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3.3.1 Introduction

A. Overview of Process Undertaken to Arrive at Preferred Alternative
B. Project Schedule Summary
C. Summary of Final Evaluation of Existing Conditions
D. Summary of Final Evaluation of Alternatives
E. Summary of District's Preferred Alternative
F. Copy of MSBA PDP Review and District Response

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A. Overview of Process Undertaken to Arrive at Preferred Alternative

Preferred Schematic Report
Agawam High School

3.3.1 Introduction

A. OVERVIEW OF PROCESS UNDERTAKEN TO ARRIVE AT PREFERRED ALTERNATIVE

The PDP phase provided information on a variety of fronts from existing conditions, educational space deficiency and program shortfalls, and potential solutions for the future. Multiple options were evaluated and are noted as follows:

- Code Upgrade
- One-series options that primarily consisting of new construction with minor renovation portions such as the Pre-K and main entry. These options were listed as 1A, 1B and 1C.
- Two-series involved various levels of renovations with building additions. These were 2A and 2B.
- Three Series involved a majority renovation. These were 3A and 3B

Option 1A was the 100% new construction alternative that was not favorable. This option was cost prohibitive and was not the preferred alternative. To satisfy study requirements, Option 1C.2 was developed during the PSR Phase which is a version of 1C that is 100% new construction, replacing the entry and Pre-K portions with in-kind new construction in lieu of renovating the existing construction. All one-series options reflected identical characteristics as shown in Option 1C, such as an open campus, three distinct buildings and overall campus organization.

Multiple School Building Committee meetings, Community Forums and two City Council working sessions were conducted. All options were discussed at length with the following highlights as follows:

Code Upgrade: This served as an option of necessity to understand the shortcomings of repurposing the vintage 1955 spaces. This option did not align with the educational vision and resulted in displaced program organization, general classrooms and science labs remaining undersized and not within controlled suites. Spaces celebrating performing arts remained compromised and outdoor spaces inactive due to the sprawling nature of the original 1955 construction, and the 1961, 1979 and 1996 additions. Those reasons with a high cost and displacement of teachers and students into modulars, eliminated this from consideration.??

Option 1C: This option is primarily new construction but converts the existing shops wing into a stand-alone Pre-K building and retains the existing building's front entrance of approximately 7,000gsf. The final square footage breakdown for the main high school building is 213,000gsf of new construction with 7,000gsf of renovation. A key aspect is that this option does not require modular classrooms due to the community wing being completed first with the academic wing completed in phase two. The result is a campus with a community building (accommodating the cafeteria, auditorium and gymnasium), academic building and stand-alone Pre-K functioning in conjunction with the existing Agawam Public Library, which is frequently used by high school students due to its proximity, resulting in a greater campus community with shared use.

Option 2B: This option maintained the existing gymnasium and cafeteria component from the original 1955 composition and built new academic wings and a new gymnasium with athletic support. A reimagined performing arts center would be built within the existing shell of the 1955 gym space. This strategy allows for uninterrupted access to physical education because there are no other spaces available within the town and the middle school has an appropriately sized
Option 3A and 3B: These options proved to be the most disruptive to the students and teachers during construction while not aligning with the district's educational plan. All stakeholder groups recognize these as least preferred and quickly fell off the list of consideration.

In conclusion Option 1C was the clear front runner leaving the PDP Phase and remained so throughout the PSR phase. Sensitivity to minimizing disruption, creating a campus of scale appropriate, yet straightforward to manage buildings and a cost comparable with their options studied solidified this

as the district's Preferred Alternative. The City Council supported Option 1C during the working session on August 21,2023. The School Building Committee provided the recommendation to move forward with Option 1C and that resonated with the community at the Community Forum on August 28, 2023. The preferred option was presented at the September 28, 2023, community forum with support and on October 23,2023 the SBC voted to submit the preferred option to the MSBA.

Further highlights are as follows:

Educational Opportunities; Program Accommodation; Compliance with Vision

The school has determined that educational opportunities is the most important consideration in the options. Overall, Option 1C and 1C.2 give the school the ability to construct the school exactly to the educational needs and match the program outlined by the school. Option 2B has limited ability to align properly with the educational vision and provide some, but not all the adjacencies outlined within. The code upgrade option doesn't align as well with the educational vision and many spaces do not meet space requirements.

Construction Disruption and Impact on Students & Staff; Phasing (Site Logistics); Construction Duration

The level of disruption to students learning and activities was an important factor the SBC considered. The ability to have minimal disruption to ongoing school activities with new construction, makes Option 1C and 1C.2 the most favorable from a disruption standpoint. Because Option 2B has an extensive amount renovation, phasing is longer and portable classrooms would be required.

Safety/Access Control; Traffic Impacts; Vehicle Circulation; Pedestrian Circulation

Safety meetings were conducted during the PSR phase. The meetings were held in the Agawam High School with the Principal, Superintendent, design team, safety consultant, Agawam Fire Chief and the Agawam Police Chief. This provided an overview of the project and general direction of the project's evolution from a security and safety perspective. The meetings were high level overviews to understand which option performs better. There was consensus that Option 1C is ideal from a safety access and security perspective. The design team's security consultant introduced FEMA security models that will be used in evaluating the design and high-level concerns that will be addressed during the design process.

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B. Project Schedule Summary

Preferred Schematic Report
Agawam High School

B. PROJECT SCHEDULE SUMMARY

This report is being submitted in anticipation of approval of the Preferred Alternative for Agawam High School by the MSBA's Board of Directors at their meeting scheduled for December 13, 2023. We understand that this schedule would include a meeting with the Board's Facility Assessment Subcommittee (FAS) on November 8 and November 15, 2023.

Subsequent milestones include:

• May 2, 2024	Submittal of Module 4 Schematic Design
• June 26, 2024:	Projected MSBA Board of Directors Meeting for the approval of Schematic Design/Project Scope and Budget Agreement
• July 10, 2024:	Projected District vote for Project Scope and Budget Agreement.
• July '24 to August '25	Design Development & completion of Construction Documents
• Spring 2025:	Anticipated start of construction
• Summer 2027:	Completion and occupancy of the New Construction

This project Schedule is based upon the Preferred Option 1C – New Construction. It is presumed that this construction duration will take approximately two (2) years to complete with construction phasing. Sitework will likely be happening concurrently, and coordinated to be complete with the school construction.

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C. Summary of Final Evaluation of Existing Conditions

Preferred Schematic Report
Agawam High School

C. SUMMARY OF FINAL EVALUATION OF EXISTING CONDITIONS

The existing conditions report included in the PDP binder, submitted to the MSBA on July 28, 2023 remains unchanged. There have been no repairs or upgrades to address any of the items noted in that report. The Agawam High School remains in poor condition with most of its major building systems at the end of their useful life. There are many programming, life safety and code issues that need to be addressed by the District.

Supplemental Information in this report is site related and comprised of a Geotechnical Report conducted August 12, 2023 by LGCI, Massachhusetts Historical Commission approval and updated Civil and Landscape Reports.

Geotechnical Summary

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

- Coordinated our exploration locations with Agawam High School.
- Marked the exploration locations at the site and notified Dig Safe Systems Inc. (Dig Safe) and the Town of Agawam for utility clearance.
- Engaged a drilling subcontractor for two (2) days to advance (9) 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 two (2) soil samples from the borings for laboratory testing.
- Prepared this preliminary geotechnical report containing the results of our subsurface explorations and our recommendations for foundation design and construction.

Massachusetts Historical Commission

The MHC recieved the PNF on September 21, 2023 and sent back their response on October 17, 2023 that the project is unlikely to affect significant historical or archeological resources.

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D. Summary of Final Evaluation of Alternatives

Preferred Schematic Report
Agawam High School

D. SUMMARY OF FINAL EVALUATION OF ALTERNATIVES

Since submittal of the PDP report on July 28, 2023, the Agawam High School Building Committee continued to meet regularly, conducted two more community forums, and completed the PSR phase with the School Building Committee on October 23, 2023. In addition, the design team met multiple times with the Educational Leadership Team to refine the academic program, functionality and adjacencies.

Option 1: Baseline Code Upgrade Repair (216,300 GSF – 100% of existing building retained)
This maintains 100% of the existing Agawam High School building, provides new systems, brings the facility into code compliance, and locates key spaces in areas of the building where they can easily fit. It results, however, in a sprawling building with inadequate adjacencies, poorly articulated classroom neighborhoods, and undersized spaces.

Option 1C: Addition/Renovation (235,075 GSF – 90% new construction, 10% renovation)
The building is organized east to west creating a new public face along Mill Street and Cooper Street. A campus connection is improved with pedestrian walkways connecting the athletic stadium to the west, the new centrally located high school and the Agawam Public Library to the south. Overall relief on the site is achieved by replacing the sprawling existing one-story high school with a more compact solution as noted above. The new entry to the high school is established within the architectural significant existing front entry along Mill Street. The former vocational wing of the high school will be renovated into the Pre-K. Locating the Pre-K on the northern portion of the site minimizes conflicts with high school traffic.

Option 1C.2: New Construction (235,075 GSF – 100% new construction)
This option is similar to Option 1C and achieves all of the same objectives while being 100% new construction. The difference is with the Pre-K and existing high school entry is treated as new construction. This results in an estimated building cost for Option 1C.2 approximately $2M premium to 1C and doesn't maintain the architectural significant existing front entry along Mill Street.

Option 2B: Renovation Addition (235,075 GSF – 68% new construction, 32% renovation)
This option organizes the building east to west and creates a new public face along Mill Street and Cooper Street. The existing gymnasium and cafeteria component are maintained from the original 1955 composition and a new an academic wing and a new gymnasium with athletic support. A reimagined performing arts center would be built within the existing shell of the 1955 gym space. The former vocational wing of the high school will be renovated into the Pre-K. Locating the Pre-K on the northern portion of the site minimizes conflicts with high school traffic.

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E. Summary of District's Preferred Alternative

Preferred Schematic Report
Agawam High School

E. SUMMARY OF DISTRICT'S PREFERRED ALTERNATIVE

Throughout PSR, workshops involved a range of stakeholders, including the Educational Leadership Team, the School Building Committee, faculty and staff of the school, and student focus groups. In a manner that is atypical for many schools engaged in an MSBA Feasibility Study, school leadership decided early on that it was essential to engage all faculty voices in the conversation, as well as a variety of students, residents, and the Agawam City Counsel.

During the months of May and June 2023, a combined 60+ participants – including Agawam Public Schools leadership, Agawam High School (AHS) staff, students, and administrators, parents, and community members – participated in a variety of visioning and programming sessions run by My Learning Place (MLP) Integrated Design and Flansburgh Architects. Each session was part of a collaborative process designed to inform the AHS of the Massachusetts School Building Authority (MSBA) Feasibility Study and pre-design process.

Participants were led through a step-by-step visioning process aimed at capturing their high-level thinking about the following:

1) educational, architectural, and community goals and priorities.
2) vision of authentic and engaging learning; and
3) vision of an ideal learning environment to support their vision of teaching and learning.

To these ends, bi-weekly Academic Leadership Team meetings, faculty interviews, educational observations by consultants, three full-day visioning workshops, and a Community Forum providing project updates were conducted. As a result of these workshops and forums, a coherent and dynamic vision for the new school facility has begun to emerge, and teachers, administrators, students, and parents have all expressed appreciation as being included in the process in such a comprehensive way.

Option 1C is the preferred option and highlights are as follows:

This option is primarily new construction but converts the existing shops wing into a stand-alone Pre-K building and retains the existing building's front entrance of approximately 7,000gsf. The final square footage breakdown for the main high school building is 213,000gsf of new construction with 7,000gsf of renovation. A key aspect is that this option does not require modular classrooms due to the community wing being completed first with the academic wing completed in phase two. The result is a campus with a community building (accommodating the cafeteria, auditorium, and gymnasium), academic building and stand-alone Pre-K functioning in conjunction with the existing Agawam Public Library, which is frequently used by high school students due to its proximity, resulting in a greater campus community with shared use.

Sensitivity to minimizing disruption, creating a campus of scale appropriate, yet straightforward to manage buildings and a cost comparable with their options studied solidified this as the district's Preferred Alternative. The City Council supported Option 1C during the working session on August 21,2023. The School Building Committee provided the recommendation to move forward with Option 1C and that resonated with the community at the Community Forum on August 28, 2023. The preferred option was presented at the September 28, 2023, community forum with support and on October 23,2023 the SBC voted to submit the preferred option to the MSBA.

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F. Copy of MSBA PDP Review and District Response

Preferred Schematic Report
Agawam High School

3.3.1 Introduction

F. COPY OF MSBA PDP REVIEW AND DISTRICT RESPONSE

A copy of the District's response to the MSBA's PDP comments follow this introduction page.

ATTACHMENT A

MODULE 3 – PRELIMINARY DESIGN PROGRAM REVIEW COMMENTS

District: Town of Agawam
School: Agawam High School
Owner's Project Manager: Leftfield, LLC
Designer Firm: Flansburgh Associates, Inc.
Submittal Due Date: August 3, 2023
Submittal Received Date: July 28, 2023
Review Date: July 28, 2023 – September 26, 2023
Reviewed by: L. Winston, M. Esdale, V. Dagkalakou, C. Forde, C. Alles

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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	☒	☐	☐	☐

[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:

4) The information provided indicates that the estimated total project cost could range from $154-$240 million. For reference, the OPM Request for Services (RFS) indicated an estimated total project cost range of $65-$150 million, and the Designer RFS indicated an estimated construction cost range of $50-$125 million. In response to these review comments, please review and respond to the following:

- *Provide the District's not-to-exceed budget for the proposed project.*

Response: The District is currently working on formulating a final budget.

- *Describe this variation and provide information that indicates that the District has discussed and acknowledged the increase in estimated costs.*

Response: Acknowledged. The original budget was set by referencing MSBA cost data online as suggested by the MSBA, and this was reviewed several years ago. Recent cost escalations and market increases have been the topic of conversation throughout the feasibility study so far and will continue to be reviewed and acknowledged in all future submissions.

- *Describe how the District and design team intend to maintain the District's project budget through schematic design.*

Response: Once the final option is selected and budgeted, the District and project team will continue to design to that budget and have value engineering sessions and evaluations of each step to ensure that the project stays within the project budget throughout all the process.

No further review comments for this section.

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 please 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.

Response: Acknowledged

3) The information provided indicates the school scheduling methodology will be changed and implemented in the next school year. In response to these review comments, describe the District's plan to encourage and support this work, and how it will work with its educators and consultants to generate the information needed to develop a design response to be provided as part of the updated educational program included in the PSR submittal. Please provide additional information in the updated educational program that describes how the updated schedule supports and reinforces the District's educational program goals as well as the benefits of the proposed changes.

Response: Since the submission of the original educational plan we have decided to not implement a schedule change for the 2024-2025 school year. In the interim we have received a private grant that will allow us to explore a schedule change this school year. This grant allows us to assemble teams of teachers, administrators, consultants, and other stakeholders to help conceptualize a master schedule that matches the needs of students based on the visioning sessions in which seventy teachers discussed the desire for a new master schedule. The benefits of the proposed changes align with our district's strategic plan to provide students with longer instructional blocks (47 - 63 minutes) to promote increased student collaboration, enhance project based learning opportunities, and allow teachers more time during the instructional block to meet the educational needs of students.

4) The information provided indicates course levels as SP, Honors, and College Prep. Please describe if there are any other course levels offered. Additionally, please clarify if AP, Honors, and College Prep classes are appropriate for students that do not intend to go directly to college. If so, please clarify whether the District has considered changing the title of the levels to make the level more inclusive and appropriate for these students.

Response: While those are the only three levels offered, AP, Honors, and College preparatory courses are offered and encouraged for students regardless of whether or not they attend college. Our Innovation Pathways require students to enroll in AP and honors level courses even though their pathways themselves are geared towards college and career readiness. Regular meetings between school counselors and teachers emphasize the school's mission to encourage rigorous courses regardless of career path. Increasingly, we are adding AP and honors courses in core subjects that allow students that are not traditionally represented in higher level classes. We have entered into discussion with our department heads to look at all courses in our program of studies to eliminate the wording of "College Prep", during our annual review and submission to the School Committee. At this time it is important for us to keep honors and AP listed because the courses are weighted higher in GPA calculations and still important for those attending post-secondary education. We believe all courses offered at Agawam High School should be accessible to all students, regardless of their future plans.

4a) Please clarify whether the three courses indicated in the Innovation Pathways are related to vocations and technology courses. Additionally, please confirm if these pathways are intended for both college-bound and non-college-bound students.

Response: The Innovation Pathways are for both college and non-college bound students. The goal is to make all students college or career ready upon graduation. The combination of the 100 hour internship, hands-on and academically oriented classes allows for a well-

rounded experience. Classes that offer the students college credits can be taken at the honors or college preparatory level. They are taught concurrently and the credit awarded is based on completion of industry standard examinations.

4b) Provide additional information associated with the Large Group Instruction space that describes the scheduling, staffing, and overall utilization of this space. Also, describe potential adjacencies and common planning time relating to these programs.

Response: The Large Group Instruction space will provide teachers with the opportunity to collaborate on common course assessments, interdisciplinary projects, and real-life connections. More than one class can combine in this space to work on common assessment or interdisciplinary projects. Medium size groups could benefit from guest speakers or panel discussions, student work exhibits, etc. The scheduling of the Large Group Instruction space would be coordinated through the main office, allowing teachers and classes to sign up when needed. Teachers would staff the space as their classes utilized the space.

4e) Please provide the following information:

- *Additional information associated with the proposed outdoor spaces and green house including but not limited to: how the outdoor spaces will be accessed, identifying all of the classes/groups that will access the spaces, how safety and security of students and staff using the outdoor spaces will be addressed, how the outdoor spaces will be managed, and how the spaces will be designed for future changes in curriculum delivery.*

Response: Agawam High School is continuously innovating and challenging traditional offerings and electives to be more interdisciplinary, that include seminars, field work, and career internships. Due to the physical constraints of our current facility, the ability to incorporate these experiences are limited and difficult to design and implement successfully and with fidelity. Many teachers in the past two years are embracing the concept of cross curricular project based learning that allows students to study real world problems across several disciplines. Our design concepts call for learning pods that are interdisciplinary with maker spaces adjacent to classrooms. Additionally, teacher work spaces and small group breakout rooms will foster opportunities that our current building does not. This will allow for more impactful learning experiences.

- *Please ensure that science/engineering spaces conform to MSBA guidelines.*

Response: The design of science/engineering spaces will conform to the MSBA guidelines.

- *The District should apply clear scheduling and supervision as described in the MSBA guidelines to ensure these spaces remain effective, use is coordinated, and the spaces are maintained and organized. Please acknowledge.*

Response: The district acknowledges the recommendations noted above.

- *Describe whether the District has considered electives that can be more exploratory and inter-disciplinary with seminars and field work. The District could consider combining core disciplines to examine, consider, and apply such things as ethics and technical writing skills to examine a major contemporary idea such as dual-use research, local economic development, and changing local demographics. Some examples include:*

- *Examine the history and ethics of harvesting and use of HeLa (Henrietta Lacks) cells and the recent legal settlement of a lawsuit with Lacks' descendants.*
- *Study the impact of pesticide use on the honeybee population and its agricultural and economic consequences.*
- *Study migration and historic population patterns of wildlife (flora and fauna) in the local area and the impact of construction and development of agricultural properties.*
- *Examine the availability and accessibility of housing, health care, and food in the community and surrounding area including such things as cost and competition.*

Response: Agawam High School is continuously innovating and challenging traditional offerings and electives to be more interdisciplinary, that include seminars, field work, and career internships. Due to the physical constraints of our current facility, the ability to incorporate these experiences are limited and difficult to design and implement successfully and with fidelity. Many teachers in the past two years are embracing the concept of cross curricular project based learning that allows students to study real world problems across several disciplines. Our design concepts call for learning pods that are interdisciplinary with maker spaces adjacent to classrooms. Additionally, teacher work spaces and small group breakout rooms will foster opportunities that our current building does not. This will allow for more impactful learning experiences.

4g) Please provide additional information regarding the World Language program and how this program allows/encourages English Learners to participate in courses involving the ELL students primary language. Describe the District's plan to offer the opportunity to ELL students to take World Language courses, if any.

Response: The current schedule allows for some flexibility but it is dependent on the level of the multi-language learners. Students that are at level one require two to three periods of instruction per day, and when coupled with their academic requirements have little room for a world language. Our school population currently has over thirty languages spoken, and a majority of students are level one. As students progress and require fewer periods of multilingual instruction they are given the opportunity to take a World Language course. We also work closely with our multilingual teacher to offer the Seal of Biliteracy exam each spring. We are also creating a Native Speaker Spanish course to meet the needs of a growing population.

4i) Describe the District's plan to include staff and students in potential involvement and encouragement of ideas for the facility upgrades or changes that could enhance their program and promote greater integration with the other programs and students that will be in the proposed facility, if any.

Response: In the spring of 2023 more than seventy teachers and department heads attended meetings with our architects, operations project managers, and educational consultants. Each department also put together a programmatic overview including needs, and adjacencies that they wanted to see in a new or renovated facility. The information gathered provided the planning for the visioning sessions. The three four hour visioning sessions included teachers, students, parents, and community members that created the schematic design that lives within this educational plan. The key takeaways included more project based learning, increased collaboration between staff members, and mini maker/media spaces adjacent to the learning

pods. Additionally, all Special Education programs were consulted to ensure adjacencies to specific programming like occupational and physical therapy rooms.

Agawam High School consistently assesses courses and programs on an annual basis to ensure students have access to challenging, relevant, and interesting courses. Educators and students are doing their best to integrate programs given the current physical plant restraints. They have already identified ways to promote more integration if these restraints were gone. One example is increased access to the 3D printer so that all department courses could benefit from this technology. A student survey could be offered as a more formal way to get input from students on course offerings.

Additionally, provide information that describes whether the guidance counselors follow a student through their four years at Agawam High School or if they change every year. Please consider the advantages and disadvantages of each type of assignment or the possibility of a hybrid model.

Response: Agawam High School has structured the counseling department so that all 9th grade students have one counselor (and one assistant principal). Grades 10-12 students will then stay with the same counselor for the remainder of their high school career. This model allows counselors and students to build a relationship that helps with transitional planning for students. Additionally, counselors are able to establish strong relationships over the three year period. The 9th grade counselor is able to work cohesively with our 9th grade assistant principal. Historically, our 9th grade students have needed tremendous support and the consistency in counseling and administration has proven to be advantageous. A grade-counselor approach would be difficult for counselors to build strong relationships with students and families, and result in a disjointed developmental counseling curriculum.

5) Provide additional information regarding the District's plan to provide professional development opportunities to prepare them to work within a new or renovated facility; including how the district is preparing to effectively utilize the spaces within a renovated or new facility, including detail regarding any current and planned preparations before and after the opening of the proposed project.

Response: Additional professional and curricular development opportunities for Agawam High School teachers began this past summer, as a result of the warning mark on the NEASC report in curriculum. Common core facilitators worked with the building administration and district curriculum staff to identify and prioritize new courses and courses with outdated curriculum for work this past summer. The high school is also using the 2023-2024 school year to plan for curriculum and programmatic changes to the high school experience. Teachers will have the opportunity to visit other schools, learn about potential best practices to bring to Agawam High School, embedding professional development opportunities for staff members throughout the school year.

In addition, please describe whether the District has considered providing additional professional and curricular development opportunities outside of the regular school year that would enable teachers extended time to prepare for changes in the curriculum and structure as a result of the proposed project.

Response: Other professional development topics planned for this year and next include: co-teaching models (best use of classroom pods spaces to support student learning), Project-based learning, and integrating technology into instruction. These topics all support the shift into a new or renovated facility. New facility spaces will be utilized for all district wide professional development.

6) The information provided indicates that the District is proposing to relocate Pre-kindergarten students from an existing off-site Early-Childhood Center (ECC) facility into the proposed high school facility. In response to these review comments, please describe the District's plan for the existing ECC facility.

Response: The existing ECC facility is centrally located at the Perry Lane Park site in Agawam. Current plans for the existing facility is to relocate the Family Resource Center to that location where families can enrollment their children into Agawam Public Schools and access the resources our school system has available to families. Plan include the Family Resource Coordinator, the Social-Emotional Learning Director and Multi Language Learning Director being relocated to this site. Currently, they all have offices in one of our schools, with location not connected to job function.

Additionally, it is noted that some of the site plans provided indicate that the Pre-K program will be proposed in a separate building outside of the proposed high school facility. Please clarify in conjunction with the note above and indicate how this program aligns with any associated Chapter 74 programs.

Response: The PreK building is a separate building part of the overall campus of the new building project. This is intentional so that traffic patterns can be separate and high school programming does not interfere with PreK programming and vice versa. This program is not intended to be Ch 74 programming, yet offer a similar opportunity of that of the innovative pathways programs the High School currently offers; an opportunity for some high school students to intern at the ECC and our child development course to have a direct partnership with our PreK program.

9) The MSBA suggests the District consider providing assisted listening technology in each classroom, as well as general use throughout educational spaces within the proposed project for hearing impaired accessibility. Please acknowledge.

Response: The district acknowledges the recommendation noted above.

Additionally, please provide the following information:

- *Please describe the District's plan for students to use their technology devices at home, if any.*

Response: Agawam High School acknowledges the fact that we will need to provide assisted listening technology in each classroom, and educational spaces throughout the new building.

- *If yes, describe whether the District has a regular program to ensure that all students have access to internet at home.*

Response: Agawam High School is a 1:1 Chromebook school with an IT department and replacement program to get damaged and broken devices in students hands immediately. The

district IT department in conjunction with our Family Resource Center provides information for families about discounted or free Internet services available from local internet service providers.

- *Additionally, please describe any arrangements that are in place to ensure all the devices are properly licensed to use the software required by the curriculum.*

Response: The school administration meets weekly with the Instructional Technology director to review all technology requests out forth by staff. An internal document has a workflow that begins with the teacher and department head, and makes its way through the administrative ranks to ensure the software is appropriate, budgeted for, and in line with school and district goals. We utilize a single sign on system called Clever for all online textbooks, instructional software, and universal screeners.

- *Please confirm whether the technology classes offered are designed to engage both college bound and non-college bound students.*

Response: We can confirm that the technology courses offered are designed to engage both college and career as well as non-college bound students.

Furthermore, the information provided states:

> *"A modern TV studio and production set would allow students to work with up-to-date technologies of digital media creation in the fields of video production, broadcasting, and film production. In our vision the studio would be a classroom of about 850 sq ft with an adjacent studio for the production to occur in. AHS currently produces "Brownie Bits" which are filmed segments that are aired to the school YouTube channel. The ideal plan would be to film a live show that would be aired to the entirety of AHS".*

This space was not included in the space summary provided. Please clarify and coordinate.

Response: The space noted above refers to the 1,200 square foot Digital Lab under the Media Center Category. This space was indicated on the PDP space summary.

10) Provide the following information:

- *Provide additional information associated with professional staffing for the proposed Library/Media Lab.*

Response: Agawam High School has a certified Library Media Specialist on staff.

- *Confirm that professional-level library-science and technical skills will be required by the District's staff to ensure that materials are properly vetted, and users acquire appropriate knowledge and skills in utilizing the technological equipment and services provided.*

Response: The Library Media Specialist creates research websites and resources for classroom teachers to implement. She provides professional development for staff, but many classes do not come to the Library Media Center during the day to engage in research because of its lack of proximity to the rest of the building.

- *Please consider including the library and media professionals in the development and instruction of inter-disciplinary and project-based learning. Please acknowledge.*

Response: Acknowledged

- *Please confirm whether the Library/Media Center will continue to house a selection of printed materials rather than relying solely on the public library to provide printed materials.*

Response: The librarian has created a website that promotes and assists teachers and students with interdisciplinary projects and project based learning. We can confirm that the Library Media Center budget is designed to continually acquire resources and materials, including selections of texts in each location. All resources are vetted and chosen in accordance with best practices and School Committee policies.

11) Provide additional information regarding the proposed changes in staffing, curriculum, and educational activities in the District's visual arts programs that will need to be supported by the proposed project. Also, describe potential adjacencies and common planning time relating to these programs. Please note that art storage should include secure and appropriately ventilated space for toxic and hazardous materials as well as an accessible file of SDS (safety data sheets). Please acknowledge.

Response: We are not changing our staffing models. Currently there are three full time art teachers due to the growth and variety of offerings available to students. The district acknowledges the art storage will be secure, properly ventilated and safety data sheets accessible.

Additionally, please consider providing a safety light at the entrance to the kiln room that automatically turns on with the kiln and/or kiln room lights are turned on.

12) Please provide the following information:

- *The information provided suggests incorporating a Music Technology/Piano Lab. However, the MSBA notes that this space was not included in the space summary provided. Please clarify and coordinate.*

Response: A dedicated space for Music Technology/Piano Lab is not required. This activity can occur within the Practice Rooms and/or the Band Room noted under the Art & Music category on the space template.

- *As the project further develops, please consider the appropriate adjacency or accessibility for design and construction of sets, especially if the visual arts classes participate in this type of activity.*

Response: We have considered and will create a design that will allow access for visual arts classes.

- *Please confirm whether sheet music will be used as part of the Performing Arts program. If so, consider providing appropriate storage for these materials.*

Response: Yes, sheet music will be used as part of the Performing Arts Program. Our design will provide ample storage for the sheet music.

13) The information provided suggests incorporating a Fitness Center/Strength and Conditioning facility large enough for up to (50) people. However, the MSBA notes that this space was not included in the space summary provided. Please clarify and coordinate. Please provide additional information regarding proposed adjacencies of the spaces listed above and describe proposed scheduling, staffing, and overall utilization of these spaces.

Response: The activity noted above, Fitness Center/Strength and Conditioning, occurs in the PE Alternative Space noted under the Health & Physical Education category on the space template.

18) In response to these review comments, please confirm that first-responding emergency representatives will continue to be consulted in the planning process and associated requirements will be incorporated into the Preferred Schematic.

Response: First-responding emergency representatives will be consulted during the Preferred Schematic Design Phase.

No further review comments for this section.

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 summary for new construction and offers the following:

- ***Core Academic*** *– The overall proposed square footage for this category exceeds the MSBA guidelines by 1,540 net square feet ("nsf"). Based on the information provided, the following spaces have been proposed in order for the District to deliver its educational program:*

Anticipated Core Academic Spaces	***Grades 9-12 for 955 Students***		
	Proposed No. Rooms	*MSBA Guidelines No. Rooms*	*Variance*
General Classrooms	*32*	*32*	*0*
Business Classroom	*1*	*0*	*+1*
ESL Classroom	*1*	*0*	*+1*
Teacher Planning	*4*	*32*	*-28*

Small Group Seminar	*2*	*2*	*0*
Science Classrooms / Lab	*9*	*9*	*0*
Prep Room	*9*	*9*	*0*
Central Chemical Storage Room	*1*	*1*	*0*
Health Pathway	*1*	*0*	*+1*

The District is proposing the following spaces:

- ***General Classrooms*** *– The District is proposing (32) 850 nsf General Classrooms, totaling 27,200 nsf, which is below the MSBA guidelines by 1,600 nsf. As the project further develops, please note and acknowledge that 825 nsf is the minimum size for all newly constructed General Classrooms in a high school.*

Response: The district acknowledges the minimum size for a general classroom is 825 nsf. This project is currently tracking 850 nsf for all general classrooms.

- ***Business Classroom –*** *The District is proposing (1) 850 nsf Business Classroom, which exceeds MSBA guidelines. In response to these review comments, provide additional information that describes the scheduling, staffing, and overall utilization of this space.*

Response: Starting with the class of 2027, all AHS students must take personal finance to fulfill their graduation requirements. We currently have 3 full time business teachers that require access to a classroom throughout the day. This requires us to fulfill 15 periods. Two classrooms will provide room utilization for fourteen periods and we will exceed 100% of each school day, while the remaining period will float into another space.

- ***English as a Second Language (ESL) Classroom –*** *The District is proposing (1) 850 nsf ESL Classroom, which exceeds MSBA guidelines. In response to these review comments, provide additional information that describes the scheduling, staffing, and overall utilization of this space.*

Response: Like many neighboring districts Agawam High School has a large increase in the number of ESL students. These students come from a variety of countries including, Ukraine, Russia, Latin America, Turkey, Afghanistan, Africa, Moldova, etc. Currently, we have 31 different languages spoken. Many of our English learners are Level 1, and require multiple periods per day of English Language instruction. In order to best serve our students, we have increased our staffing to include another ELL teacher. Due to the fact that we are teaching 10 periods of ELL instruction per day, one classroom is not enough to meet the needs of our students.

- ***Teacher Planning*** *– The District is proposing (4) 800 nsf Teacher Planning areas totaling 3,200 nsf, which meets the MSBA guidelines. No further preliminary comments.*

Response: Acknowledged.

- ***Small Group Seminar (20-30 seats)*** *– The District is proposing (2) 500 nsf Small Group Seminar areas totaling 1,000 nsf which meets the MSBA guidelines. No further preliminary comments.*

Response: Acknowledged.

- ***Science Classroom / Lab*** *– The District is proposing (9) 1,440 nsf Science Classrooms/Labs totaling 12,960 nsf, which meets the MSBA guidelines. No further preliminary comments.*

Response: Acknowledged.

- ***Prep Room*** *– The District is proposing (9) 200 nsf Prep Rooms totaling 1,800 nsf, which meets the MSBA guidelines. No further preliminary comments.*

Response: Acknowledged.

- ***Central Chemical Storage Room*** *– The District is proposing (1) 200 nsf Central Chemical Storage Room, which meets the MSBA guidelines. No further preliminary comments.*

Response: Acknowledged.

- ***Healthcare Pathway*** *– The District is proposing (1) 1,440 nsf Healthcare Pathway Classroom, which exceeds MSBA guidelines. In response to these review comments, provide additional information that describes the scheduling, staffing, and overall utilization of this space.*

Response: The Healthcare Pathway, in its third year, continues to grow. The room will be utilized throughout the day for Pathway students. There is one full time teacher for the pathway, and other teachers being considered to teach additional sections as the pathway grows.

- ***Special Education*** *– The overall proposed square footage for this category exceeds the MSBA guidelines by 4,450 nsf. 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.*

Response: Acknowledged.

- ***Art & Music / Vocations & Technology*** *– The overall proposed square footage for the combined categories exceeds the MSBA guidelines by 150 nsf. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district acknowledges the 150 nsf within this category is ineligible for reimbursement.

- ***Health & Physical Education*** *– The overall proposed square footage for this category exceeds the MSBA guidelines by 2,265 nsf. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement. Additionally, please refer to the attached memo regarding MSBA's policy on physical education square footage exceeding the MSBA guidelines.*

Response: The district acknowledges the 2,265 nsf within this category is ineligible for reimbursement.

- ***Media Center*** *– The proposed square footage for this category meets the MSBA guidelines. No further preliminary comments.*

Response: Acknowledged.

- ***Auditorium/Drama*** *– The proposed square footage for this category exceeds the MSBA guidelines by 200 nsf. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement. Additionally, please refer to the attached memo regarding MSBA's policy on auditorium square footage exceeding the MSBA guidelines.*

Response: The district acknowledges the 200 nsf within this category is ineligible for reimbursement.

- ***Dining & Food Service*** *– The proposed square footage for this category meets the MSBA guidelines. No further preliminary comments.*

Response: Acknowledged.

- ***Medical*** *– The proposed square footage for this category meets the MSBA guidelines. No further preliminary comments.*

Response: Acknowledged.

- ***Administration & Guidance*** *– The overall proposed square footage for this category exceeds the MSBA guidelines by 690 nsf. The MSBA will consider the (1) 150 nsf School Resource Officer office eligible for reimbursement. However, please note and acknowledge the remaining 540 nsf exceeding the MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district acknowledges the 540 nsf within this category is ineligible for reimbursement.

- ***Custodial & Maintenance*** *– The proposed square footage for this category meets the MSBA guidelines. No further preliminary comments.*

Response: Acknowledged.

- ***Other*** *– The District is proposing 19,940 nsf which exceeds the MSBA guidelines. The District is proposing the following spaces:*
    - ***Pre-Kindergarten Classroom (with Toilet)*** *– The District is proposing (8) 1,260 nsf Pre-Kindergarten Classrooms (with toilet) totaling 10,080 nsf, which exceeds the MSBA guidelines. The District's pre-kindergarten Students are not currently housed within the existing High School and an interest in including the pre-kindergarten students from the District's Early Childhood Center was not introduced during the conversations conducted prior to the District's invitation into the grant program. Therefore, the MSBA will not object to these spaces being included in the proposed project, however, all square footage associated with the pre-kindergarten program will be considered ineligible for reimbursement.*

Response: The District strongly disagrees with this statement and has reached out to the MSBA to clarify that pre-k was part of the plan from the beginning of the process.

- *Additionally, the information provided as part of the Preliminary Evaluation of Alternatives indicates that the Pre-Kindergarten spaces will either be within an addition/renovation or just a renovation to the existing building. However, the Space Summary provided shows all spaces that comprise the Pre-Kindergarten as new construction. In response to these review comments, please clarify and as part of the PSR submittal update the space summary accordingly.*

Response: Updated space summaries will be provided in the PSR submission.

- ***Pre-Kindergarten Waiting*** *– The District is proposing (1) 150 nsf Pre-Kindergarten Waiting Area, which exceeds the MSBA guidelines. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district is working with the MSBA to clarify the pre-k scope.

- ***Pre-Kindergarten Conference*** *– The District is proposing (1) 300 nsf Pre-Kindergarten Conference Area which exceeds the MSBA guidelines. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district is working with the MSBA to clarify the pre-k scope.

- ***Pre-Kindergarten Offices*** *– The District is proposing (3) 150 nsf Pre-Kindergarten Offices, which exceeds the MSBA guidelines. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district is working with the MSBA to clarify the pre-k scope.

- ***Pre-Kindergarten Support*** *– The District is proposing (1) 300 nsf Pre-Kindergarten Support Space, which exceeds the MSBA guidelines. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district is working with the MSBA to clarify the pre-k scope.

- ***Pre-Kindergarten Nurse –*** *The District is proposing (1) 200 nsf Pre-Kindergarten Nurse area, which exceeds the MSBA guidelines. In response to these review comments, please further describe staffing and location of proposed space.*

Response: The district is working with the MSBA to clarify the pre-k scope.

- ***IT Department*** *– The District is proposing (1) 1,400 nsf IT Department which exceeds the MSBA guidelines. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district acknowledges the 1,400 nsf for the IT Department is ineligible for reimbursement.

- ***Special Services*** *– The District is proposing (1) 2,860 nsf Special Services Area which exceeds the MSBA guidelines. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district acknowledges the 2,860 nsf for the Special Services is ineligible for reimbursement.

- ***Green House*** *– The District is proposing (1) 1,400 nsf Greenhouse which exceeds the MSBA guidelines. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district acknowledges the 1,400 nsf Greenhouse is ineligible for reimbursement.

- ***Large Group Instructional Presentation Space-*** *The District is proposing (1) 2,800 nsf Large Group Instructional Presentation Space which exceeds the MSBA guidelines. Please note and acknowledge that square footage exceeding MSBA guidelines will be considered ineligible for reimbursement.*

Response: The district acknowledges the 2,800 nsf Large Group Instructional Presentation Space is ineligible for reimbursement.

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.

Response: Acknowledged.

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.	☐	☒	☐	☐
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:

3) The information provided indicates a Project Notification Form ("PNF") has been submitted to the Massachusetts Historical Commission ("MHC") and is scheduled to receive the completed report in August of 2023. Please confirm the status and note MHC approval is required prior to construction bids. Additionally, 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. Please acknowledge.

Response: The Project Notification Form was submitted to the MHC on September 19, 202 and is appended to the end of this response document. The team acknowledges that MCH approval is required prior to construction bids and will inform the MSBA of any decisions and/or proposed actions.

5, 6) Please note that although the 2015 International Building Code ("IBC") and 2018 International Energy Conservation Code ("IECC") are in effect as the basis for the current 9th

edition of the Massachusetts Building Code, a 10th edition of the Massachusetts Building Code based on the 2021 IBC and 2021 IECC (including any MA amendments) is pending. In response to these review comments, the design team should review the project's anticipated permit date based on the project schedule and verify coordination with the code analysis and all systems basis of design in subsequent phases.

Response: With an anticipated permit date of June 2025, the design team will be designing to the 10th Edition of the Massachusetts State Building Code, including the Stretch Energy Code.

8) The information provided on page 483 states:

> *"Lahlaf Geotechnical Consulting, (LGCI) engaged Northern Drill Service Inc. (NDS) of Northborough, Massachusetts to advance nine (9) soil borings (B-1 and B-9) at the site of the proposed Agawam High School on July 17 and 18, 2023."*

However, the report was not included in the submittal. In response to these review comments, please provide the Geotechnical report and any recommendations for further soil exploration, if any.

Response: The geotechnical report is complete and is appended to the end of this response document.

Additionally, in response to these review comments, provide the timeline associated with any additional site work and note 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. Please acknowledge.

Response: The design team acknowledges the above comment.

9) The information provided states: "Hazardous material assessment will be done by the end of August 2023". Please confirm the status and note that work associated with the removal of fuel storage tanks and associated contaminated soil is considered ineligible for reimbursement. Please acknowledge.

Response: The design team acknowledges the above comment.

10) The information provided states: "The Phase I Environmental Site Assessment will be conducted by the end of August 2023". Please confirm the status and note that all costs associated with the removal of flooring and ceiling materials containing asbestos are ineligible for MSBA reimbursement. The project team should be aware of the current policies associated with MSBA's participation in the abatement and removal of hazardous materials. Additionally, note that work associated with the removal of associated contaminated soil and materials are considered ineligible for reimbursement. Please acknowledge.

Response: The district acknowledges work associated with removal of contaminated soil and materials is considered ineligible for reimbursement.

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) In response to these review comments, please provide the following information:

- *Describe how potential site constraints are impacting the design options explored in the Preliminary Evaluation of Alternatives section.*

Response: The site is bound by wetlands to the North and residential to the West, South and East with established athletic fields to the West and North and an existing school building that monopolizes the center of site. The design alternatives respond by utilizing the available area while minimizing the impact of construction on the existing school.

- *Describe how the number of on-site parking spaces for staff, student drivers, and visitors will be determined.*

Response: The number of spaces will be based on the historical use observed by the District and the projected needs of the staff and students with the additional needs of the proposed Pre-K incorporated.

- *Describe how parking requirements for other school needs, such as, after-hours athletic/performance needs, and/or local zoning requirements will be determined.*

Response: The number of spaces will be based on the historical use observed by the District and the projected needs of the athletic fields and other after-hours uses. The parking will be distributed throughout the site to help support the various uses and mobility needs of attendees. The number and distribution of parking spaces will be an ongoing conversation with the District, town departments and planning board. Samiotes Engineering, VHB, and Terraink all have provided observations regarding the existing parking in the PDP report.

- *Provide the proposed timeline associated with any permits, filings, reviews, and any other regulatory requirements.*

Response: The Permitting time scale is estimated to take up to 6 to 10 months.

- ***Agawam Conservation Commission & DEP: approximately 3-6 Months***
- ***Agawam Stormwater Permit (submitted to DPW prior to Site Plan Approval): approximately 3-6 Months***
- ***Agawam Planning Board – _Site Plan Approval Permit: 3-6 Months***
- ***Agawam DPW: approximately 45-90 Days***
- ***NPDES/SWPPP: approximately 14 Days by GC, prior to commencing construction.***

- ***MassDOT: approximately 4-9 Months***

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

Response: The information noted above will be indicated in the PSR submission.

2) In response to these review comments, provide the following:

- *Circulation diagrams that identify the existing:*
    - *Bus and parent drop-off/pick-up locations;*
    - *Vehicular and pedestrian circulation; and*
    - *Emergency vehicle access.*

Response: The requested diagrams are attached.

In the subsequent PSR submittal, provide site plans in 11"x17" format that clearly identify the following features for the site of the Preferred Schematic:

- *Structures and fences;*
- *Site access and circulation:*
    - *Bus and parent drop-off/pick-up locations;*
    - *Vehicular and pedestrian circulation; and*
    - *Emergency vehicle access.*
- *Parking and paving;*
- *Accessibility requirements;*
- *Easements;*
- *Wetlands and/or flood restrictions;*
- *Emergency vehicle access;*
- *Safety and security requirements;*
- *Utilities and drainage; and,*
- *Site orientation and other location considerations.*

Response: Items noted above will be addressed in the PSR submission.

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:

6) The information provided indicates "Options 1A, 1B, and 1C" are new construction options. However, each of these options includes a renovation component for the proposed Pre-Kindergarten program. Please note and acknowledge that the MSBA considers these options addition/renovation options. 7) As part of the Preliminary Evaluation of Alternatives, the District explored the following (8) options at the existing Agawam High School site. Please note that the information provided does not conclude with the options the District intends to further develop in the PSR submittal. Subsequent to receiving the submittal the OPM clarified that the District intends to continue to study all eight options as part of the PSR submittal.

Response: Acknowledged.

- ***Option 1****: Code upgrade at the existing Agawam High School facility for 955 students in grades 9-12, with an estimated construction cost of $125 million.*
- ***Option 1A****: New construction (Academic Wings to the North) for 955 students grades 9-12 on the site of the existing high school, with renovation/addition of Pre-Kindergarten, with an estimated construction cost of $186 million.*
- ***Option 1B****: New construction (Academic Wings to the East) for 955 students grades 9-12 on the site of the existing high school. However, this option also includes renovating a portion of the existing school to house the District's Pre-Kindergarten. This option has an estimated construction cost of $185 million.*
- ***Option 1C****: New construction for 955 students in grades 9-12 on the site of the existing high school. However, this option also includes renovating a portion of the existing*

school to house the District's Pre-Kindergarten Program. This option has an estimated construction cost of $186 million.

- ***Option 2A**: Addition (75%) and renovation (25%) (Academic Wings on the east) at the existing Agawam High School facility for 955 students grades 9-12, with the renovation of Pre-Kindergarten, with an estimated construction cost of $181.8 million.*
- ***Option 2B**: Addition (75%) and renovation (25%) (Academic wings in internal Courtyards) at the existing Agawam High School facility for 955 students grades 9-12, with the renovation of Pre-Kindergarten, with an estimated construction cost of $184.2 million.*
- ***Option 3A**: Addition (50%) and renovation (50%) at the existing Agawam High School facility for 955 students in grades 9-12, with the renovation of Pre-Kindergarten, with an estimated construction cost of $185.8 million.*
- ***Option 3B:** Addition (50%) and renovation (50%) at the existing Agawam High School facility for 955 students for grades 9-12, with the renovation of Pre-Kindergarten, with an estimated construction cost of $183.7 million.*

As part of the PSR submittal the MSBA requires that the District continue to explore the following options:

- *A code upgrade option ("Option 1") at the existing Agawam High School;*
- *At least (1) addition/renovation option at the existing Agawam High School; and,*
- *At least (1) new construction option at the existing Agawam High School site that does not include a separate renovated Pre-kindergarten program.*

Response: A new alternative will be developed with a new construction Pre-kindergarten wing.

In response to these review comments, please indicate which options the District intends to further evaluate as part of its PSR submittal and provide detailed narratives that describe why other options, if any, were eliminated from further consideration. Please note, the final evaluation of alternatives included in the PSR submittal must include at least one code upgrade option, one renovation and/or addition option that maximizes the use of the existing facility, and at least one new construction option. Please acknowledge.

Response: The district acknowledges the required alternatives for study during this phase.

Additionally, as part of the District's PSR submittal please provide the following information:

- *Floor plan diagrams that include a key/legend for clarity that showcases all the spaces with adjacencies to further understand the connections of the proposed spaces.*

Response: The design team acknowledges the recommendation above.

- *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: The design team acknowledges the recommendation above.

- *Please continue to use the same naming convention of options in subsequent submittals. Please acknowledge.*

Response: The naming convention will remain the same in subsequent submittals.

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:

No review comments for this section.

Additional Comments:

- *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.*

Response: Acknowledged.

- *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.*

Response: Acknowledged.

Regarding Past Projects:

MSBA records do not indicate previous grants associated with Agawam High School.

End

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: New or Renovated Agawam High School

Location / Address: 760 Cooper Street

City / Town: Agawam

Project Proponent

Name: Agawam Public Schools

Address: 1305 Springfield Street, Suite 1

City/Town/Zip/Telephone: Feeding Hills MA, 01030

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)
Massachusetts School Building Authority	School Building Grant
MassDOT	State Highway Access Permit - Driveway & Utility Connections
MA NHESP / US Fish & Wildlife IPAC	Concurrence Letter for Endangered Species Determination

Project Description (narrative):
The proposed project includes either renovation/additions to Agawam High School or reconstruction of a new high school on the campus. The existing campus serving grades 9-12 and consists of wings built in 1955, 1961, 1979, 1995 and a renovation in 2001. The building is under significant strain to meet the academic needs of the school and is disjointed due to the sprawling nature of the many additions. The building is being evaluated as part of a feasibility study for the MSBA.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.
Depending on the final selection, some or all of the existing Agawam High School will be demolished. Two site plans have been attached illustrating the options under consideration by the Agawam School Building Committee. This includes one extensive renovation/addition and one new construciton.

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.
Depending on the final scheme selected, the project may include extensive renovation to part of the building, including retaining the structural frame of the buildings and replacing the building systems and interior finishes.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).
Yes, a new addition may be constructed to supplement renovated space (Option 2B). One option proposes new construction in another area of the site and is under consideration as well (Option 1C).

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.

No.

What is the total acreage of the project area?

Woodland_____ acres	Productive Resources:
Wetland __0_____ acres	Agriculture __0_____ acres
Floodplain _ 0_____ acres	Forestry __0_____ acres
Open space__36.23_____ acres	Mining/Extraction __0_____ acres
Developed _5.42_____ acres	Total Project Acreage _41.65___ acres

What is the acreage of the proposed new construction? _____+/- 10_____ acres **What is the present land use of the project area?**

Project area currently houses the existing Agawam High School building, associated parking, a greenhouse, and athletic fields.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.
USGS map is attached.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: _____ Date: _____

Name: __Kent Kovacs, Flansburgh Architects_____

Address: __77 North Washington Street _____

City/Town/Zip: __Boston, MA 02114_____

Telephone: __617-367-3970_____

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

Agawam High School Site, 760 Cooper Street, Agawam, MA

South Entry

Aerial View of Campus

West Facade Classroom Wing

Lower Level East Facade

Courtyard with Greenhouse

USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

WEST SPRINGFIELD QUADRANGLE
MASSACHUSETTS - CONNECTICUT
7.5-MINUTE SERIES

SITE LOCATION

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 18T

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, August 2018 - November 2018
Roads..... U.S. Census Bureau, 2018 - 2018
Names.....GNIS, 1974 - 2020
Hydrography.....National Hydrography Dataset, 2004 - 2021
Contours.....National Elevation Dataset, 2018
Boundaries.....Multiple sources; see metadata file 2018 - 2019

Wetlands.....FWS National Wetlands Inventory 2008 - 2010

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
XM
Grid Zone Designation 18T

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

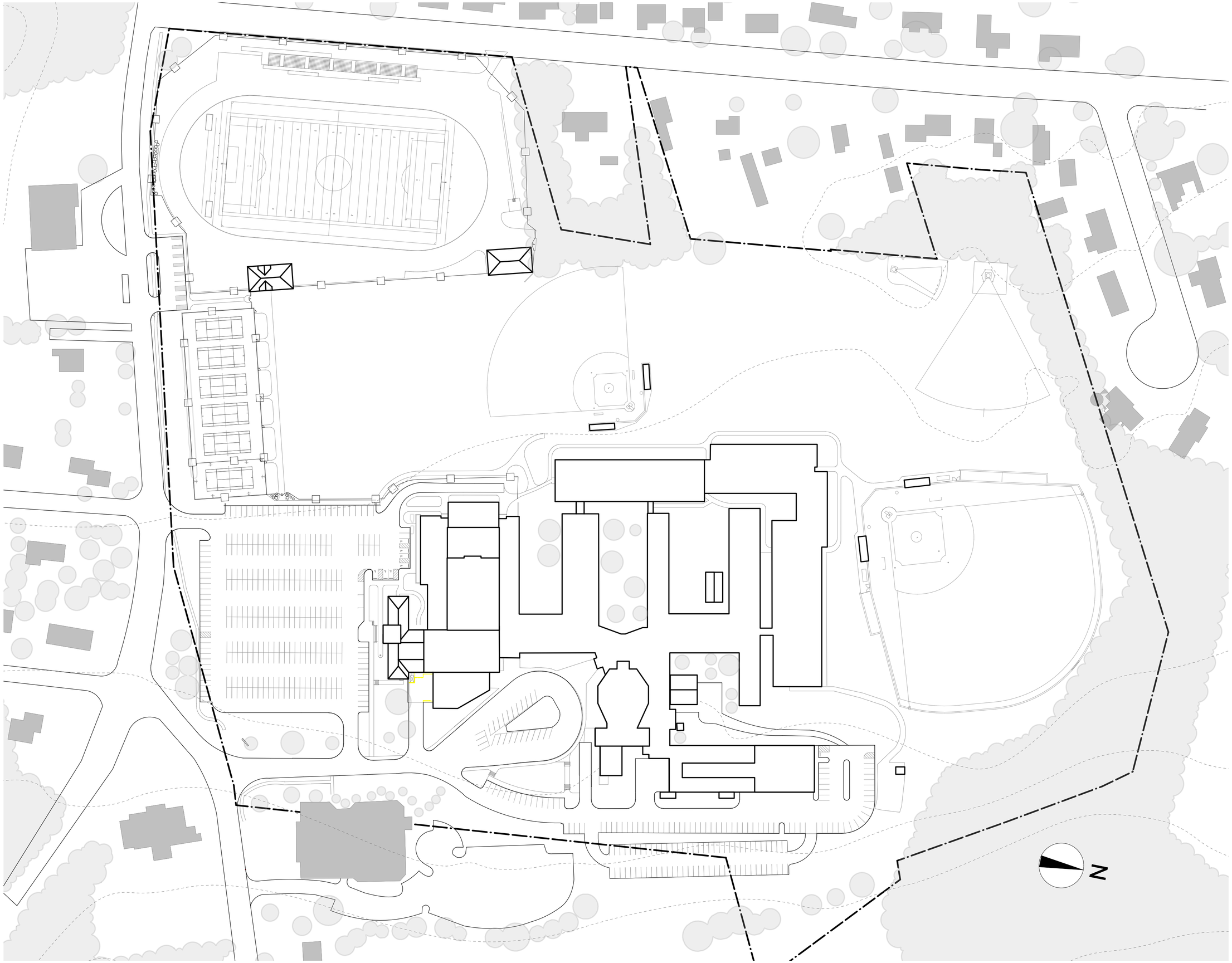
QUADRANGLE LOCATION

ADJOINING QUADRANGLES
1 Woronoco
2 Mount Tom
3 Springfield North
4 Southwick
5 Springfield South
6 Tariffville
7 Windsor Locks
8 Broad Brook

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

WEST SPRINGFIELD, MA, CT
2021

NSN 7643016369677
NGA REF NO. USGSX24K48347



Site

Scale: 1" = 100'-0"

Option 1C - New Construction

Summary

New High School	215,300 SF
Pre-K	17,500 SF
Total	232,800 SF

(1,400 SF included in school for greenhouse)

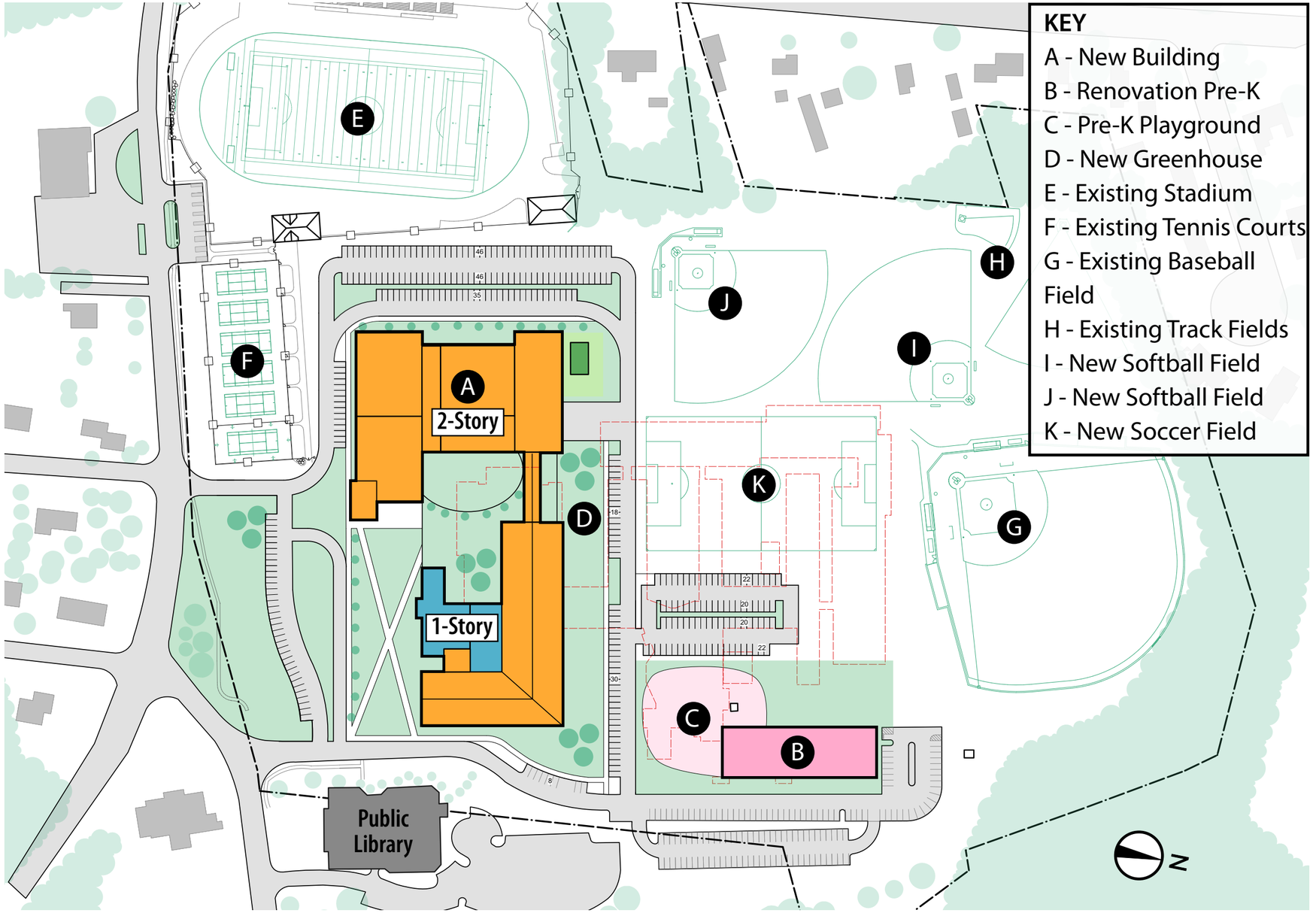
New Construction	87%
Renovation to Existing	13%

Construction Duration

Building:	28 Months
Site + Pre-K:	6 Months
Total	34 Months

Phasing Descriptions

- New construction would occur in two phases.
- The gym, cafeteria and auditorium will be built in phase 1 to maintain continuous use.



LeftField THE RIGHT CHOICE IN PROJECT MANAGEMENT FLANSBURGH

Option 2A - Addition/Renovation

Summary

New High School	215,300 SF
Pre-K	17,500 SF
Total	232,800 SF

(1,400 SF included in school for greenhouse)

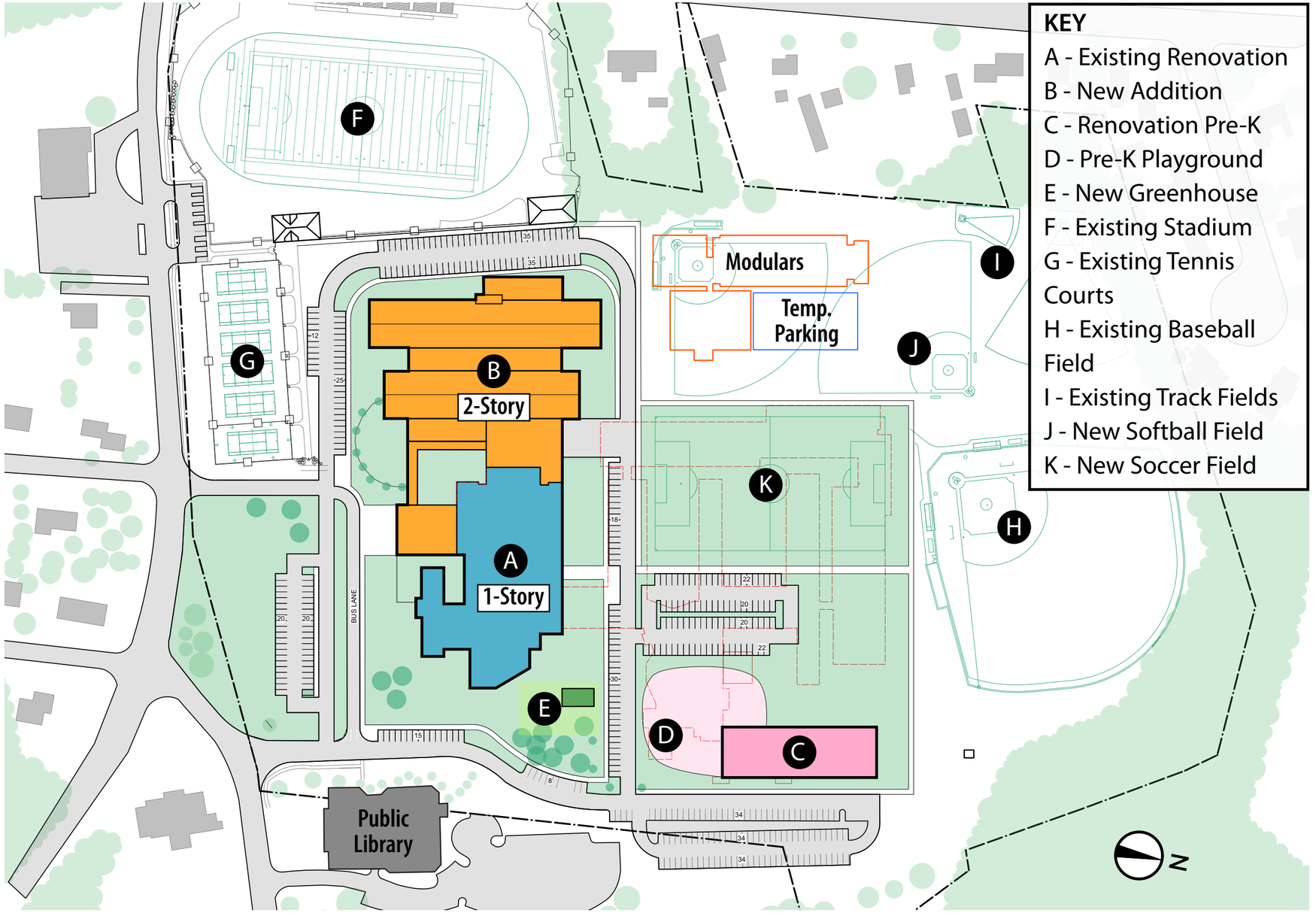
New Construction	69%
Renovation to Existing	31%

Construction Duration

Building:	36 Months
Site + Pre-K:	4 Months
Total	40 Months

Phasing Descriptions

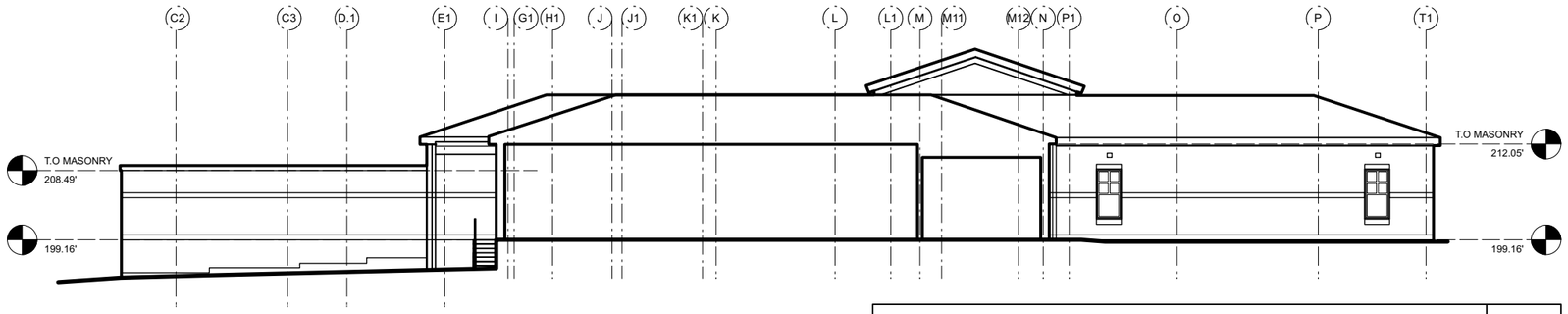
- Construction would occur in three phases.
- The gym and cafeteria will be built in phase 1 to maintain continuous use.
- Auditorium would be offline.



KEY

A - Existing Renovation
B - New Addition
C - Renovation Pre-K
D - Pre-K Playground
E - New Greenhouse
F - Existing Stadium
G - Existing Tennis Courts
H - Existing Baseball Field
I - Existing Track Fields
J - New Softball Field
K - New Soccer Field

LeftField THE RIGHT CHOICE IN PROJECT MANAGEMENT FLANSBURGH



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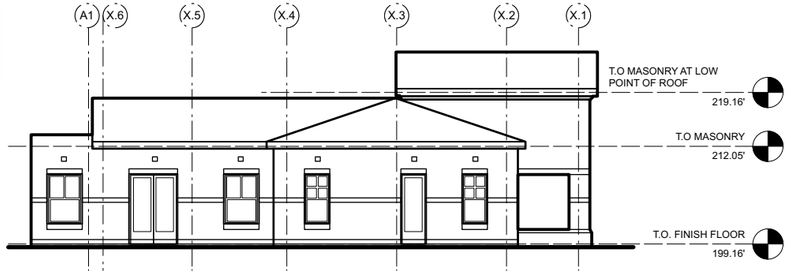
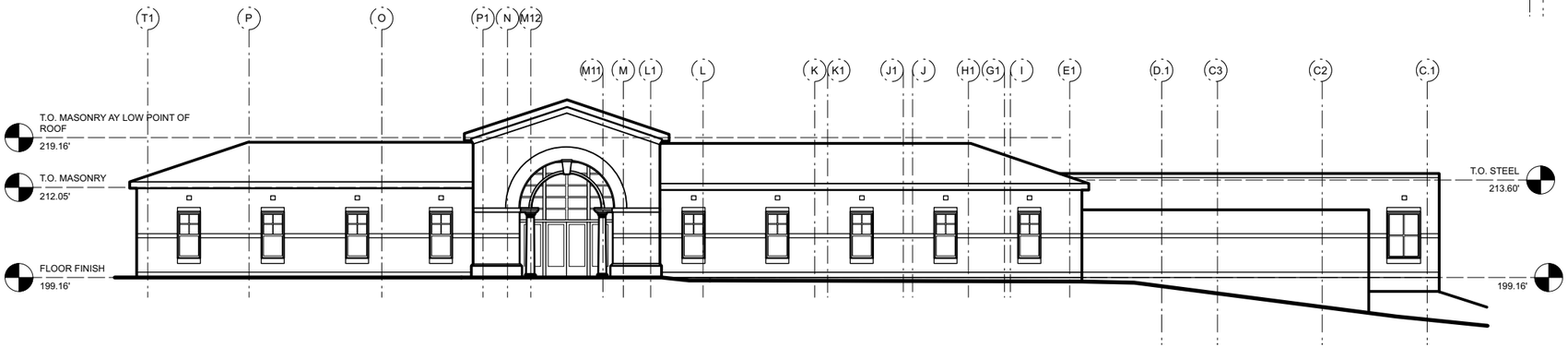
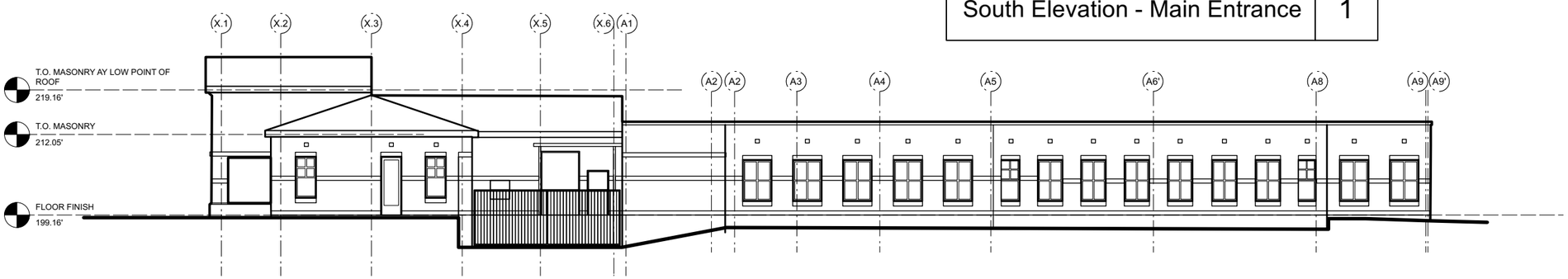


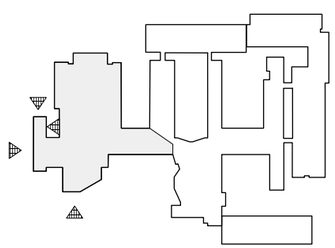
West Elevation - Main Entrance | 1



South Elevation - Main Entrance | 1

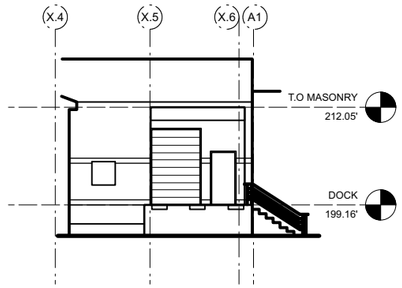


East Elevation - Main Entrance | 1

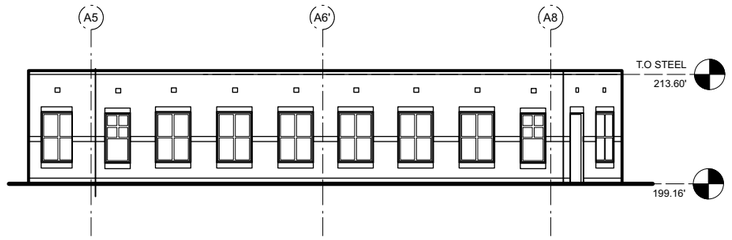


Section A
Exterior Elevations

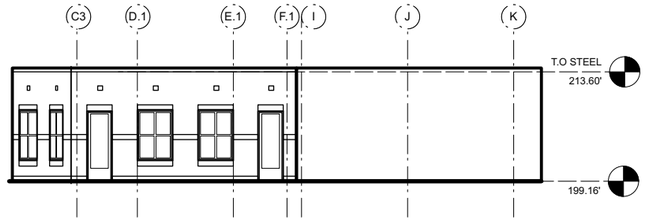
Scale1:240



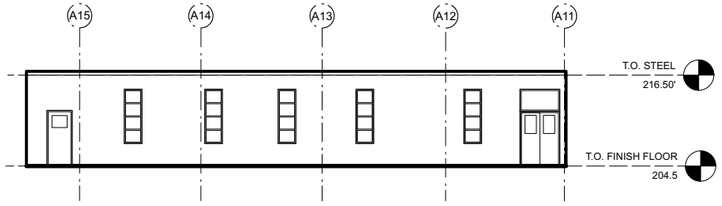
East Elevation at Receiving	1



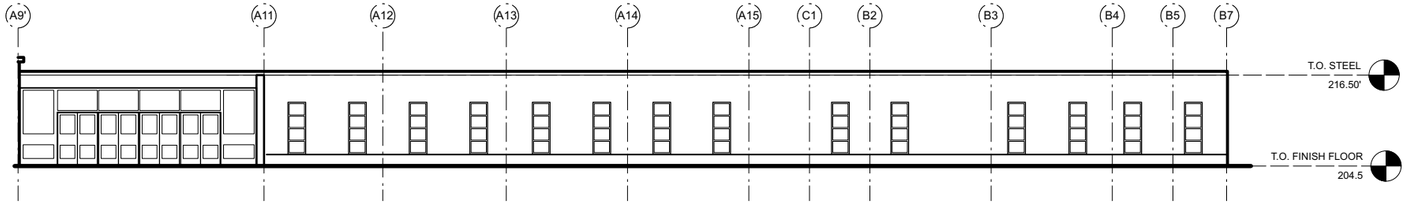
Elevation at Splayed Cafeteria Wall	1



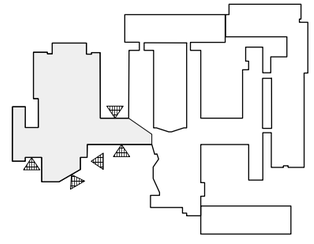
North Elevation at Cafeteria	1



West Elevation Main Wing	1

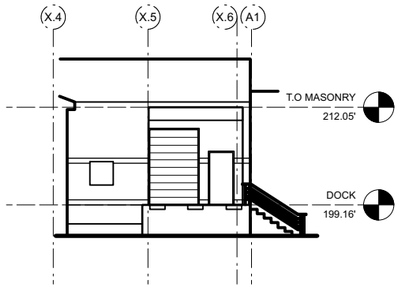


East Elevation Main Wing	1

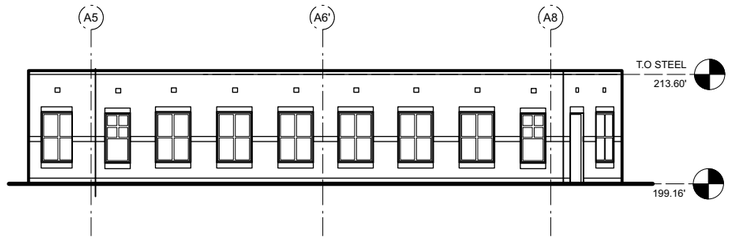


Section A
Exterior Elevations

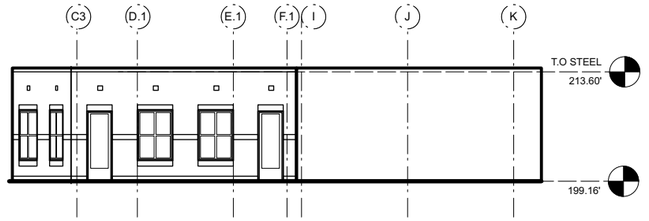
Scale1:240



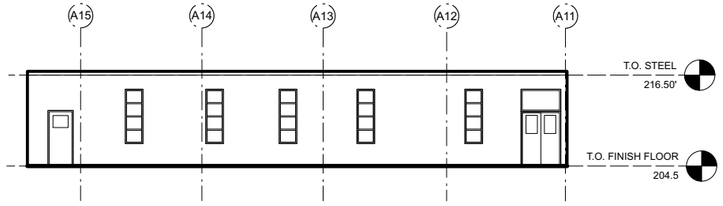
East Elevation at Receiving | 1



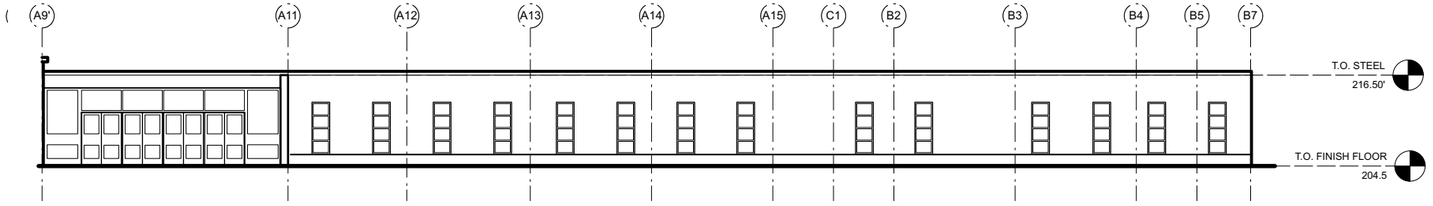
Elevation at Splayed Cafeteria Wall | 1



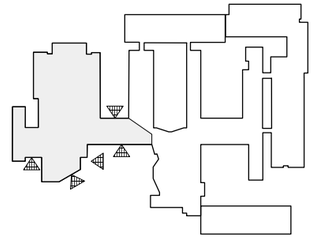
North Elevation at Cafeteria | 1



West Elevation Main Wing | 1

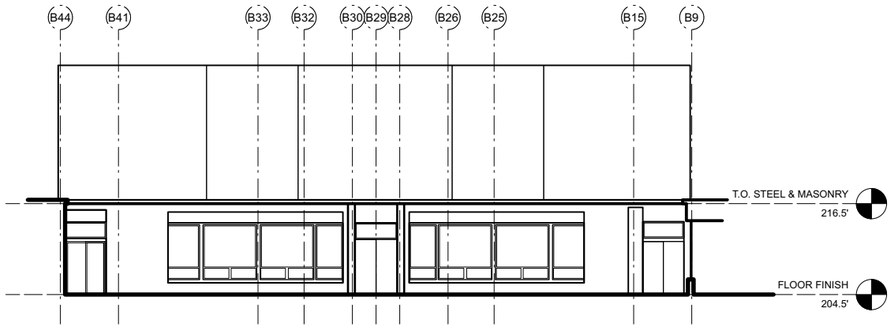


East Elevation Main Wing | 1

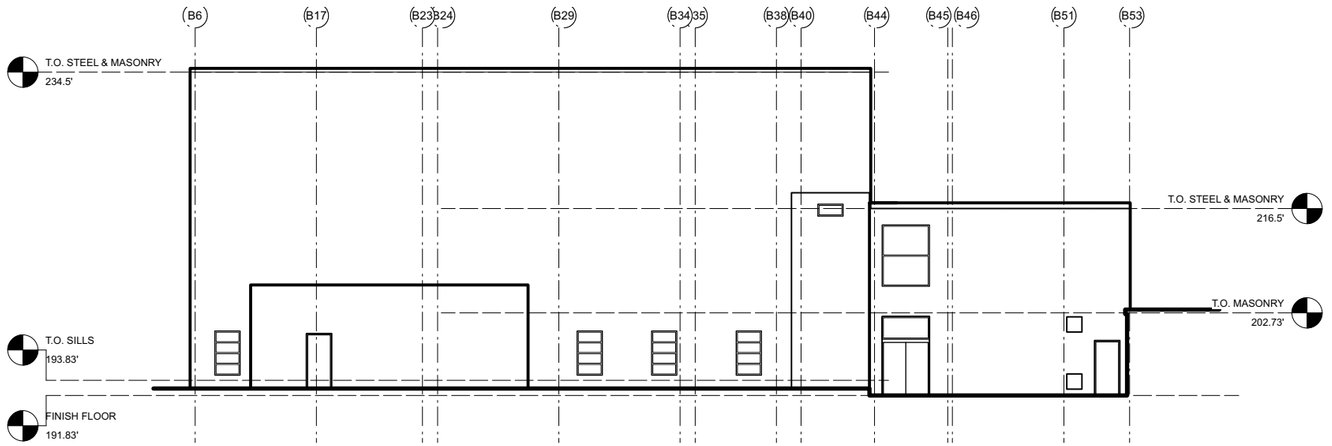


Section A
Exterior Elevations

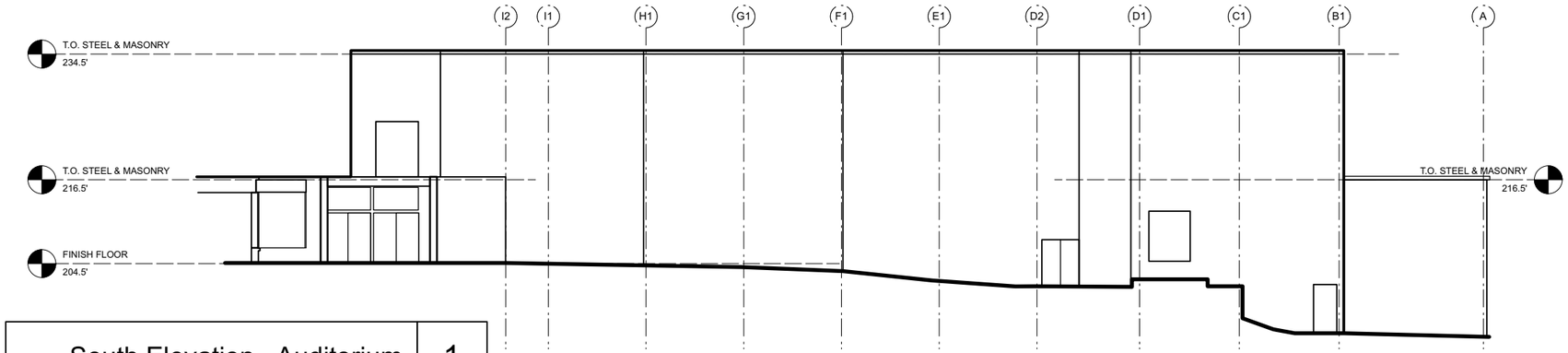
Scale1:240



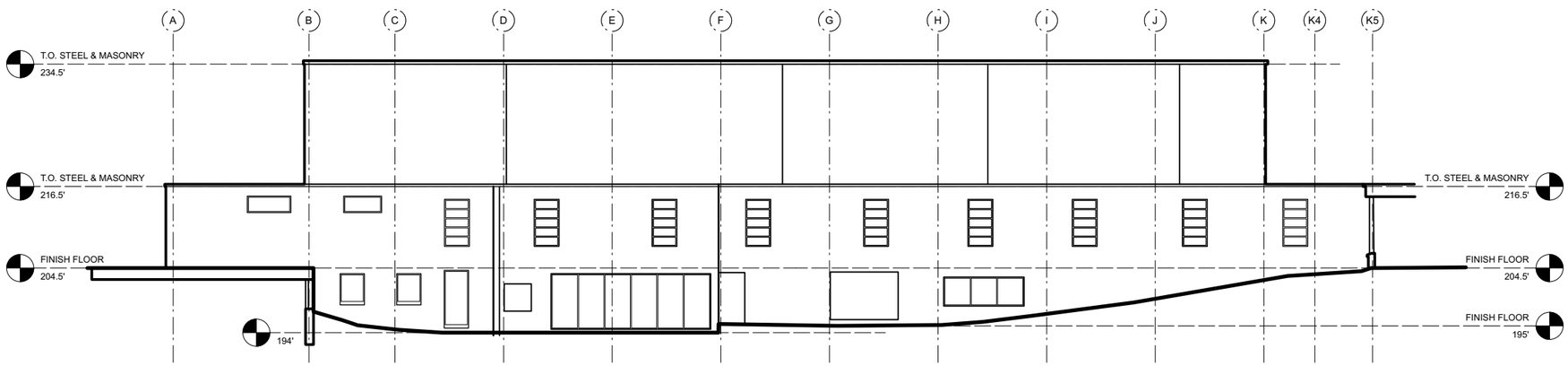
West Elevation - Auditorium | 1



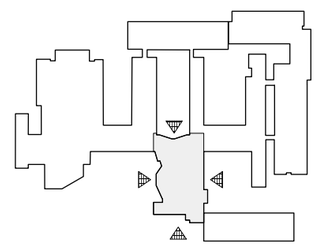
East Elevation - Auditorium | 1



South Elevation - Auditorium | 1

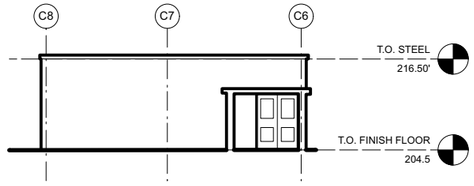


North Elevation - Auditorium | 1

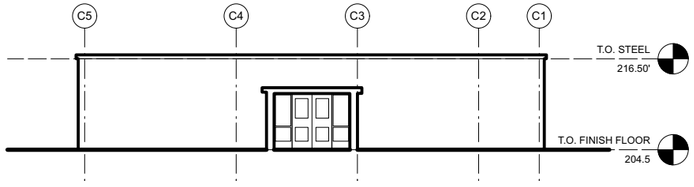


Section B
Exterior Elevations

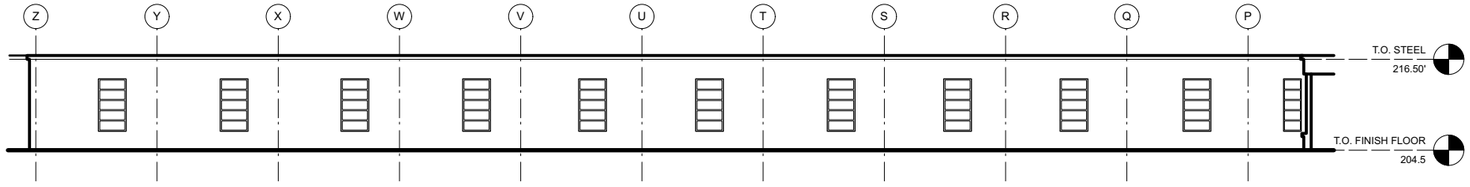
Scale1:240



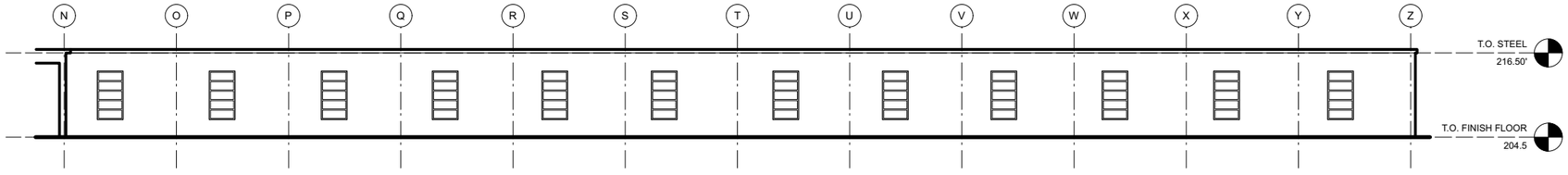
West Elevation of Section C North Wing	1



West Elevation of Section C South Wing	1



South Elevation of Section C South Wing	1



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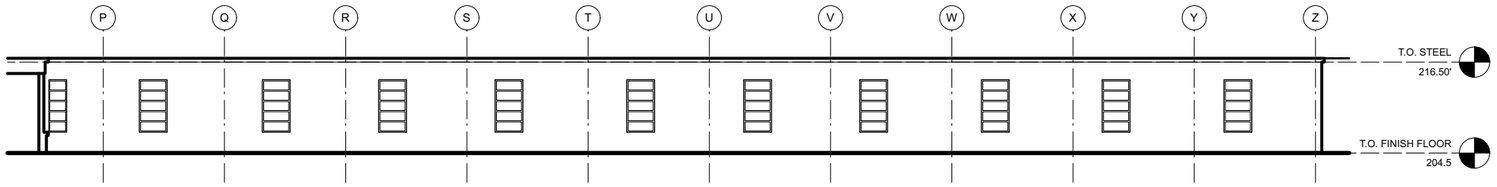
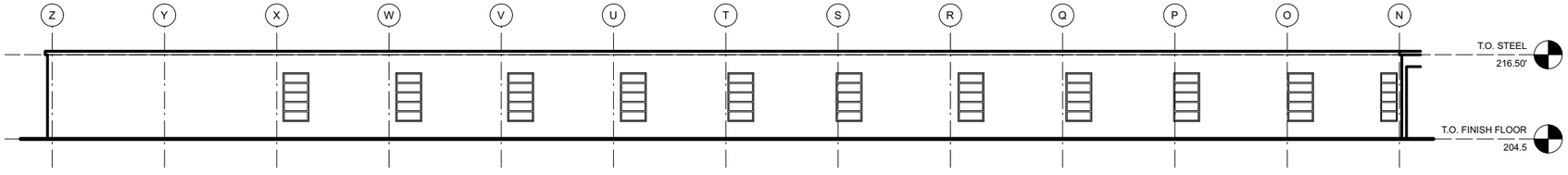
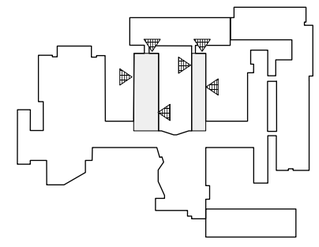


North Elevation of Section C North Wing	1



South Elevation of Section C North Wing	1



Section C
Exterior Elevations

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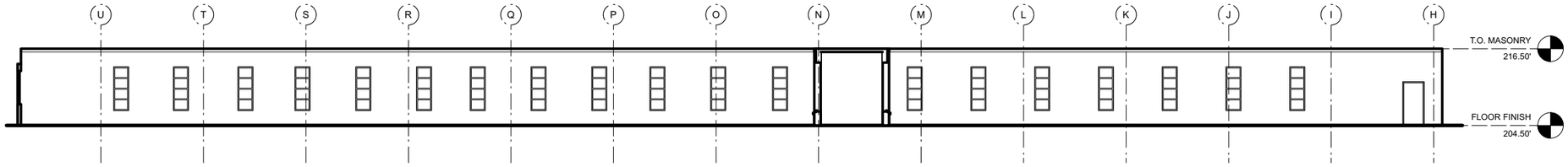
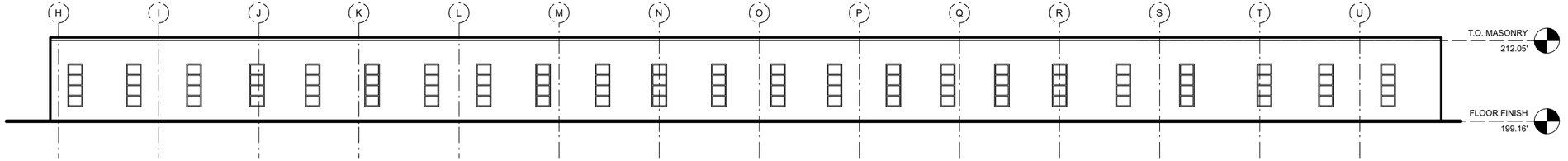
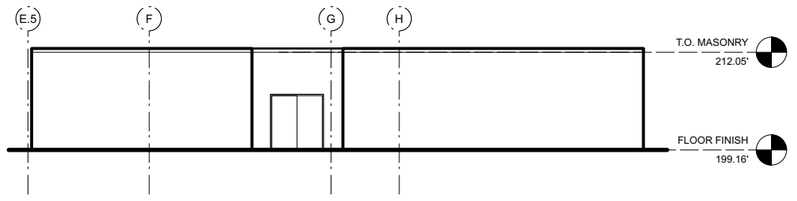


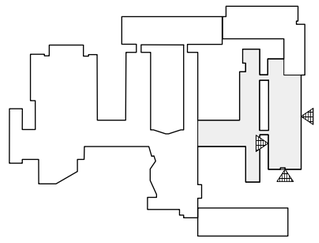
South Elevation - NE D-Wing | 1



North Elevation - NE D-Wing | 1

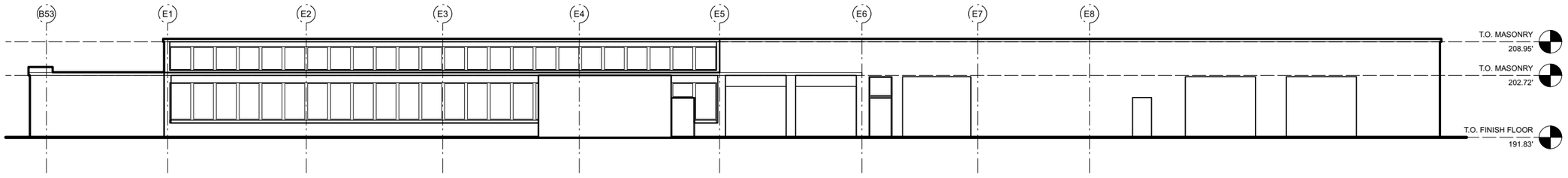


East Elevation - NE D-Wing | 1



Section D
Exterior Elevations

Scale1:240



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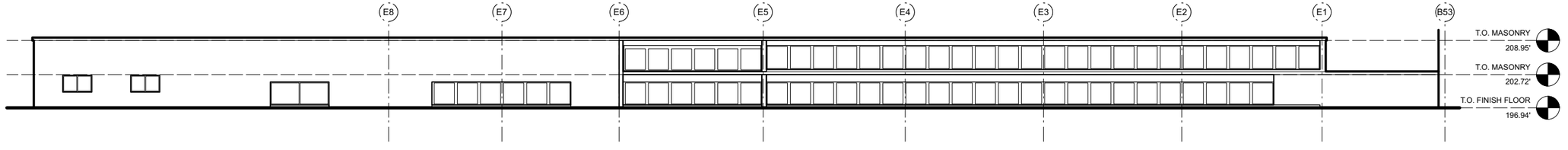

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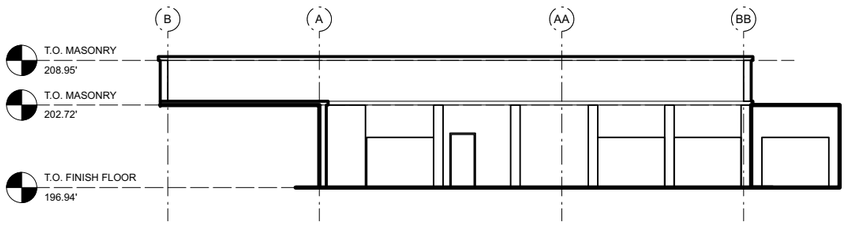

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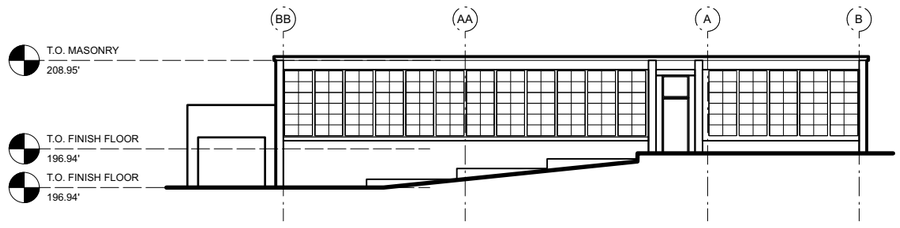

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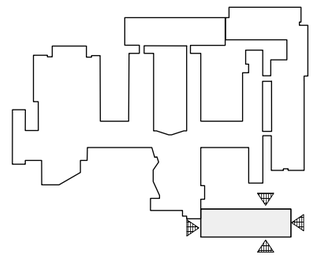

Section E
Exterior Elevations

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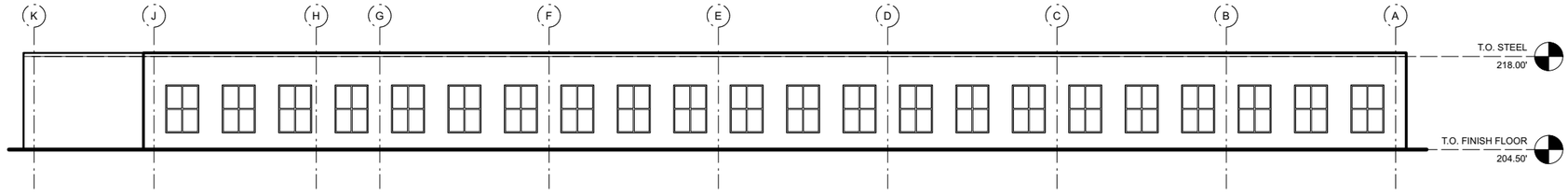

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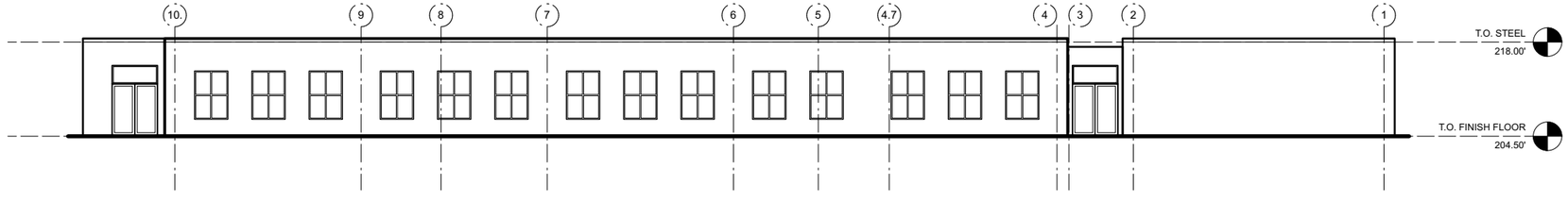

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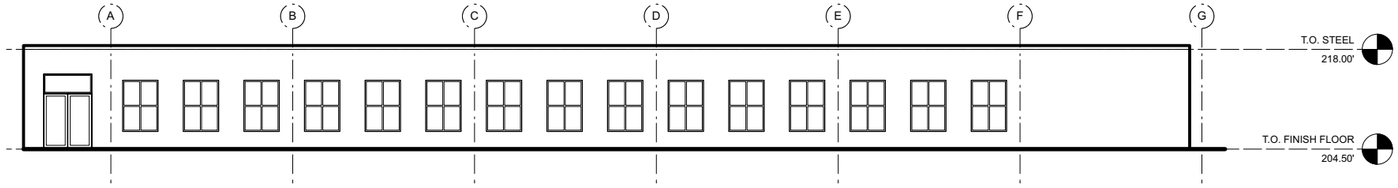

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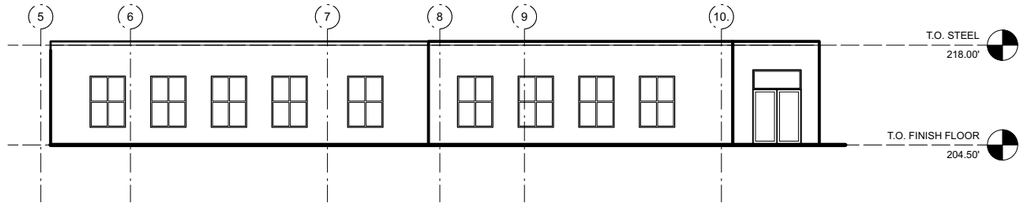

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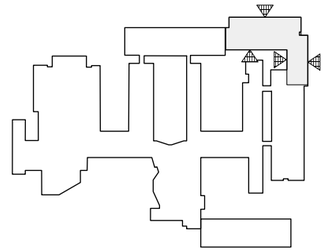

Section F
Exterior Elevations

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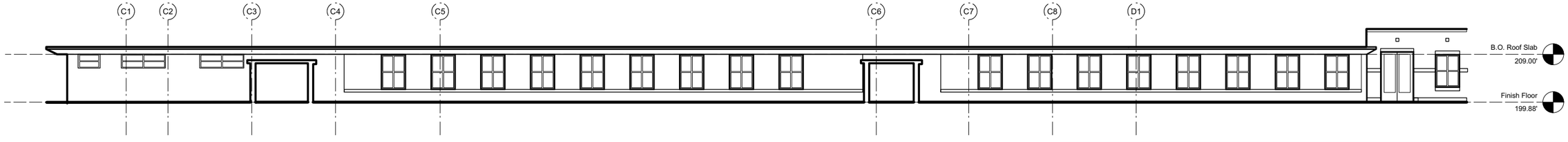
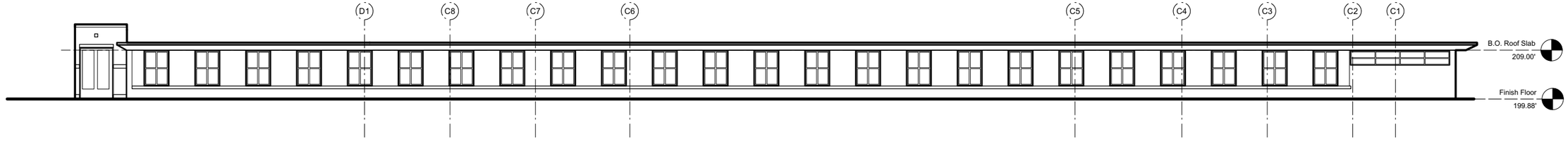


East Elevation of West Classroom Wing | 1



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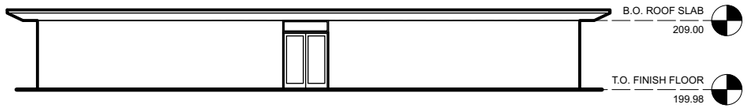

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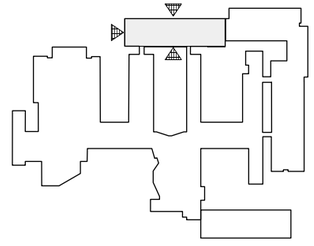

Section F
Exterior Elevations

Scale1:240

LGCI
Lahlaf Geotechnical Consulting, Inc.

August 12, 2023

Mr. Kent Kovacs, AIA, LEED AP
Vice President
Flansburgh Architects
77 North Washington Street
Boston, MA 02114
Phone: (617) 367-3970
E-mail: kkovacs@flansburgh.com

Re: **Preliminary Geotechnical Report**
Proposed Agawam High School
Agawam, Massachusetts
LGCI Project No. 2327

Dear Mr. Kovacs:

Lahlaf Geotechnical Consulting, Inc. (LGCI) has completed a geotechnical study for the proposed Agawam High School in Agawam, Massachusetts. We are submitting our geotechnical report electronically. Please notify us if you need a hard copy.

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

Thank you for choosing LGCI as your geotechnical engineer.

Very truly yours,

Lahlaf Geotechnical Consulting, Inc.

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

LGCI
Lahlaf Geotechnical Consulting, Inc.

PRELIMINARY GEOTECHNICAL REPORT
PROPOSED AGAWAM HIGH SCHOOL
AGAWAM, MASSACHUSETTS

LGCI Project No. 2327
August 12, 2023

Prepared for:

Flansburgh Architects
77 North Washington Street
Boston, MA 02114
Phone: (617) 367-3970

PRELIMINARY GEOTECHNICAL REPORT
PROPOSED AGAWAM HIGH SCHOOL
AGAWAM, MASSACHUSETTS
LGCI Project No. 2327
August 12, 2023

Prepared for:

Flansburgh Architects
77 North Washington Street
Boston, MA 02114
Phone: (617) 367-3970

Prepared by:

LAHLAF GEOTECHNICAL CONSULTING, INC.
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Phone: (978) 330-5912
Fax: (978) 330-5056

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

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1. PROJECT INFORMATION

1.1 Project Authorization

This preliminary geotechnical report presents the results of the subsurface explorations and a geotechnical evaluation performed by Lahlaf Geotechnical Consulting, Inc. (LGCI) for the proposed Agawam High School in Agawam, Massachusetts. We performed our services in general accordance with our proposal No. 23045 dated April 5, 2023. Mr. Kent Kovacs of Flansburgh Architects authorized our services by signing our proposal on June 19, 2023.

1.2 Purpose and Scope of Services

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

- Coordinated our exploration locations with Agawam High School.
- Marked the exploration locations at the site and notified Dig Safe Systems Inc. (Dig Safe) and the Town of Agawam for utility clearance.
- Engaged a drilling subcontractor for two (2) days to advance (9) 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 two (2) soil samples from the borings for laboratory testing.
- Prepared this preliminary geotechnical report containing the results of our subsurface explorations and our 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.

The site is located at 760 Cooper Street in Agawam, Massachusetts as shown in Figure 1. The site is bordered by Cooper Street and Mill Street on the southern side, by Line Street on the western side, by a power line easement on the northern side, and by private properties on the eastern side. The site is occupied by the existing high school, athletic fields, and paved driveways and parking lots.

1.4 Project Description

We understand that Flansburgh Architects has been engaged by the Town of Agawam to design the proposed Agawam High School in the site of the existing high school.

We understand that the project is in the preliminary stages and details about the type, size, and layout of the proposed high school are not available at the time of this geotechnical report.

2. SITE AND SUBSURFACE CONDITIONS

2.1 Surficial Geology

LGCI reviewed a surficial geologic map titled: "Surficial Materials Map of the West Springfield Quadrangle, Massachusetts," prepared by Stone, J.R., and DiGiacomo-Cohen, M.L., Scientific Investigation Map 3402, Quadrangle 40 – West Springfield, 2018.

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

The coarse deposits consist of sand, sand and gravel, and gravel deposits as described below.

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 Surficial Geologic Map is shown in Figure 2.

2.2 LGCI's Explorations

2.2.1 General

LGCI coordinated our exploration locations with the Town of Agawam and Flansburg Architects and marked the exploration locations in the field. LGCI notified Dig Safe and the Town of Agawam 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 Northern Drill Services, Inc. (NDS) of Northborough, Massachusetts to advance four (9) soil borings (B-1 to B-9) at the site on July 17 and 18, 2023. The borings were advanced with a Mobile B-53 ATV Drill Rig using a hollow stem auger with a 3-1/4-inch inner diameter and wash-boring techniques using a 4-inch casing. The borings extended to depths ranging between 22 and 32 feet beneath the ground surface. Upon completion, the

boreholes were backfilled with the soil cuttings. The ground surface was restored using asphalt cold patch in borings located in paved areas.

NDS 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 explorations and is intended to highlight the major soil strata encountered during our explorations. The subsurface conditions are known only at the actual exploration locations. Variations may occur and should be expected between exploration 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.

Asphalt – Asphalt was encountered at the ground surface in borings B-6 and B-8. The thickness of the asphalt ranged between 0.2 feet and 0.3 feet.

Topsoil – Topsoil was encountered at the ground surface in borings B-1 to B-5, B-7, and B-9. The thickness of the topsoil ranged between 0.7 feet and 1.5 feet.

Fill – A layer of fill was encountered beneath the topsoil or asphalt in all borings and extended to depths ranging between 4 feet and 6 feet beneath the ground surface. The samples within this layer were mostly described as poorly graded sand with silt. One (1) sample was described as well graded sand with silt. The fines content in the fill ranged between 0 and 15 percent, and the gravel content ranged between 0 and 20 percent. The fill contained traces of organic soil, roots, coal ash, and asphalt.

The SPT N-values in this layer ranged between 4 blows per foot (bpf) and 27 bpf, indicating loose to medium 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.

Sand – A layer of sand was encountered beneath the layer of fill in all borings. The sand extended to the termination depths in the borings at depths of 22 to 32 feet beneath the ground surface. The samples in this layer were mostly described as poorly graded sand. The fines content in this layer ranged between 0 and 10 percent, and the gravel content ranged between 0 and 5 percent.

The SPT N-values in this layer ranged between 5 bpf and 38 bpf, with most values ranging between 10 bpf and 23 bpf, indicating mostly medium dense material. Please note that the high SPT N-values in the sand may be due to obstructions such as cobbles and boulders present in the sand and may not represent the true density of the sand.

2.4 Groundwater

Groundwater was encountered in all borings except boring B-9 at depths ranging between 18.5 and 25 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. In addition, the drilling procedure introduced water into the boreholes during 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 two (2) 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	2.0 – 4.0	0.1	91.2	8.7
B-9	S3	Natural Sand	4.0 – 6.0	0.6	95.2	4.2

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 Asphalt, Topsoil, and Existing Fill

- Asphalt, topsoil, and existing fill were encountered in the borings. These materials are not suitable to support foundations.

- The asphalt and topsoil should be removed from within the entire construction area, including from the proposed building footprint and proposed driveways and parking lots.

- The existing fill was observed to be variable in composition and density. In addition, the fill contained traces of organic soil, roots, coal ash, and asphalt. 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 in general extend up to depths of about 4 feet and will extend locally 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 footprint of the proposed building a distance equal to the distance between the bottom of the proposed footings and the top of the natural sand, 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 should be removed to the top of the natural sand or to a depth of 18 inches beneath the bottom of the proposed pavement. Where organic soil is exposed, the organic soil should be removed. Where existing fill is exposed, the existing fill 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 layer after entirely removing the asphalt and the existing fill. The proposed slab may be designed as a slab-on-grade. Our recommendation for net allowable bearing capacity in the

sand is presented in Section 3.2.1. Our estimates for settlement are presented in Section 3.2.2. Our concrete slab considerations are presented in Section 3.3. Section 4.1 provides recommendations for preparation of subgrades.

3.2 Foundation Recommendations

3.2.1 Footing Design

- We recommend entirely removing the asphalt, the topsoil, and the existing fill from within the footprint of the proposed building as described in Section 3.1.2.

- We recommend supporting the proposed building on spread footings bearing on Structural Fill placed directly on the natural sand.

- We recommend designing the proposed footings using a net allowable bearing pressure of 4 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. 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 4 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 slabs-on-grade bearing on a minimum of 12 inches of Structural Fill placed directly on top of the natural sand. 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 80 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:

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

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

Based on the groundwater level observed in the borings, we believe that an under-slab drainage system is not required.

If the proposed building includes an elevator pit or other structure that extends beneath the FFE, such elevator pit or other structure should be designed to be waterproof.

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): 0.174g
- Spectral Response Acceleration at 1 sec. (S_1): 0.065g
- 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}: 0.278g
- Adjusted spectral response S_{M1}: 0.156g

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, if any, and site retaining walls 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:	3.3
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, if any, 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.

3.6 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.

- The subgrade should be prepared as described in Section 4.1.

- We recommend entirely removing the existing asphalt and topsoil from within the footprint of the proposed driveways and parking lots.

- The existing fill 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 Public Works and dated 1988 (with the latest Supplemental Specifications).

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, existing fill, abandoned utilities, buried foundations, and other below-ground structures and deleterious materials should be entirely removed from within the footprint of the proposed building 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 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 in accordance with the recommendations in Section 3.1, the exposed existing fill 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 building 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, some of the onsite fill free of organic matter and the natural sand may be used as Ordinary Fill. The existing and the natural sand are poorly graded. Poorly graded sands usually require wetting during compaction.

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.

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 do not anticipate that major groundwater control procedures will be needed during construction. We anticipate that filtered sump pumps installed in a series of sump pump 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:

- 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 Flansburgh Architects for the proposed Agawam High School in Agawam, 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 Agawam, MA topographic map from http://mapserver.mytopo.com.

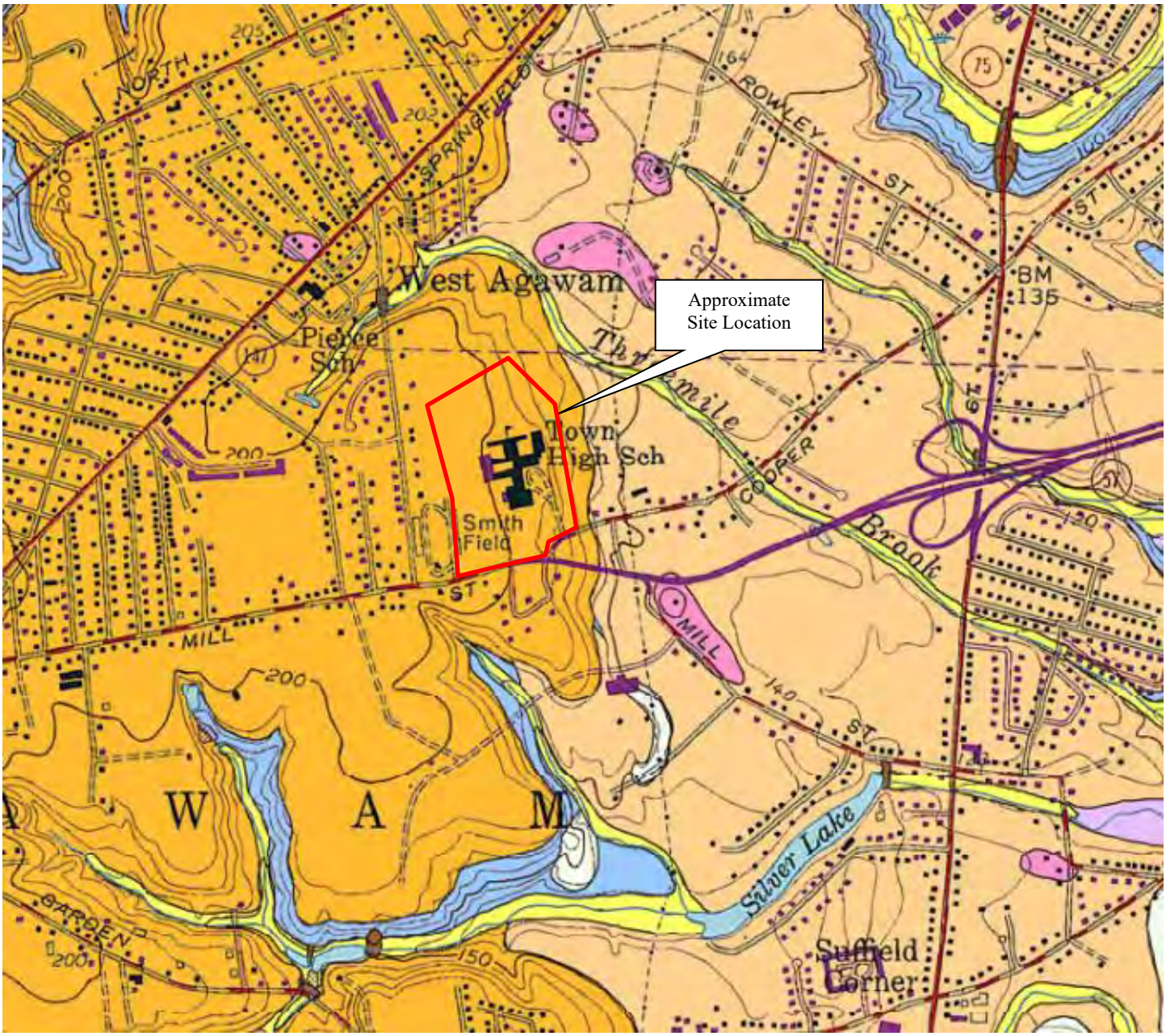
Table 1 - Summary of LGCI's Borings
Proposed Agawam High School
Agawam, MA
LGCI Project No. 2327

Boring No.	Groundwater[1] Depth (ft.)	Bottom of Topsoil / **Asphalt** Depth (ft.)	Bottom of Fill Depth (ft.)	Bottom of Sand and Gravel Depth (ft.)	Bottom of Boring Depth (ft.)
B-1	18.5	1.0	4.0	22.0	22.0[2]
B-2	19.0	1.3	4.0	22.0	22.0[2]
B-3	19.0	1.0	4.0	22.0	22.0[2]
B-4	19.5	0.7	4.0	22.0	22.0[2]
B-5	19.5	1.1	4.0	22.0	22.0[2]
B-6	19.0	**0.2**	6.0	22.0	22.0[2]
B-7	25.0	1.5	4.0	32.0	32.0[2]
B-8	20.0	**0.3**	6.0	22.0	22.0[2]
B-9	-	1.0	4.0	22.0	22.0[2]

1. Groundwater was measured during drilling, at the end of drilling, after drilling, or based on sample moisture, whichever is shallower.
2. Boring terminated in the sand layer.
3. "-" means groundwater was not encountered.

Note: Figure based on USA Topo Maps of Agawam, MA obtained from https://viewer.nationalmap.gov/

Client:	Project:	Figure 1 – Site Location Map	
Flansburgh Architects	Proposed Agawam High School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Agawam, MA	LGCI Project No.: 2327	Date: Aug. 2023



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

Note: Figure based on map titled: "Surficial Materials Map of the West Springfield Quadrangle, Massachusetts," prepared by Stone, J.R., and DiGiacomo-Cohen, M.L., Scientific Investigation Map 3402, Quadrangle 40 – West Springfield, 2018.

Client:	Project	Figure 2 – Surficial Geologic Map	
Flansburgh Architects	Proposed Agawam High School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Agawam, MA	LGCI Project No.: 2327	Date: Aug. 2023

Legend

Approximate location of borings advanced by Northern Drill Services, Inc. (NDS) of Northborough, MA on July 17 and 18, 2023, and observed by Lahlaf Geotechnical Consulting, Inc. (LGCI).

50 0 25 50 100 200

Approximate Scale (ft.)

Note

Figure based on aerial image from Google Maps of the existing Agawam High School obtained on August 8, 2023.

Client:	Project:	Figure 3 – Boring Location Plan	
Flansburgh Architects	Proposed Agawam High School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Agawam, MA	LGCI Project No.: 2327	Date: August 2023

Appendix A – LGCI's Boring Logs

LGCI
Lahlaf Geotechnical Consulting, Inc.
100 Chelmsford St.
Billerica, MA 01862
Telephone: (978) 330-5912
Fax: (978) 330-5056

BORING LOG

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PAGE 1 OF 1

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

DATE STARTED: 7/18/23 **DATE COMPLETED:** 7/18/23
BORING LOCATION: Near southwestern corner of proposed building
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 20.0 ft.
AT END OF DRILLING: 18.5 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Northern Drill Service, Inc.
DRILLING FOREMAN: Tim Tucker
DRILLING METHOD: HSA (3-1/4" I.D.) then 4-inch casing
DRILL RIG TYPE/MODEL: Mobile B-53 ATV Rig
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: NP **CHECKED BY:** DF

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-4-8-12 (12)	24/18		Topsoil	1.0	S1 - Top 12": Topsoil
		2	S2	11-9-9-7 (18)	24/16		Fill	4.0	Bot. 6": Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, trace of organic soil, brown, moist S2 - Poorly Graded SAND with Silt, (SP-SM), mostly fine to medium, 5-10% fines, 0-5% fine subrounded gravel, brown, moist
5		4	S3	6-6-5-6 (11)	24/19				S3 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
		6	S4	6-7-6-7 (13)	24/22				S4 - Similar to S3, fine to medium
		8	S5	6-7-7-7 (14)	24/15				S5 - Similar to S3
10		10	S6	7-6-6-6 (12)	24/19				S6 - Similar to S3
		12					Sand		
15		15	S7	6-5-6-6 (11)	24/21				S7 - Siimlar to S3
		17							▼
20		20	S8	6-5-7-7 (12)	24/23				▽ S8 - Poorly Graded SAND (SP), fine, 0-5% fines, brown, wet
		22						22.0	
25									Bottom of borehole at 22.0 feet. Backfilled with drill cuttings.

GENERAL NOTES:
1. Ground surface elevations not available.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

DATE STARTED: 7/18/23 **DATE COMPLETED:** 7/18/23
BORING LOCATION: Near northwestern corner of proposed building
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 20.0 ft.
AT END OF DRILLING: 19.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Northern Drill Service, Inc.
DRILLING FOREMAN: Tim Tucker
DRILLING METHOD: HSA (3-1/4" I.D.) then 4-inch casing
DRILL RIG TYPE/MODEL: Mobile B-53 ATV Rig
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: NP **CHECKED BY:** DF

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-3-6-8 (9)	24/18		Topsoil	1.3	S1 - Top 15": Topsoil
		2	S2	7-12-10-9 (22)	24/14		Fill	4.0	Bot. 3": Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, trace of organic soil, brown, moist S2 - Similar to S1 Bot. 3", trace of roots
5		4	S3	5-5-6-5 (11)	24/17				S3 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, light brown, moist
		6	S4	5-6-6-5 (12)	24/20				S4 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
		8	S5	5-4-5-4 (9)	24/16				S5 - Similar to S4
10		10	S6	5-5-5-6 (10)	24/19				S6 - Poorly Graded SAND (SP), fine, trace medium, 0-5% fines, light brown, moist
		12					Sand		
15		15	S7	7-9-11-13 (20)	24/20				S7 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
		17							
20		20	S8	7-7-8-8 (15)	24/17				S8 - Similar to S7, brown, wet
		22						22.0	Bottom of borehole at 22.0 feet. Backfilled with drill cuttings.
25									

GENERAL NOTES:
1. Ground surface elevations not available.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

DATE STARTED: 7/17/23 **DATE COMPLETED:** 7/17/23
BORING LOCATION: Near northwestern portion of porposed building
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 20.0 ft.
AT END OF DRILLING: 19.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Northern Drill Service, Inc.
DRILLING FOREMAN: Tim Tucker
DRILLING METHOD: HSA (3-1/4" I.D.) then 4-inch casing
DRILL RIG TYPE/MODEL: Mobile B-53 ATV Rig
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: NP **CHECKED BY:** DF

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-5-5-5 (10)	24/19		Topsoil	1.0	S1 - Top 12": Topsoil
		2	S2	8-14-18-13 (32)	24/24		Fill	4.0	Bot. 7": Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, trace of organic soil, brown, moist S2 - Top 14": Similar to S1 Bot. 7" Bot. 10": Poorly Graded SAND (SP), fine to medium, trace coarse, 0-5% fines, light brown, moist
5		4	S3	6-6-7-6 (13)	24/17				S3 - Poorly Graded SAND (SP), fine to medium, trace coarse, 0-5% fines, light brown, moist
		6	S4	5-5-4-4 (9)	24/20				S4 - Similar to S3
		8	S5	4-4-4-4 (8)	24/16				S5 - Similar to S3
10		10	S6	4-4-4-4 (8)	24/16				S6 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
		12					Sand		
15		15	S7	5-5-5-6 (10)	24/18				S7 - Similar to S6
		17							
20		20	S8	5-6-6-6 (12)	24/19				S8 - Similar to S6, wet
		22						22.0	Bottom of borehole at 22.0 feet. Backfilled with drill cuttings.
25									

GENERAL NOTES:
1. Ground surface elevations not available.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

DATE STARTED: 7/17/23 **DATE COMPLETED:** 7/17/23
BORING LOCATION: Near northeastern portion of proposed building
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 20.0 ft.
AT END OF DRILLING: 19.5 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Northern Drill Service, Inc.
DRILLING FOREMAN: Tim Tucker
DRILLING METHOD: HSA (3-1/4" I.D.) then 4-inch casing
DRILL RIG TYPE/MODEL: Mobile B-53 ATV Rig
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: NP **CHECKED BY:** DF

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	1-2-3-5 (5)	24/18		Topsoil	0.7	S1 - Top 8": Topsoil
		2	S2	4-5-5-5 (10)	24/15		Fill	4.0	Bot. 10": Poorly Graded SAND with Silt (SP-SM), fine, 5-10% fines, 0-5% fine subrounded gravel, trace of organic soil, brown, moist S2 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist (appears reworked)
		4	S3	4-5-4-5 (9)	24/17		Sand		S3 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
5		6	S4	5-5-5-4 (10)	24/19				S4 - Similar to S3
		8	S5	5-5-5-5 (10)	24/21				S5 - Similar to S3
10		10	S6	5-6-5-6 (11)	24/18				S6 - Similar to S3
		12							
15		15	S7	6-6-7-7 (13)	24/24				S7 - Similar to S3
		17							
20		20	S8	6-6-9-15 (15)	24/16			22.0	S8 - Poorly Graded SAND with Silt (SP-SM), fine, 5-10% fines, light brown, wet
		22							Bottom of borehole at 22.0 feet. Backfilled with drill cuttings.
25									

GENERAL NOTES:
1. Ground surface elevations not available.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

DATE STARTED: 7/18/23 **DATE COMPLETED:** 7/18/23
BORING LOCATION: Near western portion of proposed building
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 20.0 ft.
AT END OF DRILLING: 19.5 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Northern Drill Service, Inc.
DRILLING FOREMAN: Tim Tucker
DRILLING METHOD: HSA (3-1/4" I.D.) then 4-inch casing
DRILL RIG TYPE/MODEL: Mobile B-53 ATV Rig
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: NP **CHECKED BY:** DF

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-3-12-10 (15)	24/21		Topsoil	1.1	S1 - Top 13": Topsoil
		2	S2	6-12-12-11 (24)	24/15		Fill	4.0	Bot. 8": Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, trace of organic soil, brown, moist S2 - Similar to S1 Bot. 8"
5		4	S3	5-6-6-6 (12)	24/19				S3 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, light brown, moist
		6	S4	6-6-6-6 (12)	24/22				S4 - Similar to S3, trace coarse
		8	S5	6-6-7-6 (13)	24/18				S5 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
10		10	S6	7-6-6-6 (12)	24/16				S6 - Simlar to S5
		12					Sand		
15		15	S7	6-6-6-6 (12)	24/18				S7 - Similar to S5
		17							
20		20	S8	5-6-6-7 (12)	24/24				S8 - Similar to S5, brown, wet
		22						22.0	Bottom of borehole at 22.0 feet. Backfilled with drill cuttings.
25									

GENERAL NOTES:
1. Ground surface elevations not available.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

DATE STARTED: 7/17/23 **DATE COMPLETED:** 7/17/23
BORING LOCATION: Near center of proposed building
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 20.0 ft.
AT END OF DRILLING: 19.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Northern Drill Service, Inc.
DRILLING FOREMAN: Tim Tucker
DRILLING METHOD: HSA (3-1/4" I.D.) then 4-inch casing
DRILL RIG TYPE/MODEL: Mobile B-53 ATV Rig
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: NP **CHECKED BY:** DF

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0.5	S1	10-9-8 (17)	18/10		Asphalt	0.2	Top 2": Asphalt
		2	S2	8-9-7-7 (16)	24/16		Fill		S1 - Poorly Graded SAND with Gravel (SP), fine to medium, 0-5% fines, 15-20% coarse subrounded gravel, trace of coal ash, brown, moist S2 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
5		4	S3	7-6-6-6 (12)	24/1				S3 - Similar to S2, trace of asphalt
		6	S4	8-6-6-6 (12)	24/13			6.0	S4 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
		8	S5	5-5-4-4 (9)	24/15				S5 - Similar to S4
10		10	S6	3-3-3-3 (6)	24/19				S6 - Similar to S4
		12					Sand		
15		15	S7	5-5-5-5 (10)	24/21				S7 - Similar to S4
		17							
20		20	S8	6-5-7-6 (12)	24/13				S8 - Similar to S4, wet
		22						22.0	Bottom of borehole at 22.0 feet. Backfilled with drill cuttings. Ground surface restored with asphalt cold patch.
25									

GENERAL NOTES:
1. Ground surface elevations not available.

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BORING LOG

B-7

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

DATE STARTED: 7/18/23 **DATE COMPLETED:** 7/18/23
BORING LOCATION: Near southern portion of proposed building
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 32 ft.
WEATHER: 80's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 25.0 ft.
AT END OF DRILLING: 23.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Northern Drill Service, Inc.
DRILLING FOREMAN: Tim Tucker
DRILLING METHOD: HSA (3-1/4" I.D.) then 4-inch casing
DRILL RIG TYPE/MODEL: Mobile B-53 ATV Rig
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: NP **CHECKED BY:** DF

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	1-2-6-9 (8)	24/24		Topsoil	1.5	S1 - Top 18": Topsoil
		2	S2	9-9-8-7 (17)	24/17		Fill	4.0	Bot. 6": Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, 0-5% fine subround gravel, trace of organic soil, brown, moist S2 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, brown, moist (appears reworked)
		4	S3	5-5-5-5 (10)	24/15				S3 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
5		6	S4	5-5-6-6 (11)	24/22				S4 - Similar to S3
		8	S5	5-5-6-7 (11)	24/22				S5 - Similar to S3
10		10	S6	6-6-7-9 (13)	24/18				S6 - Similar to S3
		12							
15		15	S7	5-5-5-5 (10)	24/19		Sand		S7 - Similar to S3
		17							
20		20	S8	14-16-22-21 (38)	24/17				S8 - Similar to S3
		22							
25									

GENERAL NOTES:
1. Ground surface elevations not available.

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BORING LOG

B-7

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		25							
			S9	10-9-9-9 (18)	24/20				S9 - Poorly Graded SAND (SP), fine, 0-5% fines, brown, wet
		27					Sand		
30		30							S10 - Similar to S9
			S10	7-7-7-8 (14)	24/3				
		32						32.0	Bottom of borehole at 32.0 feet. Backfilled with drill cuttings.
35									
40									
45									
50									
55									
60									

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BORING LOG

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PAGE 1 OF 1

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

DATE STARTED: 7/17/23 **DATE COMPLETED:** 7/17/23
BORING LOCATION: Near southeastern portion of proposed building
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 20.0 ft.
AT END OF DRILLING: 20.5 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Northern Drill Service, Inc.
DRILLING FOREMAN: Tim Tucker
DRILLING METHOD: HSA (3-1/4" I.D.) then 4-inch casing
DRILL RIG TYPE/MODEL: Mobile B-53 ATV Rig
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: NP **CHECKED BY:** DF

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0.5	S1	18-14-13 (27)	18/11		Asphalt	0.3	Top 4": Asphalt S1 - Well Graded SAND With Silt (SW-SM), fine to coarse, 10-15% fines, 10-15% fine subrounded gravel, trace of asphalt, gray, moist
		2	S2	14-10-8-6 (18)	24/14		Fill		S2 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, trace of asphalt, light brown, moist
5		4	S3	4-2-2-3 (4)	24/3				S3 - Similar to S2
		6	S4	1-2-3-4 (5)	24/16			6.0	S4 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
		8	S5	6-7-9-10 (16)	24/18				S5 - Similar to S4
10		10	S6	9-12-11-13 (23)	24/15				S6 - Similar to S4
		12					Sand		
15		15	S7	8-8-10-9 (18)	24/23				S7 - Similar to S4
		17							
20		20	S8	8-8-8-9 (16)	24/20				▽ ▼ S8 - Similar to S4, wet
		22						22.0	Bottom of borehole at 22.0 feet. Backfilled with drill cuttings. Ground surface restored with asphalt cold patch.
25									

GENERAL NOTES:
1. Ground surface elevations not available.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Flansburgh Architects
PROJECT NAME: Prop. Agawam High School
LGCI PROJECT NUMBER: 2327
PROJECT LOCATION: Agawam, MA

DATE STARTED: 7/17/23 **DATE COMPLETED:** 7/17/23
BORING LOCATION: Near eastern portion of proposed building
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not encountered
AT END OF DRILLING: Dry at the end of drilling
OTHER: -

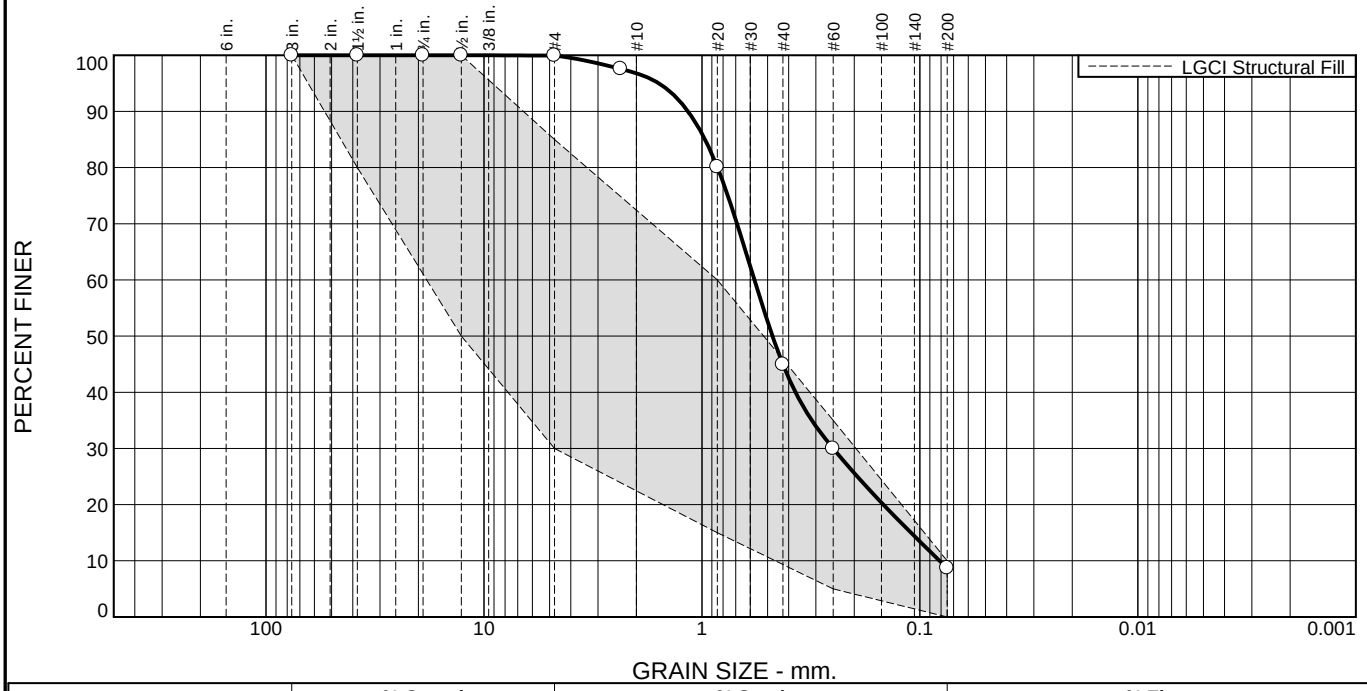
DRILLING SUBCONTRACTOR: Northern Drill Service, Inc.
DRILLING FOREMAN: Tim Tucker
DRILLING METHOD: HSA (3-1/4" I.D.) then 4-inch casing
DRILL RIG TYPE/MODEL: Mobile B-53 ATV Rig
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: NP **CHECKED BY:** DF

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	1-1-3-5 (4)	24/19		Topsoil	1.0	S1 - Top 12": Topsoil
		2	S2	4-7-11-11 (18)	24/14		Fill	4.0	Bot. 7": Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, trace of organic soil, trace of roots, brown, moist S2 - Similar to S1 Bot. 7", 5-10% fines
5		4	S3	7-7-6-6 (13)	24/20				S3 - Poorly Graded SAND (SP), mostly fine to medium, 0-5% fines, 0-5% fine subrounded gravel, light brown, moist
		6	S4	6-7-6-7 (13)	24/17				S4 - Similar to S3
		8	S5	5-6-5-5 (11)	24/16				S5 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
10		10	S6	7-8-9-8 (17)	24/21				S6 - Similar to S5
		12					Sand		
15		15	S7	7-7-8-8 (15)	24/15				S7 - Similar to S5
		17							
20		20	S8	7-7-7-7 (14)	24/24				S8 - Poorly Graded SAND with Silt (SP-SM), fine, 5-10% fines, light brown, moist
		22						22.0	Bottom of borehole at 22.0 feet. Backfilled with drill cuttings.
25									

GENERAL NOTES:
1. Ground surface elevations not available.

Appendix B – Laboratory Test Results

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	3.1	51.9	36.2	8.7	

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"	100.0	50.0 - 100.0	
#4	99.9	30.0 - 85.0	X
#8	97.6		
#20	80.1	15.0 - 60.0	X
#40	44.9		
#60	30.0	5.0 - 35.0	
#200	8.7	0.0 - 10.0	

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Poorly Graded SAND with Silt (SP-SM), mostly fine to medium, 5-10% fines, 0-5% fine subrounded gravel, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

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

Coefficients

D_{90}= 1.1574 D_{85}= 0.9680 D_{60}= 0.5744
D_{50}= 0.4748 D_{30}= 0.2501 D_{15}= 0.1099
D_{10}= 0.0812 C_u= 7.08 C_c= 1.34

Remarks

Fill sample.

Date Received: 7/18/23 **Date Tested:** 8/3/23

Tested By: NP

Checked By: DF

Location: Boring B-1
Sample Number: S2 **Depth:** 2.0'-4.0'

Date Sampled: 7/18/23

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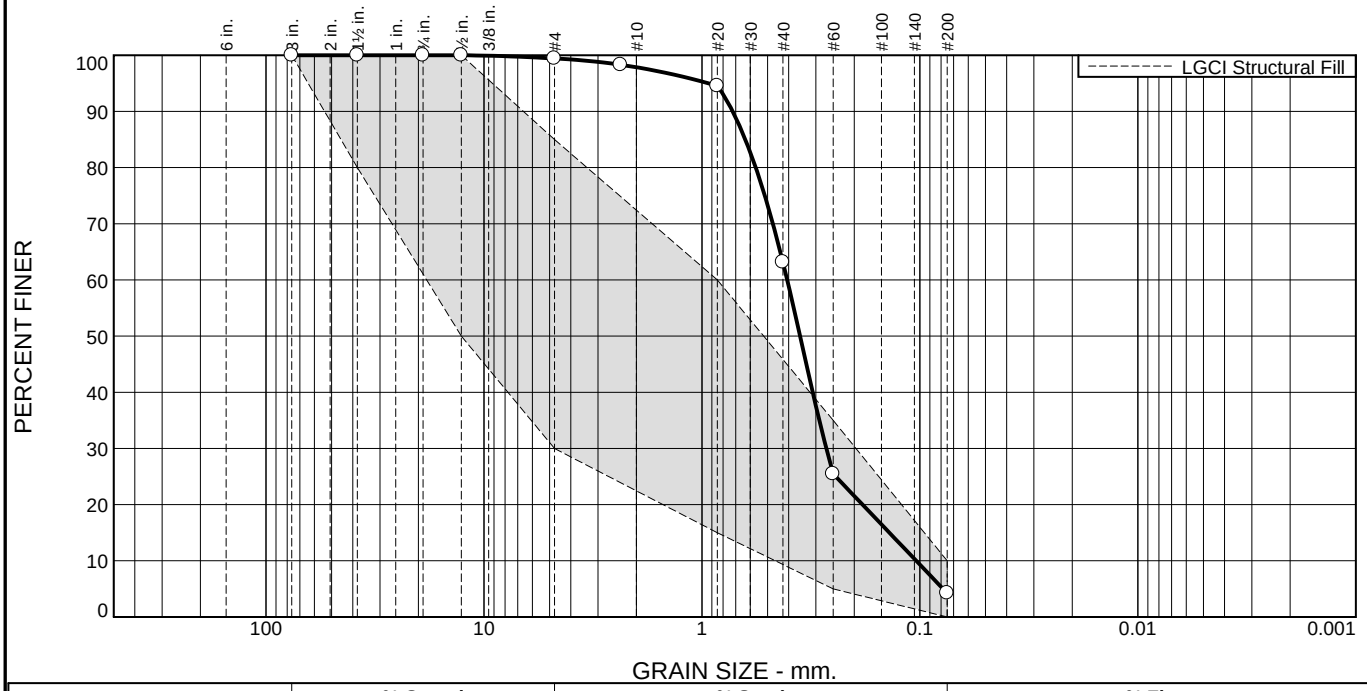
Client: Flansburgh Architects
Project: Proposed Agawam High School, Agawam, MA

Project No: 2327 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	1.5	34.8	58.9	4.2	

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"	100.0	50.0 - 100.0	
#4	99.4	30.0 - 85.0	X
#8	98.3		
#20	94.6	15.0 - 60.0	X
#40	63.1		
#60	25.5	5.0 - 35.0	
#200	4.2	0.0 - 10.0	

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Poorly Graded SAND (SP), mostly fine to medium, 0-5% fines, 0-5% fine subrounded gravel, light brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

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

Coefficients

D_{90}= 0.7223 D_{85}= 0.6323 D_{60}= 0.4062
D_{50}= 0.3546 D_{30}= 0.2689 D_{15}= 0.1380
D_{10}= 0.1039 C_u= 3.91 C_c= 1.71

Remarks

Natural sand sample.

Date Received: 7/17/23 **Date Tested:** 8/3/23

Tested By: NP

Checked By: DF

Location: Boring B-9
Sample Number: S3 **Depth:** 4.0'-6.0'

Date Sampled: 7/17/23

LGCI
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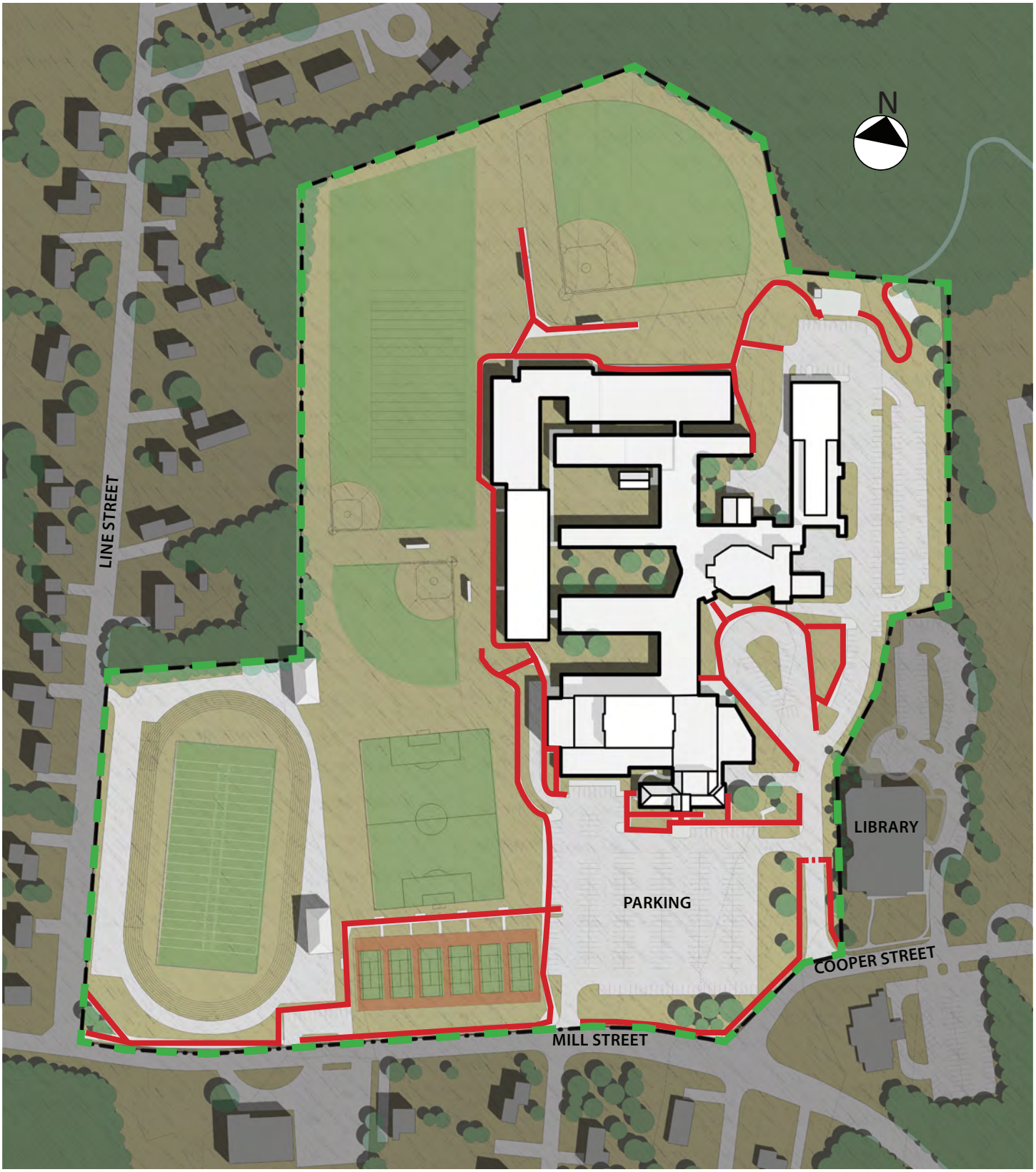
Client: Flansburgh Architects
Project: Proposed Agawam High School, Agawam, MA

Project No: 2327 **Figure**

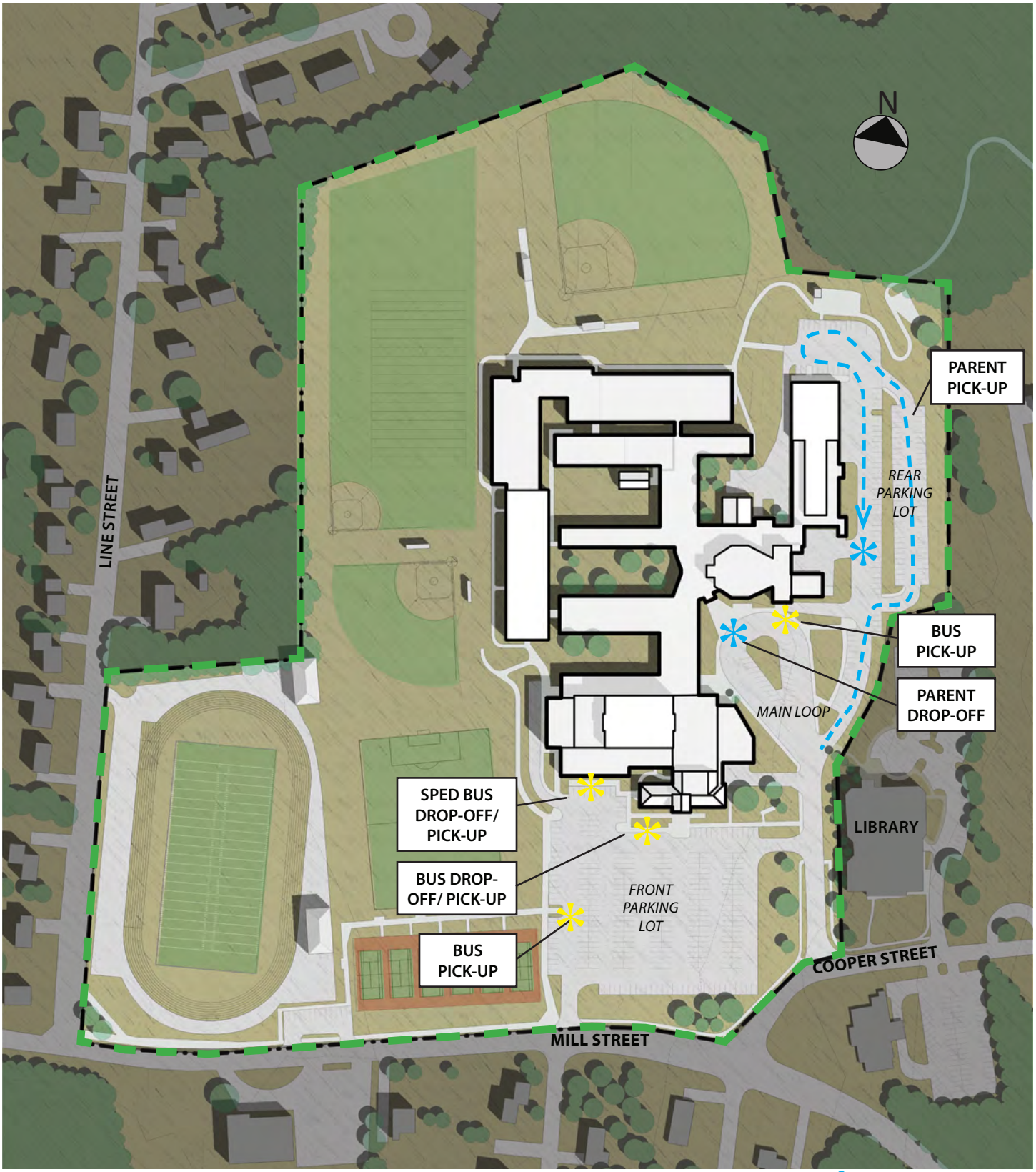
AGAWAM HIGH SCHOOL EXISTING CONDITIONS



PEDESTRIAN PATH

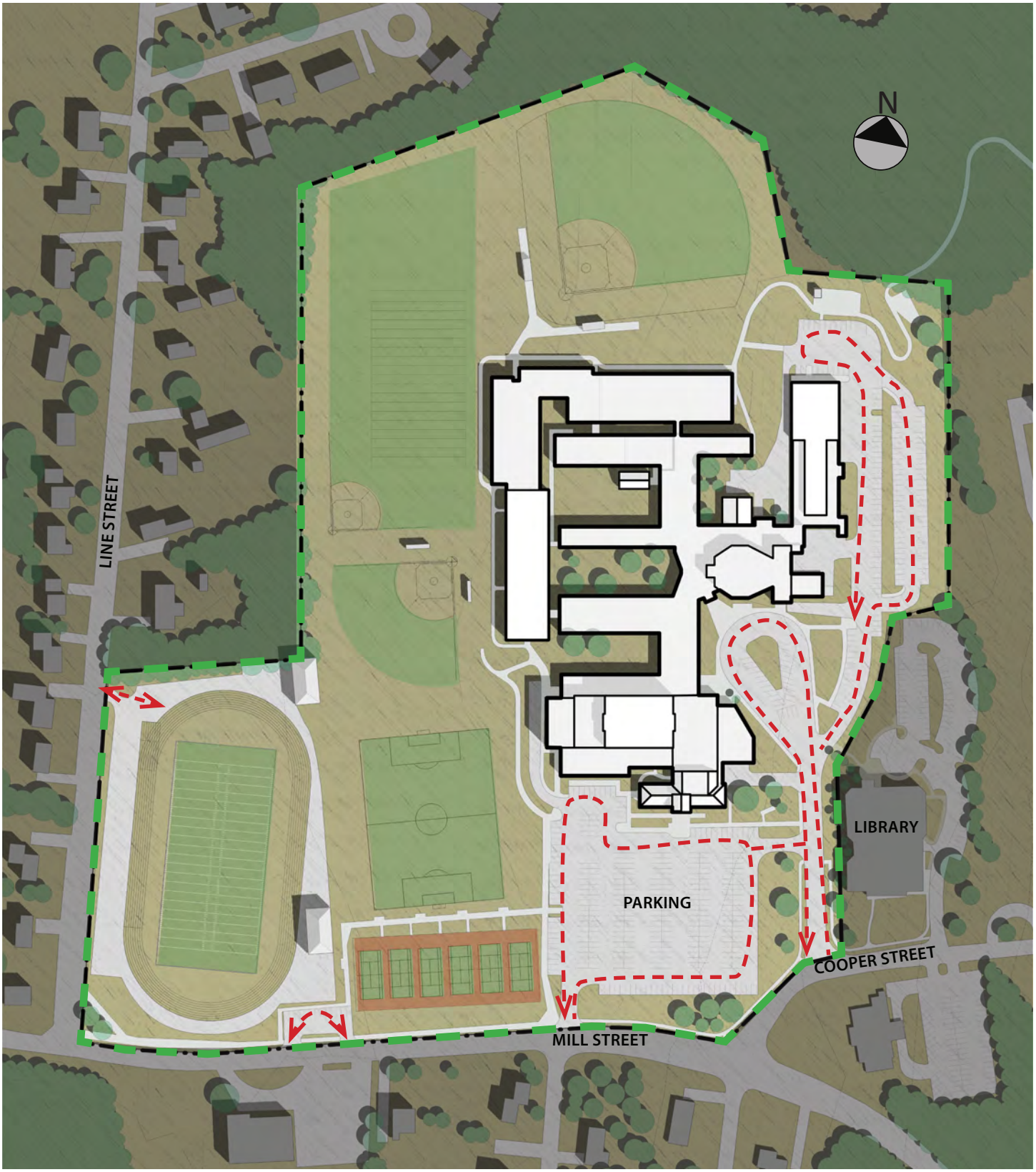
PEDESTRIAN CIRCULATION

AGAWAM HIGH SCHOOL EXISTING CONDITIONS



PICK-UP / DROP-OFF

AGAWAM HIGH SCHOOL EXISTING CONDITIONS



EMERGENCY VEHICLE ACCESS