

This design framework supports a comprehensive approach to creating an inclusive and supportive learning environment for special education students, affirming the district's commitment to fostering academic excellence and personal growth for all students.

The organization and color scheme of the rooms are to be carefully considered to reduce visual clutter and create a serene, engaging learning environment. Proximity and accessibility to other programmatic areas are also critical to ensure ease of access for students and to support optimal acoustic conditions within these special education spaces.

CASTLE Program

Additionally, the design would include a classroom space for a CASTLE Program so that Southborough CASTLE students remain with their peers in town. Central to the CASTLE Program is the creation of a personalized curriculum for every student, utilizing the advanced, web-based Autism Curriculum Encyclopedia (ACE) curriculum. This curriculum addresses a comprehensive range of developmental areas, including functional communication, daily living activities, academic skills, use of Augmentative and Assistive Communication (AAC) devices, vocational training, communication strategies, and social-pragmatic skills. The program champions a collaborative team approach to service delivery, comprising a lead special education teacher, educational support professionals, and specialists in speech and language therapy, physical therapy, and occupational therapy. Enhanced by the support of a Board Certified Behavior Analyst (BCBA), Assistive Technology Specialist, AAC consultant, and School Psychologist, the program ensures a holistic educational experience.

In terms of infrastructure, the CASTLE Program necessitates specific design features to support its educational model effectively:

- A versatile classroom that can be divided into two distinct areas for grade-specific teaching and to allow for adaptive instructional group sizes as required.
- Proximity to single-stall restrooms to accommodate privacy and ease of access for students.
- An adjoining calming space for students to de-escalate when necessary, allowing for a smoother transition back into the classroom environment.
- Dynamic workspaces that support one-on-one and small group instruction, enabling personalized learning experiences.
- Multi-sensory work areas are designed to engage students through a variety of stimuli, fostering an inclusive learning environment for all.
- Adaptive use of wall space for educational tools like word walls and visual cues, enhancing memory and learning through accessible whiteboards and other aids.
- Incorporation of the same technological resources found in general education classrooms ensures that students in the CASTLE Program have access to cutting-edge educational tools.
- Through these dedicated spaces and resources, the CASTLE Program aspires to provide a nurturing, effective, and inclusive educational setting that meets the diverse needs of its students, setting the stage for their success both within the school environment and beyond.

The CASTLE classroom would be on the edge of another learning neighborhood with a calming room adjacent that could be accessed, not only by CASTLE students but also by students from other classes in the learning neighborhood. This location would facilitate inclusion when appropriate and support a quieter environment at other times.

The Therapeutic Learning Program (TLP)

The new design would have space for the Therapeutic Learning Program (TLP). The physical environment of the TLP would be designed to be conducive to both learning and emotional support. It encompasses a tranquil space conducive to academic pursuits, areas for students to take breaks and engage in self-regulation strategies. The design specifications for the TLP's special education facilities emphasize several key features:

- Accessibility to physical activity spaces, such as a gym, to allow for movement breaks.
- Close proximity to learning neighborhoods to facilitate integration and a sense of belonging.
- An adjoining calming space for students to de-escalate when necessary, allowing for a smoother transition back into the classroom environment.
- Consideration of acoustics to reduce noise disturbances from adjacent areas, creating a quieter, more focused learning environment.

- Close proximity to counseling services in the social-emotional learning suite to ensure students have immediate access to emotional and behavioral support.
- A dedicated sensory room within the TLP, accessible directly from the program area, provides a safe and supportive space for sensory regulation.

The design would foster an inclusive, supportive environment that meets the comprehensive needs of students within the TLP, facilitating their academic achievement and emotional development in a setting that respects and responds to their individual challenges. The TLP classroom would be on the edge of a learning neighborhood with a calming room adjacent that could be accessed, not only by TLP students but also by students from other classes in the learning neighborhood. This location would facilitate inclusion when appropriate and support a quieter environment at other times.

This design framework supports a comprehensive approach to creating an inclusive and supportive learning environment for special education students, affirming the district's commitment to fostering academic excellence and personal growth for all students.

TEACHER PLANNING, COLLABORATION AND PROFESSIONAL DEVELOPMENT

Current

Professional collaboration stands as a cornerstone of the educational philosophy in The Public Schools of Southborough. The schedule is built to support grade-level teams having shared preparation time each week. Despite this commitment to collaborative planning, the District lacks designated teacher planning spaces. Teachers often resort to meeting within their own classrooms, seated at student desks, contingent upon space availability, which is far from ideal.

The District's professional development program is designed to foster growth for educators at every career stage and embedded into their professional experience so that it is sustained and relevant to their daily practice. Elementary teachers weekly convene by grade level and periodically participate in workshops aimed at enhancing teaching efficacy, curriculum implementation and student learning outcomes.

Faculty meetings and district-wide professional development sessions are currently held in less-than-ideal locations such as the building's library, classrooms, or cafeteria. These settings often suffer from issues like overcrowding, uncomfortable temperatures, and insufficient technological resources for presentations, detracting from the quality of these important gatherings.

Proposed

	Current	Design Alt 1 (4-5)	Design Alt 2 (3-5)	Design Alt 3 (2-5)
Staff Lunch	1	1	1~~2~~	1~~2~~

Room and Teacher Preparation				
Teacher Collaboration Room	0	2	2~~3~~	2~~4~~

In order to foster collaboration among educator teams, the District will provide flexible professional learning spaces for varying size groups. These spaces will empower educators to collaboratively design lessons, units, projects, and investigations. Additionally, they will support ongoing examination of student learning data and the ability to provide timely feedback and support for students. The ongoing analysis of data is a cornerstone of the multi-tiered systems of support that reading specialists, math specialists and SEL professionals guide. These collaboration rooms will also serve as venues for professional development workshops.

These teacher collaboration spaces would be strategically positioned near each learning neighborhood and near the instructional suite to facilitate easy access. By placing these rooms just outside of learning neighborhoods, it may be possible to have a removable wall between teacher collaboration rooms making them adaptable to host larger professional development sessions or staff meetings. It is important that teacher collaboration rooms are distinct from staff lunchrooms which also support teacher preparation such as photocopying, lamination and other tasks. This distinction ensures that teacher collaboration rooms are used exclusively for professional collaboration and not for breaks or social gatherings. The teacher preparation room would also include workstations where educational support professionals and itinerant employees can complete tasks given that they do not have dedicated classrooms or offices.

Future teacher collaboration rooms should include:

- Smaller, Collaborative Spaces: Areas where grade-level teams can gather for focused planning sessions, ensuring privacy and promoting efficiency in curriculum development and teaching strategy discussions.

- Larger, Open Areas: Spacious venues equipped for whole-faculty professional development activities, designed to accommodate larger groups comfortably. The larger area may be achieved by joining smaller spaces together.

- Comfort and Accessibility: Meeting spaces should offer a comfortable environment, equipped with adequate heating, cooling, and lighting to facilitate year-round use without discomfort.

- Technological Integration: Equipping these areas with the latest in presentation technology, including high-quality projectors, sound systems, and internet connectivity to support a wide range of professional development activities.

By prioritizing the creation of these dedicated spaces, The Public Schools of Southborough can further enhance their commitment to professional excellence, fostering an environment where educators are equipped, encouraged, and empowered to grow professionally, for the benefit of students.

LUNCH PROGRAMS

Current

Meals for Neary School students are prepared off-site at the P. Brent Trottier Middle School kitchen, due to Neary's lack of facilities for food preparation and cooking. After preparation, these meals are transported to Neary School, where they are served to approximately 125 students per lunch period in a communal dining area. This setup sees large groups of students moving in and out of the cafeteria space, a bustling hub of activity during meal times.

The District is committed to promoting health and wellness through nutrition, prioritizing the provision of healthy, locally sourced food options. In line with this commitment, the District actively seeks to include locally grown produce in its meal offerings, taking advantage of vegetables harvested from school gardens when possible. There's a vision to further engage students in this initiative by establishing a garden on the grounds of the new school, fostering a hands-on learning experience that connects students directly with the source of their food.

Currently, lunch periods at the District's elementary schools are limited to 20-25 minutes. The cafeteria is a large open space and can be over-stimulating for some students. There are no alternative spaces designed for dining.

Proposed

The new design would include a variety of seating options for students, including smaller breakout spaces to support sensory-sensitive options for students. Furthermore, the new site would include the introduction of on-site kitchen facilities. This would enable the preparation and safe storage of meals within the school, allowing for a wider range of healthy options on the menu. In addition, the new kitchen would provide ample space and design to support traffic flow and strategic service areas organized for efficiency. A new kitchen would also support the District's vision of integrating educational programs focused on health, nutrition, and agriculture directly into the students' learning environment.

HEALTH OFFICE

Current

At the Neary School, the health and wellness of students and staff are under the care of a Commonwealth of Massachusetts and Department of Elementary and Secondary Education licensed RN School Nurse, whose responsibilities extend beyond the traditional confines of medication administration and minor health assessments. The Health Office is a critical hub for evaluating and triaging health concerns, liaising with families and healthcare providers, managing health records, conducting screenings for various physical parameters, and addressing the emotional well-being of the school community. Furthermore, the school nurse plays a crucial role in collaborating with district nursing staff on health education, grant writing, and leading emergency response training for staff.

However, the current Health Office space is notably inadequate for the breadth of services required. In the current space, there is no waiting area or provision for isolating contagious individuals. The sole lavatory, doubling as a changing area and staff restroom, cannot meet the diverse needs of the school population, from toilet training to health-related toileting supervision. The absence of a dedicated handwashing sink outside this lavatory further complicates hygiene practices. Additionally, storage space is severely limited, impacting the secure storage of medications and medical equipment. The lack of a private area for confidential conversations with parents or consultations with staff is another significant shortfall.

Proposed
In envisioning a new design for Neary's Health Office, the goal is to create a space that adequately supports the complex health and wellness landscape of the school community. This includes a larger, more versatile area that can accommodate multiple resting spaces, a dedicated waiting area, and isolation zones for contagious students. Essential facility improvements must include lavatories to serve diverse needs effectively, additional sinks for handwashing outside the lavatories, and expanded secure storage for medications and medical supplies. A private consultation area is also critical, ensuring confidentiality and support for sensitive discussions. This enhanced design will align the physical environment of the Health Office with the expansive role of the school nurse, ensuring optimal health and wellness support for the entire school population

SOUTHBOROUGH EXTENDED SCHOOL CARE

Current:
The district-run Southborough Extended Day (SEDP) Program is designed to serve the needs of the District's students and families before and after school hours. There are dedicated staff for this program that work separately but in concert with school staff. However, although students are enrolled in the program after the end of the school day staff arrives earlier, so a dedicated space is needed to accommodate SEDP staff. The chart below depicts well the existing numbers of students supported by the SEDP, as well as the demand for spots in the program both before and after school:

Current SEDP Families Accessing SEDP

Finn (K-1)	**Woodward (2-3)**	**Neary (4,5)**
60 Families	75 Families	35 Families

Proposed

~~In the proposed Neary design there will be an office for the Southborough Extended Day Program that allows for safety regarding access to the school as well as dedicated storage space for materials and equipment.~~ An alternative office space for SEDP has been identified in a different school building.

TRANSPORTATION POLICIES

Current
In The Public Schools of Southborough, transportation is provided at no cost for ALL students in grades K-8. Combining schools or adjusting grade configurations would not increase bus traffic at the schools, but would reduce the bus traffic on the main roads and in the surrounding areas.

Currently, the District operates a fleet that includes 14 full-size buses and one half-size bus, catering to the transportation needs of both regular and Special Education students. As of now, 212 (K-5) students do not qualify (residing within a mile of their respective school) for daily bus transportation provided by the District, however, it is the long-standing practice of the District that all students are offered school bus transportation regardless of their residence's distance from school.

Given that the elementary schools do not serve exclusively neighborhood zones and specialized programs are not uniformly distributed across all schools, the District employs a sophisticated transfer bus system. This system facilitates the movement of students between the three elementary schools for both morning arrivals and afternoon departures. Bus routes are designed to accommodate students attending any of the three schools, utilizing the transfer system. Transportation is organized in two tiers: middle and high school students are transported first, followed by the elementary students, optimizing the efficiency of school commutes.

Proposed
The proposal to consolidate schools would improve the efficiency and complexity of the bus system. By reducing the locations that need to be supported, we will gain valuable AM and PM minutes to reduce the overall commute time. The consolidation would also pool vehicles so that they could support multiple functions and won't be displaced to the extent they are in the current configuration.

The new school's parking facilities will be designed to meet the daily needs of the school and accommodate community events outside school hours. This planning includes:

- Ensuring safe bus access routes that do not conflict with areas designated for student drop-offs and pickups.
- Maintaining secure and controlled zones for deliveries.

- Designing recess and recreational spaces away from traffic, safeguarding the well-being of students during outdoor activities.
- Optimizing traffic flow to avoid confluence at the same locations during peak drop-off/pick-up times as well as special events.
- Reduce bus route lengths for students and reduce overall school related traffic.

FUNCTIONAL & SPATIAL RELATIONSHIPS

The school's design vision is centered around creating an adaptable environment that reflects the community's values, prioritizes the well-being of its members, and fosters student learning. The aim is for the entire building to maintain a sense of physical unity, with thoughtful consideration given to the internal and external flow, ensuring that the spaces within are conducive to both movement and connection. Student achievements will be proudly displayed throughout, making the celebration of learning a visible and integral part of the school's atmosphere.

The design will include careful choices regarding design aesthetics, natural light, finishes, and furniture, all tailored to create a welcoming and appropriate environment for the students.

The Media Center will be adjacent to the~~STE learning labs and~~ art room~~s~~ to support inquiry across disciplines. The school's layout will thoughtfully separate academic areas from spaces designated for community use, an aspect critical for maintaining security and functionality.

Classroom organization will be strategically designed in learning neighborhoods to promote collaboration, with classrooms and specialized education areas distributed throughout the building to support integrated and inclusive education. Small group rooms between general education classrooms will allow for special education academic support and peer to peer collaboration to happen in quiet settings but close to the general education classroom. Furthermore, the learning commons, directly outside of and visible from grade-level classrooms, will also facilitate shared educational initiatives, allowing for flexible grouping of students and targeted instructional experiences. This space might also accommodate multiple classes to gather for presentations, performances, or community meetings.

Specialty classrooms, including those for art, world language, music, and media~~, and STE~~ will be purposefully located to support interdisciplinary learning. By placing the ~~STE Learning Labs and~~ art room~~s~~ adjacent to the media center, students will engage in inquiry that bridges these spaces and is supported by multiple educators. In addition, the instructional support suite and teacher collaboration spaces will be strategically located at the edges of learning neighborhoods to support targeted academic support for students as well as embedded and sustained professional learning. The locations of components of the special education program will allow for inclusion and seamless integration, while parts of the program will be situated in a special education suite that allows for confidentiality and distraction-free assessments and support when needed. This layout is intended to enhance cross-disciplinary collaboration and ensure all students have equal access to the rich array of educational resources and opportunities the school offers.

The design would incorporate gathering spaces for various groups within the community. While grade levels or cross-grade level groups might gather in the learning commons of a learning neighborhood, a larger contingent of the school could gather in the auditorium, which will also serve as a music learning space. For whole school or larger community events, the gymnasium will serve as a communal space.

The design would embody the community's overarching objectives and priorities and adhere to the District's core design principles, outlined as follows:

- Purposeful Outdoor Environments: Dedicated spaces outdoors for academic pursuits, social-emotional development, and recreation in a safe and secure manner
- Promoting Unity Across Grade Levels: A focus on fostering connections and a sense of unity within and across different grades.
- Adaptable Learning Environments: Ensuring spaces are versatile enough to accommodate the diverse needs of every learner.
- Forward-Thinking Design: Creating spaces and adopting practices that not only address current educational requirements but are also adaptable to future needs.
- Community and Culture at the Forefront: Envisioning the project as a means to protect, connect, and cultivate the school's community and cultural heritage.
- Foundational Emphasis on Elementary Education: Recognizing elementary education as crucial for laying the groundwork for academic achievement and social-emotional well-being.
- A Model of Sustainability: Championing a school facility that serves as a dynamic educational resource, promoting sustainability and environmental stewardship.
- A Model of Safety and Security: Providing flexibility while maintaining safety and security protocols will be part of the design.

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SECURITY & VISUAL ACCESS REQUIREMENTS

Current

The Public Schools of Southborough prioritizes the safety and security of all students and staff, aiming to enhance public safety for all community members who interact with or utilize school facilities. This commitment extends to minimizing risks to individuals and preventing damage or loss to district property. The school has established a comprehensive approach to building security, underscored by the following key elements:

- Structured Safety and Security Governance: The district has implemented clear administrative guidelines and policies dedicated to supervising safety and security initiatives across all schools and works closely with the Town's Police and Fire Departments safety officials to coordinate.
- Continuous Security Assessments: The district undertakes ongoing evaluations to scrutinize existing security measures, identify any shortcomings, assess the requisite level of security, and propose enhancements.
- Integrated Security Management: A multi-faceted approach to security is employed, incorporating diverse communication channels, detailed policies and protocols, physical security measures, staff training, and well-defined response strategies. The buildings are locked throughout the school day, and staff use key access cards to enter the building. This approach fosters collaboration among administrators, staff, parents, and students.
- Comprehensive Background Checks: All school personnel, including faculty, staff, volunteers, contractors, and vendors present on school grounds, undergo CORI checks, SORI checks, and FBI Fingerprinting checks to ensure the safety of the school environment. Additionally, staff members are mandated to wear identification badges visibly during school hours.
- Regular Safety Drills: The school routinely conducts fire alarm and active intruder drills to guarantee that faculty and staff are proficient in accounting for all students swiftly and effectively.
- Staff Preparedness Training: Staff members receive ongoing training to adeptly enact the Emergency Response Plan, ensuring readiness in case of emergencies.
- Cultivating a Vigilant Community: The school community, including students, faculty, and staff, is educated and encouraged to remain vigilant and report any suspicious or concerning activities or behaviors.

This comprehensive approach speaks to The Public Schools of Southborough's commitment to creating and maintaining a secure educational environment where learning and growth can flourish unimpeded by concerns for personal safety or property protection.
Proposed

The future design of the school's security system aims to strike a balance between fostering a welcoming atmosphere for students, families, and the broader community and integrating a comprehensive suite of advanced security measures. These features, while not exhaustive, are crucial for ensuring a protected learning environment:

- Enhanced Entrance and Lobby Security: Implement a secure, single-entry door system for each school or program, equipped with a door-release mechanism, intercom, video surveillance, and a sophisticated visitor management system. All additional exterior doors should be locked at the commencement of the school day, with exit-only functionality and surveillance.
- Dedicated Access Points for Operational Needs: Ensure separate and safe access routes for kitchen operations, facilities management, and shipping/receiving, distinct from the main entrance, to alleviate congestion and enhance security.

- Clear and Informative Signage: Install signage to guide visitors, contractors, and vendors directly to the administration area for secure entry processing. Identification markers on doors and windows, along with evacuation maps in all occupied rooms, will enhance navigation and safety.
- Defined School Perimeter: The school's boundaries should be distinctly marked from public areas, with landscaping designed to maintain unobstructed views of the school's exterior for surveillance purposes.
- Strategically Planned Vehicular Access: Design vehicular access that incorporates safety measures such as bollards, no-parking zones, and specified drop-off points, ensuring a clear separation between general traffic and buses. Safe routes should be established for pedestrians and cyclists, with unambiguous access for emergency and public safety vehicles.
- Access Control Systems: Adopt best practices in access control technologies for entrances to the building, classrooms, and other critical areas to manage entry efficiently.
- Optimal Exterior Lighting: Install adequate lighting around walkways, entrances, and parking areas, focusing on reducing spill-over lighting into neighboring areas and maximizing energy efficiency.
- Coordinated Video Surveillance: Establish a video surveillance system with clear protocols for operation and maintenance in collaboration with local law enforcement agencies.
- Segmented spaces for community use (i.e., gymnasium)

By incorporating these strategic security enhancements in the design, the school not only ensures the safety of its inhabitants but also maintains an inviting environment conducive to learning and community engagement.

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D. Geo-Environmental Phase II Limited Subsurface Investigation

PEER
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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^{o}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 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.

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.

<u>VOCs</u>

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 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					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	2020 MCP RCS-1	2020 MCP RCS-2	COMM-97-001 Lined Landfill	COMM-97-001 Unlined Landfill	Soil		Soil		Soil		Soil		Soil		Soil	
	Units					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
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

						CQ52307		CQ52308		CQ52309		CQ52310		CQ52312		CQ52313	
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				COMM-97-001	COMM-97-001	Soil		Soil		Soil		Soil		Soil		Soil	
		2020 MCP	2020 MCP	Lined	Unlined												
	Units	RCS-1	RCS-2	Landfill	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					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			COMM-97-001	COMM-97-001	Soil		Soil		Soil		Soil		Soil		Soil	
		2020 MCP	2020 MCP	Lined	Unlined												
	Units	RCS-1	RCS-2	Landfill	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						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				COMM-97-001	COMM-97-001	Soil		Soil		Soil		Soil		Soil		Soil	
	Units	2020 MCP RCS-1	2020 MCP RCS-2	Lined Landfill	Unlined Landfill	Result	RL	Result	RL	Result	RL	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.

Table 1E - Total Petroleum Hydrocarbons
(Detected Analytes)
Margaret A. Neary Elementary School
53 Parkerville Road
Southborough, Massachusetts

	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			COMM-97-001	COMM-97-001	Soil		Soil		Soil		Soil		Soil		Soil	
	Units	2020 MCP RCS-1	2020 MCP RCS-2	Lined Landfill	Unlined Landfill	Result	RL	Result	RL	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					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			COMM-97-001	COMM-97-001	Soil		Soil		Soil		Soil		Soil		Soil	
	2020 MCP	2020 MCP	Lined	Unlined												
Units	RCS-1	RCS-2	Landfill	Landfill	Result	RL	Result	RL	Result	RL	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					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			COMM-97-001	COMM-97-001	Soil		Soil		Soil		Soil		Soil		Soil	
	2020 MCP	2020 MCP	Lined	Unlined												
Units	RCS-1	RCS-2	Landfill	Landfill	Result	RL	Result	RL	Result	RL	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						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				COMM-97-001	COMM-97-001	Soil		Soil		Soil		Soil		Soil		Soil	
		2020 MCP	2020 MCP	Lined	Unlined												
	Units	RCS-1	RCS-2	Landfill	Landfill	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
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.

Table 1I - General Chemistry

(Detected Analytes)

Margaret A. Neary Elementary School

53 Parkerville Road

Southborough, Massachusetts

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	RCRA Characteristics 40 CFR 261	COMM-97-001 Lined Landfill	COMM-97-001 Unlined Landfill	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL		
Miscellaneous/Inorganics																				
Percent Solid	%	NL	NL	NL	NL	NL	94		90		90		89		80		90			
Conductivity - Soil Matrix	umhos/cm	NL	NL	NL	8,000	4,000	24	5	20	5	23	5	25	5	NS		NS			
Corrosivity	Pos/Neg	NL	NL	NL	NL	NL	**Negative**		**Negative**		**Negative**		**Negative**							
Flash Point	Degree F	NL	NL	≤ 140	NL	NL	>200	200	>200	200	>200	200	>200	200	NS		NS			
Ignitability	degree F	NL	NL	≤ 140	NL	NL	**Passed**	140	**Passed**	140	**Passed**	140	**Passed**	140	NS		NS			
pH at 25C - Soil	pH Units	NL	NL	≤ 2 and ≥ 12.5	NL	NL	7.22	1.00	7.4	1.00	7.12	1.00	7.32	1.00	NS		NS			
Reactivity Cyanide	mg/Kg	NL	NL	40 CFR 261.23	NL	NL	< 5	5	< 5	5	< 5	5	< 5	5	NS		NS			
Reactivity Sulfide	mg/Kg	NL	NL	40 CFR 261.23	NL	NL	< 20	20	< 20	20	< 20	20	< 20	20	NS		NS			
Reactivity	Pos/Neg	NL	NL	40 CFR 261.23	NL	NL	**Negative**		**Negative**		**Negative**		**Negative**							

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

NS = Constituent was not sampled for in this sample.

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.

PHOENIX
Environmental Laboratories, Inc.

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,

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

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone (860) 645-1102

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

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

PHOENIX

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		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/15/24	14:37
Location Code:	PEER	Received by:	CP	04/16/24	14:45
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	8404				

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

Ver 1

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

Phoenix I.D.: CQ52307

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
QA/QC Surrogates							
% 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

Ver 1

Project ID: M.A.N. SCHOOL

Client ID: B2 FULL

Phoenix I.D.: CQ52307

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

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

Phoenix I.D.: CQ52307

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
QA/QC Surrogates							
% 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 %
Oxygenates & Dioxane							
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)
Semivolatiles							
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

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

Phoenix I.D.: CQ52307

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
QA/QC Surrogates							
% 2,4,6-Tribromophenol	73		%	1	04/20/24	MR	30 - 130 %

Ver 1

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 (preceeded 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

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		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/15/24	11:39
Location Code:	PEER	Received by:	CP	04/16/24	14:45
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	8404				

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

Ver 1

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

Phoenix I.D.: CQ52308

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
QA/QC Surrogates							
% 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

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

Phoenix I.D.: CQ52308

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

Ver 1

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
QA/QC Surrogates							
% 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 %
Oxygenates & Dioxane							
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)
Semivolatiles							
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
QA/QC Surrogates							
% 2,4,6-Tribromophenol	73		%	1	04/20/24	MR	30 - 130 %

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

Phoenix I.D.: CQ52308

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 (preceeded 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

Phyllis Shiller, Laboratory Director
April 25, 2024
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

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		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/15/24	13:16
Location Code:	PEER	Received by:	CP	04/16/24	14:45
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	8404				

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

Ver 1

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

Phoenix I.D.: CQ52309

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
QA/QC Surrogates							
% 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 % [3]
% 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

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

Phoenix I.D.: CQ52309

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

Ver 1

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

Phoenix I.D.: CQ52309

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
QA/QC Surrogates							
% 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 %
Oxygenates & Dioxane							
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)
Semivolatiles							
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

Ver 1

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
QA/QC Surrogates							
% 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 (preceeded 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

Phyllis Shiller, Laboratory Director
April 25, 2024
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

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		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/15/24	9:42
Location Code:	PEER	Received by:	CP	04/16/24	14:45
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	8404				

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

Ver 1

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

Phoenix I.D.: CQ52310

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
QA/QC Surrogates							
% 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

Ver 1

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

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

Phoenix I.D.: CQ52310

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
QA/QC Surrogates							
% 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 %
Oxygenates & Dioxane							
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)
Semivolatiles							
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

Ver 1

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

Phoenix I.D.: CQ52310

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
QA/QC Surrogates							
% 2,4,6-Tribromophenol	74		%	1	04/20/24	MR	30 - 130 %

Ver 1

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 (preceeded 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

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		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/10/24	
Location Code:	PEER	Received by:	CP	04/16/24	14:45
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	8404				

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
Volatiles							
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

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

Phoenix I.D.: CQ52311

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
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	98		%	1	04/16/24	JLI	70 - 130 %

Ver 1

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)

Massachusetts does not offer certification for Soil/Solid matrices.

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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:

TRIP BLANK INCLUDED.

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Phyllis Shiller, Laboratory Director
April 25, 2024
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

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		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/15/24	15:01
Location Code:	PEER	Received by:	CP	04/16/24	14:45
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	8404				

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

Ver 1

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

Phoenix I.D.: CQ52312

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
QA/QC Surrogates							
% 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 %

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Comments:

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The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller

Phyllis Shiller, Laboratory Director

April 25, 2024

Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX
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		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/15/24	15:33
Location Code:	PEER	Received by:	CP	04/16/24	14:45
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	8404				

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

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Comments:

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Phyllis Shiller

Phyllis Shiller, Laboratory Director
April 25, 2024
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

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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		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/15/24	
Location Code:	PEER	Received by:	CP	04/16/24	14:45
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	8404				

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
Volatiles							
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

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

Phoenix I.D.: CQ52314

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
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4 (50x)	101		%	50	04/16/24	JLI	70 - 130 %

Ver 1

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)

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Comments:

TRIP BLANK INCLUDED.

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Phyllis Shiller, Laboratory Director
April 25, 2024
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

QA/QC Report

April 25, 2024

QA/QC Data

SDG I.D.: GCQ52307

QA/QC Batch 727169 (mg/kg), QC Sample No: CQ51669 2X (CQ52307, CQ52308, CQ52309, CQ52310)

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Mercury - Soil	BRL	0.02	<0.03	<0.03	NC	94.7	92.5	2.4	106	89.5	16.9	75 - 125	20	

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

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
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

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
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	r
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	r
Zinc	BRL	0.67	14.0	20.2	36.3	76.8	85.0	10.1	101			75 - 125	35	r

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

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Antimony	BRL	3.3	<3.5	<3.6	NC	90.1	93.4	3.6	92.4			75 - 125	35	

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	r
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	r
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	r
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.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
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
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

PHOENIX

Environmental Laboratories, Inc.
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QA/QC Report

April 25, 2024

QA/QC Data

SDG I.D.: GCQ52307

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)											
TPH by GC (Extractable Products) - Soil											
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	r
% 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	l
Dalapon	ND	130	48	63	27.0	53	73	31.7	40 - 140	30	r
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	

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)										
Polychlorinated Biphenyls - Soil										
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	m
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)

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
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	l
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	m
Trichlorotrifluoroethane	ND	5.0	124	118	5.0	131	126	3.9	70 - 130	20	m
Vinyl chloride	ND	5.0	126	121	4.0	136	131	3.7	70 - 130	20	m
% 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)

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
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	l,m
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	

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	l,m
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	l,m
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, Laboratory Director
April 25, 2024

Thursday, April 25, 2024

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

State: MA

Sample Criteria Exceedances Report

GCQ52307 - PEER

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	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

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

NY # 11301

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

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

NY # 11301

Analysis Comments

April 25, 2024 SDG I.D.: GCQ52307

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%.

Cooler: Yes ☑ No ☐
Coolant: IPK ☑ ICE ☐ No ☐

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 2.4 °C Pg 1 of 1

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☑ Email: gorden@peercpc.com

Customer: PEER Consultants
Address: 10 Mall Rd Suite 301
Burlington MA 01803
7812388880

Project: M.A.N. School
Report to: d.gorden
Invoice to: d.gorden
QUOTE # Southboro

Project P.O: 8404

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 4/15/24

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe OIL=Oil
B=Bulk L=Liquid X = ____________(Other)

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	2024 Date Sampled	Time Sampled	Hi level VOC	Lo level VOC	TPH GRO	Flash/Ignit	SVOC, TPH DRO, PCB*	TCLP Metals **	Pesticides/Herbicides	Chloride, NO2, NO3, Phosphate	Fecal Coliform	MS/MSD*	~~GL Amber 8 oz w/H3PO4~~ 120ml ster	Soil VOA Vials [✓] methanol [✓] H2O	GL Soil container (8) oz	GL Soil container (4) oz	40 ml VOA Vial [ ] As is [ ] HCL	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
52307	B2 Full	S	4/15	1437	✓	✓	✓	✓	✓		[illegible]	[illegible]				5	2	1								
52308	B3 Full	S		1139	✓	✓	✓	✓	✓							5	2	1								
52309	B4 Full	S		1316	✓	✓	✓	✓	✓							5	2	1								
52310	B5 Full	S		0942	✓	✓	✓	✓	✓							5	2	1								
52311	TB0415244	L	4/10	–	✓	✓										3										
52312	B2-B5 0-2'	S	4/15	1501							✓						1									
52313	B2-B5 WT	S	4/15	1533								✓	✓		1		1									
52314	TB HL																									

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	4-16-24	1205
[signature]	[signature]	4-16-24	14:45

Comments, Special Requirements or Regulations:
* and MCP 14 metals, pH, corrosivity, conductivity, reactivity
** Follow 20x rule, Call Client first for approval

**MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.*

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☑ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ (Residential) Direct Exposure
☐ (Comm/Industrial) Direct Exposure
☐ GA Leachability
☐ GB Leachability
☐ GA-GW Objectives
☐ GB-GW Objectives

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA comm97-001
☐ MCP Certification
☐ GW-1 ☐ MWRA eSMART
☐ GW-2 ☐ S-1 10% CALC
☐ GW-3
☑ S-1 GW-1 ☑ S-1 GW-2 ☑ S-1 GW-3
☑ S-2 GW-1 ☑ S-2 GW-2 ☑ S-2 GW-3
☐ S-3 GW-1 ☐ S-3 GW-2 ☐ S-3 GW-3
☐ SW Protection

State where samples were collected: MA

Data Format
☑ Excel
☑ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☑ Phoenix Std Report
☐ Other

* SURCHARGE APPLIES

PEL-126 REV. 06/20

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E. Geotechnical Preliminary Report

Lahlaf Geotechnical Consulting, Inc.

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

Lahlaf Geotechnical Consulting, Inc.

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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LGCI Project No. 2404
May 1, 2024

Prepared for:

Arrowstreet
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Suite 700N
Boston, MA 02109
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Prepared by:

LAHLAF GEOTECHNICAL CONSULTING, INC.
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Phone: (978) 330-5912
Fax: (978) 330-5056

COMMONWEALTH OF MASSACHUSETTS
ABDELMADJID M. LAHLAF
CIVIL
No. 39814
REGISTERED PROFESSIONAL ENGINEER

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

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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.

<u>Topsoil</u> – 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.

<u>Fill</u> – 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.

<u>Subsoil</u> – 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 9th 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 (tcf). 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:

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

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 (Ss): 0.191g
- Spectral Response Acceleration at 1 sec. (S_1): 0.067g
- Site Coefficient Fa (Table 1613.5.3(1)): 1.6
- Site Coefficient Fv (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 γ:	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, 9th Edition (MSBC 9th Edition), Section 1610, a lateral earthquake force equal to $0.100*(S_s)*(F_a)*\gamma*H^2$ 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), γ 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 9th 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 ±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 ±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^{th}) Edition."

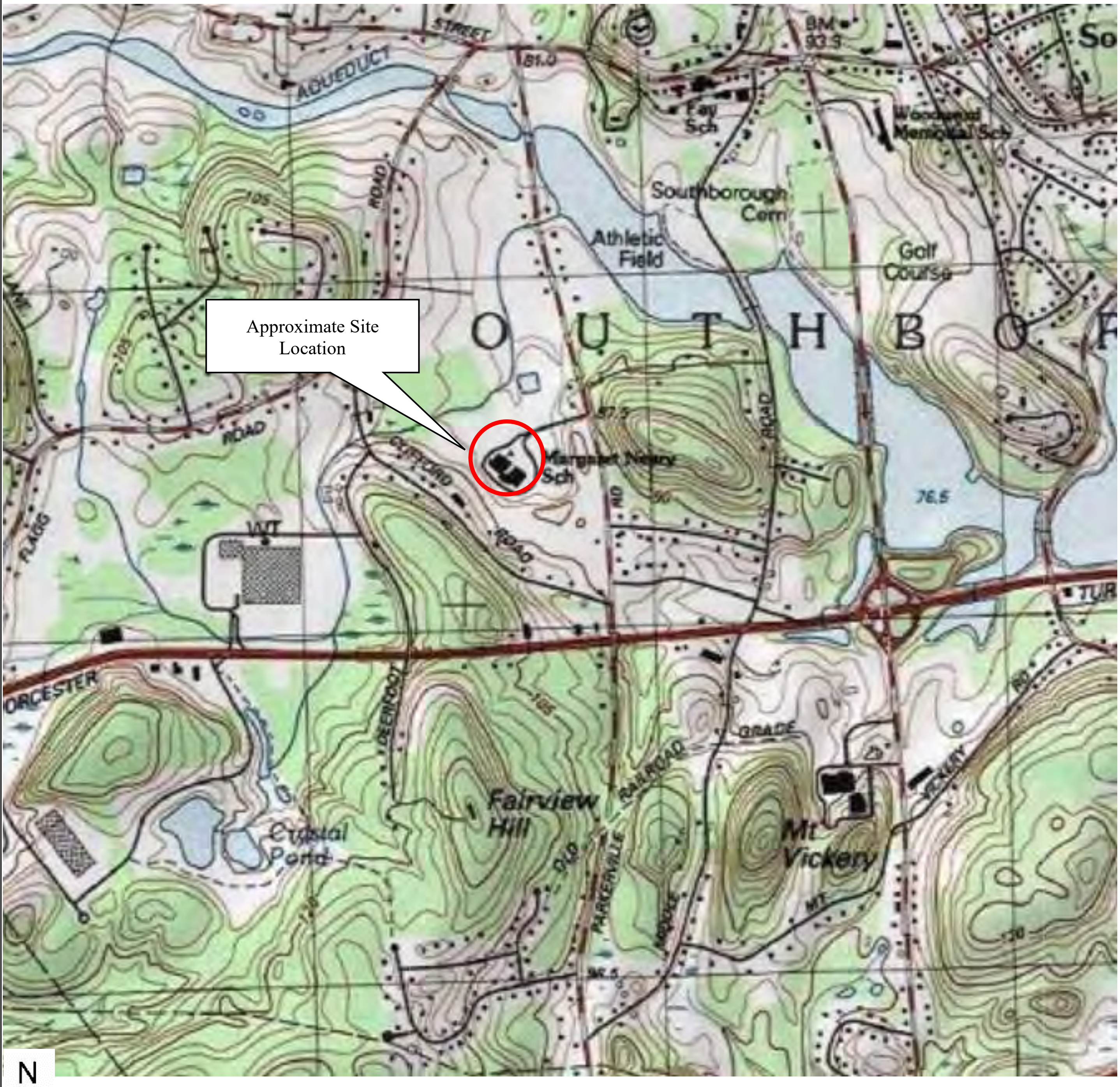
The Department of Labor, Occupational Safety and Health Administration (1989), "Occupational Safety and Health Standards - Excavations; Final Rule," 20 CFR Part 1926, Subpart P.

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[2] 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 [3]	21.3
B-2	2.9	1.0	6.2	-	15.0 [4]	15.0
B-3	2.0	1.2	-	-	17.0 [3]	17.0
B-4	3.1	0.8	-	2.0	19.0 [3]	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.



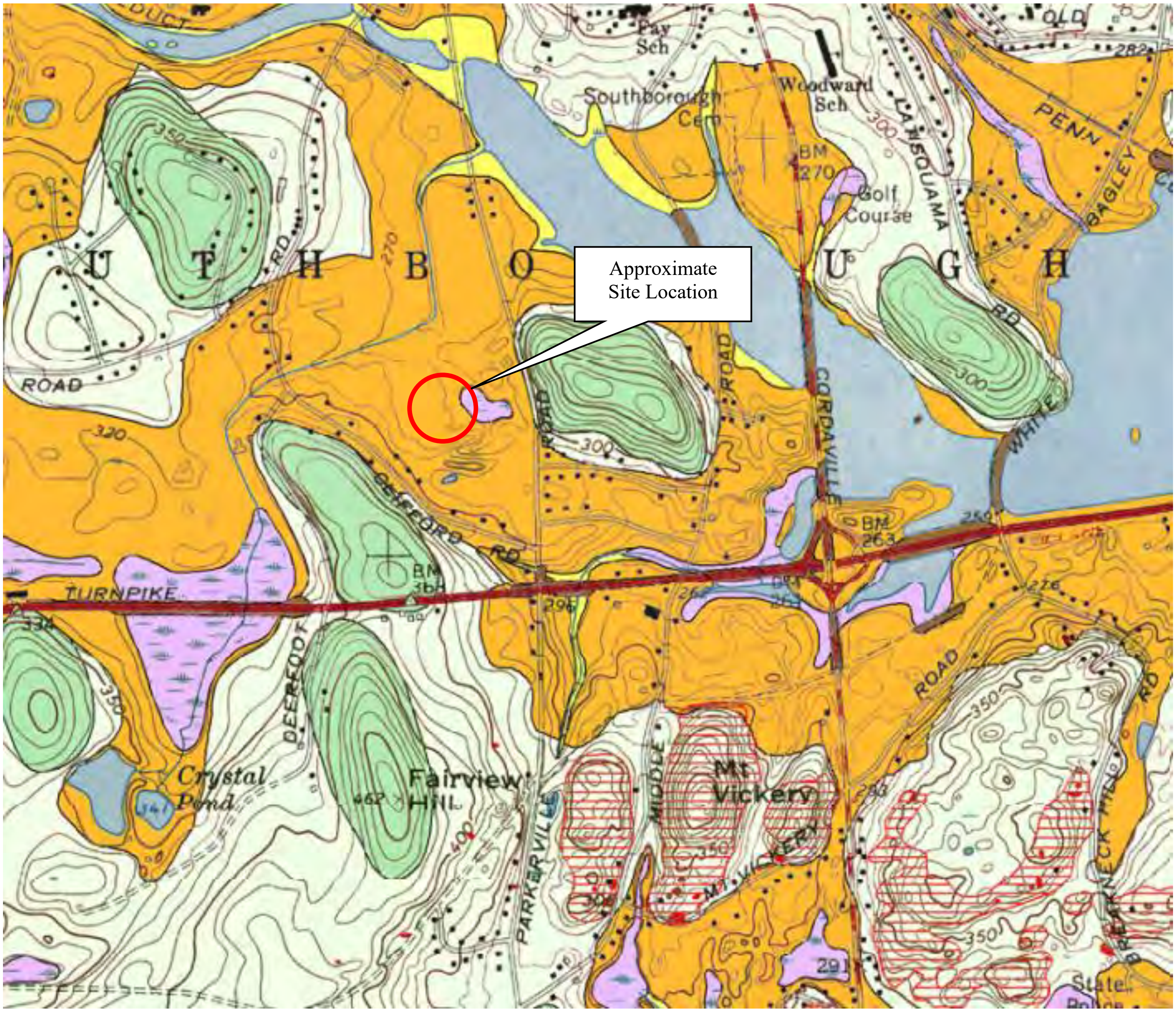
N

Contour Intervals: 3 meters

0.4 mi

Note: Figure based on USA Topo Maps of Southborough, MA *ngmdb.usgs.gov/topoview/viewer*

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



N

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 range 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).

Approximate Scale (ft.)

50 0 50 100

Note

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

Client:	Project:	
Arrowstreet	Proposed Neary Elementary School	Figure 3 – Boring Location Plan

LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location:	LGCI Project No.:	Date:
	Southborough, MA	2404	May 2024

Appendix A – LGCI's Boring Logs

BORING LOG

B-1

LGCI — Lahlaf Geotechnical Consulting, Inc.

CLIENT: Arrowstreet
PROJECT NAME: Proposed Neary Elementary School
LGCI PROJECT NUMBER: 2404
PROJECT LOCATION: Southborough, MA

DATE STARTED: 4/15/24 **DATE COMPLETED:** 4/15/24
BORING LOCATION: Near center of site
COORDINATES: NA
SURFACE El.: NA (see note 1) **TOTAL DEPTH:** 21.3 ft.
WEATHER: 40's / Sunny
GROUNDWATER LEVELS:
- **DURING DRILLING:** 10.0 ft. Based on sample moisture
- **AT END OF DRILLING:** 4.2 ft.
- **OTHER:** -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: SG **CHECKED BY:** AS

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0		0–2	S1	3-3-31-39 (34)	24/17		Topsoil	1.0	S1 - Top 12": Topsoil
							Fill		Bot. 5": Poorly Graded Gravel with Sand (GP), fine to coarse, subangular, ~30% fine to coarse sand, ~5% fines, brown and white, moist
		2–4	S2	34-35-56-39 (91)	24/16		Fill		S2 - Silty SAND with Gravel (SM), fine to coarse, 35-40% fines, ~20% fine subangular gravel, brown grey, moist
5		4–6	S3	26-24-21-12 (45)	24/15		Fill	6.0	S3 - Similar to S2
		6–6.7	S4	19-81/2" (81/2")	8/8	1, 2	Sand and Gravel		S4 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine subrounded gravel, brown grey, moist REMARK 1: SS bouncing on possible boulder at depth of 6.7 feet. REMARK 2: HSA grinding on possible boulder from depths between 6.7 and 8 feet.
		8–10	S5	13-15-21-19 (36)	24/8		Sand and Gravel		S5 - Similar to S4
10		10–11.3	S6	13-19-95/3" (114/9")	15/15	3	Sand and Gravel		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 REMARK 3: HSA grinding on possible boulder from depths between 11.5 and 15 feet.
15		15–17	S7	17-28-14-13 (42)	24/17		Sand and Gravel		S7 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse subangular gravel, brown grey, wet
20		20–21.3	S8	19-85-60/3" (145/9")	15/15		Sand and Gravel	21.3	S8 - Similar to S7
									Bottom of borehole at 21.3 feet. Backfilled borehole with drill cuttings.
25									

GENERAL NOTES:
1. The ground surface elevation is not available.

BORING LOG

B-2

CLIENT: Arrowstreet
PROJECT NAME: Proposed Neary Elementary School
LGCI PROJECT NUMBER: 2404
PROJECT LOCATION: Southborough, MA

DATE STARTED: 4/15/24 **DATE COMPLETED:** 4/15/24
BORING LOCATION: Near eastern side of site
COORDINATES: NA
SURFACE El.: NA (see note 1) **TOTAL DEPTH:** 15.01 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
▽ **DURING DRILLING:** 4.0 ft. Based on sample moisture
▼ **AT END OF DRILLING:** 2.9 ft.
▼ **OTHER:** -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: SG **CHECKED BY:** AS

Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0–2	S1	2-6-13-18 (19)	24/20		Topsoil	1.0	S1 - Top 12": Topsoil
					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
2–3.8	S2	20-20-22-80/3" (42)	21/13		Fill		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
4–6	S3	10-10-9-7 (19)	24/12		Fill	6.1	S3 - Silty SAND with Gravel (SM), fine to coarse, ~30% fines, ~20% fine subangular gravel, grey, wet
6–8	S4	8-17-28-27 (45)	24/17		Sand and Gravel		S4 - Top 1": Buried Organic Soil Bot. 16": Silty SAND with Gravel (SM), fine to coarse, ~30% fines, ~20% fine subangular gravel, trace of weathered rock, grey, wet
				1	Sand and Gravel		REMARK 1: HSA grinding on possible boulder at depth of 9 feet.
10–12	S5	17-20-20-31 (40)	24/12		Sand and Gravel		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
				2	Sand and Gravel	15.0	REMARK 2: HSA grinding on possible boulder/cobbles at depths between 12 and 15 feet.
15	S6	100/0"	0/0				S6 - No Recovery Bottom of borehole at 15.0 feet. Backfilled borehole with drill cuttings.

GENERAL NOTES:
1. The ground surface elevation is not available.

BORING LOG

B-3

PAGE 1 OF 1

Lahlaf Geotechnical Consulting, Inc.

CLIENT: Arrowstreet
PROJECT NAME: Proposed Neary Elementary School
LGCI PROJECT NUMBER: 2404
PROJECT LOCATION: Southborough, MA

DATE STARTED: 4/15/24 **DATE COMPLETED:** 4/15/24
BORING LOCATION: Near weastern side of site
COORDINATES: NA
SURFACE El.: NA (see note 1) **TOTAL DEPTH:** 17 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
- ∇ **DURING DRILLING:** 2.0 ft. Based on sample moisture
- ▼ **AT END OF DRILLING:** 2.5 ft.
- **OTHER:** -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: SG **CHECKED BY:** AS

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0		0-2	S1	1-2-7-12 (9)	24/19		Topsoil	1.2	S1 - Top 14": Topsoil
							Sand and Gravel		Bot. 5": Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, 0-5% fine gravel, grey with orange stripes, moist ∇
		2-4	S2	28-26-33-31 (59)	24/17				▼ S2 - Top 4": Similar to S1, Bot. 5" 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		4-6	S3	15-20-21-13 (41)	24/16				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
		6-8	S4	15-13-18-19 (31)	24/4				S4 - Similar to S3, Bot. 9", fine to coarse
10		10-12	S5	25-31-61-50 (92)	24/14				S5 - Silty GRAVEL with Sand (GM), fine to coarse, angular, 15-20% fines, 25-30% fine to coarse sand, grey, wet
15		15-17	S6	20-25-26-25 (51)	24/12			17.0	S6 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subangular gravel, grey, wet
									Bottom of borehole at 17.0 feet. Backfilled borehole with drill cuttings.
20									
25									

GENERAL NOTES:
1. The ground surface elevation is not available.

LGCI
Lahlaf Geotechnical Consulting, Inc.

BORING LOG

B-4

CLIENT: Arrowstreet
PROJECT NAME: Proposed Neary Elementary School
LGCI PROJECT NUMBER: 2404
PROJECT LOCATION: Southborough, MA

DATE STARTED: 4/15/24 **DATE COMPLETED:** 4/15/24
BORING LOCATION: Near southern center of site
COORDINATES: NA
SURFACE El.: NA (see note 1) **TOTAL DEPTH:** 19 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
▽ **DURING DRILLING:** 4.0 ft. Based on sample moisture
▼ **AT END OF DRILLING:** 3.1 ft.
▼ **OTHER:** -

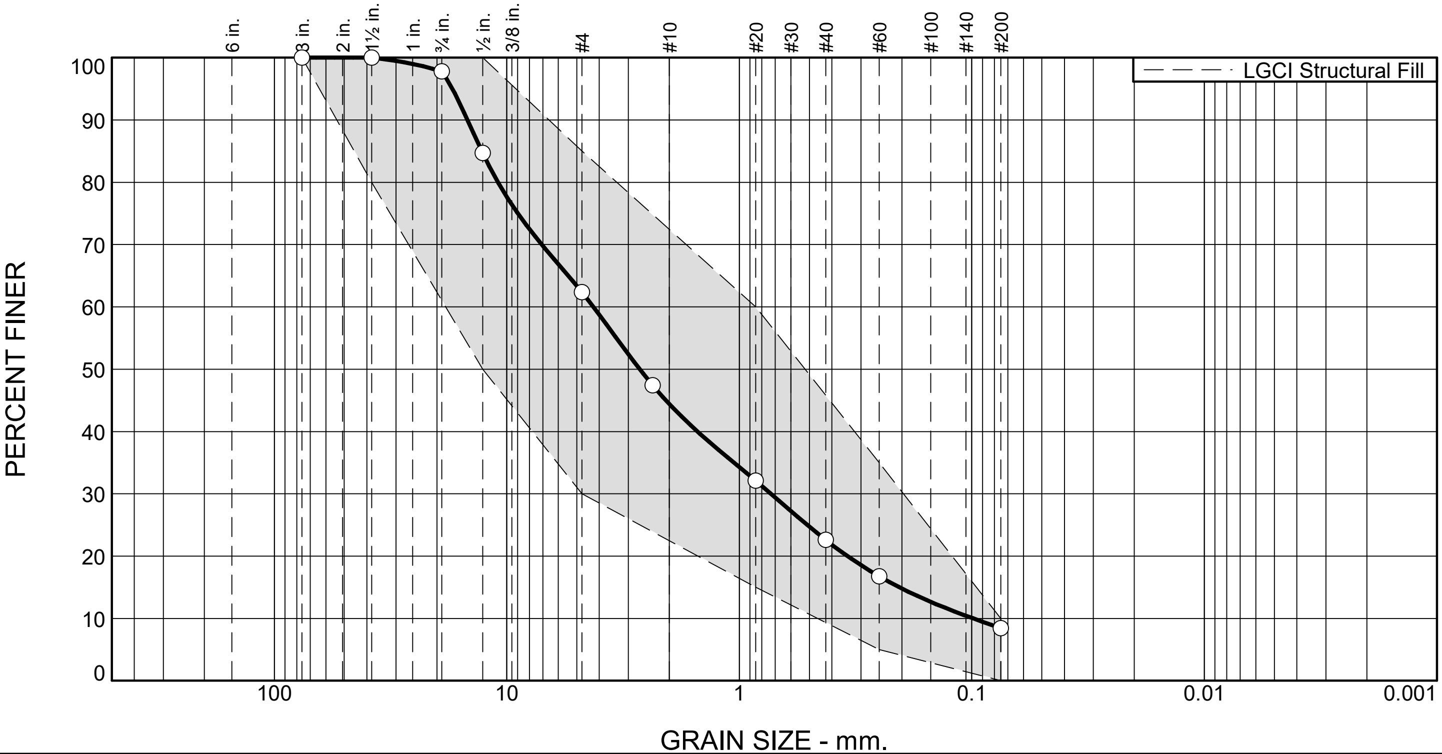
DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: SG **CHECKED BY:** AS

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0-2	S1	1-4-12-10 (16)	24/17		Topsoil	0.8	S1 - Top 10": Topsoil
							Subsoil	2.0	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
		2-4	S2	11-14-15-17 (29)	24/13		Sand and Gravel		S2 - Silty SAND (SM), fine to coarse, ~15% fines, ~35% fine to coarse subrounded gravel, brown, moist
5		4-6	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
		6-8	S4	8-7-8-12 (15)	24/8				S4 - Similar to S3
		8				1			REMARK 1: HSA grinding on possibe boulder/cobbles at depth of 8 feet.
10		10-12	S5	9-9-6-7 (15)	24/12				S5 - Silty SAND with Gravel (SM), fine to coarse, ~15% fines, 15-20% fine to coarse gravel, trace of weathered rock, brown grey, wet
15		15-17	S6	6-6-6-5 (12)	24/7				S6 - Silty SAND (SM), fine to medium, trace of coarse, 35-40% fines, 5-10% fine to coarse subrounded gravel, grey, wet
		17-19	S7	7-13-17-26 (30)	24/14			19.0	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
20		19							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

Particle Size Distribution Report



% +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	

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 35-40% mostly fine gravel

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

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

Coefficients

D_{90}= 14.7722 D_{85}= 12.8177 D_{60}= 4.2431
D_{50}= 2.6797 D_{30}= 0.7306 D_{15}= 0.2046
D_{10}= 0.0986 C_u= 43.05 C_c= 1.28

Remarks

Natural Soil Material

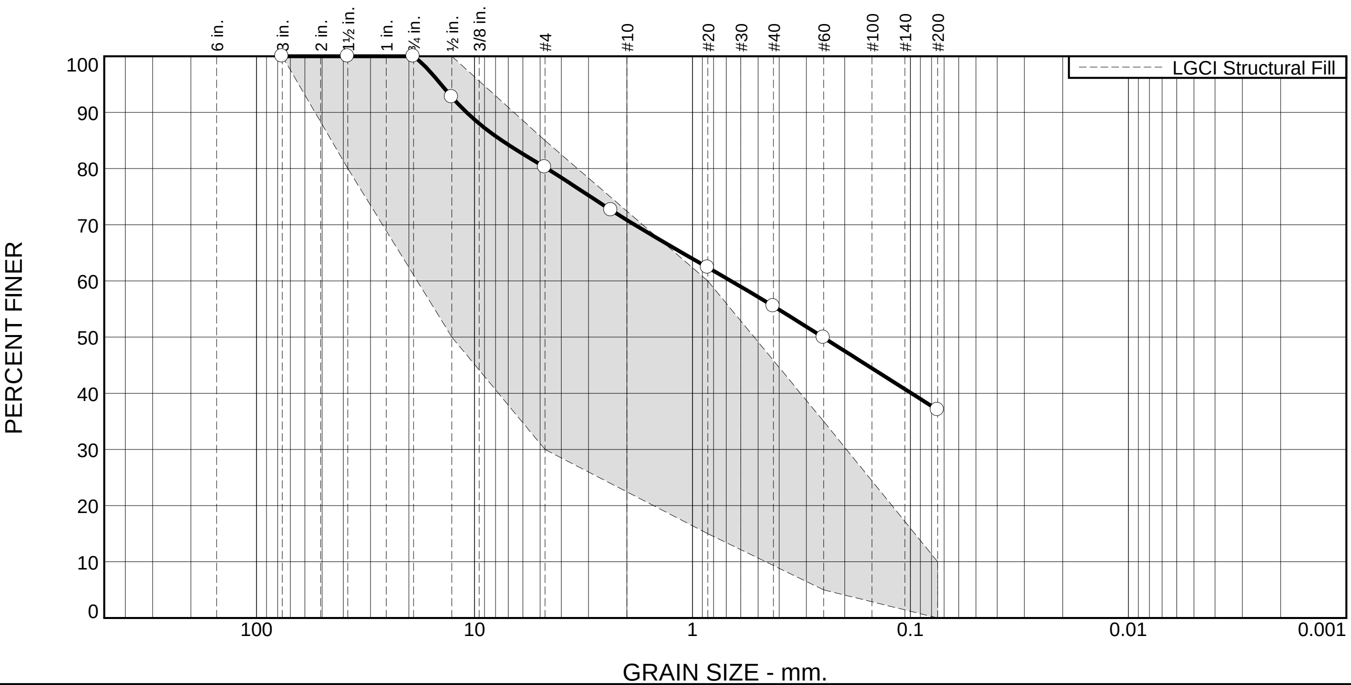
Date Received: 4/15/24 **Date Tested:** 4/30/24
Tested By: SG
Checked By: SL

Location: B-3
Sample Number: S2 Bot. 13" **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**

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_{90}= 10.8651 D_{85}= 7.4884 D_{60}= 0.6656
D_{50}= 0.2525 D_{30}= D_{15}=
D_{10}= C_u= C_c=

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**

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F. Soil Suitability Assessment (Percolation Test)

McCarty Engineering, Inc.
Civil Engineers

July 11, 2024

Mr. Adel Shahin
Green International Affiliates, Inc.

Re: Proposal for Soil Testing
Neary School, Southborough

Dear Mr. Shahin,

McCarty Engineering, Inc. (MEI) is pleased to submit this proposal for Soil Evaluation Services for the proposed sewage disposal system at the Neary School. The details of our proposal are outlined below.

Scope of Services

We will undertake the following scope of services:

Task1- Soil Testing

Under this Task MEI will perform deep hole and percolation soil testing that will aid in the sizing and design of a proposed septic system. This soil testing will include digging multiple deep holes to determine where groundwater is encountered along with classifying the soil texture. Associated with these test holes, MEI will perform percolation tests. It is MEI's understanding that that the town will notify Digsafe and provide the operator and machine to conduct the required testing.

Cost

Our cost for the above Scope of Services will be on a time and materials basis. Any out of scope work will be billed at our standard rate of $165/hour for a principle engineer and $115/hour for a staff engineer.
If required, permit fees to the Board of Health are to be paid by the applicant. MEI will give adequate notice of the fee amount and filing deadline so that a check can be provided.
The fee breakdown by task is as follows:

Task 1	Soil Testing	$ 1,250
	Reimbursable Exp.(3.5%)±	$ 40
	Total	**$ 1,290**

Schedule

We are prepared to begin work within (1) week of receipt of this executed Proposal. We recognize that the schedule is an important aspect of every project and will do our best to complete the work in a timely and professional manner.

Conclusions

We are available at your convenience to answer any questions that you may have relative to this Proposal. Should this Proposal meet with your approval, please sign and return a copy to us for our files. Your signature provides full authorization to proceed.

We look forward to working with you on this project.

Respectfully,

Lar Greene, RLA
Senior Landscape Architect

Accepted By: ______________________ Date: _________________

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G. MHC Project Notification Form

ARROWSTREET

PROJECT NOTIFICATION FORM

MARGARET A. NEARY ELEMENTARY SCHOOL

SOUTHBOROUGH, MA

MAY 20, 2024

PREPARED FOR

MASSACHUSETTS HISTORICAL COMMISSION

May 20, 2024

Ms. Brona Simon, Executive Director & State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125-3314

Southborough Elementary/ 23072

Margaret A. Neary Elementary School
Southborough, Massachusetts
Project Notification Form

Ms. Simon:

On behalf of the Town of Southborough (the Applicant), Arrowstreet is pleased to submit for your consideration the enclosed Project Notification Form (PNF) for the planned construction of the Margaret A. Neary Elementary School at 53 Parkerville Road in Southborough (the Project) in accordance with MGL Chapter 9 Sections 26 to 27A. The Applicant is requesting that the Commission permit the demolition of portions of the existing school to allow construction of the Project. The original portion of the school was constructed in 1970 and is not listed on the State Inventory of Historic Assets of the Commonwealth.

The Project is in the early phases of a Feasibility Study under the Massachusetts School Building Authority (MSBA) school construction program. The Feasibility Study is investigating several options for the Neary Elementary School, including major repair/renovation, renovation and addition, or demolition. In each option, portions of the existing building or entire building may be preserved, renovated, and/or demolished. This PNF is being submitted to gain MHC's input on the impact of the proposed work at the Neary Elementary School.

Please contact us if you have any questions or concerns.

Sincerely,

ARROWSTREET

Laurence Spang, AIA
Partner

ARROWSTREET

Project Notification Form

20 May 2024

I. PROJECT NOTIFICATION FORM

APPENDIX A MASSACHUSETTS
HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: Margaret A. Neary Elementary School

Location / Address: 53 Parkerville Rd

City / Town: Southborough, MA

Project Proponent

Name: The Public Schools of Northborough and Southborough C/O Gregory L.Martineau, Superintendent

Address: 53 Parkerville Rd

City/Town/Zip/Telephone: Southborough, MA, 01772 (508)-486-5115

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name	Type of License or funding (specify)
MSBA	School Construction Grant
MassDEP	Public Water Supply
MEPA	ENF Certificate
EPA	NPDES General Permit for Construction Activities
Mass Save	Utility Incentives

Project Description (narrative):

The project includes options for the addition/renovation of the existing Margaret A. Neary Elementary School or the construction of a new grades3-5 or grades 2-5 school on the existing Neary school site. The existing building shares a parcel of land with the Trottier Middle School to the north. The addition/renovation or new building will provide educational program of the Margaret A. Neary Elementary School and the Albert S. Woodward School in an approximately 121,067 sf (grades 2-5) or 100,200 sf (grades 3-5)facility at 53 Parkerville Rd in Southborough, MA. The project includes new building construction, possible demolition and abatement of the existing building; and construction of access drives, parking, playing fields, and associated site work.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

Yes. The project includes the potential demolition of the existing school. The existing building is a modern single-story brick exterior, concrete framed building constructed in 1970.

See section IV. Existing Building Photos for photographs of the existing building. It has a number of accessibility issues, building systems are outdated and nearing the end of their useful life, and the building configuration needs improvement to meet the educational vision of the District. The Town of Southborough would also like to consolidate their elementary school buildings to reduce the number of transitions for the students as they progress through elementary school and reduce the transportation constraints on the district and families.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

Should the district choose to move forward with the addition/renovation option, rehabilitation of the existing building would occur to comply with accessibility regulations and provide spaces to meet the new educational programming needs of the school. No rehabilitation of the existing building will occur if the district moves forward with the new construction option.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

Yes. The project includes the construction of a new consolidated school or an addition to the existing school building that will accommodate the students of the existing Margaret A. Neary Elementary School and the existing Albert S. Woodward School. The 1 or 2 story building will be approximately 121,067 sf (grades 2-5) or 100,200 sf (grades 3-5) and will consist of classrooms and community spaces (gymnasium, cafeteria, auditorium, etc.)

The project has been accepted into the Massachusetts School Building Authority Capital Funding Program.

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

The Margaret A. Neary Elementary School is not listed in the State Inventory of Historic Assets of the Commonwealth. Neither is it located within the Southborough Center Historic District.

MHC Maps revealed no Prehistoric Archaeological Assets of the Commonwealth mapped in the project site location. The site and the playing fields were substantially rebuilt in 1970 as part of the construction of the existing buildings, so no archaeological resources are anticipated to be affected.

What is the total acreage of the project area?

Woodland	29	acres	Productive Resources:		
Wetland	11.6	acres	Agriculture	0	acres
Floodplain	16.94	acres	Forestry	0	acres
Open space	40	acres	Mining/Extraction	0	acres
Developed	10.37	acres	Total Project Acreage	81	acres

What is the acreage of the proposed new construction? **2.77** acres

What is the present land use of the project area?

Education – Elementary School

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: Laurence Spang Date: 7/12/2024

Name: Arrowstreet C/O Laurence Spang, Partner

Address: 10 Post Office Square, Suite 700 N

City/Town/Zip: Boston, MA 02109

Telephone: 617. 623.5555

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

II. USGS MAP

Southborough Topo Map in Worcester County Massachusetts

Map Provided by TopoZone.com

III. EXISTING BUILDING PHOTOS

Drone view of Margaret A. Neary Elementary School

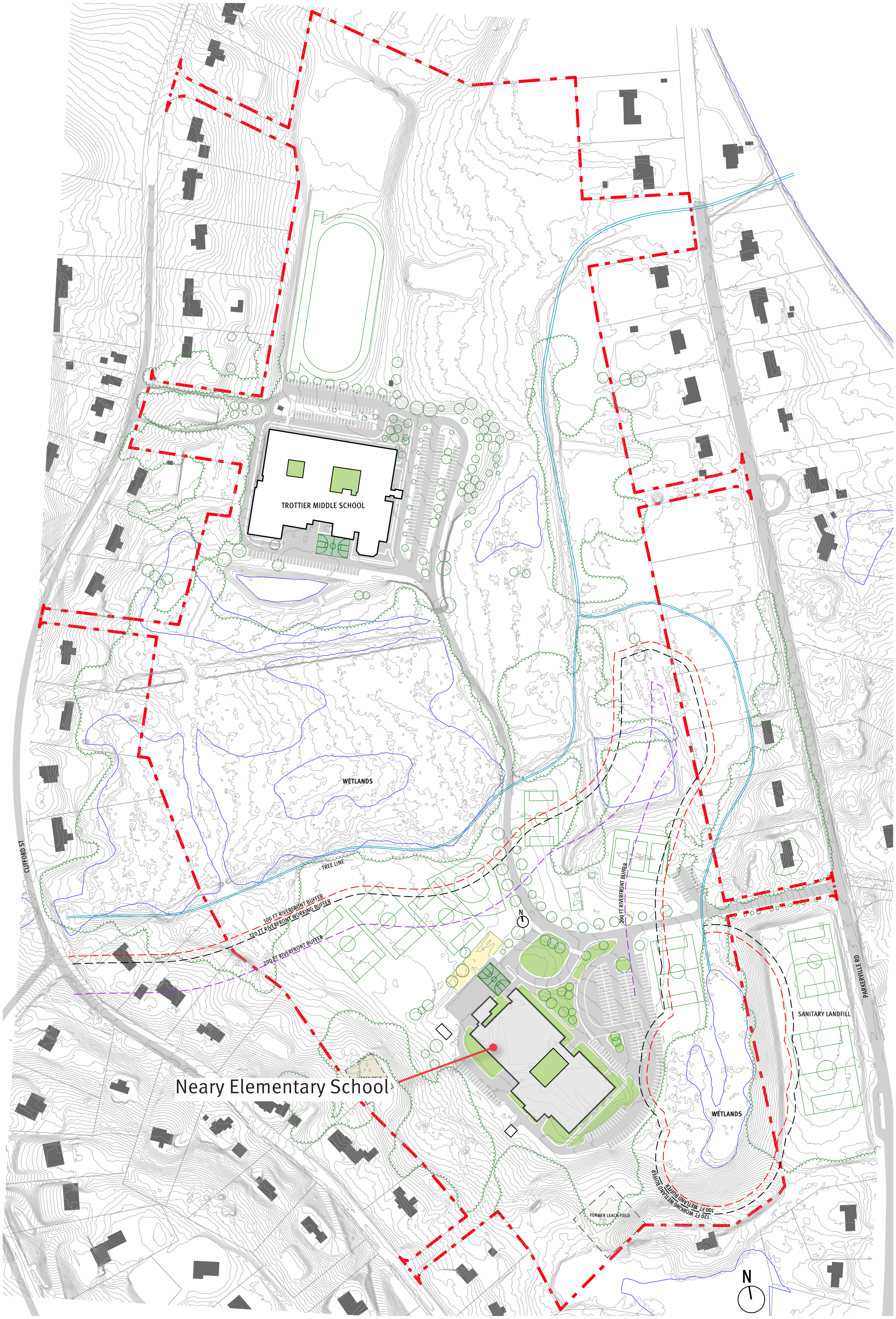
North East Facade at the Main Entrance

View of Signage on the North East Facade

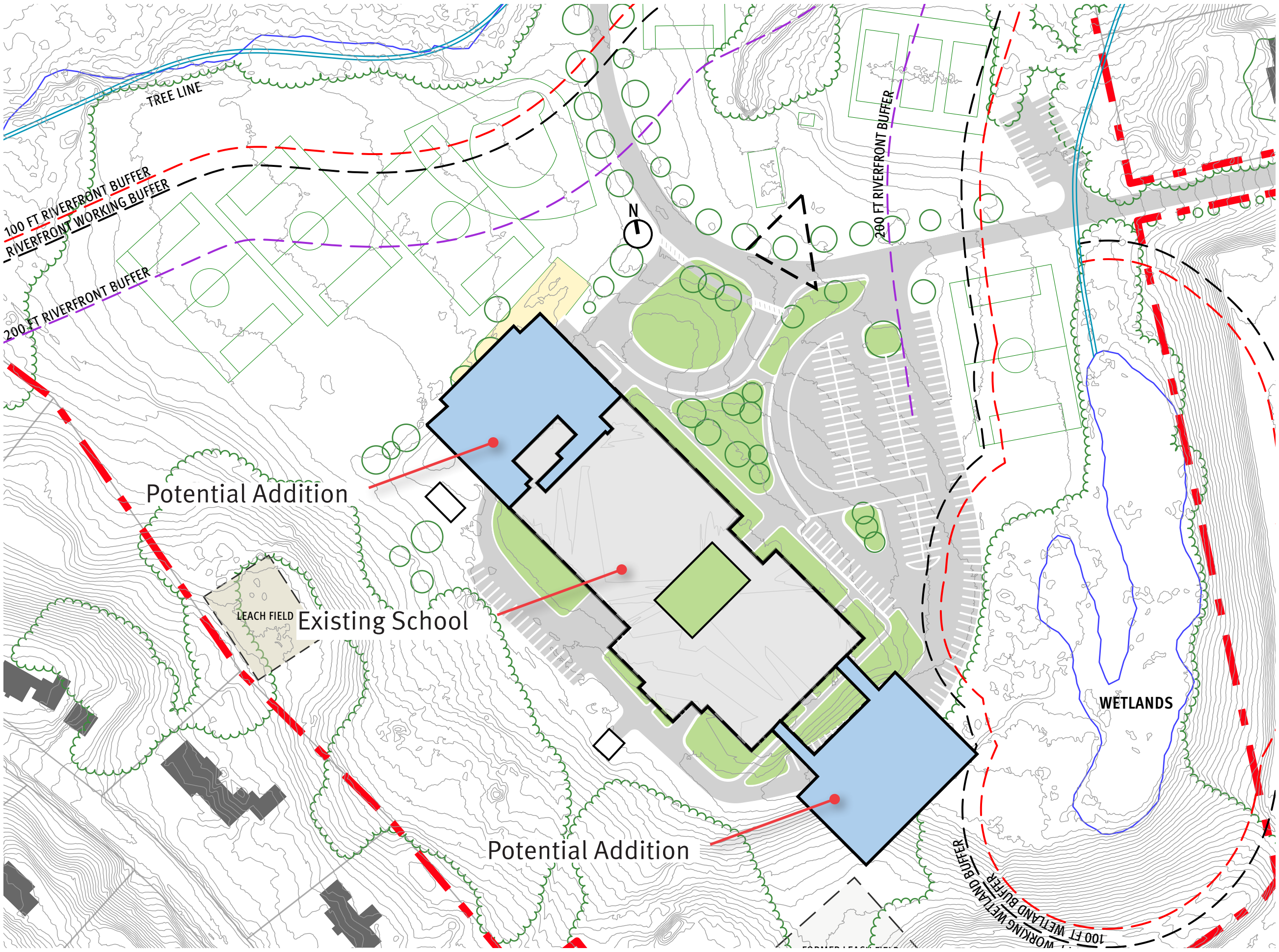

View of Internal Courtyard

Modular Classrooms along the North West Facade Constructed in 2001

IV. PROPOSED DESIGN

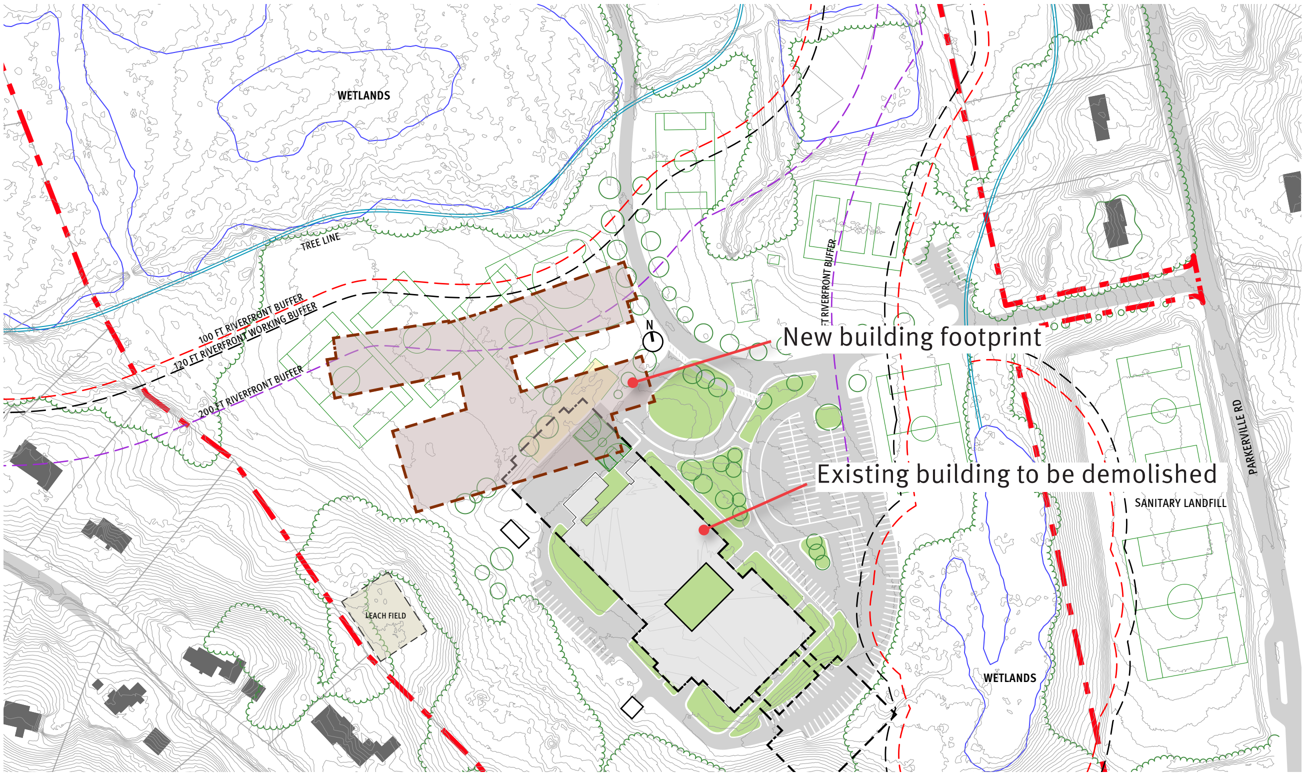


Existing Site Plan



Proposed Site Plan - Addition/Renovation Grades 2-5

Proposed Building Footprint - Addition/Renovation Grades 2-5



Proposed Site Plan - New Construction Grades 2-5

Proposed Building Footprint - New Construction Grades 2-5

Arrowstreet Inc.
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555

arrowstreet.com

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H. PSR Cost Estimates

PSR Options Cost Estimate

Margaret A. Neary Elementary School

Southborough, MA

PM&C LLC
20 Downer Avenue, Suite 5
Hingham, MA 02043
(T) 781-740-8007
(F) 781-740-1012

Prepared for:

Arrowstreet

August 12, 2024

Margaret A. Neary Elementary School
Southborough, MA

12-Aug-24

PSR Options Cost Estimate

INTRODUCTION

NOTE: The costs for the various PSR 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 PSR Design Submission cost estimate was produced from narratives and outline drawings dated July 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)

PM&C

Margaret A. Neary Elementary School
Southborough, MA

12-Aug-24

PSR Options Cost Estimate

PSR PRICING OPTIONS

MAIN CONSTRUCTION COST SUMMARY

	Gross Floor Area	$/sf	Estimated Construction Cost - DBB	Estimated Construction Cost - CMr
OPTION B.4 - Add/Reno at Neary (610 Enrollment)	103,392	$816.94	**$84,465,306**	**$89,533,224**
OPTION C.1 - New Construction Neary (305 Enrollment)	63,305	$987.42	**$62,508,710**	**$66,259,233**
OPTION C.4 - New Construction Neary (610 Enrollment)	99,564	$870.18	**$86,638,273**	**$91,836,569**
Alternate Pricing				
Geothermal System - Based on C.4 ADD			**$4,181,688**	**$4,432,589**

PM&C

Margaret A. Neary Elementary School 12-Aug-24
Southborough, MA

PSR Options Cost Estimate

MAIN CONSTRUCTION COST SUMMARY

	Start Date		Gross Floor Area	$/sf	Estimated Construction Cost
OPTION B.4 - Add/Reno at Neary (610 Enrollment)					
NEW ADDITION + RENOVATE EXISTING SCHOOL			103,392	$458.40	$47,394,579
DEMOLITION (modulars)			2,471	$15.00	$37,065
REMOVE HAZARDOUS MATERIALS					$939,392
SITEWORK -Allowance					$10,845,587
SUB-TOTAL	Jun-26		103,392	$572.74	$59,216,623
ESCALATION TO START DATE	6.00%				$3,552,997
DESIGN AND PRICING CONTINGENCY	15.0%				$8,882,493
SUB-TOTAL			103,392	$693.01	$71,652,113
GENERAL CONDITIONS		30	MTHS	$160,000	$4,800,000
GENERAL REQUIREMENTS	2.00%				$1,433,042
PHASING	3.00%				$2,149,563
BONDS	0.75%				$537,391
INSURANCES	2.00%				$1,433,042
PERMIT					Excl
SUB-TOTAL					$82,005,151
OH+P	3.0%				$2,460,155
MODULAR CLASSROOMS					BY Owner
TOTAL OF ALL CONSTRUCTION			103,392	$816.94	**$84,465,306**

Margaret A. Neary Elementary School
Southborough, MA

12-Aug-24

PSR Options Cost Estimate

MAIN CONSTRUCTION COST SUMMARY

	Start Date		Gross Floor Area	$/sf	Estimated Construction Cost
OPTION C.1 - New Construction Neary (305 Enrollment)					
NEW CONSTRUCTION			63,305	$526.55	$33,333,492
DEMOLITION			62,756	$10.00	$627,560
REMOVE HAZARDOUS MATERIALS					$939,392
SITEWORK					$9,950,986
SUB-TOTAL	Jun-26		63,305	$708.50	$44,851,430
ESCALATION TO START DATE	6.00%				$2,691,086
DESIGN AND PRICING CONTINGENCY	15.0%				$6,727,715
SUB-TOTAL			63,305	$857.28	$54,270,231
GENERAL CONDITIONS		24	MTHS	$160,000	$3,840,000
GENERAL REQUIREMENTS	2.00%				$1,085,405
PHASING					NR
BONDS	0.75%				$407,027
INSURANCES	2.00%				$1,085,405
PERMIT					Excl
SUB-TOTAL					$60,688,068
OH+P	3.0%				$1,820,642
MODULAR CLASSROOMS					BY Owner
TOTAL OF ALL CONSTRUCTION			63,305	$987.42	**$62,508,710**

Margaret A. Neary Elementary School
Southborough, MA

12-Aug-24

PSR Options Cost Estimate

MAIN CONSTRUCTION COST SUMMARY

	Start Date		Gross Floor Area	$/sf	Estimated Construction Cost
OPTION C.4 - New Construction Neary (610 Enrollment)					
NEW CONSTRUCTION			99,564	$506.00	$50,379,465
DEMOLITION			62,756	$10.00	$627,560
REMOVE HAZARDOUS MATERIALS					$939,392
SITEWORK					$10,630,619
SUB-TOTAL	Jun-26		99,564	$628.51	$62,577,036
ESCALATION TO START DATE	6.00%				$3,754,622
DESIGN AND PRICING CONTINGENCY	15.0%				$9,386,555
SUB-TOTAL			99,564	$760.50	$75,718,213
GENERAL CONDITIONS		30	MTHS	$160,000	$4,800,000
GENERAL REQUIREMENTS	2.00%				$1,514,364
PHASING	2.00%				NR
BONDS	0.75%				$567,887
INSURANCES	2.00%				$1,514,364
PERMIT					Excl
SUB-TOTAL					$84,114,828
OH+P	3.0%				$2,523,445
MODULAR CLASSROOMS					BY Owner
TOTAL OF ALL CONSTRUCTION			99,564	$870.18	**$86,638,273**

Margaret A. Neary Elementary School
Southborough, MA

12-Aug-24

PSR Options Cost Estimate

GFA 103,392

CONSTRUCTION COST SUMMARY

		BUILDING SYSTEM	SUB-TOTAL	TOTAL	$/SF	%
BUILDING SUMMARY - OPTION B.4						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$1,630,882			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$1,012,234	**$2,643,116**	$25.56	5.6%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$1,851,345			
	B1020	Roof Construction	$1,583,092	**$3,434,437**	$33.22	7.2%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$3,223,491			
	B2020	Windows	$2,272,765			
	B2030	Exterior Doors	$103,392	**$5,599,648**	$54.16	11.8%
B30	**ROOFING**					
	B3010	Roof Coverings	$3,395,623			
	B3020	Roof Openings	$0	**$3,395,623**	$32.84	7.2%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$3,610,694			
	C1020	Interior Doors	$827,136			
	C1030	Specialties/Millwork	$1,622,225	**$6,060,055**	$58.61	12.8%
C20	**STAIRCASES**					
	C2010	Stair Construction	$110,000			
	C2020	Stair Finishes	$40,000	**$150,000**	$1.45	0.3%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$827,136			
	C3020	Floor Finishes	$1,645,521			
	C3030	Ceiling Finishes	$1,033,920	**$3,506,577**	$33.92	7.4%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$192,400	**$192,400**	$1.86	0.4%

Margaret A. Neary Elementary School
Southborough, MA

12-Aug-24

PSR Options Cost Estimate

GFA 103,392

CONSTRUCTION COST SUMMARY

		BUILDING SYSTEM	*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
BUILDING SUMMARY - OPTION B.4						
D20	**PLUMBING**					
	D20	Plumbing	$2,955,261	**$2,955,261**	$28.58	6.2%
D30	**HVAC**					
	D30	HVAC	$8,878,748	**$8,878,748**	$85.87	18.7%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$878,832	**$878,832**	$8.50	1.9%
D50	**ELECTRICAL**					
	D5010	Complete System	$6,908,290	**$6,908,290**	$66.82	14.6%
E10	**EQUIPMENT**					
	E10	Equipment	$851,000	**$851,000**	$8.23	1.8%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$1,308,204			
	E2020	Movable Furnishings	NIC	**$1,308,204**	$12.65	2.8%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$632,388			
	F2020	Hazardous Components Abatement	$0	**$632,388**	$6.12	1.3%
TOTAL DIRECT COST (Trade Costs)				***$47,394,579***	*$458.40*	*100.0%*

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION B.4							
	GROSS FLOOR AREA CALCULATION						
	Level 1			28,480			
	Level 2			14,627			
	Level 3						
	Building Renovation			60,285			
	TOTAL GROSS FLOOR AREA (GFA)				**103,392** *sf*		
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
	Strip Footings	*109*	*CY*	$770 /cy			
	Foundation Walls	*164*	*CY*	$1,438 /cy			
	Spread Footings	*205*	*CY*	$682 /cy			
	Grade beams	*39*	*CY*	$1,320 /cy			
	Piers	*21*	*CY*	$2,071 /cy			
	Total Foundation Concrete	*538*	*CY*				
	Strip footing, typical; 2'6" x 15"						
	Formwork	**2,250**	sf	16.00	36,000		
	Re-bar	**9,000**	lbs.	2.00	18,000		
	Concrete material	**109**	cy	155.00	16,895		
	Placing concrete	**109**	cy	120.00	13,080		
	Foundation wall; 14" thick						
	Formwork	**7,200**	sf	20.00	144,000		
	Re-bar, 115 lbs/cy	**18,860**	lbs.	2.00	37,720		
	Concrete material	**164**	cy	155.00	25,420		
	Placing concrete	**164**	cy	120.00	19,680		
	Form shelf	**900**	lf	10.00	9,000		
	Exterior spread footings; 7'-0"x 7'-0"x 24"						
	Formwork	**1,904**	sf	18.00	34,272		
	Re-bar, 60 lbs/cy	**7,800**	lbs.	2.00	15,600		
	Concrete material	**130**	cy	155.00	20,150		
	Placing concrete	**130**	cy	120.00	15,600		
	Set anchor bolts grout plates	**34**	ea	150.00	5,100		
	Interior Spread Footings; 8'-0"x 8'-0"x 24"						
	Formwork	**960**	sf	18.00	17,280		
	Re-bar, 60 lbs/cy	**4,500**	lbs.	2.00	9,000		
	Concrete material	**75**	cy	155.00	11,625		
	Placing concrete	**75**	cy	120.00	9,000		
	Set anchor bolts grout plates	**15**	ea	150.00	2,250		
	New foundations for conversion of gym to cafeteria	200	LF				
	Formwork	**1,000**	sf	15.00	15,000		
	Re-bar, 330 lbs/cy	**12,870**	lbs.	2.00	25,740		
	Concrete material	**39**	cy	155.00	6,045		
	Placing concrete	**39**	cy	120.00	4,680		
	Piers/Pilasters						
	Formwork	**1,142**	sf	22.00	25,124		
	Re-bar, 300 lbs/cy	**6,300**	lbs	2.00	12,600		
	Concrete material	**21**	cy	155.00	3,255		
	Placing concrete	**21**	cy	120.00	2,520		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Trowelled-on bituminous mastic dampproofing at foundation walls	**3,600**	sf	4.00	14,400		
072100	*THERMAL INSULATION*						
	2" Insulation at foundation walls	**3,600**	sf	3.00	10,800		
312000	*EARTHWORK*						
	Strip footings/Fdn wall						
	Excavation	**1,167**	cy	25.00	29,175		
	Remove off-site	**1,167**	cy	32.00	37,344		
	Backfill with imported material	**1,058**	cy	48.00	50,784		
	Spread footings/Grade beams						
	Excavation	**773**	cy	25.00	19,325		
	Remove off-site	**773**	cy	32.00	24,736		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION B.4							
	Backfill with imported material	**529**	cy	48.00	25,392		
	Building						
	Cut; 5ft of Unsuitable Fill	**5,274**	cy	15.00	79,110		
	Fill - imported structural fill swell 25%	**6,593**	cy	65.00	428,545		
	SOIL DISPOSAL - conversion factor 1.7 to tons						
	Load excess soils for disposal	**5,274**	cy	2.50	13,185		
	Less than RCS-1 - clean non-regulated	**8,966**	tn	25.00	224,150		
	Miscellaneous						
	Gravel fill beneath footings, 6"	**100**	cy	48.00	4,800		
	Ledge, trenching allow	**1**	ls	50,000.00	Assumed NR		
	Perimeter drain	**900**	lf	30.00	27,000		
	Temporary dewatering for foundation work	**1**	ls	30,000.00	30,000		
	Foundations against existing; premium	**110**	lf	250.00	27,500		
	Temporary dewatering for foundation work	**1**	ls	30,000.00	30,000		
	SUBTOTAL					1,630,882	
A1020	**SPECIAL FOUNDATIONS**						
	Structural fill/Ground Improvements Allowance					See Above	
	SUBTOTAL					-	
A1030	**LOWEST FLOOR CONSTRUCTION**						
033000	*CONCRETE*						
	Passive depressurization system + Vapor barrier, 15mils	**28,480**	sf	5.00	142,400		
	Slab on grade	*28,480*	*sf*				
	WWF reinforcement	**32,752**	sf	1.85	60,591		
	Concrete - 5" thick	**454**	cy	170.00	77,180		
	Placing concrete	**454**	cy	65.00	29,510		
	Finishing and curing concrete	**28,480**	sf	3.00	85,440		
	Control joints - saw cut	**28,480**	sf	0.10	2,848		
	Miscellaneous						
	Patch existing floors	**60,285**	sf	5.00	301,425		
	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	**28,480**	sf	3.00	85,440		
312000	*EARTHWORK*						
	Gravel base, 12"	**1,055**	cy	45.00	With Structural Fill Above		
	Underslab drainage	**28,480**	sf	3.00	85,440		
	Compact existing sub-grade	**28,480**	sf	0.50	14,240		
	Underslab E&B for plumbing	**28,480**	sf	1.50	42,720		
	SUBTOTAL					1,012,234	
	TOTAL - FOUNDATIONS						**$2,643,116**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
		14.3	*lbs/sf*				
B1010	**FLOOR CONSTRUCTION**	*309*	*tns*	excluding canopies + roof screens			
		$6,577	*$/Ton*				

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION B.4							
033000	*CONCRETE*						
	WWF reinforcement	**16,821**	sf	1.85	31,119		
	Concrete Fill to metal deck; lightweight, total thickness 5 1/4"	**239**	cy	190.00	45,410		
	Place and finish concrete	**14,627**	sf	3.00	43,881		
	Rebar to decks	**4,388**	lbs	2.00	8,776		
051200	*STRUCTURAL STEEL FRAMING*						
	Structural steel framing; Complete; 15 lbs per SF	**110**	tns	5,200.00	572,000		
	Moment connections	**6**	ea	750.00	4,500		
	Shear studs	**3,657**	ea	3.50	12,800		
	2" metal galvanized floor deck	**14,627**	sf	7.50	109,703		
	Expansion joints	**1**	ls	50,000.00	NR		
	Remove bearing wall at gym and add new columns + support beam; includes shoring	**1**	ls	75,000.00	75,000		
	Seismic upgrades	**60,285**	sf	15.00	904,275		
078100	*FIREPROOFING/FIRESTOPPING*						
	Fire proofing to columns and beams; 2 hr	**14,627**	sf	3.00	43,881		
	Intumescent paint @ architecturally exposed beams and columns - allow	**1**	ls	25,000.00	NR		
	SUBTOTAL					1,851,345	
B1020	**ROOF CONSTRUCTION**						
033000	*CONCRETE*						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	**5,000**	sf	9.00	45,000		
051200	*STRUCTURAL STEEL FRAMING*						
	Structural steel framing; Complete; 14 lbs per SF	**199**	tns	5,200.00	1,034,800		
	Canopy	**11**	tns	5,500.00	60,500		
	Roof screens	**7**	tns	5,500.00	38,500		
	Decking						
	1 1/2" galvanized metal deck, typical	**28,480**	sf	7.00	199,360		
	Premium for acoustic (Gym)	**6,000**	sf	6.00	36,000		
	Roof deck repair at existing (2" gypsum + 1" fiberboard); 2%	**1,206**	sf	22.00	26,532		
078100	*FIREPROOFING/FIRESTOPPING*						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	**28,480**	sf	5.00	142,400		
	SUBTOTAL					1,583,092	
	TOTAL - SUPERSTRUCTURE						**$3,434,437**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**	*27,000*	Total closure area				
	Exterior Wall Area - 75% solid	*20,250*	*sf total area solid*				
042000	*MASONRY*						
	Mockup	**1**	ls	50,000.00	50,000		
	Brick veneer; 80% of Solid	**16,200**	sf	46.00	745,200		
	Repoint/repair/Clean existing brick	**13,146**	sf	30.00	394,380		
	5" Mineral wool at exterior closure	**20,250**	sf	6.50	131,625		
	Miscellaneous flashings and sealants	**20,250**	sf	1.50	30,375		
	Staging to exterior wall	**20,250**	sf	4.00	81,000		
055000	*MISC. METALS*						
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	**16,200**	sf	1.50	24,300		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**20,250**	sf	10.00	202,500		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION B.4							
	Miscellaneous sealants to closure	**20,250**	sf	1.00	20,250		
072100	*THERMAL INSULATION*						
	5.5" Batt insulation in stud	**20,250**	sf	6.00	121,500		
	Insulation at glazed openings	**3,815**	lf	6.00	22,890		
076400	*CLADDING*						
	Phenolic Panel/ACM Rainscreen; 20% of solid	**4,050**	sf	100.00	405,000		
	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*						
	Exterior wall;						
	6" Stud backup	**20,250**	sf	16.00	324,000		
	Gypsum Sheathing	**20,250**	sf	3.50	70,875		
	Insulate existing exterior walls + add stud to inside face (3" continuous + 5.5" in stud) includes removal of existing	**13,146**	sf	26.00	341,796		
	Drywall lining to interior face of stud backup	**20,250**	sf	4.00	81,000		
101400	*SIGNAGE*						
	Exterior signage - allowance	**1**	ls	15,000.00	15,000		
	SUBTOTAL					3,223,491	
B2020	**WINDOWS**						
	Exterior Wall Area; 25%	*6,750*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**3,815**	lf	10.00	38,150		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier/flashing at windows	**3,815**	lf	10.00	38,150		
	Backer rod & double sealant	**3,815**	lf	11.00	41,965		
080001	*METAL WINDOWS*						
	Aluminum windows, triple glazed	**5,062**	sf	180.00	911,160		
	Curtainwall, triple glazed	**1,688**	sf	230.00	388,240		
	Replace existing windows with x3 window system	**4,695**	sf	180.00	845,100		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	*LOUVERS*						
	Louvers	**1**	ls	10,000.00	10,000		
	SUBTOTAL					2,272,765	
B2030	**EXTERIOR DOORS**						
	Allowance for exterior doors	**103,392**	gsf	1.00	103,392		
	SUBTOTAL					103,392	
	TOTAL - EXTERIOR CLOSURE						**$5,599,648**
B30	***ROOFING***						
055000	*MISCELLANOUS METALS*						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	*ROUGH CARPENTRY*						
	Rough carpentry and blocking @ roof	**88,765**	sf	1.50	133,148		
070002	*ROOFING AND FLASHING*	**88,765**	total area				
	PVC roof membrane system, white or gray, 1/2" coverboard, 5" polyiso insulation, vapor barrier	**88,765**	sf	28.00	2,485,420		
	Plaza deck pavers system at terrace				Assumed NR		
	Miscellaneous Roofing						
	Demo existing roofing; includes HazMat	**60,285**	sf	7.00	421,995		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION B.4							
	Miscellaneous flashings/copings/walkway pads etc.	**88,765**	sf	4.00	355,060		
	SUBTOTAL					3,395,623	
B3020	**ROOF OPENINGS**						
086300	*ROOF SKYLIGHTS*						
	Aluminum framed skylight	**1,500**	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	
	TOTAL - ROOFING						**$3,395,623**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
040001	*MASONRY*						
	Allowance for masonry partitions; Existing CMU ETR	**43,107**	gsf	2.00	86,214		
061000	*ROUGH CARPENTRY*						
	Backer panels in electrical closets	**1**	ls	10,000.00	10,000		
	Wood blocking at interiors	**103,392**	gsf	0.50	51,696		
078400	*FIREPROOFING/FIRESTOPPING*						
	Fire stopping including slab edges and core	**103,392**	gsf	1.00	103,392		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**103,392**	gsf	1.25	129,240		
078150	*EXPANSION JOINTS*						
	Allowance for expansion joint covers	**1**	ls	25,000.00	25,000		
081110	*INTERIOR GLAZING*						
	Allowance for interior glazing	**103,392**	gsf	5.00	516,960		
092900	*GYPSUM BOARD ASSEMBLIES*						
	Allowance for GWB partitions	**103,392**	gsf	26.00	2,688,192		
	SUBTOTAL					3,610,694	
C1020	**INTERIOR DOORS**						
	Doors, frames, hardware; complete	**103,392**	gsf	8.00	827,136		
	SUBTOTAL					827,136	
C1030	**SPECIALTIES / MILLWORK**						
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	**103,392**	gsf	5.00	516,960		
061000	*ROUGH CARPENTRY*						
062000	*INTERIOR ARCHITECTURAL WOODWORK*						
	Interior millwork package	**103,392**	gsf	3.00	310,176		
101100	*VISUAL DISPLAY SURFACES*						
	Markerboard and tackboard package	**103,392**	gsf	2.00	206,784		
101400	*SIGNAGE*						
	Room identification, directional & safety signage, building directory + environmental graphics	**103,392**	gsf	2.00	206,784		
102800	*TOILET ACCESSORIES*						
	Toilet accessories/compartments	**103,392**	gsf	1.00	103,392		
104400	*FIRE PROTECTION SPECIALTIES*						
	Fire extinguisher cabinets	**1**	ls	17,649.29	17,649		
	AED cabinets	**1**	ls	2,000.00	2,000		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION B.4							
105000	*LOCKERS*						
	Student lockers/cubbies	**103,392**	gsf	2.50	258,480		
	SUBTOTAL					1,622,225	
	TOTAL - INTERIOR CONSTRUCTION						**$6,060,055**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
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		
	Monumental stair						
	Framing + premium finishes at monumental stair		flt	80,000.00	NR		
	SUBTOTAL					110,000	
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	**103,392**	gsf	8.00	827,136		
	SUBTOTAL					827,136	
C3020	**FLOOR FINISHES**						
	Floor finishes complete package	**103,392**	gsf	13.00	1,344,096		
	Floor prep at existing	**60,285**	sf	5.00	301,425		
	SUBTOTAL					1,645,521	
C3030	**CEILING FINISHES**						
	Ceiling finishes complete package	**103,392**	gsf	10.00	1,033,920		
	SUBTOTAL					1,033,920	
	TOTAL - INTERIOR FINISHES						**$3,506,577**
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	**103,392**	gsf	28.00	2,894,976		
	Demo; cut + cap	**60,285**	gsf	1.00	60,285		
	SUBTOTAL					2,955,261	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION B.4							
	TOTAL - PLUMBING						**$2,955,261**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Geothermal Premium	**103,392**	gsf	40.00	NR		
	HVAC System; ASHP	**103,392**	gsf	85.00	8,788,320		
	Demo; cut + cap	**60,285**	gsf	1.50	90,428		
	SUBTOTAL					8,878,748	
	TOTAL - HVAC						**$8,878,748**
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	**103,392**	gsf	8.50	878,832		
	SUBTOTAL					878,832	
	TOTAL - FIRE PROTECTION						**$878,832**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL SYSTEMS**						
	Gear & Distribution						
	Normal power distribution system						
	2500A 277/480V main switchboard	**1**	ea	175,000.00	175,000		
	Panelboards/feeders	**103,392**	gsf	6.00	620,352		
	Emergency power						
	Emergency Generator	**1**	ls		Included Below		
	Emergency power feeders	**103,392**	gsf	6.50	672,048		
	Photovoltaic						
	PV system equipment; roof top				Excluded		
	Battery Storage				Excluded		
	Infrastructure empty conduit and backboxes	**1**	ls	15,000	15,000		
	Equipment Wiring						
	Feeders + Electrical to equipment	**103,392**	gsf	4.50	465,264		
	SUBTOTAL					1,947,664	
D5020	**LIGHTING & POWER**						
	Lighting	**103,392**	gsf	9.00	930,528		
	Exit lighting	**103,392**	gsf	0.50	51,696		
	Lighting controls	**103,392**	gsf	2.50	258,480		
	Lighting circuitry	**103,392**	gsf	4.00	413,568		
	Branch devices	**103,392**	gsf	0.65	67,205		
	Branch circuitry	**103,392**	gsf	4.00	413,568		
	SUBTOTAL					2,135,045	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Telecommunications						
	MDF/IDF closets, devices, cabling and rough - in	**103,392**	gsf	5.00	516,960		
	PA/Clock System						
	PA/Clock System	**103,392**	gsf	1.50	155,088		
	Performance lighting						
	Cafeteria dimming panelboard with feeders	**1**	ls	35,000.00	35,000		
	Cafeteria/performance lighting system	**1**	ls	100,000.00	100,000		
	Audio Visual Systems/Speech Reinforcement						
	Cafeteria A/V system rough-in and power	**1**	ls	20,000.00	20,000		
	Cafeteria A/V system	**1**	ls	75,000.00	75,000		
	Speech reinforcement	**103,392**	gsf	1.50	155,088		
	General A/V rough-in and power	**103,392**	gsf	1.00	103,392		
	Specialty Communications Systems						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION B.4							
	BDA system, antenna and annunciator	**103,392**	gsf	0.75	77,544		
	Cell repeater/Distributed antenna system, not specified	**103,392**	gsf	1.00	103,392		
	Fire Alarm						
	Fire alarm system	**103,392**	gsf	3.50	361,872		
	Security System						
	Security system	**103,392**	gsf	5.00	516,960		
	SUBTOTAL					2,220,296	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Common Work Results for Electrical						
	Demolition and make safe	**60,285**	gsf	1.00	60,285		
	Lightning protection	**1**	ls	65,000.00	65,000		
	Grounding	**1**	ls	30,000.00	30,000		
	Temp power and lights	**1**	ls	100,000.00	100,000		
	Job conditions; Coordination/BIM/Commissioning support/Seismic etc.	**1**	ls	350,000.00	350,000		
	SUBTOTAL					605,285	
	TOTAL - ELECTRICAL						**$6,908,290**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
112000	*LOADING DOCK EQUIPMENT*						
	Loading dock equipment	**1**	ls	10,000.00	10,000		
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*						
	Retractable bleachers	**200**	seat	220.00	44,000		
	SUBTOTAL					851,000	
	TOTAL - EQUIPMENT						**$851,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
122100	*WINDOW TREATMENT*						
	Window shades at exterior glazing including blackout shades at art & specialty classrooms - allowance	**6,750**	sf	10.00	67,500		
123553	*CASEWORK*						
	Casework package	**103,392**	gsf	12.00	1,240,704		
	SUBTOTAL					1,308,204	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$1,308,204**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION B.4							
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Remove windows	**5,634**	sf	12.00	67,608		
	Remove exterior wall/form openings for new connection at addition; includes shoring	**3,300**	sf	25.00	82,500		
	Gut demolition	**60,285**	sf	8.00	482,280		
	SUBTOTAL					632,388	
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$632,388**
	SUBTOTAL						**$47,394,579**

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK B.4							
G	*SITEWORK*						
G10	**SITE PREPARATION & DEMOLITION**	*350,000*	*sf*				
	GENERAL CONDITIONS						
	Mobilizations/Temp Parking/Etc.	**1**	ls	150,000.00	150,000		
	Relocate modulars				NR		
	Relocate/remove play equipment	**1**	ls	150,000.00	150,000		
	6' high site construction fence - perimeter	**2,400**	lf	18.00	43,200		
	SITE DEMOLITION AND RELOCATIONS						
	Demolish existing paving	**115,000**	sf	1.50	172,500		
	Misc. demolition	**1**	ls	150,000.00	150,000		
	UTILITY DEMOLITION						
	Demolish existing utility lines	**1**	ls	50,000.00	50,000		
	Geothermal well support	**1**	ls	150,000.00	NR		
	VEGETATION & TOPSOIL MANAGEMENT						
	Strip + dispose topsoil (swell 25%)	**8,089**	cy	37.00	299,293		
	Street sweeping allowance during hauling	**1**	ls	25,000.00	25,000		
	EROSION & SEDIMENT CONTROL						
	Silt Fence; installation and removal	**2,400**	lf	12.00	28,800		
	Erosion Control monitoring & maintenance	**1**	ls	10,000.00	10,000		
	SITE EARTHWORK						
	Site cut to design subgrade	*25,926*	*cy*				
	Cut/fill; assumed balanced site	**25,926**	cy	30.00	777,780		
	Store cut onsite				NR		
	Process cut and amend with additional soils for reuse				NR		
	SOIL DISPOSAL						
	Load excess soils for disposal						
	Less than RCS-1 - clean non-regulated; allowance	**1**	ls	250,000.00	250,000		
	ESTABLISHING GRADE						
	Sub grade establishment	**350,000**	sf	0.15	52,500		
	Fine grading throughout the site	**350,000**	sf	0.25	87,500		
	HAZARDOUS MATERIALS						
	UST removal allowance				NR		
	Abate existing asbestos coated water line	**2,430**	lf	280.00	680,400		
	Soil disposal & replacement allowance				See Summary		
	SUBTOTAL					2,926,973	
G20	**SITE IMPROVEMENTS**						
	Roadways and Parking Lots						
	Bituminous concrete pavement - standard	*107,224*	*sf*				
	gravel base; 8" thick	**8,290**	cy	50.00	414,500		
	asphalt top; 1.5" thick	**1,025**	tns	200.00	205,000		
	asphalt binder; 2" thick	**1,370**	tns	190.00	260,300		
	CURBING						
	Vertical granite curb	**4,400**	lf	55.00	242,000		
	ROAD MARKINGS AND SIGNS						
	Parking spot	**240**	ea	85.00	20,400		
	Parking spot ADA	**15**	ea	250.00	3,750		
	Pavement markings/signage allowance	**1**	ls	10,000.00	10,000		
	SUBTOTAL					1,155,950	
	PEDESTRIAN PAVING						
	Concrete sidewalks	*34,154*	*sf*				
	gravel base; 12" thick	**1,581**	cy	50.00	79,050		

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Margaret A. Neary Elementary School 12-Aug-24
Southborough, MA

PSR Options Cost Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK B.4							
	Broom finish concrete paving; 5" thick	**34,154**	sf	16.00	546,464		
	Concrete pads	*1,500*	*sf*				
	gravel base; 12" thick	**104**	cy	50.00	5,200		
	Broom finish concrete paving; 8" thick	**1,500**	sf	24.00	36,000		
	Concrete pavers at Entrance Court and Patio	*10,000*	*sf*				
	gravel base; 12" thick	**463**	cy	50.00	Not Required		
	Broom finish concrete paving; 5" thick	**10,000**	sf	16.00	Not Required		
	Pavers	**10,000**	sf	35.00	Not Required		
	STAIRS AND RAMPS						
	Ramp/stairs premium	**1**	ls	150,000.00	150,000		
	SUBTOTAL					816,714	
	SITE IMPROVEMENTS						
	Site Furnishings						
	Stainless steel bollards	**20**	ea	1,500.00	30,000		
	Benches w/ backs and arms	**20**	ea	4,200.00	84,000		
	Bike racks	**10**	ea	900.00	9,000		
	Trash and Recycling receptacles	**5**	ea	2,500.00	12,500		
	Movable tables and chair sets	**8**	ea	5,500.00	NR		
	Overhead shade structure, 10' x 10'	**1**	ea	15,000.00	15,000		
	Flagpole	**1**	ea	7,000.00	7,000		
	Flagpole foundation	**1**	ea	4,500.00	4,500		
	Site sign, allow	**1**	ea	50,000.00	50,000		
	Baseball Fields				ETR		
	Grass fields				ETR		
	Fencing						
	Fencing; 4' high vinyl chain-link	**2,000**	lf	60.00	120,000		
	Site Walls						
	Modular block retaining walls				Assumed NR		
	Play Area						
	Play Area						
	Play surface	**8,000**	sf	35.00	280,000		
	Play equipment	**1**	ls	400,000.00	400,000		
	SUBTOTAL					1,012,000	
	Landscaping						
	LAWN AND SEED						
	Topsoil - imported 12" thick; swell 25%	**2,037**	cy	65.00	132,405		
	Seeding	**110,000**	sf	0.50	55,000		
	Trees, Shrubs and Perennial planting area	**1**	ls	350,000.00	350,000		
	IRRIGATION						
	Irrigation area at grass fields, planting beds; allow	**1**	ls	150,000.00	150,000		
	Wetlands reconstruction				NR		
	SUBTOTAL					687,405	
G30	**CIVIL MECHANICAL UTILITIES**						
	WATER SERVICE						
	8" CLDI	**2,430**	lf	100.00	243,000		
	6" CLDI	**30**	lf	95.00	2,850		
	4" CLDI	**30**	lf	85.00	2,550		
	Fire department connection	**1**	ea	2,500.00	2,500		
	Hydrants	**3**	ea	6,500.00	19,500		
	Valves	**10**	ea	1,200.00	12,000		
	CONNECTIONS						
	Connect to existing water line	**1**	ea	15,000.00	15,000		
	EXCAVATION & BACKFILL						
	DI piping excavation/backfill (inside site)	**2,490**	lf	50.00	124,500		
	Pressure test & chlorinate	**2,490**	lf	7.50	18,675		
	Allowance for temporary water service	**1**	ls	30,000.00	30,000		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK B.4							
	Allowance for temporary support of existing utilities				NR		
	SUBTOTAL					470,575	
	SANITARY SEWER						
	6" PVC	**60**	lf	25.00	1,500		
	4" PVC	**50**	lf	20.00	1,000		
	4" SDR-26 Force Main	**1,200**	lf	80.00	96,000		
	SMH	**4**	ea	4,800.00	19,200		
	Grease trap - 6,000 gal.	**1**	ea	20,000.00	20,000		
	Septic Tank - 15,000 gal.	**1**	ea	50,000.00	50,000		
	Pump station + fast Filtration Unit - 10,000 gal.	**1**	ea	60,000.00	60,000		
	Leaching field	**21,515**	sf	40.00	860,600		
	CONNECTIONS						
	Connect to existing				NR		
	EXCAVATION & BACKFILL - Gravity	*1,310*	*lf*				
	PVC piping excavation	**1,164**	cy	15.00	17,460		
	Trench bedding	**388**	cy	25.00	9,700		
	Backfill w/cut soils	**776**	cy	23.00	17,848		
	Pressure testing	**1,310**	lf	4.00	5,240		
	Allowance for obstructions	**1**	ea	25,000.00	25,000		
	Video Inspection	**1**	ls	10,000.00	10,000		
	Grease trap - 5,000 gal.	**1**	ea	10,000.00	10,000		
	SUBTOTAL					1,203,548	
	STORM DRAINAGE						
	Drain lines, 12" HDPE	**1,300**	lf	80.00	104,000		
	Groundwater monitoring wells	**3**	ea	20,000.00	60,000		
	DMH	**13**	ea	4,200.00	54,600		
	WQU	**2**	ea	12,000.00	24,000		
	OCS	**2**	ea	6,000.00	12,000		
	CB	**12**	ea	3,800.00	45,600		
	DCB	**3**	ea	6,000.00	18,000		
	CONNECTIONS						
	Connect to existing structures allowance	**1**	ls	10,000.00	10,000		
	SURFACE DRAINAGE SYSTEMS						
	<u>Bio retention/Rain Garden Allowance</u>	*5,000*	*sf*				
	shape basins	**5,000**	sf	2.50	12,500		
	mulch	**46**	cy	50.00	2,300		
	24" Planting soil mix	**370**	cy	60.00	22,200		
	12" Sand	**185**	cy	40.00	7,400		
	4" Double washed pea stone	**61**	cy	50.00	3,050		
	4" PVC pipe; allowance	**250**	lf	40.00	10,000		
	12" Pipe bedding	**185**	cy	40.00	7,400		
	SUBSURFACE DRAINAGE SYSTEMS						
	<u>Infiltration system</u>						
	Plastic chambers - incl dispose soils	**68,000**	cf	19.00	1,292,000		
	SUBTOTAL					1,685,050	
G40	**ELECTRICAL UTILITIES**						
	Concrete:						
	Primary duct bank	**400**	lf	50.00	20,000		
	Secondary service 2500A	**90**	lf	50.00	4,500		
	Generator duct bank	**100**	lf	40.00	4,000		
	Communications duct bank	**400**	lf	40.00	16,000		
	Excavation and backfill:						
	Primary duct bank	**400**	lf	25.00	10,000		
	Secondary service	**90**	lf	30.00	2,700		
	Generator duct bank	**100**	lf	30.00	3,000		
	Communications duct bank	**400**	lf	25.00	10,000		
	SUBTOTAL					70,200	
	<u>Power</u>						
	Utility co. back charges				By Owner		

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	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK B.4							
191		Primary duct bank	**400**	lf	180.00	72,000		
192		Electric manhole	**2**	ea	12,500.00	25,000		
193		Transformers by Owner				Included above		
194		Secondary service	**90**	lf	800.00	72,000		
195		Generator:						
196		Generator service	**100**	lf	400.00	40,000		
197		Communications						
198		Connect to existing utility pole	**1**	ea	1,500.00	1,500		
199		Communications duct bank	**400**	lf	150.00	60,000		
200		Communication manhole	**2**	ea	12,500.00	25,000		
201		Site Lighting						
202		Allowance	**107,224**	sf	3.00	321,672		
203		EV Stations						
204		EV stations; double	**10**	loc	20,000.00	200,000		
205		SUBTOTAL					817,172	
206								
207		**TOTAL - SITE DEVELOPMENT**						***$10,845,587***

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Margaret A. Neary Elementary School 12-Aug-24
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PSR Options Cost Estimate GFA 63,305

CONSTRUCTION COST SUMMARY

		BUILDING SYSTEM	SUB-TOTAL	TOTAL	$/SF	%
BUILDING SUMMARY - OPTION C.1						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$2,352,199			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$1,103,774	**$3,455,973**	$54.59	10.4%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$897,620			
	B1020	Roof Construction	$2,555,620	**$3,453,240**	$54.55	10.4%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$3,240,887			
	B2020	Windows	$1,843,243			
	B2030	Exterior Doors	$63,305	**$5,147,435**	$81.31	15.4%
B30	**ROOFING**					
	B3010	Roof Coverings	$1,614,198			
	B3020	Roof Openings	$0	**$1,614,198**	$25.50	4.8%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$2,298,154			
	C1020	Interior Doors	$506,440			
	C1030	Specialties/Millwork	$995,151	**$3,799,745**	$60.02	11.4%
C20	**STAIRCASES**					
	C2010	Stair Construction	$245,000			
	C2020	Stair Finishes	$60,000	**$305,000**	$4.82	0.9%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$506,440			
	C3020	Floor Finishes	$822,965			
	C3030	Ceiling Finishes	$633,050	**$1,962,455**	$31.00	5.9%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$192,400	**$192,400**	$3.04	0.6%

Margaret A. Neary Elementary School
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PSR Options Cost Estimate

GFA 63,305

CONSTRUCTION COST SUMMARY

		BUILDING SYSTEM	*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
BUILDING SUMMARY - OPTION C.1						
D20	**PLUMBING**					
	D20	Plumbing	$1,772,540	**$1,772,540**	$28.00	5.3%
D30	**HVAC**					
	D30	HVAC	$5,380,925	**$5,380,925**	$85.00	16.1%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$538,093	**$538,093**	$8.50	1.6%
D50	**ELECTRICAL**					
	D5010	Complete System	$4,200,448	**$4,200,448**	$66.35	12.6%
E10	**EQUIPMENT**					
	E10	Equipment	$661,000	**$661,000**	$10.44	2.0%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$850,040			
	E2020	Movable Furnishings	NIC	**$850,040**	$13.43	2.6%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$33,333,492***	*$526.55*	*100.0%*

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.1							
	GROSS FLOOR AREA CALCULATION						
	Level 1			48,185			
	Level 2			15,120			
	Level 3						
	TOTAL GROSS FLOOR AREA (GFA)				**63,305** ***sf***		
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
	Strip Footings	*146*	*CY*	$770 /cy			
	Foundation Walls	*219*	*CY*	$1,440 /cy			
	Spread Footings	*332*	*CY*	$674 /cy			
	Piers	*22*	*CY*	$2,051 /cy			
	Total Foundation Concrete	*719*	*CY*				
	Strip footing, typical; 2'6" x 15"						
	Formwork	**3,013**	sf	16.00	48,208		
	Re-bar	**12,050**	lbs.	2.00	24,100		
	Concrete material	**146**	cy	155.00	22,630		
	Placing concrete	**146**	cy	120.00	17,520		
	Foundation wall; 14" thick						
	Formwork	**9,640**	sf	20.00	192,800		
	Re-bar, 115 lbs/cy	**25,185**	lbs.	2.00	50,370		
	Concrete material	**219**	cy	155.00	33,945		
	Placing concrete	**219**	cy	120.00	26,280		
	Form shelf	**1,205**	lf	10.00	12,050		
	Exterior spread footings; 7'-0"x 7'-0"x 24"						
	Formwork	**1,960**	sf	18.00	35,280		
	Re-bar, 60 lbs/cy	**7,980**	lbs.	2.00	15,960		
	Concrete material	**133**	cy	155.00	20,615		
	Placing concrete	**133**	cy	120.00	15,960		
	Set anchor bolts grout plates	**35**	ea	150.00	5,250		
	Interior Spread Footings; 8'-0"x 8'-0"x 24"						
	Formwork	**2,560**	sf	18.00	46,080		
	Re-bar, 60 lbs/cy	**11,940**	lbs.	2.00	23,880		
	Concrete material	**199**	cy	155.00	30,845		
	Placing concrete	**199**	cy	120.00	23,880		
	Set anchor bolts grout plates	**40**	ea	150.00	6,000		
	Piers/Pilasters						
	Formwork	**1,176**	sf	22.00	25,872		
	Re-bar, 300 lbs/cy	**6,600**	lbs	2.00	13,200		
	Concrete material	**22**	cy	155.00	3,410		
	Placing concrete	**22**	cy	120.00	2,640		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Trowelled-on bituminous mastic dampproofing at foundation walls	**4,820**	sf	4.00	19,280		
072100	*THERMAL INSULATION*						
	2" Insulation at foundation walls	**4,820**	sf	3.00	14,460		
312000	*EARTHWORK*						
	Strip footings/Fdn wall						
	Excavation	**1,562**	cy	25.00	39,050		
	Remove off-site	**1,562**	cy	32.00	49,984		
	Backfill with imported material	**1,416**	cy	48.00	67,968		
	Spread footings/Grade beams						
	Excavation	**1,120**	cy	25.00	28,000		
	Remove off-site	**1,120**	cy	32.00	35,840		
	Backfill with imported material	**788**	cy	48.00	37,824		
	Building						
	Cut; 5ft of Unsuitable Fill	**8,923**	cy	15.00	133,845		
	Fill - imported structural fill swell 25%	**11,154**	cy	65.00	725,010		
	SOIL DISPOSAL - conversion factor 1.7 to tons						

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.1							
	Load excess soils for disposal	**8,923**	cy	2.50	22,308		
	Less than RCS-1 - clean non-regulated	**15,169**	tn	25.00	379,225		
	Miscellaneous						
	Gravel fill beneath footings, 6"	**135**	cy	48.00	6,480		
	Ledge, trenching allow	**1**	ls	50,000.00	Assumed NR		
	Perimeter drain	**1,205**	lf	30.00	36,150		
	Temporary dewatering for foundation work	**1**	ls	30,000.00	30,000		
	Temporary dewatering for foundation work	**1**	ls	30,000.00	30,000		
	SUBTOTAL					2,352,199	
A1020	**SPECIAL FOUNDATIONS**						
	Structural fill/Ground Improvements Allowance					See Above	
	SUBTOTAL					-	
A1030	**LOWEST FLOOR CONSTRUCTION**						
033000	*CONCRETE*						
	Passive depressurization system + Vapor barrier, 15mils	**48,185**	sf	5.00	240,925		
	Slab on grade	*48,185*	*sf*				
	WWF reinforcement	**55,413**	sf	1.85	102,514		
	Concrete - 5" thick	**768**	cy	170.00	130,560		
	Placing concrete	**768**	cy	65.00	49,920		
	Finishing and curing concrete	**48,185**	sf	3.00	144,555		
	Control joints - saw cut	**48,185**	sf	0.10	4,819		
	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	**48,185**	sf	3.00	144,555		
312000	*EARTHWORK*						
	Gravel base, 12"	**1,785**	cy	45.00	With Structural Fill Above		
	Underslab drainage	**48,185**	sf	3.00	144,555		
	Compact existing sub-grade	**48,185**	sf	0.50	24,093		
	Underslab E&B for plumbing	**48,185**	sf	1.50	72,278		
	SUBTOTAL					1,103,774	
	TOTAL - FOUNDATIONS						**$3,455,973**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
		14.2	*lbs/sf*				
B1010	**FLOOR CONSTRUCTION**	*450*	*tns*	excluding canopies + roof screens			
		$6,461	*$/Ton*				
033000	*CONCRETE*						
	WWF reinforcement	**17,388**	sf	1.85	32,168		
	Concrete Fill to metal deck; lightweight, total thickness 5 1/4"	**247**	cy	190.00	46,930		
	Place and finish concrete	**15,120**	sf	3.00	45,360		
	Rebar to decks	**4,536**	lbs	2.00	9,072		
051200	*STRUCTURAL STEEL FRAMING*						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.1							
	Structural steel framing; Complete; 15 lbs per SF	**113**	tns	5,200.00	587,600		
	Moment connections	**6**	ea	750.00	4,500		
	Shear studs	**3,780**	ea	3.50	13,230		
	2" metal galvanized floor deck	**15,120**	sf	7.50	113,400		
	Expansion joints	**1**	ls	50,000.00	NR		
078100	*FIREPROOFING/FIRESTOPPING*						
	Fire proofing to columns and beams; 2 hr	**15,120**	sf	3.00	45,360		
	Intumescent paint @ architecturally exposed beams and columns - allow	**1**	ls	25,000.00	NR		
	SUBTOTAL					897,620	
B1020	**ROOF CONSTRUCTION**						
033000	*CONCRETE*						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	**10,000**	sf	9.00	90,000		
051200	*STRUCTURAL STEEL FRAMING*						
	Structural steel framing; Complete; 14 lbs per SF	**337**	tns	5,200.00	1,752,400		
	Canopy	**11**	tns	5,500.00	60,500		
	Roof screens	**7**	tns	5,500.00	38,500		
	Decking						
	1 1/2" galvanized metal deck, typical	**48,185**	sf	7.00	337,295		
	Premium for acoustic (Gym)	**6,000**	sf	6.00	36,000		
078100	*FIREPROOFING/FIRESTOPPING*						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	**48,185**	sf	5.00	240,925		
	SUBTOTAL					2,555,620	
	TOTAL - SUPERSTRUCTURE						**$3,453,240**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**	*36,150*	Total closure area				
	Exterior Wall Area - 75% solid	*27,113*	*sf total area solid*				
042000	*MASONRY*						
	Mockup	**1**	ls	50,000.00	50,000		
	Brick veneer; 80% of Solid	**21,690**	sf	46.00	997,740		
	5" Mineral wool at exterior closure	**27,113**	sf	6.50	176,235		
	Miscellaneous flashings and sealants	**27,113**	sf	1.50	40,670		
	Staging to exterior wall	**27,113**	sf	4.00	108,452		
055000	*MISC. METALS*						
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	**21,690**	sf	1.50	32,535		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**27,113**	sf	10.00	271,130		
	Miscellaneous sealants to closure	**27,113**	sf	1.00	27,113		
072100	*THERMAL INSULATION*						
	5.5" Batt insulation in stud	**27,113**	sf	6.00	162,678		
	Insulation at glazed openings	**3,013**	lf	6.00	18,078		
076400	*CLADDING*						
	Phenolic Panel/ACM Rainscreen; 20% of solid	**5,423**	sf	100.00	542,300		
	12' high Acoustic Equipment Screen	**1,440**	sf	95.00	136,800		
	EXPANSION JOINT COVERS						
	Expansion joints	**1**	ls	25,000.00	25,000		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.1							
092900	*GYPSUM BOARD ASSEMBLIES*						
	Exterior wall;						
	6" Stud backup	**27,113**	sf	16.00	433,808		
	Gypsum Sheathing	**27,113**	sf	3.50	94,896		
	Drywall lining to interior face of stud backup	**27,113**	sf	4.00	108,452		
101400	*SIGNAGE*						
	Exterior signage - allowance	**1**	ls	15,000.00	15,000		
	SUBTOTAL					3,240,887	
B2020	**WINDOWS**						
	Exterior Wall Area; 25%	*9,038*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**3,013**	lf	10.00	30,130		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier/flashing at windows	**3,013**	lf	10.00	30,130		
	Backer rod & double sealant	**3,013**	lf	11.00	33,143		
080001	*METAL WINDOWS*						
	Aluminum windows, triple glazed	**6,778**	sf	180.00	1,220,040		
	Curtainwall, triple glazed	**2,260**	sf	230.00	519,800		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	*LOUVERS*						
	Louvers	**1**	ls	10,000.00	10,000		
	SUBTOTAL					1,843,243	
B2030	**EXTERIOR DOORS**						
	Allowance for exterior doors	**63,305**	gsf	1.00	63,305		
	SUBTOTAL					63,305	
	TOTAL - EXTERIOR CLOSURE						**$5,147,435**
B30	***ROOFING***						
055000	*MISCELLANOUS METALS*						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	*ROUGH CARPENTRY*						
	Rough carpentry and blocking @ roof	**48,185**	sf	1.50	72,278		
070002	*ROOFING AND FLASHING*	**48,185**	total area				
	PVC roof membrane system, white or gray, 1/2" coverboard, 5" polyiso insulation, vapor barrier	**48,185**	sf	28.00	1,349,180		
	Plaza deck pavers system at terrace				Assumed NR		
	Miscellaneous Roofing						
	Miscellaneous flashings/copings/walkway pads etc.	**48,185**	sf	4.00	192,740		
	SUBTOTAL					1,614,198	
B3020	**ROOF OPENINGS**						
086300	*ROOF SKYLIGHTS*						
	Aluminum framed skylight	**1,500**	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	
	TOTAL - ROOFING						**$1,614,198**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
040001	*MASONRY*						

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PSR Options Cost Estimate

GFA 63,305

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.1							
	Allowance for masonry partitions	**63,305**	gsf	2.00	126,610		
061000	*ROUGH CARPENTRY*						
	Backer panels in electrical closets	**1**	ls	10,000.00	10,000		
	Wood blocking at interiors	**63,305**	gsf	0.50	31,653		
078400	*FIREPROOFING/FIRESTOPPING*						
	Fire stopping including slab edges and core	**63,305**	gsf	1.00	63,305		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**63,305**	gsf	1.25	79,131		
078150	*EXPANSION JOINTS*						
	Allowance for expansion joint covers	**1**	ls	25,000.00	25,000		
081110	*INTERIOR GLAZING*						
	Allowance for interior glazing	**63,305**	gsf	5.00	316,525		
092900	*GYPSUM BOARD ASSEMBLIES*						
	Allowance for GWB partitions	**63,305**	gsf	26.00	1,645,930		
	SUBTOTAL					2,298,154	
C1020	**INTERIOR DOORS**						
	Doors, frames, hardware; complete	**63,305**	gsf	8.00	506,440		
	SUBTOTAL					506,440	
C1030	**SPECIALTIES / MILLWORK**						
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	**63,305**	gsf	5.00	316,525		
061000	*ROUGH CARPENTRY*						
062000	*INTERIOR ARCHITECTURAL WOODWORK*						
	Interior millwork package	**63,305**	gsf	3.00	189,915		
101100	*VISUAL DISPLAY SURFACES*						
	Markerboard and tackboard package	**63,305**	gsf	2.00	126,610		
101400	*SIGNAGE*						
	Room identification, directional & safety signage, building directory + environmental graphics	**63,305**	gsf	2.00	126,610		
102800	*TOILET ACCESSORIES*						
	Toilet accessories/compartments	**63,305**	gsf	1.00	63,305		
104400	*FIRE PROTECTION SPECIALTIES*						
	Fire extinguisher cabinets	**1**	ls	11,922.57	11,923		
	AED cabinets	**1**	ls	2,000.00	2,000		
105000	*LOCKERS*						
	Student lockers/cubbies	**63,305**	gsf	2.50	158,263		
	SUBTOTAL					995,151	
	TOTAL - INTERIOR CONSTRUCTION						**$3,799,745**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
033000	*CONCRETE*						
	Concrete to stairs	**3**	flt	5,000.00	15,000		
055000	*MISCELLANEOUS METALS*						
	Egress stairs w/ stainless steel rails and handrails	**3**	flt	50,000.00	150,000		
	Monumental stair						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.1							
	Framing + premium finishes at monumental stair	1	flt	80,000.00	80,000		
	SUBTOTAL					245,000	
C2020	**STAIR FINISHES**						
090005	*RESILIENT FLOORS*						
	Stair finishes	3	flts	20,000.00	60,000		
	SUBTOTAL					60,000	
	TOTAL - STAIRCASES						**$305,000**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes complete package	63,305	gsf	8.00	506,440		
	SUBTOTAL					506,440	
C3020	**FLOOR FINISHES**						
	Floor finishes complete package	63,305	gsf	13.00	822,965		
	SUBTOTAL					822,965	
C3030	**CEILING FINISHES**						
	Ceiling finishes complete package	63,305	gsf	10.00	633,050		
	SUBTOTAL					633,050	
	TOTAL - INTERIOR FINISHES						**$1,962,455**
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		
	SUBTOTAL					192,400	
	TOTAL - CONVEYING SYSTEMS						**$192,400**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing package complete	63,305	gsf	28.00	1,772,540		
	SUBTOTAL					1,772,540	
	TOTAL - PLUMBING						**$1,772,540**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Geothermal Premium	63,305	gsf	30.00	ALT		
	HVAC System; ASHP	63,305	gsf	85.00	5,380,925		
	SUBTOTAL					5,380,925	
	TOTAL - HVAC						**$5,380,925**
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	63,305	gsf	8.50	538,093		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.1							
	SUBTOTAL					538,093	
	TOTAL - FIRE PROTECTION						**$538,093**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL SYSTEMS**						
	Gear & Distribution						
	Normal power distribution system						
	Main switchboard	**1**	ea	125,000.00	125,000		
	Panelboards/transformers/feeders	**63,305**	gsf	6.00	379,830		
	Emergency power						
	Emergency Generator	**1**	ls		Included Below		
	Emergency power feeders	**63,305**	gsf	4.50	284,873		
	Photovoltaic						
	PV system equipment; roof top				Excluded		
	Battery Storage				Excluded		
	Infrastructure empty conduit and backboxes	**1**	ls	15,000	15,000		
	Equipment Wiring						
	Feeders + Electrical to equipment	**63,305**	gsf	4.50	284,873		
	SUBTOTAL					1,089,576	
D5020	**LIGHTING & POWER**						
	Lighting	**63,305**	gsf	9.00	569,745		
	Exit lighting	**63,305**	gsf	0.50	31,653		
	Lighting controls	**63,305**	gsf	2.50	158,263		
	Lighting circuitry	**63,305**	gsf	4.00	253,220		
	Branch devices	**63,305**	gsf	0.65	41,148		
	Branch circuitry	**63,305**	gsf	4.00	253,220		
	SUBTOTAL					1,307,249	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Telecommunications						
	MDF/IDF closets, devices, cabling and rough - in	**63,305**	gsf	5.00	316,525		
	PA/Clock System						
	PA/Clock System	**63,305**	gsf	1.50	94,958		
	Performance lighting						
	Cafeteria dimming panelboard with feeders	**1**	ls	35,000.00	35,000		
	Cafeteria/performance lighting system	**1**	ls	100,000.00	100,000		
	Audio Visual Systems/Speech Reinforcement						
	Cafeteria A/V system rough-in and power	**1**	ls	20,000.00	20,000		
	Cafeteria A/V system	**1**	ls	75,000.00	75,000		
	Speech reinforcement	**63,305**	gsf	1.50	94,958		
	General A/V rough-in and power	**63,305**	gsf	1.00	63,305		
	Specialty Communications Systems						
	BDA system, antenna and annunciator	**63,305**	gsf	0.75	47,479		
	Cell repeater/Distributed antenna system, not specified	**63,305**	gsf	1.00	63,305		
	Fire Alarm						
	Fire alarm system	**63,305**	gsf	3.50	221,568		
	Security System						
	Security system	**63,305**	gsf	5.00	316,525		
	SUBTOTAL					1,448,623	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Common Work Results for Electrical						
	Lightning protection	**1**	ls	40,000.00	40,000		
	Grounding	**1**	ls	25,000.00	25,000		
	Temp power and lights	**1**	ls	60,000.00	60,000		
	Job conditions; Coordination/BIM/Commissioning support/Seismic etc.	**1**	ls	230,000.00	230,000		
	SUBTOTAL					355,000	
	TOTAL - ELECTRICAL						**$4,200,448**

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.1							
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
112000	*LOADING DOCK EQUIPMENT*						
	Loading dock equipment	**1**	ls	10,000.00	10,000		
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*						
	Retractable bleachers	**200**	seat	220.00	44,000		
	SUBTOTAL					661,000	
	TOTAL - EQUIPMENT						**$661,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
122100	*WINDOW TREATMENT*						
	Window shades at exterior glazing including blackout shades at art & specialty classrooms - allowance	**9,038**	sf	10.00	90,380		
123553	*CASEWORK*						
	Casework package	**63,305**	gsf	12.00	759,660		
	SUBTOTAL					850,040	
E2020	**MOVABLE FURNISHINGS** All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$850,040**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.1							
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						**$33,333,492**

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK C.1							
G	***SITEWORK***						
G10	**SITE PREPARATION & DEMOLITION**	*350,000*	*sf*				
	GENERAL CONDITIONS						
	Mobilizations/Temp Parking/Etc.	**1**	ls	150,000.00	150,000		
	Relocate modulars				NR		
	Relocate/remove play equipment	**1**	ls	150,000.00	150,000		
	6' high site construction fence - perimeter	**2,400**	lf	18.00	43,200		
	SITE DEMOLITION AND RELOCATIONS						
	Demolish existing paving	**115,000**	sf	1.50	172,500		
	Misc. demolition	**1**	ls	150,000.00	150,000		
	UTILITY DEMOLITION						
	Demolish existing utility lines	**1**	ls	50,000.00	50,000		
	Geothermal well support	**1**	ls	150,000.00	NR		
	VEGETATION & TOPSOIL MANAGEMENT						
	Strip + dispose topsoil (swell 25%)	**8,089**	cy	37.00	299,293		
	Street sweeping allowance during hauling	**1**	ls	25,000.00	25,000		
	EROSION & SEDIMENT CONTROL						
	Silt Fence; installation and removal	**2,400**	lf	12.00	28,800		
	Erosion Control monitoring & maintenance	**1**	ls	10,000.00	10,000		
	SITE EARTHWORK						
	Site cut to design subgrade	*25,926*	*cy*				
	Cut/fill; assumed balanced site	**25,926**	cy	30.00	777,780		
	Store cut onsite				NR		
	Process cut and amend with additional soils for reuse				NR		
	SOIL DISPOSAL						
	Load excess soils for disposal						
	Less than RCS-1 - clean non-regulated; allowance	**1**	ls	250,000.00	250,000		
	ESTABLISHING GRADE						
	Sub grade establishment	**350,000**	sf	0.15	52,500		
	Fine grading throughout the site	**350,000**	sf	0.25	87,500		
	HAZARDOUS MATERIALS						
	UST removal allowance				NR		
	Abate existing asbestos coated water line	**2,430**	lf	280.00	680,400		
	Soil disposal & replacement allowance				See Summary		
	SUBTOTAL					2,926,973	
G20	**SITE IMPROVEMENTS**						
	Roadways and Parking Lots						
	Bituminous concrete pavement - standard	*104,850*	*sf*				
	gravel base; 8" thick	**8,106**	cy	50.00	405,300		
	asphalt top; 1.5" thick	**1,002**	tns	200.00	200,400		
	asphalt binder; 2" thick	**1,339**	tns	190.00	254,410		
	CURBING						
	Vertical granite curb	**4,400**	lf	55.00	242,000		
	ROAD MARKINGS AND SIGNS						
	Parking spot	**120**	ea	85.00	10,200		
	Parking spot ADA	**10**	ea	250.00	2,500		
	Pavement markings/signage allowance	**1**	ls	10,000.00	10,000		
	SUBTOTAL					1,124,810	
	PEDESTRIAN PAVING						
	Concrete sidewalks	*28,775*	*sf*				
	gravel base; 12" thick	**1,332**	cy	50.00	66,600		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK C.1							
	Broom finish concrete paving; 5" thick	**28,775**	sf	16.00	460,400		
	Concrete pads	*1,500*	*sf*				
	gravel base; 12" thick	**104**	cy	50.00	5,200		
	Broom finish concrete paving; 8" thick	**1,500**	sf	24.00	36,000		
	Concrete pavers at Entrance Court and Patio	*10,000*	*sf*				
	gravel base; 12" thick	**463**	cy	50.00	Not Required		
	Broom finish concrete paving; 5" thick	**10,000**	sf	16.00	Not Required		
	Pavers	**10,000**	sf	35.00	Not Required		
	STAIRS AND RAMPS						
	Ramp/stairs premium	**1**	ls	150,000.00	150,000		
	SUBTOTAL					718,200	
	SITE IMPROVEMENTS						
	Site Furnishings						
	Stainless steel bollards	**20**	ea	1,500.00	30,000		
	Benches w/ backs and arms	**20**	ea	4,200.00	84,000		
	Bike racks	**10**	ea	900.00	9,000		
	Trash and Recycling receptacles	**5**	ea	2,500.00	12,500		
	Movable tables and chair sets	**8**	ea	5,500.00	NR		
	Overhead shade structure, 10' x 10'	**1**	ea	15,000.00	15,000		
	Flagpole	**1**	ea	7,000.00	7,000		
	Flagpole foundation	**1**	ea	4,500.00	4,500		
	Site sign, allow	**1**	ea	50,000.00	50,000		
	Baseball Fields				ETR		
	Grass fields				ETR		
	Fencing						
	Fencing; 4' high vinyl chain-link	**2,000**	lf	60.00	120,000		
	Site Walls						
	Modular block retaining walls				Assumed NR		
	Play Area						
	Play Area						
	Play surface	**8,000**	sf	35.00	280,000		
	Play equipment	**1**	ls	400,000.00	400,000		
	SUBTOTAL					1,012,000	
	Landscaping						
	LAWN AND SEED						
	Topsoil - imported 12" thick; swell 25%	**2,037**	cy	65.00	132,405		
	Seeding	**110,000**	sf	0.50	55,000		
	Trees, Shrubs and Perennial planting area	**1**	ls	350,000.00	350,000		
	IRRIGATION						
	Irrigation area at grass fields, planting beds; allow	**1**	ls	150,000.00	150,000		
	Wetlands reconstruction				NR		
	SUBTOTAL					687,405	
G30	**CIVIL MECHANICAL UTILITIES**						
	WATER SERVICE						
	8" CLDI	**2,430**	lf	100.00	243,000		
	6" CLDI	**20**	lf	95.00	1,900		
	4" CLDI	**30**	lf	85.00	2,550		
	Fire department connection	**1**	ea	2,500.00	2,500		
	Hydrants	**2**	ea	6,500.00	13,000		
	Valves	**7**	ea	1,200.00	8,400		
	CONNECTIONS						
	Connect to existing water line	**1**	ea	15,000.00	15,000		
	EXCAVATION & BACKFILL						
	DI piping excavation/backfill (inside site)	**2,480**	lf	50.00	124,000		
	Pressure test & chlorinate	**2,480**	lf	7.50	18,600		
	Allowance for temporary water service	**1**	ls	30,000.00	30,000		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK C.1							
	Allowance for temporary support of existing utilities				NR		
	SUBTOTAL					458,950	
	SANITARY SEWER						
	6" PVC	**60**	lf	25.00	1,500		
	4" PVC	**50**	lf	20.00	1,000		
	4" SDR-26 Force Main	**1,200**	lf	80.00	96,000		
	SMH	**4**	ea	4,800.00	19,200		
	Grease trap - 3,000 gal.	**1**	ea	12,000.00	12,000		
	Septic Tank - 7,500 gal.	**1**	ea	30,000.00	30,000		
	Pump station + fast Filtration Unit - 10,000 gal.	**1**	ea	60,000.00	60,000		
	Leaching field	**10,760**	sf	40.00	430,400		
	CONNECTIONS						
	Connect to existing				NR		
	EXCAVATION & BACKFILL - Gravity	*1,310*	*lf*				
	PVC piping excavation	**1,164**	cy	15.00	17,460		
	Trench bedding	**388**	cy	25.00	9,700		
	Backfill w/cut soils	**776**	cy	23.00	17,848		
	Pressure testing	**1,310**	lf	4.00	5,240		
	Allowance for obstructions	**1**	ea	25,000.00	25,000		
	Video Inspection	**1**	ls	10,000.00	10,000		
	Grease trap - 3,000 gal.	**1**	ea	10,000.00	10,000		
	SUBTOTAL					745,348	
	STORM DRAINAGE						
	Drain lines, 12" HDPE	**1,500**	lf	80.00	120,000		
	Groundwater monitoring wells	**3**	ea	20,000.00	60,000		
	DMH	**13**	ea	4,200.00	54,600		
	WQU	**2**	ea	12,000.00	24,000		
	OCS	**2**	ea	6,000.00	12,000		
	CB	**12**	ea	3,800.00	45,600		
	DCB	**3**	ea	6,000.00	18,000		
	CONNECTIONS						
	Connect to existing structures allowance	**1**	ls	10,000.00	10,000		
	SURFACE DRAINAGE SYSTEMS						
	Bio retention/Rain Garden Allowance	*5,000*	*sf*				
	shape basins	**5,000**	sf	2.50	12,500		
	mulch	**46**	cy	50.00	2,300		
	24" Planting soil mix	**370**	cy	60.00	22,200		
	12" Sand	**185**	cy	40.00	7,400		
	4" Double washed pea stone	**61**	cy	50.00	3,050		
	4" PVC pipe; allowance	**250**	lf	40.00	10,000		
	12" Pipe bedding	**185**	cy	40.00	7,400		
	SUBSURFACE DRAINAGE SYSTEMS						
	Infiltration system						
	Plastic chambers - incl dispose soils	**52,000**	cf	19.00	988,000		
	SUBTOTAL					1,397,050	
G40	**ELECTRICAL UTILITIES**						
	Concrete:						
	Primary duct bank	**400**	lf	50.00	20,000		
	Secondary service 2500A	**90**	lf	50.00	4,500		
	Generator duct bank	**100**	lf	40.00	4,000		
	Communications duct bank	**400**	lf	40.00	16,000		
	Excavation and backfill:						
	Primary duct bank	**400**	lf	25.00	10,000		
	Secondary service	**90**	lf	30.00	2,700		
	Generator duct bank	**100**	lf	30.00	3,000		
	Communications duct bank	**400**	lf	25.00	10,000		
	SUBTOTAL					70,200	
	Power						
	Utility co. back charges				By Owner		

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK C.1							
191		Primary duct bank	**400**	lf	180.00	72,000		
192		Electric manhole	**2**	ea	12,500.00	25,000		
193		Transformers by Owner				Included above		
194		Secondary service	**90**	lf	800.00	72,000		
195		Generator:						
196		Generator service	**100**	lf	400.00	40,000		
197		Communications						
198		Connect to existing utility pole	**1**	ea	1,500.00	1,500		
199		Communications duct bank	**400**	lf	150.00	60,000		
200		Communication manhole	**2**	ea	12,500.00	25,000		
201		Site Lighting						
202		Allowance	**104,850**	sf	3.00	314,550		
203		EV Stations						
204		EV stations; double	**10**	loc	20,000.00	200,000		
205		SUBTOTAL					810,050	
206								
207		**TOTAL - SITE DEVELOPMENT**						***$9,950,986***

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GFA 99,564

CONSTRUCTION COST SUMMARY

		BUILDING SYSTEM	*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
BUILDING SUMMARY - OPTION C.4						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$3,454,582			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$1,655,886	**$5,110,468**	$51.33	10.1%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$1,852,135			
	B1020	Roof Construction	$3,452,568	**$5,304,703**	$53.28	10.5%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$4,478,925			
	B2020	Windows	$2,596,150			
	B2030	Exterior Doors	$99,564	**$7,174,639**	$72.06	14.2%
B30	**ROOFING**					
	B3010	Roof Coverings	$2,333,744			
	B3020	Roof Openings	$0	**$2,333,744**	$23.44	4.6%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$3,594,413			
	C1020	Interior Doors	$796,512			
	C1030	Specialties/Millwork	$1,562,344	**$5,953,269**	$59.79	11.8%
C20	**STAIRCASES**					
	C2010	Stair Construction	$250,000			
	C2020	Stair Finishes	$80,000	**$330,000**	$3.31	0.7%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$796,512			
	C3020	Floor Finishes	$1,294,332			
	C3030	Ceiling Finishes	$995,640	**$3,086,484**	$31.00	6.1%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$384,800	**$384,800**	$3.86	0.8%

Margaret A. Neary Elementary School
Southborough, MA

12-Aug-24

PSR Options Cost Estimate

GFA 99,564

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
BUILDING SUMMARY - OPTION C.4						
D20	**PLUMBING**					
	D20	Plumbing	$2,787,792	**$2,787,792**	$28.00	5.5%
D30	**HVAC**					
	D30	HVAC	$8,462,940	**$8,462,940**	$85.00	16.8%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$846,294	**$846,294**	$8.50	1.7%
D50	**ELECTRICAL**					
	D5010	Complete System	$6,431,064	**$6,431,064**	$64.59	12.8%
E10	**EQUIPMENT**					
	E10	Equipment	$851,000	**$851,000**	$8.55	1.7%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$1,322,268			
	E2020	Movable Furnishings	NIC	**$1,322,268**	$13.28	2.6%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$50,379,465***	*$506.00*	*100.0%*

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.4							
	GROSS FLOOR AREA CALCULATION						
	Level 1			69,664			
	Level 2			29,900			
	Level 3						
	TOTAL GROSS FLOOR AREA (GFA)				**99,564**	***sf***	
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
	Strip Footings	*207*	*CY*	$768	/cy		
	Foundation Walls	*309*	*CY*	$1,440	/cy		
	Spread Footings	*569*	*CY*	$674	/cy		
	Piers	*39*	*CY*	$2,069	/cy		
	Total Foundation Concrete	*1,124*	*CY*				
	Strip footing, typical; 2'6" x 15"						
	Formwork	**4,250**	sf	16.00	68,000		
	Re-bar	**17,000**	lbs.	2.00	34,000		
	Concrete material	**207**	cy	155.00	32,085		
	Placing concrete	**207**	cy	120.00	24,840		
	Foundation wall; 14" thick						
	Formwork	**13,600**	sf	20.00	272,000		
	Re-bar, 115 lbs/cy	**35,535**	lbs.	2.00	71,070		
	Concrete material	**309**	cy	155.00	47,895		
	Placing concrete	**309**	cy	120.00	37,080		
	Form shelf	**1,700**	lf	10.00	17,000		
	Exterior spread footings; 7'-0"x 7'-0"x 24"						
	Formwork	**3,528**	sf	18.00	63,504		
	Re-bar, 60 lbs/cy	**14,400**	lbs.	2.00	28,800		
	Concrete material	**240**	cy	155.00	37,200		
	Placing concrete	**240**	cy	120.00	28,800		
	Set anchor bolts grout plates	**63**	ea	150.00	9,450		
	Interior Spread Footings; 8'-0"x 8'-0"x 24"						
	Formwork	**4,224**	sf	18.00	76,032		
	Re-bar, 60 lbs/cy	**19,740**	lbs.	2.00	39,480		
	Concrete material	**329**	cy	155.00	50,995		
	Placing concrete	**329**	cy	120.00	39,480		
	Set anchor bolts grout plates	**66**	ea	150.00	9,900		
	Piers/Pilasters						
	Formwork	**2,117**	sf	22.00	46,574		
	Re-bar, 300 lbs/cy	**11,700**	lbs	2.00	23,400		
	Concrete material	**39**	cy	155.00	6,045		
	Placing concrete	**39**	cy	120.00	4,680		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Trowelled-on bituminous mastic dampproofing at foundation walls	**6,800**	sf	4.00	27,200		
072100	*THERMAL INSULATION*						
	2" Insulation at foundation walls	**6,800**	sf	3.00	20,400		
312000	*EARTHWORK*						
	Strip footings/Fdn wall						
	Excavation	**2,204**	cy	25.00	55,100		
	Remove off-site	**2,204**	cy	32.00	70,528		
	Backfill with imported material	**1,997**	cy	48.00	95,856		
	Spread footings/Grade beams						
	Excavation	**1,914**	cy	25.00	47,850		
	Remove off-site	**1,914**	cy	32.00	61,248		
	Backfill with imported material	**1,345**	cy	48.00	64,560		
	Building						
	Cut; 5ft of Unsuitable Fill	**12,901**	cy	15.00	193,515		
	Fill - imported structural fill swell 25%	**16,126**	cy	65.00	1,048,190		
	SOIL DISPOSAL - conversion factor 1.7 to tons						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.4							
	Load excess soils for disposal	**12,901**	cy	2.50	32,253		
	Less than RCS-1 - clean non-regulated	**21,932**	tn	25.00	548,300		
	Miscellaneous						
	Gravel fill beneath footings, 6"	**214**	cy	48.00	10,272		
	Ledge, trenching allow	**1**	ls	50,000.00	Assumed NR		
	Perimeter drain	**1,700**	lf	30.00	51,000		
	Temporary dewatering for foundation work	**1**	ls	30,000.00	30,000		
	Temporary dewatering for foundation work	**1**	ls	30,000.00	30,000		
	SUBTOTAL					3,454,582	
A1020	**SPECIAL FOUNDATIONS**						
	Structural fill/Ground Improvements Allowance				See Above		
	SUBTOTAL					-	
A1030	**LOWEST FLOOR CONSTRUCTION**						
033000	*CONCRETE*						
	Passive depressurization system + Vapor barrier, 15mils	**69,664**	sf	5.00	348,320		
	Slab on grade	*69,664*	*sf*				
	WWF reinforcement	**80,114**	sf	1.85	148,211		
	Concrete - 5" thick	**1,111**	cy	170.00	188,870		
	Placing concrete	**1,111**	cy	65.00	72,215		
	Finishing and curing concrete	**69,664**	sf	3.00	208,992		
	Control joints - saw cut	**69,664**	sf	0.10	6,966		
	Miscellaneous						
	Equipment pads	**1**	ls	15,000.00	15,000		
	Loading dock	**1**	ls	30,000.00	30,000		
	Elevator pits	**2**	ea	40,000.00	80,000		
	Radon system				Excluded; NR		
072100	*THERMAL INSULATION*						
	Under slab insulation, 2" thick under slab	**69,664**	sf	3.00	208,992		
312000	*EARTHWORK*						
	Gravel base, 12"	**2,580**	cy	45.00	With Structural Fill Above		
	Underslab drainage	**69,664**	sf	3.00	208,992		
	Compact existing sub-grade	**69,664**	sf	0.50	34,832		
	Underslab E&B for plumbing	**69,664**	sf	1.50	104,496		
	SUBTOTAL					1,655,886	
	TOTAL - FOUNDATIONS						**$5,110,468**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
		13.6	*lbs/sf*				
B1010	**FLOOR CONSTRUCTION**	*677*	*tns*	excluding canopies + roof screens			
		$6,449	*$/Ton*				
033000	*CONCRETE*						
	WWF reinforcement	**34,385**	sf	1.85	63,612		
	Concrete Fill to metal deck; lightweight, total thickness 5 1/4"	**488**	cy	190.00	92,720		
	Place and finish concrete	**29,900**	sf	3.00	89,700		
	Rebar to decks	**8,970**	lbs	2.00	17,940		
051200	*STRUCTURAL STEEL FRAMING*						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.4							
	Structural steel framing; Complete; 15 lbs per SF	**224**	tns	5,200.00	1,164,800		
	Moment connections	**11**	ea	750.00	8,250		
	Shear studs	**7,475**	ea	3.50	26,163		
	2" metal galvanized floor deck	**29,900**	sf	7.50	224,250		
	Expansion joints	**1**	ls	50,000.00	50,000		
078100	*FIREPROOFING/FIRESTOPPING*						
	Fire proofing to columns and beams; 2 hr	**29,900**	sf	3.00	89,700		
	Intumescent paint @ architecturally exposed beams and columns - allow	**1**	ls	25,000.00	25,000		
	SUBTOTAL					1,852,135	
B1020	**ROOF CONSTRUCTION**						
033000	*CONCRETE*						
	6" Normal weight concrete deck at low roof and at mechanical equipment pads	**10,000**	sf	9.00	90,000		
051200	*STRUCTURAL STEEL FRAMING*						
	Structural steel framing; Complete; 13 lbs per SF	**453**	tns	5,200.00	2,355,600		
	Canopy	**11**	tns	5,500.00	60,500		
	Roof screens	**7**	tns	5,500.00	38,500		
	Decking						
	1 1/2" galvanized metal deck, typical	**69,664**	sf	7.00	487,648		
	Premium for acoustic (Gym + Café)	**12,000**	sf	6.00	72,000		
078100	*FIREPROOFING/FIRESTOPPING*						
	Fireproofing to columns, beams and deck; 1 hr - includes Intumescent	**69,664**	sf	5.00	348,320		
	SUBTOTAL					3,452,568	
	TOTAL - SUPERSTRUCTURE						**$5,304,703**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**	*51,000*	Total closure area				
	Exterior Wall Area - 75% solid	*38,250*	*sf total area solid*				
042000	*MASONRY*						
	Mockup	**1**	ls	50,000.00	50,000		
	Brick veneer; 80% of Solid	**30,600**	sf	46.00	1,407,600		
	5" Mineral wool at exterior closure	**38,250**	sf	6.50	248,625		
	Miscellaneous flashings and sealants	**38,250**	sf	1.50	57,375		
	Staging to exterior wall	**38,250**	sf	4.00	153,000		
055000	*MISC. METALS*						
	Misc. metals at masonry including loose lintels (relieving angles included in steel tns)	**30,600**	sf	1.50	45,900		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**38,250**	sf	10.00	382,500		
	Miscellaneous sealants to closure	**38,250**	sf	1.00	38,250		
072100	*THERMAL INSULATION*						
	5.5" Batt insulation in stud	**38,250**	sf	6.00	229,500		
	Insulation at glazed openings	**4,250**	lf	6.00	25,500		
076400	*CLADDING*						
	Phenolic Panel/ACM Rainscreen; 20% of solid	**7,650**	sf	100.00	765,000		
	12' high Acoustic Equipment Screen	**1,440**	sf	95.00	136,800		
	EXPANSION JOINT COVERS						
	Expansion joints	**1**	ls	25,000.00	25,000		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.4							
092900	*GYPSUM BOARD ASSEMBLIES*						
	Exterior wall;						
	6" Stud backup	**38,250**	sf	16.00	612,000		
	Gypsum Sheathing	**38,250**	sf	3.50	133,875		
	Drywall lining to interior face of stud backup	**38,250**	sf	4.00	153,000		
101400	*SIGNAGE*						
	Exterior signage - allowance	**1**	ls	15,000.00	15,000		
	SUBTOTAL					4,478,925	
B2020	**WINDOWS**						
	Exterior Wall Area; 25%	*12,750*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**4,250**	lf	10.00	42,500		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier/flashing at windows	**4,250**	lf	10.00	42,500		
	Backer rod & double sealant	**4,250**	lf	11.00	46,750		
080001	*METAL WINDOWS*						
	Aluminum windows, triple glazed	**9,562**	sf	180.00	1,721,160		
	Curtainwall, triple glazed	**3,188**	sf	230.00	733,240		
	Horizontal aluminum fin sunshades @ south facing windows, custom color				Excluded		
089000	*LOUVERS*						
	Louvers	**1**	ls	10,000.00	10,000		
	SUBTOTAL					2,596,150	
B2030	**EXTERIOR DOORS**						
	Allowance for exterior doors	**99,564**	gsf	1.00	99,564		
	SUBTOTAL					99,564	
	TOTAL - EXTERIOR CLOSURE						**$7,174,639**
B30	***ROOFING***						
055000	*MISCELLANOUS METALS*						
	Terrace top rail/ladders/stairs				Assumed NR		
061000	*ROUGH CARPENTRY*						
	Rough carpentry and blocking @ roof	**69,664**	sf	1.50	104,496		
070002	*ROOFING AND FLASHING*	69,664	total area				
	PVC roof membrane system, white or gray, 1/2" coverboard, 5" polyiso insulation, vapor barrier	**69,664**	sf	28.00	1,950,592		
	Plaza deck pavers system at terrace				Assumed NR		
	<u>Miscellaneous Roofing</u>						
	Miscellaneous flashings/copings/walkway pads etc.	**69,664**	sf	4.00	278,656		
	SUBTOTAL					2,333,744	
B3020	**ROOF OPENINGS**						
086300	*ROOF SKYLIGHTS*						
	Aluminum framed skylight	**1,500**	sf	250.00	Assumed NR		
	Smoke vents; 7'x7'				NR		
	SUBTOTAL					-	
	TOTAL - ROOFING						**$2,333,744**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
040001	*MASONRY*						

PM&C

Margaret A. Neary Elementary School 12-Aug-24
Southborough, MA

PSR Options Cost Estimate GFA 99,564

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.4							
	Allowance for masonry partitions	**99,564**	gsf	2.00	199,128		
061000	*ROUGH CARPENTRY*						
	Backer panels in electrical closets	**1**	ls	10,000.00	10,000		
	Wood blocking at interiors	**99,564**	gsf	0.50	49,782		
078400	*FIREPROOFING/FIRESTOPPING*						
	Fire stopping including slab edges and core	**99,564**	gsf	1.00	99,564		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**99,564**	gsf	1.25	124,455		
078150	*EXPANSION JOINTS*						
	Allowance for expansion joint covers	**1**	ls	25,000.00	25,000		
081110	*INTERIOR GLAZING*						
	Allowance for interior glazing	**99,564**	gsf	5.00	497,820		
092900	*GYPSUM BOARD ASSEMBLIES*						
	Allowance for GWB partitions	**99,564**	gsf	26.00	2,588,664		
	SUBTOTAL					3,594,413	
C1020	**INTERIOR DOORS**						
	Doors, frames, hardware; complete	**99,564**	gsf	8.00	796,512		
	SUBTOTAL					796,512	
C1030	**SPECIALTIES / MILLWORK**						
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	99,564	gsf	5.00	497,820		
061000	*ROUGH CARPENTRY*						
062000	*INTERIOR ARCHITECTURAL WOODWORK*						
	Interior millwork package	**99,564**	gsf	3.00	298,692		
101100	*VISUAL DISPLAY SURFACES*						
	Markerboard and tackboard package	**99,564**	gsf	2.00	199,128		
101400	*SIGNAGE*						
	Room identification, directional & safety signage, building directory + environmental graphics	**99,564**	gsf	2.00	199,128		
102800	*TOILET ACCESSORIES*						
	Toilet accessories/compartments	**99,564**	gsf	1.00	99,564		
104400	*FIRE PROTECTION SPECIALTIES*						
	Fire extinguisher cabinets	**1**	ls	17,102.43	17,102		
	AED cabinets	**1**	ls	2,000.00	2,000		
105000	*LOCKERS*						
	Student lockers/cubbies	**99,564**	gsf	2.50	248,910		
	SUBTOTAL					1,562,344	
	TOTAL - INTERIOR CONSTRUCTION						**$5,953,269**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
033000	*CONCRETE*						
	Concrete to stairs	**4**	flt	5,000.00	20,000		
055000	*MISCELLANEOUS METALS*						
	Egress stairs w/ stainless steel rails and handrails	**3**	flt	50,000.00	150,000		
	Monumental stair						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.4							
	Framing + premium finishes at monumental stair	1	flt	80,000.00	80,000		
	SUBTOTAL					250,000	
C2020	**STAIR FINISHES**						
090005	*RESILIENT FLOORS*						
	Stair finishes	4	flts	20,000.00	80,000		
	SUBTOTAL					80,000	
	TOTAL - STAIRCASES						**$330,000**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes complete package	99,564	gsf	8.00	796,512		
	SUBTOTAL					796,512	
C3020	**FLOOR FINISHES**						
	Floor finishes complete package	99,564	gsf	13.00	1,294,332		
	SUBTOTAL					1,294,332	
C3030	**CEILING FINISHES**						
	Ceiling finishes complete package	99,564	gsf	10.00	995,640		
	SUBTOTAL					995,640	
	TOTAL - INTERIOR FINISHES						**$3,086,484**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
055000	*MISCELLANEOUS METALS*						
	Pit ladder and miscellaneous metals	2	ea	900.00	1,800		
	Sill angles	1	ls	3,000.00	3,000		
142100	*ELEVATOR*						
	Electric traction elevator, 2 stop, 4,000lbs	2	ea	190,000.00	380,000		
	SUBTOTAL					384,800	
	TOTAL - CONVEYING SYSTEMS						**$384,800**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing package complete	99,564	gsf	28.00	2,787,792		
	SUBTOTAL					2,787,792	
	TOTAL - PLUMBING						**$2,787,792**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Geothermal Premium	99,564	gsf	30.00	ALT		
	HVAC System; ASHP	99,564	gsf	85.00	8,462,940		
	SUBTOTAL					8,462,940	
	TOTAL - HVAC						**$8,462,940**
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	99,564	gsf	8.50	846,294		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.4							
	SUBTOTAL					846,294	
	TOTAL - FIRE PROTECTION						**$846,294**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL SYSTEMS**						
	Gear & Distribution						
	Normal power distribution system						
	Panelboards/transformers/feeders	**1**	ea	175,000.00	175,000		
	Panelboards/feeders	**99,564**	gsf	6.00	597,384		
	Emergency power						
	Emergency Generator	**1**	ls		Included Below		
	Emergency power feeders	**99,564**	gsf	4.50	448,038		
	Photovoltaic						
	PV system equipment; roof top				Excluded		
	Battery Storage				Excluded		
	Infrastructure empty conduit and backboxes	**1**	ls	15,000	15,000		
	Equipment Wiring						
	Feeders + Electrical to equipment	**99,564**	gsf	4.50	448,038		
	SUBTOTAL					1,683,460	
D5020	**LIGHTING & POWER**						
	Lighting	**99,564**	gsf	9.00	896,076		
	Exit lighting	**99,564**	gsf	0.50	49,782		
	Lighting controls	**99,564**	gsf	2.50	248,910		
	Lighting circuitry	**99,564**	gsf	4.00	398,256		
	Branch devices	**99,564**	gsf	0.65	64,717		
	Branch circuitry	**99,564**	gsf	4.00	398,256		
	SUBTOTAL					2,055,997	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Telecommunications						
	MDF/IDF closets, devices, cabling and rough - in	**99,564**	gsf	5.00	497,820		
	PA/Clock System						
	PA/Clock System	**99,564**	gsf	1.50	149,346		
	Performance lighting						
	Cafeteria dimming panelboard with feeders	**1**	ls	35,000.00	35,000		
	Cafeteria/performance lighting system	**1**	ls	100,000.00	100,000		
	Audio Visual Systems/Speech Reinforcement						
	Cafeteria A/V system rough-in and power	**1**	ls	20,000.00	20,000		
	Cafeteria A/V system	**1**	ls	75,000.00	75,000		
	Speech reinforcement	**99,564**	gsf	1.50	149,346		
	General A/V rough-in and power	**99,564**	gsf	1.00	99,564		
	Specialty Communications Systems						
	BDA system, antenna and annunciator	**99,564**	gsf	0.75	74,673		
	Cell repeater/Distributed antenna system, not specified	**99,564**	gsf	1.00	99,564		
	Fire Alarm						
	Fire alarm system	**99,564**	gsf	3.50	348,474		
	Security System						
	Security system	**99,564**	gsf	5.00	497,820		
	SUBTOTAL					2,146,607	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Common Work Results for Electrical						
	Lightning protection	**1**	ls	65,000.00	65,000		
	Grounding	**1**	ls	30,000.00	30,000		
	Temp power and lights	**1**	ls	100,000.00	100,000		
	Job conditions; Coordination/BIM/Commissioning support/Seismic etc.	**1**	ls	350,000.00	350,000		
	SUBTOTAL					545,000	
	TOTAL - ELECTRICAL						**$6,431,064**

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
BUILDING BACKUP - OPTION C.4							
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
112000	*LOADING DOCK EQUIPMENT*						
	Loading dock equipment	**1**	ls	10,000.00	10,000		
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*						
	Retractable bleachers	**200**	seat	220.00	44,000		
	SUBTOTAL					851,000	
	TOTAL - EQUIPMENT						**$851,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
122100	*WINDOW TREATMENT*						
	Window shades at exterior glazing including blackout shades at art & specialty classrooms - allowance	**12,750**	sf	10.00	127,500		
123553	*CASEWORK*						
	Casework package	**99,564**	gsf	12.00	1,194,768		
	SUBTOTAL					1,322,268	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$1,322,268**
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						**$50,379,465**

PM&C

Margaret A. Neary Elementary School 12-Aug-24
Southborough, MA

PSR Options Cost Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK C.4							
G	***SITEWORK***						
G10	**SITE PREPARATION & DEMOLITION**	*350,000*	*sf*				
	GENERAL CONDITIONS						
	Mobilizations/Temp Parking/Etc.	**1**	ls	150,000.00	150,000		
	Relocate modulars				NR		
	Relocate play equipment	**1**	ls	150,000.00	150,000		
	6' high site construction fence - perimeter	**2,400**	lf	18.00	43,200		
	SITE DEMOLITION AND RELOCATIONS						
	Demolish existing paving	**115,000**	sf	1.50	172,500		
	Misc. demolition	**1**	ls	150,000.00	150,000		
	UTILITY DEMOLITION						
	Demolish existing utility lines	**1**	ls	50,000.00	50,000		
	Geothermal well support	**1**	ls	150,000.00	NR		
	VEGETATION & TOPSOIL MANAGEMENT						
	Strip + dispose topsoil (swell 25%)	**8,089**	cy	37.00	299,293		
	Street sweeping allowance during hauling	**1**	ls	25,000.00	25,000		
	EROSION & SEDIMENT CONTROL						
	Silt Fence; installation and removal	**2,400**	lf	12.00	28,800		
	Erosion Control monitoring & maintenance	**1**	ls	10,000.00	10,000		
	SITE EARTHWORK						
	Site cut to design subgrade	*25,926*	*cy*				
	Cut/fill; assumed balanced site	**25,926**	cy	30.00	777,780		
	Store cut onsite				NR		
	Process cut and amend with additional soils for reuse				NR		
	SOIL DISPOSAL						
	Load excess soils for disposal						
	Less than RCS-1 - clean non-regulated; allowance	**1**	ls	250,000.00	250,000		
	ESTABLISHING GRADE						
	Sub grade establishment	**350,000**	sf	0.15	52,500		
	Fine grading throughout the site	**350,000**	sf	0.25	87,500		
	HAZARDOUS MATERIALS						
	UST removal allowance				NR		
	Abate existing asbestos coated water line	**2,430**	lf	280.00	680,400		
	Soil disposal & replacement allowance				See Summary		
	SUBTOTAL					2,926,973	
G20	**SITE IMPROVEMENTS**						
	Roadways and Parking Lots						
	Bituminous concrete pavement - standard	*112,442*	*sf*				
	gravel base; 8" thick	**8,693**	cy	50.00	434,650		
	asphalt top; 1.5" thick	**1,075**	tns	200.00	215,000		
	asphalt binder; 2" thick	**1,436**	tns	190.00	272,840		
	CURBING						
	Vertical granite curb	**4,400**	lf	55.00	242,000		
	ROAD MARKINGS AND SIGNS						
	Parking spot	**240**	ea	85.00	20,400		
	Parking spot ADA	**15**	ea	250.00	3,750		
	Pavement markings/signage allowance	**1**	ls	10,000.00	10,000		
	SUBTOTAL					1,198,640	
	PEDESTRIAN PAVING						
	Concrete sidewalks	*33,833*	*sf*				
	gravel base; 12" thick	**1,566**	cy	50.00	78,300		

PSR Options Cost Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK C.4							
	Broom finish concrete paving; 5" thick	**33,833**	sf	16.00	541,328		
	Concrete pads	*1,500*	*sf*				
	gravel base; 12" thick	**104**	cy	50.00	5,200		
	Broom finish concrete paving; 8" thick	**1,500**	sf	24.00	36,000		
	Concrete pavers at Entrance Court and Patio	*10,000*	*sf*				
	gravel base; 12" thick	**463**	cy	50.00	Not Required		
	Broom finish concrete paving; 5" thick	**10,000**	sf	16.00	Not Required		
	Pavers	**10,000**	sf	35.00	Not Required		
	STAIRS AND RAMPS						
	Ramp/stairs premium	**1**	ls	150,000.00	150,000		
	SUBTOTAL					810,828	
	SITE IMPROVEMENTS						
	Site Furnishings						
	Stainless steel bollards	**20**	ea	1,500.00	30,000		
	Benches w/ backs and arms	**20**	ea	4,200.00	84,000		
	Bike racks	**10**	ea	900.00	9,000		
	Trash and Recycling receptacles	**5**	ea	2,500.00	12,500		
	Movable tables and chair sets	**8**	ea	5,500.00	NR		
	Overhead shade structure, 10' x 10'	**1**	ea	15,000.00	15,000		
	Flagpole	**1**	ea	7,000.00	7,000		
	Flagpole foundation	**1**	ea	4,500.00	4,500		
	Site sign, allow	**1**	ea	50,000.00	50,000		
	Baseball Fields				ETR		
	Grass fields				ETR		
	Fencing						
	Fencing; 4' high vinyl chain-link	**2,000**	lf	60.00	120,000		
	Site Walls						
	Modular block retaining walls				Assumed NR		
	Play Area						
	Play Area						
	Play surface	**8,000**	sf	35.00	280,000		
	Play equipment	**1**	ls	400,000.00	400,000		
	SUBTOTAL					1,012,000	
	Landscaping						
	LAWN AND SEED						
	Topsoil - imported 12" thick; swell 25%	**2,037**	cy	65.00	132,405		
	Seeding	**110,000**	sf	0.50	55,000		
	Trees, Shrubs and Perennial planting area	**1**	ls	350,000.00	350,000		
	IRRIGATION						
	Irrigation area at grass fields, planting beds; allow	**1**	ls	150,000.00	150,000		
	Wetlands reconstruction				NR		
	SUBTOTAL					687,405	
G30	**CIVIL MECHANICAL UTILITIES**						
	WATER SERVICE						
	8" CLDI	**2,430**	lf	100.00	243,000		
	6" CLDI	**20**	lf	95.00	1,900		
	4" CLDI	**20**	lf	85.00	1,700		
	Fire department connection	**1**	ea	2,500.00	2,500		
	Hydrants	**2**	ea	6,500.00	13,000		
	Valves	**6**	ea	1,200.00	7,200		
	CONNECTIONS						
	Connect to existing water line	**1**	ea	15,000.00	15,000		
	EXCAVATION & BACKFILL						
	DI piping excavation/backfill (inside site)	**2,470**	lf	50.00	123,500		
	Pressure test & chlorinate	**2,470**	lf	7.50	18,525		
	Allowance for temporary water service	**1**	ls	30,000.00	30,000		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK C.4							
	Allowance for temporary support of existing utilities				NR		
	SUBTOTAL					456,325	
	SANITARY SEWER						
	6" PVC	**60**	lf	25.00	1,500		
	4" PVC	**50**	lf	20.00	1,000		
	4" SDR-26 Force Main	**1,500**	lf	80.00	120,000		
	SMH	**4**	ea	4,800.00	19,200		
	Grease trap - 6,000 gal.	**1**	ea	18,000.00	18,000		
	Septic Tank - 15,000 gal.	**1**	ea	50,000.00	50,000		
	Pump station + fast Filtration Unit - 10,000 gal.	**1**	ea	60,000.00	60,000		
	Leaching field	**21,515**	sf	40.00	860,600		
	CONNECTIONS						
	Connect to existing				NR		
	EXCAVATION & BACKFILL - Gravity	*1,610*	*lf*				
	PVC piping excavation	**1,431**	cy	15.00	21,465		
	Trench bedding	**477**	cy	25.00	11,925		
	Backfill w/cut soils	**954**	cy	23.00	21,942		
	Pressure testing	**1,610**	lf	4.00	6,440		
	Allowance for obstructions	**1**	ea	25,000.00	25,000		
	Video Inspection	**1**	ls	10,000.00	10,000		
	Grease trap - 3,000 gal.	**1**	ea	10,000.00	10,000		
	SUBTOTAL					1,237,072	
	STORM DRAINAGE						
	Drain lines, 12" HDPE	**1,750**	lf	80.00	140,000		
	Groundwater monitoring wells	**3**	ea	20,000.00	60,000		
	DMH	**13**	ea	4,200.00	54,600		
	WQU	**2**	ea	12,000.00	24,000		
	OCS	**2**	ea	6,000.00	12,000		
	CB	**18**	ea	3,800.00	68,400		
	DCB	**4**	ea	6,000.00	24,000		
	CONNECTIONS						
	Connect to existing structures allowance	**1**	ls	10,000.00	10,000		
	SURFACE DRAINAGE SYSTEMS						
	Bio retention/Rain Garden Allowance	*5,000*	*sf*				
	shape basins	**5,000**	sf	2.50	12,500		
	mulch	**46**	cy	50.00	2,300		
	24" Planting soil mix	**370**	cy	60.00	22,200		
	12" Sand	**185**	cy	40.00	7,400		
	4" Double washed pea stone	**61**	cy	50.00	3,050		
	4" PVC pipe; allowance	**250**	lf	40.00	10,000		
	12" Pipe bedding	**185**	cy	40.00	7,400		
	SUBSURFACE DRAINAGE SYSTEMS						
	Infiltration system						
	Plastic chambers - incl dispose soils	**49,500**	cf	19.00	940,500		
	SUBTOTAL					1,398,350	
G40	**ELECTRICAL UTILITIES**						
	Concrete:						
	Primary duct bank	**400**	lf	50.00	20,000		
	Secondary service 2500A	**90**	lf	50.00	4,500		
	Generator duct bank	**100**	lf	40.00	4,000		
	Communications duct bank	**400**	lf	40.00	16,000		
	Excavation and backfill:						
	Primary duct bank	**400**	lf	25.00	10,000		
	Secondary service	**90**	lf	30.00	2,700		
	Generator duct bank	**100**	lf	30.00	3,000		
	Communications duct bank	**400**	lf	25.00	10,000		
	SUBTOTAL					70,200	
	Power						
	Utility co. back charges				By Owner		

Margaret A. Neary Elementary School
Southborough, MA

12-Aug-24

PSR Options Cost Estimate

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK C.4							
191		Primary duct bank	**400**	lf	180.00	72,000		
192		Electric manhole	**2**	ea	12,500.00	25,000		
193		Transformers by Owner				Included above		
194		Secondary service	**90**	lf	800.00	72,000		
195		Generator:						
196		Generator service	**100**	lf	400.00	40,000		
197		Communications						
198		Connect to existing utility pole	**1**	ea	1,500.00	1,500		
199		Communications duct bank	**400**	lf	150.00	60,000		
200		Communication manhole	**2**	ea	12,500.00	25,000		
201		Site Lighting						
202		Allowance	**112,442**	sf	3.00	337,326		
203		EV Stations						
204		EV stations; double	**10**	loc	20,000.00	200,000		
205		SUBTOTAL					832,826	
206								
207		**TOTAL - SITE DEVELOPMENT**						***$10,630,619***

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I. "RMAT" Climate Resilience Design Standards Tool Report

Climate Resilience Design Standards Tool Project Report

Neary ES - Southborough
Date Created: 8/7/2024 3:14:14 PM
Created By: arodrigue
Date Report Generated: 8/8/2024 12:26:19 PM
Tool Version: Version 1.2
Project Contact Information: Andy Rodrigue (rodrigue@arrowstreet.com)

Project Summary

Link to Project

Estimated Capital Cost: $114602730.00
End of Useful Life Year: 2076
Project within mapped Environmental Justice neighborhood: No

Ecosystem Service Benefits	Scores
Project Score	Low
Exposure	**Scores**
Sea Level Rise/Storm Surge	Not Exposed
Extreme Precipitation - Urban Flooding	High Exposure
Extreme Precipitation - Riverine Flooding	Moderate Exposure
Extreme Heat	High Exposure

Asset Preliminary Climate Risk Rating Summary

Number of Assets: 4

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
Public School	Low Risk	High Risk	High Risk	High Risk
Recreation Fields	Natural Resource project assets do not receive a preliminary climate risk rating.			
Geothermal Wells	Low Risk	High Risk	Moderate Risk	High Risk
Wetlands Protection	Natural Resource project assets do not receive a preliminary climate risk rating.			

Climate Resilience Design Standards Summary

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
Public School					
Recreation Fields					
Geothermal Wells					
Wetlands Protection					
Extreme Precipitation					
Public School	2070			50-yr (2%)	Tier 3
Recreation Fields	2030				Tier 2
Geothermal Wells	2070			5-yr (20%)	Tier 2

Wetlands Protection	2030		Tier 1
Extreme Heat			
Public School	2070	90th	Tier 3
Recreation Fields	2030	50th	Tier 2
Geothermal Wells	2070	50th	Tier 2
Wetlands Protection	2030	50th	Tier 1

Scoring Rationale - Project Exposure Score

The purpose of the Exposure Score output is to provide a preliminary assessment of whether the overall project site and subsequent assets are exposed to impacts of natural hazard events and/or future impacts of climate change. For each climate parameter, the Tool will calculate one of the following exposure ratings: Not Exposed, Low Exposure, Moderate Exposure, or High Exposure. The rationale behind the exposure rating is provided below.

Sea Level Rise/Storm Surge

This project received a "Not Exposed" because of the following:

- Not located within the predicted mean high water shoreline by 2030
- No historic coastal flooding at project site
- Not located within the Massachusetts Coast Flood Risk Model (MC-FRM)

Extreme Precipitation - Urban Flooding

This project received a "High Exposure" because of the following:

- Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life
- Existing impervious area of the project site is greater than 50%
- No historic flooding at project site
- No increase to impervious area

Extreme Precipitation - Riverine Flooding

This project received a "Moderate Exposure" because of the following:

- Part of the project is within 500ft of a waterbody and less than 20ft above the waterbody
- No historic riverine flooding at project site
- The project is not within a mapped FEMA floodplain [outside of the Massachusetts Coast Flood Risk Model (MC-FRM)]
- Project is not likely susceptible to riverine erosion

Extreme Heat

This project received a "High Exposure" because of the following:

- 30+ days increase in days over 90 deg. F within project's useful life
- Existing trees are being removed as part of the proposed project
- Existing impervious area of the project site is greater than 50%
- Located within 100 ft of existing water body
- No increase to the impervious area of the project site

Scoring Rationale - Asset Preliminary Climate Risk Rating

A Preliminary Climate Risk Rating is determined for each infrastructure and building asset by considering the overall project Exposure Score and responses to Step 4 questions provided by the user in the Tool. Natural Resource assets do not receive a risk rating. The following factors are what influenced the risk ratings for each asset.

Asset - Public School
Primary asset criticality factors influencing risk ratings for this asset:

- Asset can be inaccessible/inoperable more than a week after natural hazard event without consequences
- Less than 1,000 people would be directly affected by the loss/inoperability of the asset
- Few alternative programs and/or services are available to support the community

- Cost to replace is greater than $100 million
- There are no hazardous materials in the asset

Asset - Recreation Fields
Primary asset criticality factors influencing risk ratings for this asset:

No score available

Asset - Geothermal Wells
Primary asset criticality factors influencing risk ratings for this asset:

- Asset can be inaccessible/inoperable more than a week after natural hazard event without consequences
- Loss/inoperability of the asset would have impacts limited to the location of infrastructure only
- Inoperability of the asset would not be expected to result in injuries
- Cost to replace is less than $10 million
- There are no hazardous materials in the asset

Asset - Wetlands Protection
Primary asset criticality factors influencing risk ratings for this asset:

No score available

Project Climate Resilience Design Standards Output

Climate Resilience Design Standards and Guidance are recommended for each asset and climate parameter. The Design Standards for each climate parameter include the following: recommended planning horizon (target and/or intermediate), recommended return period (Sea Level Rise/Storm Surge and Precipitation) or percentile (Heat), and a list of applicable design criteria that are likely to be affected by climate change. Some design criteria have numerical values associated with the recommended return period and planning horizon, while others have tiered methodologies with step-by-step instructions on how to estimate design values given the other recommended design standards.

Asset: Public School — Building/Facility

Sea Level Rise/Storm Surge — Low Risk

Applicable Design Criteria

Projected Tidal Datums: NOT APPLICABLE

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation — High Risk

Target Planning Horizon: 2070
Return Period: 50-yr (2%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Public School	2070	50-Year (2%)	9.7	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Extreme Heat High Risk

Target Planning Horizon: 2070
Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Asset: Recreation Fields Natural Resources

Sea Level Rise/Storm Surge

Applicable Design Criteria

Projected Tidal Datums: NOT APPLICABLE

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Return Period Recommendations for natural resource assets and subsequent projected values are provided as a consideration for users, not a formal standard. Users should follow industry best practices for designing natural resource assets in coordination with the appropriate regulatory agencies.

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation

Target Planning Horizon: 2030

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

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Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Recreation Fields	2030	25-Year (4%)	7.2	Downloadable Methodology PDF

Return Period Recommendations for natural resource assets and subsequent projected values are provided as a consideration for users, not a formal standard. Users should follow industry best practices for designing natural resource assets in coordination with the appropriate regulatory agencies.

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Extreme Heat

Target Planning Horizon: 2030
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Growing Degree Days: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: NOT APPLICABLE

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Asset: Geothermal Wells — Infrastructure

Sea Level Rise/Storm Surge — Low Risk

Applicable Design Criteria

Projected Tidal Datums: NOT APPLICABLE

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation — High Risk

Target Planning Horizon: 2070

Return Period: 5-yr (20%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Geothermal Wells	2070	5-Year (20%)	5.9	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Extreme Heat High Risk

Target Planning Horizon: 2070
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Asset: Wetlands Protection Natural Resources

Sea Level Rise/Storm Surge

Applicable Design Criteria

Projected Tidal Datums: NOT APPLICABLE

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Return Period Recommendations for natural resource assets and subsequent projected values are provided as a consideration for users, not a formal standard. Users should follow industry best practices for designing natural resource assets in coordination with the appropriate regulatory agencies.

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation

Target Planning Horizon: 2030

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 1

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Wetlands Protection	2030	25-Year (4%)	7.2	Downloadable Methodology PDF

Return Period Recommendations for natural resource assets and subsequent projected values are provided as a consideration for users, not a formal standard. Users should follow industry best practices for designing natural resource assets in coordination with the appropriate regulatory agencies.

ATTENTION: This is a Tier 1 project. It is advised to compare the extreme precipitation output values to the NOAA+ methodology to calculate total precipitation depth for 24-hr design storms.

This methodology can be found in the following PDF. (Link).

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 1

Extreme Heat

Target Planning Horizon: 2030
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 1

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 1

Projected Heat Index: NOT APPLICABLE

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: NOT APPLICABLE

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: NOT APPLICABLE

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Project Inputs

Core Project Information

Name:	Neary ES - Southborough
Given the expected useful life of the project, through what year do you estimate the project to last (i.e. before a major reconstruction/renovation)?	2076
Location of Project:	Southborough
Estimated Capital Cost:	$114,602,730
Who is the Submitting Entity?	Private Other Arrowstreet Inc. Andy Rodrigue (rodrigue@arrowstreet.com)
Is this project being submitted as part of a state grant application?	No
Which grant program?	
What stage are you in your project lifecycle?	Planning
Is climate resiliency a core objective of this project?	Yes
Is this project being submitted as part of the state capital planning process?	No
Is this project being submitted as part of a regulatory review process or permitting?	No
Brief Project Description:	A new elementary school building for grades 2-5, situated near a perennial stream and wetland. The project is anticipated to utilize ground-source geothermal wells to heat and cool the building. Other attributes will include stormwater management strategies, preservation of existing wetlands, and a potential for renewable energy sources such as PV panels and battery storage.
Project Submission Comments:	

Project Ecosystem Service Benefits

Factors Influencing Output

✓ Project promotes decarbonization
✓ Project provides recreation

Factors to Improve Output

✓ Incorporate nature-based solutions that may reduce storm damage
✓ Protect public water supply by reducing the risk of contamination, pollution, and/or runoff of surface and groundwater sources used for human consumption
✓ Incorporate green infrastructure or nature-based solutions that recharge groundwater
✓ Incorporate green infrastructure to filter stormwater
✓ Incorporate nature-based solutions that sequester carbon carbon
✓ Incorporate vegetation that provides pollinator habitat
✓ Identify opportunities to prevent pollutants from impacting ecosystems
✓ Incorporate education and/or protect cultural resources as part of your project

Is the primary purpose of this project ecological restoration?

No

Project Benefits

Provides flood protection through nature-based solutions	No
Reduces storm damage	Maybe
Recharges groundwater	Maybe
Protects public water supply	Maybe
Filters stormwater using green infrastructure	Maybe
Improves water quality	No
Promotes decarbonization	Yes
Enables carbon sequestration	Maybe
Provides oxygen production	No
Improves air quality	No
Prevents pollution	Maybe
Remediates existing sources of pollution	No
Protects fisheries, wildlife, and plant habitat	No
Protects land containing shellfish	No
Provides pollinator habitat	Maybe
Provides recreation	Yes
Provides cultural resources/education	Maybe

Project Climate Exposure

Is the primary purpose of this project ecological restoration?	No
Does the project site have a history of coastal flooding?	No
Does the project site have a history of flooding during extreme precipitation events (unrelated to water/sewer damages)?	No

Does the project site have a history of riverine flooding?	No
Does the project result in a net increase in impervious area of the site?	Unsure
Are existing trees being removed as part of the proposed project?	Yes

Project Assets

Asset: Public School
Asset Type: Typically Occupied
Asset Sub-Type: School (primary, secondary, high, vocational, etc.)
Construction Type: New Construction
Construction Year: 2026
Useful Life: 50
Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Building may be inaccessible/inoperable more than a week after natural hazard event without consequences
Identify the geographic area directly affected by permanent loss or significant inoperability of the building/facility.
Impacts limited to site only
Identify the population directly served that would be affected by the permanent loss of use or inoperability of the building/facility.
Less than 1,000 people
Identify if the building/facility provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The building/facility does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
If the building/facility became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the building/facility would not be expected to result in injuries
If there are hazardous materials in your building/facility, what are the extent of impacts related to spills/releases of these materials?
There are no hazardous materials in the building/facility
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Moderate – Inoperability may impact other facilities, assets, or buildings, but is not expected to affect their ability to operate
If this building/facility was damaged beyond repair, how much would it approximately cost to replace?
Greater than or equal to $100 million
Is this a recreational facility which can be vacated during a natural hazard event?
No
If the building/facility became inoperable for longer than acceptable in Question 1, what are the public and/or social services impacts?
Few alternative programs and/or services are available to support the community
If the building/facility became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the building is not able to serve or operate its intended users or function)?
Loss of building is not expected to reduce the ability to maintain government services.
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to loss of confidence in government (i.e. the building is not able to serve or operate its intended users or function)?
No Impact
Asset: Recreation Fields
Asset Type: Open Space
Asset Sub-Type: Open recreation space
Construction Type: Restoration or enhancement
Construction Year: 2026
Monitoring Frequency: 10
Asset: Geothermal Wells
Asset Type: Green Infrastructure
Asset Sub-Type: Other Green Infrastructure
Construction Type: New Construction
Construction Year: 2026
Useful Life: 50
Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure may be inaccessible/inoperable more than a week after natural hazard event without consequences.
Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts limited to location of infrastructure only
Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Less than 5,000 people
Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The infrastructure does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
Will the infrastructure reduce the risk of flooding?

No

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?

Inoperability of the infrastructure would not be expected to result in injuries

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?

There are no hazardous materials in the infrastructure

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?

Minor – Inoperability will not likely affect other facilities, assets, or buildings

If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?

Less than $10 million

Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.

No

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?

No impact on surrounding natural resources is expected

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?

Loss of infrastructure is not expected to reduce the ability to maintain government services

What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?

No Impact

Asset: Wetlands Protection

Asset Type: Wetland Resource Area - Inland

Asset Sub-Type: Riverfront Area

Construction Type: Maintenance (environmental)

Construction Year: 2026

Monitoring Frequency: 5

Report Comments

N/A

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