10.15.2024
Clinton Middle School Building Project Agenda

PERMANENT BUILDING COMMITTEE
SCHOOL BUILDING SUB-COMMITTEE

MEETING AGENDA

DORE + WHITTIER

Meeting Date:	October 15, 2024
Meeting Time:	6:30 PM
Project Name:	Clinton Middle School
Project Number:	202000640305
Meeting Purpose:	SBC Meeting No. 032
Location:	ZOOM
Meeting Link:	https://us06web.zoom.us/j/84507155160?pwd=b4y175R8bmiRzfbGNytOXEFrXeHzWv.1
Meeting ID:	845 0715 5160
Passcode:	026218
One Tab Mobile:	+13017158592,84507155160#,,,,*026218# US (Washington DC)
Prepared By:	Elias Grijalva

1. Call to Order & number of voting members present
2. Carriage House Project Invoices for Approval **(Vote expected)**
3. Previous Meeting Minutes and Topics for Approval **(vote expected)**
4. Clinton Middle School Invoices and Commitments for Approval **(Vote expected)**
5. LPA|A Update
6. Other Topics not Reasonably Anticipated 48 hours prior to the Meeting.
7. Public Comment
8. Next Meetings
9. Adjourn

Carriage House Project
Invoices for Approval

Spencer, Sullivan & Vogt, Inc.
1 Thompson Square, Suite 204
Charlestown, MA 02129

INVOICE

Town of Clinton
Michael Ward
242 Church Street Clinton MA 01510
Clinton , MA 01510

Invoice No: 2407-05
Invoice Date: 08/01/2024
Terms: Net 30
Services Through: 08/31/2024
Project Number: 2407

Clinton Carriage House

Description	Contract Amount	% Comp.	Previously Billed	Remaining Amount	Amount Due
Master planning	$32,000.00	87%	$25,050.00	$4,250.00	$2,700.00
Design Service Phase 1	$17,198.00	78%	$11,230.00	$3,748.00	$2,220.00
	$49,198.00	**84%**	**$36,280.00**	**$7,998.00**	**$4,920.00**

Total Amount Due **$4,920.00**

Aging Summary:

Invoice Number	Date	Outstanding	Current	Over 30	Over 60	Over 90	Over 120
2407-05	8/1/24	$4,920.00	$0.00	$4,920.00	$0.00	$0.00	$0.00
2407-04	8/1/24	$8,010.00	$0.00	$8,010.00	$0.00	$0.00	$0.00
	Total	$12,930.00	$0.00	$12,930.00	$0.00	$0.00	$0.00

Spencer, Sullivan & Vogt, Inc.
69 Milk St, #224
Westborough, MA 01581

INVOICE

Town of Clinton
Michael Ward
242 Church Street Clinton MA 01510
Clinton , MA 01510

Invoice No: 2407-06
Invoice Date: 10/01/2024
Terms: Net 30
Services Through: 09/30/2024
Project Number: 2407

Clinton Carriage House

Description	Contract Amount	% Comp.	Previously Billed	Remaining Amount	Amount Due
Master planning	$32,000.00	94%	$27,750.00	$2,050.00	$2,200.00
Design Service Phase 1	$17,198.00	81%	$13,450.00	$3,298.00	$450.00
	$49,198.00	**89%**	**$41,200.00**	**$5,348.00**	**$2,650.00**

Total Amount Due **$2,650.00**

Aging Summary:

Invoice Number	Date	Outstanding	Current	Over 30	Over 60	Over 90	Over 120
2407-06	10/1/24	$2,650.00	$2,650.00	$0.00	$0.00	$0.00	$0.00
2407-05	8/1/24	$4,920.00	$0.00	$0.00	$4,920.00	$0.00	$0.00
	Total	$7,570.00	$2,650.00	$0.00	$4,920.00	$0.00	$0.00

Previous Meeting Minutes for Approval
September 17,2024

PERMANENT BUILDING COMMITTEE
SCHOOL BUILDING COMMITTEE SUB-COMMITTEE
MEETING MINUTES

Project:	Clinton Middle School	Project No:	202000640305
Subject:	School Building Committee Meeting	Meeting Date:	09/17/2024
Location:	ZOOM	Time:	6:30 PM
Distribution:	Attendees, Project File	Prepared By:	E. Grijalva
MSBA Module:	D- Detailed Design		

Name	Affiliation
Steven Meyer*	PBC Member- Superintendent
Chris McGown *	PBC Chair
Chris Magliozzi*	PBC Member, Vice Chair
Michael Ward*	PBC Member- Town Admin
Brian Delorey	PBC Member
Bill Connolly	SBC Member
Matt Varakis	School Committee Chair
Shane McCarthy	Teacher
Tyler Steffey	SBC Member, CMS Principal
Phil Duffy	Director of Community and Econ Development
Becky Tollis	SBC Member
Trip Elmore	DWMP- Project Director
Terry Hartford	DWMP – Sr. Project Manager
Elias Grijalva	DWMP – Assistant PM
Sean Brennan	LPA|A –Project Architect
Peter Caruso	LPA|A – Project Manager
Eric Moore	LPA|A - Principal in Charge
Amanda	Studio 2112
Lynne Giesecke	Studio 2112
Beth Paulson	Fontaine Bros – Project Manager
Emily Cabrera	Public

***PBC Voting Members**

DORE + WHITTIER

Item No.	Description	Action
31.1	**Call to Order & number of voting members present** 6:31PM meeting was called to order by PBC Chair C. McGown with 5 of 7 voting members in attendance.	Record
31.2	**Previous Topics & Approval of August 13, Meeting Minutes:** A motion to approve the August 13, 2024, previous meeting minutes, was submitted by C. Magliozzi and seconded by M. Ward. Discussion: None; Roll Call Vote: B. Delorey (Y), C. Magliozzi (Y), M. Ward (Y), S. Meyer(Y), C. McGown (Y); Abstentions: None; All in favor, motion passes.	Record
31.3	**CMS Invoices for Approval** **Invoice 1:** DWMP Invoice No.023; Description: Design Development; Amount: $70,000.00 A motion was made by B. Delorey and seconded by C. Magliozzi for the approval of DWMP Invoice No.023. Discussion: None; Roll Call Vote: B. Delorey (Y), C. Magliozzi (Y), M. Ward (Y), S. Meyer(Y), C. McGown (Y); Abstentions: None; All in favor, motion passes.	Record
	Invoice 2: LPA|A Invoice No. 2220-2408; Description: Design Development; Amount: $544,900.00 A motion was made by B. Delorey and seconded by C. Magliozzi for the approval of LPA|A Invoice No. 2220-2408. Discussion: None; Roll Call Vote: B. Delorey (Y), C. Magliozzi (Y), M. Ward (Y), S. Meyer(Y), C. McGown (Y); Abstentions: None; All in favor, motion passes.	
31.4	**LPA|A Update** P. Caruso provides a brief update on various designer tasks. • **Geothermal Conductivity Report:** Report received 8/27/24; confirmed that the site is suitable for the installation of a closed loop geothermal well system. • **Soils Analysis Report:** Report received 8/27/24; (19) test borings, (12) samples of taken, data indicated slightly elevated levels of arsenic in (3) of soil samples, all levels are below the landfill acceptance criteria. **Discussion:** C. McGown asks, did we carry an allowance for contaminated soil within the budget? T. Elmore states there is a hazardous allowance within the budget. • **Test Pits:** Scheduled to be done on September 26 and 27th. • **Working Group Update:** Meetings with various department staff including admin/guidance, medical, all 3 STEM teachers, classroom technology, food service, and special education, providing their feedback to ensure we're capturing the scope correctly.	Record

- **Thermal Energy Demand Intensity Update**
  a. In the process of assembling thermal models for calculating the linear thermal bridge deratings; code requirement and incentive rebate benefits

- **Overall Design Development Progress**
  a) **September 04, 2024:** 50% Submission from sub-consultants due to LPA|A
  b) **September 30, 2024:** Reviewing progress drawings
  c) **October 15,2024:** SBC/PBC Meeting
  d) **November 01, 2024:** Drawings will be submitted to cost estimators and commissioning agent
  e) **November ___, 2024:** SBC/PBC Meeting
  f) **November 26, 2024:** Cost Reconciliation with the team
  g) **December 03, 2024:** SBC/PBC Meeting – vote to authorize DD submission to MSBA
  h) **December 06, 2024:** DD Submission to MSBA

- **Planting Strategy Update** (refer to meeting packet for a visual comparison between each option)

L. Giesecke, principal of Studio 2112, presents a comparison and update on the different landscape progress since Schematic Design.

b. Schematic Design
  i. (190) shade tree, (8) flowering trees, (20) Coniferous Trees, (15,225) Shrubs, Perennials
    1. Approx total cost: $754,500.00

c. 50% Design Development
  i. (49) Shade Trees, (3) Flowering Trees, (8) Coniferous Trees, (2,240) Shrubs + Perennials
    1. Approx total cost: $187,000.00

d. Further Design Development
  i. (55) Shade Tree, (3) Flowering Trees, (8) Coniferous Trees, (2,240) Shrubs + Perennials
    1. Approx total cost: $257,000.00

A motion was made to go with the further design development option made by B. Delorey and seconded by C. Magliozzi.

Discussion:
P. Duffy praises the design updates, calling them responsive to recent feedback. He suggests moving the courts slightly to create more space during recess, offering quieter areas for children who prefer to observe or be by themselves. Lastly, they recommend repositioning some trees that are no longer needed in their current location, suggesting they be moved to allow for a larger play area.
L. Giesecke acknowledges that the current design is more of a diagram for locating elements and calculating numbers. Benches are being added based on feedback, providing a space for children who prefer quiet time rather than running around.

Roll Call Vote: B. Delorey (Y), C. Magliozzi (Y), M. Ward (Y), S. Meyer(Y), C. McGown (Y); Abstentions: None; All in favor, motion passes.

	Exterior Design Update- A updated video rendering will be available on the website. • Main material palette being brick masonry and ultra-high-performance concrete (UHPC). • Brick will be in a brown earth tone, while UHPC and other materials like aluminum composite metal panels (ACM) and fiber cement are part of the design • The team has reduced the amount of UHPC used to lower costs while still enhancing the building's features. • The main entrance design has been updated for more prominence, creating a sheltered entry area, and simplifying the admin area and sixth-grade classrooms. • The exterior design incorporates brick piers and window slots for a mill building aesthetic, with fiber cement added for texture. • The UHPC is a durable, dense concrete panel with fiberglass mesh, offering high strength without excessive bulk. • Perforated metal panels introduced as a unique design feature for signage, allowing the building name to shine through the perforations, particularly at night. • A working group will review the appropriateness of the graphic design for the signage, which includes historic imagery of the area. • The perforated screen design is also introduced at the cafeteria, aligning with three jogs in the main lobby's southern wall. • Ultra-high-performance concrete (UHPC) is strategically used to break up the elevation and highlight specialty areas such as the music stage, kitchen, receiving area, and science labs. • Fiber cement, a less costly material, is used for accent banding and stair towers to reduce costs while maintaining aesthetics. • The east side features outdoor classroom spaces, gardens, and solar shading elements across windows for energy efficiency, as well as the art rooms, media center, and Makerspace. **Discussion:** None	
31.5	**Other topics not Reasonably Anticipated 48 hours prior to the Meeting:** **Discussion:** None	Record
31.8	**Public Comment:** **Discussion:** None	Record

31.9	**Next SBC Meeting**: PBC/SBC Meeting: October 15, 2024 @ 6:30PM; Location: TBD PBC/SBC Meeting November: TBD PBC/SBC Meeting December 3, 2024 @ 6:30PM; Location TBD **Discussion:** None	Record
31.10	**Adjourn:** 7:32PM A motion was made by C. Magliozzi and seconded by B. Delorey to adjourn the meeting. Discussion: None; Roll Call Vote: B. Delorey (Y), C. Magliozzi (Y), M. Ward (Y), S. Meyer(Y), C. McGown (Y); Abstentions: None; All in favor, motion passes.	Record

Sincerely,
DORE + WHITTIER
Elias Grijalva
Assistant Project Manager
Cc: Attendees, File
The above is my summation of our meeting. Please contact me for incorporation into these minutes if you have any additions and/or corrections.

Clinton Middle School
Invoices and Commitment for Approval

Dore and Whittier Management Partners, LLC
Please send payments to;
212 Battery Street
Suite 1
Burlington, VT 05401

Clinton Middle School
100 West Boylston Street
Clinton, MA 01510

Invoice number 00024
Date 09/30/2024

Project 22-0126 CLINTON SCHOOL DEPARTMENT

For Date Range: September 1 to September 30, 2024

Description	Contract Amount	Prior Billed	Current Billed	Remaining	Total Billed
Pre Designer Selection	39,000.00	39,000.00	0.00	0.00	39,000.00
Feasibility Sudy	125,000.00	125,000.00	0.00	0.00	125,000.00
Schematic Design	120,000.00	120,000.00	0.00	0.00	120,000.00
Amendment #1 - PSR Estimate PM+C	6,600.00	6,600.00	0.00	0.00	6,600.00
Amendment #2					
Design Development	392,000.00	180,000.00	70,000.00	142,000.00	250,000.00
Construction Documents	562,000.00	0.00	0.00	562,000.00	0.00
Bidding	181,000.00	0.00	0.00	181,000.00	0.00
Construction Administration	2,400,000.00	0.00	0.00	2,400,000.00	0.00
Final Close Out	125,000.00	0.00	0.00	125,000.00	0.00
Subtotal	3,660,000.00	180,000.00	70,000.00	3,410,000.00	250,000.00
Total	3,950,600.00	470,600.00	70,000.00	3,410,000.00	540,600.00

Invoice total **70,000.00**

Aging Summary

Invoice Number	Invoice Date	Outstanding	Current	Over 30	Over 60	Over 90	Over 120
00021	07/01/2024	40,000.00				40,000.00	
00023	08/28/2024	70,000.00		70,000.00			
00024	09/30/2024	70,000.00	70,000.00				
	Total	180,000.00	70,000.00	70,000.00	0.00	40,000.00	0.00

LPA | Architects

Invoice

BILL TO

Mr. Trip Elmore
Dore & Whittier
220 Merrimac Street
Building 7, 2nd Floor
Newburyport, MA 01950

DATE	INVOICE #
9/30/2024	2220-2409

TERMS	DUE DATE
Net 15	10/15/2024

DESCRIPTION	AMOUNT
Amount Now Due For Architectural Services: Re: Clinton MS - FS through Closeout Design Services including Amendments No. 1 through 9.	544,900.00

SUMMARY: A/E FEE = $11,700,000 & AMENDMENTS 1-9 OF $162,535 = $11,862,635

Cost Category	Phase	Fee	Previously Invoiced	Received	Current Invoice	Balance to Invoice
0002-0000	FS	250,000	250,000	250,000		
0002-0000	SD	350,000	350,000	350,000		
0201-0400	DD	2,997,000	1,362,300	817,400	544,900	1,089,800
0201-0500	CD	4,440,000				4,440,000
0201-0600	Bidding	333,000				333,000
0201-0700	CA	2,775,000				2,775,000
0201-0800	Closeout	555,000				555,000
0003-0000	Env. Site (A1)	8,140	8,140	8,140		
0003-0000	Survey (A2)	28,600	28,600	28,600		
0003-0000	Site Survey (A3)	17,600	17,600	17,600		
0003-0000	Geotech (A4)	10,010	10,010	10,010		
0003-0000	Flow Test (A4)	1,925	1,925	1,925		
0003-0000	Traffic Analysis (A5)	14,190	14,190	14,190		
0003-0000	Phius FS (A6)	4,950	4,950	4,950		
0003-0000	Traffic Study (A7)	(3,630)	(3,630)	(3,630)		
0003-0000	Geothermal (A9)	80,850	4,037	4,037		76,813
0004-0000	Other	451	451	451		
TOTAL		11,863,086	2,048,573	1,503,673	544,900	9,269,613

cc: Elias Grijalva
Terry Hartford

Total	$544,900.00

Lamoureux Pagano Associates | Architects
108 Grove Street, Suite 300, Worcester MA 01605
508.752.2831 | www.lpaa.com

ATTACHMENT F

CONTRACT FOR DESIGNER SERVICES

AMENDMENT NO. 010

WHEREAS, the Town **of Clinton** ("Owner") and **Lamoureux Pagano Associates | Architects**, (the "Designer") (collectively, the "Parties") entered into a Contract for Designer Services for the **Clinton Middle School Project** (Project Number **202000640305**) at the **Clinton Middle School** on **100 West Boylston Street, Clinton, Massachusetts 01510.**
"Contract"; and

WHEREAS, effective as of **October 3, 2024**, the Parties wish to amend the Contract:

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained in this Amendment, and other good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

1. The Owner hereby authorizes the Designer to perform additional services for Geotechnical Boring Locations and Test Pits, NTE proposal dated October 3, 2024.

2. For the performance of services required under the Contract, as amended, the Designer shall be compensated by the Owner in accordance with the following Fee for Basic Services:

Fee for Basic Services:	**Original Contract**	**Previous Amendments**	**Amount of this Amendment**	**After this Amendment**
Feasibility Study	$250,000.00	-	-	$250,000.00
Schematic Design	$350,000.00	-	-	$350,000.00
Amendment No.1: Hazardous material inspection	-	$8,140.00	-	$8,140.00
Amendment No.2: Land surveying	-	$28,600.00	-	$28,600.00
Amendment No.3: Site Surveying	-	$17,600.00	-	$17,600.00
Amendment No.4 Geotechnical testing & Fire Hydrant Flow Test	-	$11,935.00	-	$11,935.00
Amendment No.5: Traffic Analysis	-	$14,190.00	-	$14,190.00
Amendment No.6: PHIUS Feasibility Study	-	$4,950.00	-	$4,950.00
Amendment No.7 Deduct from Amendment 5 uncommitted funds	-	-($3,630.00)	-	-($3,630.00)
Amendment No.8 Design Development	-	$2,997,000.00	-	$2,997,000.00
Amendment No.8 Construction Documents	-	$4,440,000.00	-	$4,440,000.00
Amendment No.8 Bidding	-	$333,000.00	-	$333,000.00
Amendment No.8 Construction	-	$2,775,000.00	-	$2,775,000.00
Amendment No.8 Close out	-	$555,000.00	-	$555,000.00
Amendment No.9 Geothermal Test Well & Analysis	-	$80,850.00		$80,850.00
Amendment No. 10 Geotechnical Boring locations & Test Pits	-		**$3,960.00**	**$3,960.00**
Total Fee	**$600,000.00**	**$11,262,635.00**	**$3,960.00**	**$11,866,595.00**

3. The Construction Budget shall be as follows:

Original Budget: $ 114,295,892.00

Amended Budget $_____

4. The Project Schedule shall be as follows:

Original Schedule: Final Occupancy June 30, 2028 ; Final Close out June 30, 2029.

Amended Schedule $_____

5. This Amendment contains all of the terms and conditions agreed upon by the Parties as amendments to the original Contract. No other understandings or representations, oral or otherwise, regarding amendments to the original Contract shall be deemed to exist or bind the Parties, and all other terms and conditions of the Contract remain in full force and effect.

IN WITNESS WHEREOF, the Owner, with the prior approval of the Authority, and the Designer have caused this Amendment to be executed by their respective authorized officers.

OWNER

Steven Meyer
(print name)

Superintendent of Schools
(print title)

By _____
(signature)

Date_____

DESIGNER

Eric Moore
(print name)

Principal-in-Charge
(print title)

By _____
(signature)

Date October 3, 2024

LPA|Architects

2 October 2024

Trip Elmore, Project Manager
Dore + Whittier, OPM Group
260 Merrimac Street
Building 7, 2nd Floor
Newburyport, MA 01950

Re: Clinton Middle School – Amendment No. 10 – Additional Services
Geotechnical Boring Locations & Test Pits

Dear Mr. Elmore:

This is LPA|A's fee proposal for additional services relative to providing site survey services to locate geotechnical borings and test pits on the Clinton Middle School site at the proposed location of the new school. As you may recall, site survey was excluded from LPA|A's DD–Closeout fee proposal.

The consulting engineer proposed for the above work is Nitsch Engineering. The total cost for the proposed scope of work, including LPA|A's 10% contractual markup, is $3,960 and is, in LPA|A's opinion, reasonable and appropriate. A copy of Nitsch's proposal letter, dated August 20, 2024, is attached for your reference. Please reference Task II: Geotechnical Boring Locations.

Also attached is Attachment F – Amendment No. 10 to the Contract for Designer Services for the Owner's signature.

Please contact me if you have any questions or comments.

Sincerely,

Eric Moore
Principal Architect

EM/pf

Enclosures: Nitsch Engineering proposal letter dated 8/20/2024
Attachment F – Amendment No. 10 to the Contract for Designer Services

cc: Rick Lamoureux, LPA|A Sean Brennan, LPA|A
Peter Caruso, Jr., LPA|A Pam Farley, LPA|A

2220/Legal/Owner/Amendments/Amendment No. 10/Proposal – Geotechnical Boring Locations – Test Pits

Nitsch Engineering

370 Main Street, Suite 850
Worcester, MA 01608
T: 508-365-1030

www.nitscheng.com

August 20, 2024

Eric D. Moore, AIA
Principal
Lamoureux Pagano Architects
108 Grove Street, Suite 300
Worcester, MA 01605

RE: Nitsch Proposal #15181.1P
Clinton Middle School
Easement and Land Swap
Land Surveying Services
Additional Services(rev1)
Clinton, MA

Dear Eric Moore:

Nitsch Engineering (Nitsch) is pleased to submit this Additional Services proposal to you (the Client) for professional land surveying services related to the Clinton Middle School Project located on West Boylston Street (Route 110) in Clinton, Massachusetts. It is our understanding that you have requested land surveying services to evaluate potential wetland resource areas adjacent to the project, add the 400' regulatory buffer zone from the Wachusett Reservoir to the existing conditions survey, locate geotechnical borings, test pits and update sewer, drain and water lines as marked by the Clinton DPW.

This letter summarizes our scope and fee.

SCOPE OF ADDITIONAL SERVICES

Nitsch will provide professional land surveying services to accomplish the following tasks:

Survey work will conform to the procedural and technical standards for the practice of land surveying in Massachusetts under the direct supervision of a Professional Land Surveyor registered to practice in the Commonwealth of Massachusetts.

~~TASK I: EVALUATE WETLAND RESOURCE AREAS~~

1. Retain services of a wetland scientist to evaluate and report potential wetland resource areas as shown on the attached sketch; and

2. Determine Massachusetts Department of Environmental Protection (MassDEP) surface water protection limit and associated 400-foot buffer zone; and

TASK II: GEOTECHNICAL BORING LOCATIONS

1. Verify previously established survey control set by Nitsch. This control was set utilizing Global Positioning System (GPS) observations to establish NAD 83 horizontal coordinates and NAVD 88 vertical datum for the project site;

2. Field locate geotechnical boring and test pit explorations when they have been completed;

3. Add geotechnical explorations to previously prepared existing conditions plan utilizing Nitsch file format and drafting standards; and

4. Field locate sewer, drain and water lines as marked by the Clinton DPW

WORK NOT INCLUDED IN THE SCOPE OF SERVICES

1. Preparation of Conservation Commission filings such as Request for Determination of Applicability (RDA), Abbreviated Notice of Resource Area Delineation (ANRAD), or Notice of Intent (NOI).

2. Performing a field update of any site improvement changes since June 2023.

ASSUMPTIONS

1. Any revisions requested by the Client or other approving authorities after commencement of the survey will be considered Additional Services.

2. The Client is responsible for providing and arranging open and uninterrupted access to the site prior to Nitsch's arrival and there are no special access requirements. Should access not be supplied, Additional Services will be required.

3. Criminal background checks, such as Criminal Offender Record Information (CORI) and Sexual Offender Record Information (SORI), if required, do not cause undue delays to access site.

4. This cost assumes record monumentation, including survey control, is recoverable and Nitsch will encounter reasonable congruity between field and record data.

5. Additional or special insurance coverage is not required.

6. AutoCAD drawing layer standards used by Nitsch, will not need to be modified.

7. There have been no changes, or additions to the site improvements since our survey was performed in June 2023.

8. Subject to the customary standard of care for the professional services performed or furnished by Nitsch under this agreement, Nitsch may use or rely upon the accuracy and completeness of record documents provided by others and shall not be held responsible for any errors or omissions that may arise as a result of erroneous or incomplete information within any such record documents from which information was obtained, in whole or in part, and incorporated into documents prepared by Nitsch.

TIME AND MANNER

Nitsch is prepared to begin work immediately from the receipt of this executed proposal and documents to be provided by the Client and anticipates substantial completion within two (2) weeks thereafter. The completion of field tasks will be subject to weather conditions affecting the required field work.

COMPENSATION

Compensation for the Additional Services provided will be in accordance with the Standard Contract Terms of Nitsch's executed agreement with the Client, dated December 29, 2022. The estimated lump-sum cost for these services is $9,600 (see breakdown below). Costs will not be incurred by Nitsch beyond this estimated amount without prior written approval from the Client. Expenses are included in the above-listed fees.

~~TASK I: EVALUATE WETLAND RESOURCE AREAS~~

TASK II: GEOTECHNICAL BORING LOCATIONS 3,600.00
Assumes explorations have been completed
and will require (2) site visits

Should the conditions of this Additional Services proposal meet with your approval, please sign the Client Authorization section below and return this Additional Services proposal to us for our files. If Nitsch is authorized to commence and/or continue providing its services on the project, either verbally or in writing, prior to the full execution of a written contract, such authorization will be deemed an acceptance of this Additional Services proposal, and all such services will be provided and compensated for in accordance with the terms and conditions contained herein as though this Additional Services proposal were fully executed by the Client.

If you have any questions, please call.

Very truly yours,

Nitsch Engineering, Inc.

Mark Violette

Mark E. Violette, PLS
Deputy Director of Land Surveying

MEV/vem

Enclosures: Survey Limits Sketch

P:\15000-16999\15181 Clinton MS\Contract\Draft Agreements\Survey\AS3\AS 3_Revised\15181.1P_SurPr_AS3_Rev1.docx

CLIENT AUTHORIZATION

This Additional Services proposal is hereby accepted by the Client as evidenced by the execution hereof, and such a person so executing the same on behalf of the Client does hereby warrant full authority to act for, in the name of, and on behalf of the Client.

Such acceptance provides full authorization for Nitsch to proceed with providing the Scope of Additional Services under the terms and conditions stated herein.

_____ _____
Signature Date

_____
Printed Name and Title

LPA|A Working Group Meeting Minutes

Meeting Minutes | DD: Admin/Guidance Program 09.05.2024

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Robert Seed** | Assistant Principal | CPS
- **Mike Notaro** | Dean of School Culture | CPS
- **Madison Cole** | School Psychologist | CPS
- **Danielle Bailey** | 7/8th Social Worker | CPS
- **Brian McGown** | Adjustment Counselor | CPS
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.05.24.01	**Introduction** ▪ Peter presented overview of where the project design current stands.	**Info.**
09.05.24.02	**Administration Suite** ▪ There will be 2 workstations at main reception area. ▪ Copy room open to reception desk is acceptable. ▪ There will be 1 copy machine in Copy Room area behind receptionists. ▪ Include both upper/base cabinets at copy room area. ▪ Both single-user HC toilet rooms are acceptable to be located off main corridor and not accessible from within the suites. ▪ Include kitchenette area with refrigerator. ▪ Teacher mail access- keep mail slots within close proximity of door for easy access. ▪ Plan for 120 mail slots. ▪ Include digital display in waiting area.	**Info.**

Item:	Description:	Responsibility:

	▪ Maintain 200SF for Records room; will use extra space for storage, if needed. Records room will also be "communications room" in an emergency.
	▪ Conference room to be accessible from both the guidance suite and main corridor.
	  o Include 1 smartboard (not digital display) to have same technology as a typical classroom.
	  o Include 1 additional 8' markerboard
	  o Keep at 18 people capacity.	

09.05.24.03	Guidance Suite ▪ Make the guidance waiting area larger to accommodate receptionist. o Add copy machine at reception area. Counselors use copy machine with confidential information. ▪ The door into guidance suite shall be closer to main corridor to reduce security issues. ▪ Add tackboard in short hallway from main corridor. ▪ Install digital display in guidance waiting area. ▪ Install 4' tackboard and markerboard in each guidance office.	**Info.**
09.05.24.04	Room Swap ▪ Executive Functioning will become Foreign Language Classroom. ▪ Swap Health/Wellness with new Foreign Language Classroom.	
09.05.24.05	Room Swap ▪ Psychologist and SRO offices at second floor shall be swapped.	

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Admin & Guidance\2220-MO-DD Admin & Guidance 09.06.24.docx

Meeting Minutes | DD: Art Rooms 10.09.2024

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Suhani Bhatia** | Teacher | CPS
- **Marisa Sciaraffa** | 8th Grade Teacher | CPS
- **Brian Macdonald** | Science Teacher | CPS
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Project Manager | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Terry Hartford** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
10.09.24.01	**Introduction** ▪ The purpose of the meeting is to review the current layout of the art rooms.	**Info.**
10.09.24.02	**General Storage Needs** ▪ Flat countertop space is desirable. ▪ 4 tall cabinets are adequate; extend countertop as much as possible. o Tall cabinets will have adjustable shelves and sliding drawers at bottom.	**Info.**
10.09.24.03	**Storage Rooms:** ▪ Fixed shelves are preferred; 16" deep. ▪ Add a 30"d. x 48" long countertop for a 24"x24" paper cutter to sit on. Paper cutter to sit in storage room away from students. ▪ Kiln will be in the south storage room.	
10.09.24.04	**Skylight:** ▪ Kevin Rafter to advise if open grid ceiling is desirable at skylight wells.	

Item:	Description:	Responsibility:
	▪ There will be scene lighting around the perimeter of the skylight well.	
10.09.24.05	**General Art Room Comments:** • The room is 1,200sf (~30' x 40') • No overhead power drops are needed. • No spray booth is needed. • Shades will be provided on the interior borrowed lite. Film will be installed over glass to reduce distraction to the students. • Will use all magnetic whiteboards; no tackboards are desired. • SM is expecting at least 1 window to be operable by way of awning limited to 4" opening. • Will have linoleum flooring; durable, low VOC, long lifespan, can more easily remove stains. • Plan for charging cart for Chromebooks and Ipads.	

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Industrial Arts\2220-MO-DD Art Rooms 10.09.24.docx

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Chris Tahan** | Director of Technology | CPS
- **Brian Sharon** | IT Specialist | CPS
- **Scott Goodrich** | Principal | Edvance Technology Design
- **Eric Moore** | Principal Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.13.24.01	**Introduction** ▪ The purpose of the meeting is to review the current status of the technology to be included in the project scope.	**Info.**
09.13.24.02	**Built in Classroom Technology will include:** ▪ Flush mounted digital clock; ability to scroll or broadcast a message in an emergency. ▪ Speaker for public address announcements. ▪ Emergency call buttons. ▪ Speech reinforcement- program audio for multi-media presentations. ▪ Phone ▪ Document camera; marries with projector. CMS currently tries to offer one to anyone that requests it. Currently carrying one per classroom.	**Info.**
09.13.24.03	**Chromebooks:** ▪ Cabinet for smaller quantities in resource rooms for 7-8 grades.	

Item:	Description:	Responsibility:

- Charging cart for grades 4–6; currently being managed within classroom. Grades 7–8 will not have charging carts.
- Currently carrying a new Chromebook for each of the teachers.
- Carry new Chromebooks for grades 4 and 5; stays in 4th grade; Chromebooks will probably travel with the student starting in 5th grade to upper grades, and therefore charging carts may not be required in grades 5 and 6.

09.13.24.04 **Interactive Short-Throw Projector:**

- Will specify the latest and greatest.
- 5'x8' whiteboard with 100" diagonal projection.
- 5000 lumens
- Laser light based; rated for 25k hours
- No servicing for up to 15–20 years.
- Will be used throughout school for consistency.
- USB and HDMI connection to projector.
- Capable of being integrated with speech reinforcement
- Will have wireless technology; some limitations with video content. Should make physical connection for video content.
- Should explore using wireless keyboards.

09.13.24.05 **Portable Display Technology:**

- Positive– removes gap between student and screen
- Negative– can take up a lot of space in classroom
- Evaluate spaces where this may be beneficial.
- Currently will not be used for primary classroom display technology.

09.13.24.06 **Classroom Flexibility:**

- SM advised that there is no desire for second connection to the projector at back of each classroom.

09.13.24.07 **Flat Panel Display in Classrooms:**

- Only if technology advancements occur between now and 100% CD's requiring further considerations.

Item:	Description:	Responsibility:
	• Will need to relocate the PH connections to be behind the digital display along with power receptacles. • SM advised to keep all current display connections on wall.	
09.13.24.08	**Flat Panel Display for Signage:** • 1 in Main Administration Waiting • 1 in Main Lobby • 1 in Cafeteria • Potentially 1 at top of main lobby stair. • SG recommended Samsung with integrated digital player in panel. Free lifetime support.	

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Industrial Arts\2220-MO-DD Classroom Technology 09.13.24.docx

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Brenda Disessa** | Computer Science Robotics Teacher | CPS
- **Brian Sharon** | IT | CPS
- **Christina Bazelmans** | Associate Principal | LPA|A
- **Corinna Javier** | Associate | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Trip Elmore** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.13.24.01	**Introduction** ▪ Corinna presented overview of where the project design currently stands. ▪ Computer Science classroom located adjacent to Life Science lab, with shared prep room that contains a sink, dish washer, chemical storage cabinet, refrigerator with ice maker, teacher wardrobe and storage space that can be used for computer science.	**Info.**
09.13.24.02	**Computer Science and Robotics** ▪ 4' markerboards flanking a 8' markerboard with short throw projector on both sides of the room. Brenda Disessa (BD) noted that both projectors should mirror what the teacher is presenting, and that there are likely more whiteboard shown than necessary. LPA|A will reduce white boards in favor of more storage along the walls. ▪ North wall currently has (24) student project cubbies that are 1' wide by 2' tall. BD advised that 24 is the appropriate number, and will advise on the appropriate size for student project storage. ▪ North wall also shows rolling 4' wide storage cabinets with bins, similar to Durham mobile cabinet with bins. BD advised doors must be lockable and 3 should be	**Info.**

Item:	Description:	Responsibility:

sufficient.

- There will be 2– 8' wide windows along the south exterior wall with solar shading to reduce solar heat gain.
- The southern wall includes tall cabinets and base cabinets for the full length of the wall. BD requests maximizing the tall storage cabinets.
- (3) 3–D printers are shown on the countertops on the south/window wall. BD and Brian Sharon (BS) will forward a product cut for the preferred 3D printer model. LPA|A assumes this will be specified with a "clean print" enclosure with filter, so that exhaust will not be required.
- A 12' x 12' robotics area is required, and BD confirmed that it could be against the wall on one side. BD/BS will advise on the preferred model robotics arena, and will confirm if it should be a competition field or portable field for quick assembly/disassembly and storage.
- Tables shown now have lockers beneath. BD would prefer mobile tables on casters, similar to this mobile robotics work bench, but without an edge lip.

Item:	Description:	Responsibility:

- The shop should accommodate a minimum of 25 students, so additional tables and chairs will be added to the floor plan. Must have accessible height tables available.
- (2) higher power desktop computers are desired instead of the (3) currently shown. They do not need to be adjacent to the 3d printers.
- Robot storage is required, and must be locked. Discussed locating flexible shelving inside the prep room (which can be locked) for robot storage.
- Prep room also requires secure "charging bank" to charge many robot batteries and small drones. Suggest flexible shelving 4' wide with multiple outlets located vertically.
- PLTW notebook "Mail slots" for students are desired and will be furniture; 100 slots is appropriate.
- Overhead power/cord reels are desired throughout the room (over each table) BD would prefer if they were on sliding tracks, to increase flexibility. Cord reels must be reachable by teachers.
- Project display is desired in the hallway or in the lobby of the building, to display 3d projects to the full student population. A display case in the lobby would be sufficient.
- LPA|A will rearrange the prep room so that the sink is away from the charging batteries.
- Include dedicated technology charging cart outlet for future-proofing

Attachments:	Computer Science Drawing
Minutes by:	Christina Bazelmans
Distribute to:	Attendees
File location:	I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Computer Sciece & Robotics\2220-MO-DD Computer Science Robotics 9.13.24.docx

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Beth Armstrong** | Administrative Assistant Food Service | CPS
- **Ed Arons** | Principal | Colburn & Guyette
- **Cal Brokamp** | Project Director | Colburn & Guyette
- **Eric Moore** | Principal Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Rick Lamoureux, Jr.** | Principal | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Trip Elmore** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.13.24.01	**Introduction** ▪ The purpose of the meeting is to review the current status of food service to be included in the project scope.	**Info.**
09.13.24.02	**Smallwares:** ▪ Not currently carried in food service scope/budget ▪ Intent is to bring from existing school to the new school (reuse). ▪ C&G only deals with equipment that is "plugged in". ▪ The Owner will be responsible for coordinating bringing existing smallwares over to the new school.	**Info.**
09.13.24.03	**Inventory:** ▪ C&G will be on site and coordinate and make inventory of what equipment will be reused. ▪ Beth will prepare a list of items that is plugged in and what is not for next week. ▪ At the end of DD, C&G will walk client through the cutbook to clearly show what is included in the construction package and confirm all equipment specifications.	

Item:	Description:	Responsibility:

09.13.24.04 **Trash and Condiments:**

- LPA|A to locate trash over by dishwashing area.
- Integrate condiments into serving lines; small carts for each of the 3 serving lines.

09.13.24.05 **Current Kitchen Layout:**

- Does not include any existing equipment to be reused.
- Beth confirmed the kitchen layout looks good.
- SM concerned about the POS, milk, condiments equipment needing to be moved each day into the kitchen to allow for Cafeteria use. LPA|A to revisit; potentially moving out wall to enclose the serving lines to be within the kitchen area.
- Beth confirmed that this is a cooking kitchen (prep onsite).
- Currently, trays sit outside and students grab them individually and go get food. Would like to keep that approach.
- Make utility counter first and have the trays sitting on countertop.
- C&G and LPA|A to coordinate location of Janitor's closet and bathrooms.

09.13.24.06 **Receiving/Trash Area:**

- View of receiving area from Custodian's office is not necessary. LPA|A to move Trash/Recycling room down and shift Custodian's Office and bathroom up.

09.13.24.07 **Beth Armstrong Contact Information:**

- Email: armstrongb@clinton.k12.ma.us
- Phone: 978-273-6527

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Industrial Arts\2220-MO-DD Food Service 09.13.24.docx

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Justin Murray** | History Teacher | CPS
- **Terry Ingano** | Clinton Historian
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Corinna Javier** | Associate | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Trip Elmore** | Owner's Project Manger | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W
- **Terry Hartford** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
	Introduction	

09.20.24.01	▪ Sean Brennan (SB) presented Overview of types of graphic/ history wall projects LPA|A has done in the past
	  o Town centered, school centered, people centric
	▪ SB presented overview of building organization – public spaces and organization of academic wings
	  o Identified locations for graphics – Perforated panels at stairs, and cafeteria windows, custom printed plastic laminate on lobby sawtooth walls, display cases in lobby and in front of media center (MC display case to remain – not a graphic wall)
		Info.

09.20.24.02	**Cafeteria Window Scrim – perforated panels** ▪ SB described Zahner "Image Wall" custom perforated metal panels. ▪ Image being shown is the Train trestle ▪ Terry Ingano (TI) thinks the image used is a very recognizable symbol of Clinton ▪ The whole group liked this image and decided this is a good direction for this location	**Info.**

Item:	Description:	Responsibility:
	▪ TI may have other photos of this train trestle and will look through his images and let us know if he has anything better than what we are showing	
09.20.24.03	**Front Stair Scrim – perforated panels**	
	▪ Graphic uses a map from 1876	
	▪ The group all liked the map image but LPA|A will work on graphic changes	
	o Make sure the downtown area is highlighted and not the hills	**Info.**
	o Look at moving the Flying Gael logo	
	▪ SB noted the word "CLINTON" is in front of a window so it will be highlighted at night	
09.20.24.04	**Lobby Sawtooth Wall Graphics**	
	▪ SB described the custom printed plastic laminate panels and how they are hung with z-clips – if an image fell out of favor there is an opportunity to replace the panels	
	▪ SB presented the idea of using several distinct images or one large across all the panels	
	▪ LPA|A is looking for direction for a focus for these graphics – general history, focus on the Dam, industry, people, etc.	
	▪ Justin Murray (JM) is interested in telling something about the town so students, parents and visitors to the school can learn about the town	**Info.**
	o JM would like it to be the history of Clinton, like a timeline	
	o JM would like to add plaques to describe the images	
	▪ SB gave the idea of adding QR codes for link to additional information – could also be a history project for students that could be changed periodically	
	▪ JM suggested starting at revolutionary war even before the town was incorporated (1850)	
	o SB suggested it would be best to stick to a time where photographs existed	

Item:	Description:	Responsibility:
	▪ JM noted Fuller field as potential location to highlight ▪ LPA|A is looking for direction on major themes and imagery ▪ Depending on the quality and number of images LPA|A will come up with a design strategy (one image per panel, multiple images per panel or images that span multiple panels) ▪ Panels could be based a point in time or a particular theme (Industry, tech, people, nature) or one iconic image ▪ Steve Meyer would like the lobby graphics to be both aesthetically pleasing and historically significant ▪ SM asked the group to share images and thoughts in the next week ▪ SM gave the towers of Clinton as one idea of a theme	
09.20.24.04	**Wayfinding/ Academic Neighborhood Grapics** ▪ SB shared examples of schools that used themes and graphics that could be linked to curriculum to define neighborhoods ▪ SM likes the idea of using colors to define neighborhoods as it will allow for flexibility if the classroom wings need to be re-allocated to different grade levels in future years. ▪ SM suggested grades 4,5 & 6 could have more distinct colors - 7&8 could have a more subtle scheme ▪ LPA|A will be presenting ideas of how the academic neighborhoods are organized and the color in the October 7 interiors working group meeting.	**Info.**

Attachments:

Minutes by: Corinna Javier

Distribute to: Attendees

File location: I:₩PROJECTS₩2022₩2220 - Clinton Middle School₩MINUTES₩Owner₩DD Working Group Meetings₩Historic Graphics₩2220-MO-DD Historic Graphics 09.20.24.docx

Meeting Minutes | DD: Industrial Arts Program 09.11.2024

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Jennifer Oliver** | Industrial Arts Teacher | CPS
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Christina Bazelmans** | Associate Principal | LPA|A
- **Corinna Javier** | Associate | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.11.24.01	**Introduction** ▪ Sean presented overview of where the project design currently stands.	**Info.**
09.11.24.02	**Industrial Arts (main classroom)** ▪ Will have up to 12' high ceilings. ▪ 8' smartboard with a 4' whiteboard on either side. ▪ Emergency eyewash close to tools. ▪ Wardrobe closet close to teacher's desk. ▪ Need a lot of tall cabinets; lockable. ▪ Built-in cabinets preferred along east wall. ▪ Would like to store as much as possible in the tall storage cabinets for security. o Small cart with rocks is heaviest item to store and is kept on bottom shelf. o 4- 4' tall cabinets with 8' of base/upper ▪ Student tables- will have lockers below (don't need separate cubbies if that's the case). Each student needs enough storage for a shoebox size item.	**Info.**

Item:	Description:	Responsibility:

- Add base/upper cabinets along each wall; mix in with tall cabinets.
- Drill press location is good as shown.
- Band saw to be facing classroom so when teacher is behind it, they can be facing the students.
    - Currently on rolling table; new ones need to be mobile.
- Currently showing 18 power drops from ceiling; could be reduced; LPA|A to review. At the very least, one for each student table.
- Dust collector– will need to mobile and connect into machine as needed.
- Students NOT currently using power tools, only handtools; only Chromebooks.
- Install plywood on walls behind drill presses/band saws and along South wall.
- Powertools working areas are designated on west and south walls.
- Exterior door:
    - Students do not go outside (too many variables such as wind, rain, etc.)
    - More for deliveries.
    - LPA|A to use a 42" wide door for future use.
- Fire extinguisher cabinet to include fire blanket.
- Classroom will have noise dampening acoustics (for LEED).
- Classroom will have speech reinforcement.
- Sinks will need solids interceptor due to potential paints being used.
- Floor drains beyond emergency shower are not needed.

09.11.24.03 Industrial Arts (Storage Room)

- Move teacher's wardrobe into classroom.
- Put CNC machine in classroom in southeast corner.
- No visibility/display space is needed into storage room; maximize shelving. LPA|A will look for potential display area somewhere else in the school.

Item:	Description:	Responsibility:
	▪ No lumber rack is needed. ▪ Standard 3' wide door is adequate. ▪ Standard bookshelf depth works perfectly fine. ▪ Line all walls with shelving.	
09.11.24.04	**Types of experimental equipment used:** ▪ Uses up to 10 bicycles twice per year. LPA|A to identify potential storage methods. **Jen to send cutsheet of bike storage equipment.** ▪ Egg drop from 10'. SM suggested conducting the egg drop from the second floor of main lobby. ▪ Wind tunnels that can be stored easily. ▪ Crash test ramps that can be stored easily. ▪ CO2 car racing– need 60' length. Can be done in main lobby second floor. Uses 2 vehicles at a time.	

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

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Meeting Minutes | DD: Interior Design Review 10.07.2024

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Mike Notaro** | Dean of School Culture | CPS
- **Alison Alvarado** | Grade 6 Math/Science | CPS
- **Harold Ogilvie** | Life Sciences Teacher | CPS
- **Eric Moore** | Principal Architect | LPA|A
- **Rick Lamoureux, Jr.** | Principal | LPA|A
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Corinna Javier** | Associate | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Trip Elmore** | Owner's Project Manager | D&W
- **Terry Hartford** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
10.07.24.01	**Introduction** ▪ Sean presented an overview of the interior finishes and color selections.	**Info.**
10.07.24.02	**Color Scheme:** ▪ Color reinforced wayfinding– giving the classroom wings primary colors including the following: o 4th grade– green neighborhood o 5th grade– yellow neighborhood o 6th grade– Teal Neighborhood o 7th & 8th grade– navy on the first floor and blue on the second floor.	**Info.**
10.07.24.03	**Corridor and Lobby Finishes:** • 4x12 ceramic tile on corridor walls for durability. The smaller tile reduces imperfections from showing on the wall surface.	

Item:	Description:	Responsibility:
	• Terrazzo flooring at the main lobby for durability. Pattern to play off the Cafeteria sawtooth walls.	
10.07.24.04	**Interior Main Lobby Theme:** • Capture the mill feeling and industrial nature of the Town. Express the structure for the hung second floor walkway at Lobby.	
10.07.24.05	**Cafeteria:** • Golden wood veneer panels. • Green ceiling baffles. • Green tile around serving lines with stainless steel overhead doors. • Open grid ceiling above serving line bumpout.	
10.07.24.06	**Main Entrance:** • Steve asked if "MIDDLE SCHOOL" signage can be added across the fascia of the main entrance canopy. LPA|A to review. Something that can be used to define what the school is.	
10.07.24.07	**Gymnasium:** • Can put bottom 3-4 rows out for a game or extend all the way out for an assembly but will go into the playing surface. • CMU walls up to second floor level with high-impact GWB above with acoustic panels. • Will have a center-rolling divider curtain down the middle of the gym. • LPA|A will look at options for a batting cage. • EM reviewed what LPA|A designed for Auburn Middle School for attendees to see for comparison purposes. • District advised that there should be capacity for 100 people during a game.	
10.07.24.08	**Corridor Lockers:** • 15" wide	

Item:	Description:	Responsibility:
	• Targeting 200 (100 double-tier) lockers per grade.	
10.07.24.09	**Teal Color:** • TS questioned how the color teal fits in the color theme. • SM explained that it's a compatible color for the overall color theme and works with the green color palette.	
10.07.24.10	**Classrooms:** • AA asked how many classrooms per grade- LPA|A responded with 6 dedicated classrooms, a SPED room, 2 resource rooms, and collaborative spaces for grades 4-6.	
10.07.24.11	**Stairs:** • All stairs except at the ends of the classroom wings will get stainless steel perforated guardrails. • The stairs at the ends of the classroom wings will have half-walls up the middle.	
10.07.24.12	**7th and 8th grade Corridor:** • LPA|A will add the accent tile and markerboards to break up the long corridors.	

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Medical Suite\2220-MO-DD Interior Design 10.07.24.docx

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Harold Ogilvie** | Life Sciences Teacher | CPS
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Christina Bazelmans** | Associate Principal | LPA|A
- **Corinna Javier** | Associate | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Terry Hartford** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.10.24.01	**Introduction** ▪ Sean presented overview of where the project design currently stands. ▪ Shifted entire prep room to Computer Science side. ▪ There will be perimeter counters on east and south walls with mobile student desks for flexibility.	**Info.**
09.10.24.02	**Life Science (general comments)** ▪ 6' markerboards on either side of 8' smartboard will be adequate at teaching wall. ▪ The teacher demonstration table will be mobile. No need for experiment upright rod assemblies. ▪ There will be 2– 8' wide windows along the south exterior wall with solar shading to reduce solar heat gain. This will provide much more sunlight than existing. o Tryptic soy experiments need some sunlight. No dedicated area required, however. ▪ Not much need for glassware. Only install 1 drying rack in the prep room. ▪ Preference is for lockable storage throughout the room and in prep room. No glass in upper cabinet doors. o Storage for scalpels, bleach, etc. and would like security.	**Info.**

Item:	Description:	Responsibility:

- Preference is for emergency eyewash to be closer to the prep room (not at main classroom door). Will reduce temptation by students to use.
- Mail slots for students will be furniture; not built in.
- One shared tall teacher wardrobe cabinet in prep room to be shared with Computer Science is adequate.
    - Tall cabinet(s) not necessary in Life Science room; nothing large to store in them.
    - Tall cabinets to be installed in prep room.
- Add dedicated charging cart location at north wall (where tall cabinet is currently shown). SM preference is to "future proof" the space.
- Include 1 residential-type refrigerator with freezer and built-in ice maker in prep room.
- Include residential-type under-counter dishwasher in prep room.
- Include mid-size chemical storage cabinet in prep room located under countertop.
- Include residential-type countertop microwave in prep room.
- 3 overhead power drops are adequate.
- No overhanging experiment grid is needed. HO can use another classroom, if needed.
- Located up to 10 microscopes in a tall cabinet.
- No tackboards needed; only whiteboards (20' is adequate).
- Include sanitizing goggle cabinet.
- HO preference is for deeper student lab sinks and in prep room; approximately 9" deep x 18" wide. Sinks will be epoxy to match countertop material.
- Fire extinguisher cabinet to include fire blanket.

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Medical Suite\2220-MO-DD Life Science 09.10.24.docx

Meeting Minutes | DD: Media Center & Maker Space 09.19.2024

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Chris Tahan** | Director of Technology | CPS
- **Brian Sharon** | IT Specialist | CPS
- **Jo Hainey** | Library/Media Specialist | CPS
- **Scott Goodrich** | Principal | Edvance Technology Design
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Christina Bazelmans** | Programming and Sustainability Director | LPA|A
- **Chris Lee** | Design Director | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Trip Elmore** | Owner's Project Manager | D&W
- **Terry Hartford** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.19.24.01	**Introduction** ▪ The purpose of the meeting is to review the current layout of the Media Center and Maker Space.	**Info.**
09.19.24.02	**Media Center:** ▪ SM was originally hoping to get enough seating in library so it can be used as a faculty meeting area. However, due to MSBA requirements, some square footage needed to be given to the Maker Space. The Cafeteria will become the faculty meeting area. ▪ SM desires to have at least one area that can fit an entire classroom. This is accomplished with the layout shown. ▪ Smaller work space to be configured with a conference table o Will have a ISTP ▪ More important to keep 2 small and 1 large group room. ▪ SM has no issue with limited visibility to group rooms from circulation desk; most likely there will be another staff	**Info.**

Item:	Description:	Responsibility:

member (speech teacher, counselor, intervention instructor) with the students.

- Plan for 10,000 volumes of books; shelving units can be mobile for greater flexibility.
- SM requested display case to the right of the main media center doors.
- LPA|A to show square tables, in lieu of round, so they can be put together.
- Locate charging cart for Chromebooks adjacent to the circulation desk; provide power.
- Add copy machine in the work room.
- Include a sink in the work room.
- LPA|A to plan for 2 staff in media center; one at circulation desk and one in work room.
- Locate 4' whiteboard and 4' tackboard behind circulation desk.
- Group Rooms:
  - digital display to hook up
  - 4' whiteboard
- Adjacent outdoor courtyard can be used as an outdoor maker space.
- No further comments provided; layout is approved.

09.19.24.03 **Maker Space:**

- SM– will be a combination of scheduled and open for other classes.
- Need to address acoustics with Media Center.
- Maker space will be electronics focused.
- Needs lockable tall storage. Locate across from the ISTP. Include countertop with shelving below.
- Charging cart
- 1 sink is acceptable.
- Overhead power– use grid spacing to accommodate flexible furniture.
- Will have 2– 3D printers.
- Need flexible furniture.
- No need for a copy machine.

Item:	Description:	Responsibility:
	▪ District is ok with walking through media center from maker space to get outside.	
09.19.24.04	**Technology Office:** ▪ SM– could be located at the Outside Provider and the OP uses a small group seminar room. ▪ No card readers are needed at MDF/IDF rooms.	

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Industrial Arts\2220–MO–DD Media Center and Maker Space 09.19.24.docx

Meeting Minutes | DD: Medical Suite Program 09.09.2024

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Nancy Miliken** | CMS Nurse | CPS
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Chris Lee** | Associate Principal | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Terry Hartford** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.09.24.01	**Introduction** ▪ Peter presented overview of where the project design currently stands.	**Info.**
09.09.24.02	**Medical Suite (general comments)** ▪ Provide space for 3–4 chairs in the waiting room with a table. ▪ Would like direct view to resting area from Nurse Office desk. ▪ A second Nurse workstation could be in the open within the resting area; at a furniture desk or built–in counter. ▪ Storage room is desirable for kid's clothes and supplies. Can be stored in furniture cabinets (not built–in). ▪ A second exam room is not necessary (kids in separate room is "worrisome"); give space to resting area. ▪ Door into guidance suite is acceptable. ▪ 2 beds in rest area + 1 bed in exam room is adequate. ▪ Provide a refrigerator with freezer and ice maker within the exam room. Refrigerator does not need to be lockable.	**Info.**

Item:	Description:	Responsibility:
	▪ Provide infrastructure for copier/fax machine in Nurse Office. ▪ Glass in doors at Nurse Office is desirable.	
09.09.24.03	**Hoyer Lift** • Nancy provided LPA|A with Hoyer lift example.	LPA|A

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Medical Suite\2220-MO-DD Medical 09.09.24.docx

Meeting Minutes | DD: PE/Athletics Working Group 10.08.2024

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Katy Clouatre** | Teacher | CPS
- **Jennifer Gouvin** | Director of Athletics | CPS
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Terry Hartford** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
10.08.24.01	**Introduction** ▪ Sean presented the Gymnasium, Locker Rooms and associated spaces to the attendees.	**Info.**
10.08.24.02	**Locker Rooms:** ▪ There are currently 112 double-tier lockers shown on the drawings which are 15"W. x 36"H. x 12"D. ▪ District advised that they need 50 double-tier lockers for athletes and 30, 4-tier lockers for regular gym class for a total of 80. ▪ The school will issue padlocks to students for the gym locker room lockers. ▪ Lockers will be vented. ▪ Currently, the students carry around 2 backpacks: one in front and one in back. ▪ District advised that the corridor locker bank at the beginning of the first floor 7/8th grade wing can be used for overflow locker needs. ▪ District advised that they would like to incorporate a Teams Meeting room within the locker room area and	**Info.**

Item:	Description:	Responsibility:
	directly off the Gym. A reduction in lockers to 80 will meet their needs. ▪ District advised that the changing rooms can be reduced.	
10.08.24.03	**Gymnasium Construction:** ▪ Wall-mounted projection screen on north wall, opposite of bleachers. ▪ Center-rolling divider curtain; Owner would like to see both sides at the same time. ▪ 2 scoreboards will be installed; one on the north wall and one on east wall. ▪ Wall pads will wrap the perimeter of the Gym. ▪ A custom-sized batting cage will be installed; LPA|A to research available options due to limited space available to install. ▪ The District advised LPA|A to prioritize the batting cage over the divider curtain.	**Info.**

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Admin & Guidance\2220-MO-DD PE-Athletics 10.06.24.docx

Meeting Minutes | DD: Safety & Security Working Group 09.18.2024

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Chris Tahan** | Director of Technology | CPS
- **Azim Rawji** | ART Engineering, Inc.
- **Robbie Burnett** | ART Engineering, Inc.
- **Thuyen Nguyen** | ART Engineering, Inc.
- **Eric Moore** | Principal Architect | LPA|A
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Terry Hartford** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.18.24.01	**Introduction** ▪ The purpose of the meeting is to review safety and security features of the new school.	**Info.**
09.18.24.02	**Review of EMS Working Group from 8/09/24:** ▪ Topics reviewed as a recap: o Entry sequence into building o Locations of card access at exterior doors o Locations of card access at corridor doors o Classroom door hardware ▪ Removable center mullion at double door ▪ Corridor doors will be on magnetic hold opens which will release in event of fire or emergency. o Video surveillance, intrusion detection, and access control scope. o Locations of safety stations. o Locations of bullet-resistant glazing (Level 3). **NO CHANGE FROM LAST DISCUSSION.**	**Info.**

Item:	Description:	Responsibility:

09.18.24.03 **Records Room(s):**

- Currently, floor plan shows the records room divided into 2 spaces. SM is good with this.
- Locate emergency receiving phone in one of the records rooms for use during a lockdown.

09.18.24.04 **Cameras**

- To be placed around school for full 360 as base as can be done.
- Verkada is the proprietary manufacturer.
- Each camera comes with a license fee; the District will cover in the budget.
- ART recommended a dedicated camera for the main entrance that is viewable at the main admin reception desk.
- Install display on wall in front of main admin reception desk with views of multiple cameras for the receptionists to see at all times.
- Airphone type unit dedicated with link to camera.

09.18.24.05 **Bullet-resistant Material:**

- Bullet-resistant glazing to be installed at single exterior window of main admin waiting area, door from vestibule to main office, and the second row of vestibule doors. No bullet-resistant frames/walls.
- LPA|A will specify laminated safety glazing at all interior sidelights and door glazing.

09.18.24.06 **Elevator:**

- The elevators act as an additional communicator. If it rings more than 6 times (for example), it defaults to the next EMS. There is a shared dispatch in town.

09.18.24.07 **Main Office Reception Desk:**

- There will be a monitor with cameras.
- Each receptionist will have their own phone.
- Include a dedicated phone that answers emergency calls.

Item:	Description:	Responsibility:
09.18.24.08	**Public Address System:** • Normal announcements through PA. • Interrupter button for fire alarm and PA systems.	

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Industrial Arts\2220-MO-DD Safety and Security 09.18.24.docx

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Brittany Constant** | 7th Grade Science Teacher | CPS
- **Marisa Sciaraffa** | 8th Grade Teacher | CPS
- **Brian Macdonald** | Science Teacher | CPS
- **Peter A. Caruso, Jr.** | Project Manager | LPA|A
- **Corinna Javier** | Associate | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Terry Hartford** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.23.24.01	**Introduction** ▪ The purpose of the meeting is to review the current layout of the science labs.	**Info.**
9.23.24.02	**Prep Room:** Will be equipped with the following: ▪ Emergency eyewash/shower ▪ FE Cabinet with Fire Blanket ▪ Base/upper cabinets; no glass in doors. ▪ Sink ▪ Drying rack over sink. ▪ Undercounter residential dishwasher. ▪ Refrigerator with freezer/ice maker ▪ Teacher wardrobe cabinet. ▪ Chemical storage cabinet under countertop. ▪ Microscopes will be stored in base cabinets. ▪ No special power requirements ▪ No special storage requirements for equipment	**Info.**
09.23.24.03	**Science Classroom:** Will be equipped with the following:	

Item:	Description:	Responsibility:

- FE cabinet with fire blanket.
- Teacher demonstration table (mobile):
  - Include upright rod assembly.
  - Include safety screen.
- 8' whiteboard (magnetic) with interactive short throw projector.
- Student tables with lockable casters.
- Request student lab sinks to be same size as existing: 17" x 14" x 12"d.
- Lots our power outlets along backsplash.
- No drying rack at teacher demonstration sink.
- Accessible handwashing sink and lab sink on same side of room.
- Locate tall cabinet for student apron storage (locate where goggle cabinet is currently shown and move goggle cabinet to other side of communicating door).
- No glass in upper cabinet doors.
- LPA|A to provide 50/50 split of lockable and open upper cabinets.
- No special power requirements.
- No special storage requirements for equipment.

09.23.24.04 **Magnetic markerboards and tackboards:**

- Using the floor plan in the meeting, LPA|A is replacing one tackboard on the east wall (the one closer to the south wall) with a magnetic markerboard. The markerboards on the teaching wall (one 8' and two 4') will remain and will all be magnetic. The tackboard near the entrance to the classroom on the east wall will remain a tackboard.

09.23.24.05 **Chemical Storage Room:**

- Sink not required.
- Need various types of chemical storage cabinets.
- Base lockable cabinets with open upper shelving.

Item:	Description:	Responsibility:

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Industrial Arts\2220-MO-DD Science Labs 09.23.24.docx

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Kate Philbin** | Grade 5 | CMS
- **Loretta Braverman** | CMS
- **Robyn Della-Giustina** | CMS
- **Sean Brennan** | Project Architect | LPA|A
- **Peter A. Caruso, Jr.** | Architect | LPA|A
- **Christina Bazelmans** | Associate Principal | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.12.24.01	**Introduction** ▪ Sean presented overview of where the project design currently stands.	**Info.**
09.12.24.02	**Special Education Liaison:** ▪ Will each look like a regular classroom for that grade and will be fit up as such. ▪ 25 desks with 2 sinks for grades 4-6; no sinks for grades 7-8. ▪ Interactive whiteboard with flanking 4' whiteboards. ▪ Spreach reinforcement. ▪ No additional comments.	**Info.**
09.12.24.03	**Small Group Resource (12 in total):** ▪ ½ size classroom ▪ Interactive short throw projector ▪ Single HC sink. ▪ Teacher wardrobe ▪ No additional comments.	

Item:	Description:	Responsibility:

09.12.24.04 OT/PT:

- Separate office directly off classroom.
- Same size as typical classroom
- Will have ceiling-mounted swing
- Teacher's desk.
- Interactive short throw projector with flanking 4' whiteboards and mirror
- Prefer tall cabinets, not base cabinets
- Owner to provide cutsheets on scooters and bikes
- Hoyer lift- to be stored in another location; very seldomly used.

09.12.24.05 Life Skills and Adult Daily Living:

- 2 bathrooms; one larger with Hoyer lift.
- ADL to have washer/dryer, cot, stove, oven, dishwasher, and microwave.
- Life Skills to be fit-up like a typical classroom.
- Goal of 16 cubbies in Life Skills.
- Magnetic whiteboard on opposite wall as projector.
- 12 cubbies in large toilet room.
- Built-in shelving units in Storage on one wall; 12" deep.
- Set temperature limit at faucet in ADL kitchen sink.

09.12.24.06 TLC/ABA Classrooms:

- Calming room-
  - Wall pads to 4' a.f.f. with acoustical panels above
  - Ceiling to match main classroom.
  - Separate light switch/controls
  - Small carpet by FF&E
  - Shift 5' opening to one side with metal frame and glass on other.
  - One way viewing glass with adjacent office; mirror on calming room side.
- 12 open cubbies in each TLC/ABA room.
- Office to have their own wardrobe furniture.

09.12.24.07 Conference Room:

Item:	Description:	Responsibility:
	▪ Provide millwork countertop space.	

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Special Education\2220-MO-DD Special Education 09.12.24.docx

Attendees:

- **Steven Meyer** | Superintendent of Schools | CPS
- **Tyler Steffey** | Principal | CPS
- **Brian Farragher** | Director of Facilities | CPS
- **Peter A. Caruso, Jr.** | Project Manager | LPA|A
- **Henry Glennon** | Associate | LPA|A
- **Terry Hartford** | Owner's Project Manager | D&W
- **Elias Grijalva** | Owner's Project Manager | D&W

Item:	Description:	Responsibility:
09.25.24.01	**Introduction** ▪ The purpose of the meeting is to review the current layout of all available storage rooms within the new school.	**Info.**
09.25.24.02	**Mechanical Unit Filter Replacement:** ▪ Filters are currently replaced during the summer and right before winter. CPS only orders what they need to minimize storage needs. ▪ Brian advised that space will be found it needed to storage filters.	**Info.**
09.25.24.03	**Changes to Floor Plan to Accommodate Storage/Custodial Needs:** ▪ Change Storage A220 to Janitor A220. ▪ Add a small Janitor closet within second floor Custodian Storage A270. ▪ At Custodian's Office A179, incorporate Closet A179A into Office area for one larger room. ▪ Add single door from Custodian's Office A179 into Trash/Recycle room for better access. ▪ At Girl's Locker room Janitor Closet, remove door on locker room side and add door to adjacent Corridor. This will allow janitors to have a closet to serve the admin wing.	

Item:	Description:	Responsibility:

- Regarding a Janitor closet to serve the first floor 7/8th grade classroom wing:
  - If a Janitor closet cannot be added to the mechanical room, then the Janitor closet in the kitchen will serve the 7/8th grade wing. LPA|A to review other possible options.

The objective is to provide a Janitor closet to support each wing of the school.

09.23.24.04 **Trash/Recycle Room:**

- The school uses town barrels for trash and must continue to use them.
- Brian estimates between 10–15 barrels of trash each week.
- The reality is that the trash bins may end up living on the loading dock or in the receiving area.
- The floor cleaner will likely be stored in this room. It needs to be charged and will be brought over from existing to the new school.

Attachments:

Minutes by: Peter A. Caruso, Jr.

Distribute to: Attendees

File location: I:\PROJECTS\2022\2220 – Clinton Middle School\MINUTES\Owner\DD Working Group Meetings\Industrial Arts\2220-MO-DD Storage 09.25.24.docx

MEETING MINUTES

Date: October 1, 2024
Location: Virtual meeting
Re: Clinton Middle School Playground Equipment

Attendees:
Clinton:
Brian Farragher- Facilities and Grounds [BF]
Steve Meyer- Superintendent [SM]
Tyler Steffey- Clinton MS Principle [TS]
Alison Alvarado [AA]

Dore +Whittier:
Elias Grijalva [EG]
Terry Hartford [TH]
Trip Elmore [TE]

Lamoureux Pagano Associates | Architects (LPAA):
Eric Moore [EM]
Henry Glennon [HC]
Peter Caruso [PC]
Rick Lamoureux [RL]
Sean Brennan [SB]

Studio 2112 Landscape Architecture (S2112):
Lynne Giesecke [LG]
Amanda Leifer [AL]
Shira Davis [SD]

Meeting minutes provided below. Action items noted in **bold.**

General Notes:

- SM confirmed that one grade at a time would be using outdoor spaces, around 150 students. Students will be using both the playground and other outdoor spaces such as the basketball courts. Design team to review and assume approximately have the students will be using the playground.
    - S2112 noted that guidelines recommend 100SF per student when sizing play spaces.
- Playground equipment is divided by age groups 2-5 and 5-12. S2112 noted all items proposed are age appropriate for 5-12 age group. Play equipment is selected to provide levels of challenge for students of different ages and abilities.
- All benches on site to match.
- **S2112 to include 4 square painted lines at basketball courts.**

- **S2112 to study fencing and low mow fescue around playground to reduce maintenance of the lawn area**.

Playground Equipment Selection:

- Play equipment currently carried in plan was presented along with alternate options for discussion. Selections noted below.
- Large Main Structure
    - Clinton selected the "Volo with Shade" as the preferred large play structure. There was discussion about one of the slides on the structure being too small for the students but that it may still be suitable for the 4th graders and could be great for the community after hours. **S2112 to inquire with manufacturer about alternative slides/play in that part of the structure.**
- Climbing Structure
    - Bloqx 2 – Selected structure.
    - Curli Combi – Selected structure.
        - Rope play structures were deemed more appropriate for the older students.
        - SM liked that there was a flow and defined path of travel that students can move through the structure.
        - **S2112 to share additional rope play structures of different types/sizes in a follow up presentation.**
    - The Enif structure was not selected. AA and TS noted that it seemed more appropriate for 4th graders, and that the climbing piece of equipment should cater more toward the older students.
- Motor/Physical Structures
    - Cocowave swing – Selected structure. Strong support for having a swing. TS liked the uniqueness of this swing.
    - Frog hop – Selected structure.
- Spinning Play Structures
    - Universal Carousel – Selected structure. Crowd favorite on the playground.
    - Spica will be carried for now – no objections or strong opinions on this or alternate items. **Group to review when other items are updated to see if it need to be studied.**
    - AA liked the inclusive twister. SD noted that the twister is similar to the universal carousel, and the carousel is S2112's recommendation as an accessible piece of play equipment.
- Non-Prescriptive and Inclusive Features
    - Rubber Balls– Selected structure.
    - Chimes– Selected structure.
        - Concerns were raised about the chimes getting too hot. SM mentioned that the music teacher may take students outside. **S2112 to reach out to manufacturer re heat concerns.**

Next Steps:

- S2112 to provide an updated presentation using the feedback from this meeting.

If there are corrections/additions please provide in writing to aleifer@studio212la.com by 10/14/24

LPA|A Reports

SOIL MANAGEMENT PLAN

for:

Clinton Middle School
100 West Boylston Street
Clinton, MA.

Prepared For:

The Town of Clinton
c/o: Lamoureux Pagano Associates
108 Grove Street, Suite 300
Worcester, MA 01605

Prepared By:

Lord Environmental
A Coneco Engineers & Scientists Inc. Company
4 First Street
Bridgewater, MA 02324

Project No. 12899

September 2024

TABLE OF CONTENTS

ATTACHMENTS

1.0 BACKGROUND

This Soil Management Plan (SMP) has been prepared in support of the proposed redevelopment of the property located at 100 West Boylston Street in Clinton, MA (the "Site"). Plans are to construct the new Clinton Middle School on the premises. This property, formally under ownership by the Commonwealth of Massachusetts and currently owned by the Town of Clinton as of March 11, 1969, has operated as a public middle school and high school. According to the property card, the Clinton Middle School building was built in 1975, and the Clinton High School building was built in 2000.

Soil samples collected from the Site during various geotechnical and environmental studies has identified naturally occurring elevated concentrations of arsenic, common to the Worcester County region. No other testing parameters completed have been shown to exceed a Massachusetts Department of Environmental Protection (MassDEP) Reportable Concentration.

As future plans for re-development require a significant volume of soil to be excavated to bring the property to grade, this SMP has been prepared to manage re-use of the soil on-site as well as guide the acceptance and placement of excess soil at the Fish Road Soil Reuse Facility in Dudley, MA if necessary. This soil reuse facility is operated under contract to the Town by W. L. French Excavating Corporation. The Fish Road Soil Reuse Facility is currently the only facility in Massachusetts accepting soils containing elevated levels of natural occurring arsenic.

1.1 SITE DESCRIPTION

The Clinton Middle School property (the "Site") consists of one parcel of land comprising a total of approximately 26.80 acres in a primarily residential zoned area of Clinton, Massachusetts. A site locus map is provided as **Figure 1**. Currently, the Clinton Middle School and Clinton High School buildings are located on the Site. An existing conditions plan is provided as **Figure 2.**

According to the USGS Clinton, Massachusetts Quadrangle Topographical Map, the elevation of the Site is approximately 380 feet above mean sea level. No pits, ponds or lagoons are located on the Site. No mapped wetlands are located on the Site. A freshwater pond and lake exist at the Site's northern abutter. The Wachusett Reservoir exists on the Site's southern abutter. Review of the MassDEP Priority Resources Map (**Figure 3**) indicates that the south and southwest portions of the Site are located within a Zone A Public Water Supply Protection Area. The map also indicates the western portion of the Site as a Medium Yield Aquifer Area. Additionally, the Site is designated as Protected Open Space.

Review of the Flood Insurance Rate Map 25027C0462E, dated July 4, 2011, published by the Federal Emergency Management Agency (FEMA) indicated the Site is outside any

flood designation area. Review of the Bedrock Geologic Map of Massachusetts, Richard Goldsmith, et al, 1980, indicates that the bedrock at the Site is Oakdale Formation, which consists of metamorphosed thin-bedded, pelitic and calcareous siltstone and muscovite schist. The Soil Survey of Worcester County indicates the majority of the Site soil as Udorthents, smoothed. Chatfield-Hollis-Rock Outcrop Complex, 15 to 35 percent slopes and Agawam Fine Sandy Loam, 3 to 8 percent slopes are also included in small portions of the west and northwest corner of the Site.

A cut/fill analysis will be performed, at the conclusion of the Design Development phase, to determine the quantity (in cubic yards) of soil relocation or removal required to bring the property to suitable grade. If the site cannot accommodate all of the excess soils, it may be necessary to export such soil to a licensed disposal site such as W.L. French Excavating Corporation.

1.2 EXISTING SOIL AND GROUNDWATER CONDITIONS

The applicable soil category of the Site is S-1/GW-1. The applicable groundwater category is GW-1. According to the MassDEP Priority Resources Map, the south and southwest portions of the Site are located within a Zone A of a Class A surface water supply. Additionally, the western portion of the property is designated as a Medium Yield Aquifer area. A MassDEP Priority Resources Map is provided as **Figure 3**.

1.3 PARTIES INVOLVED

Receiving Location if Required:

Fish Road Soil Reuse Facility
W.L. French Excavating Corporation
Off Fish Road, Assessor Map 229, Lot 158
Dudley, MA
978-663-2623

Clinton Middle School Property Owner:

Town of Clinton
242 Church Street
Clinton, MA. 01510

Receiving Location Management if Required:

Jarrett Everton, PE, General Manager
W.L. French Excavating Corporation
14 Sterling Road
Billerica, MA
978-663-2623

Clinton Middle School Architect:

Eric Moore, Principal Architect
LPA|A
108 Grove Street, Suite 300
Worcester, MA 01605
508.752.2831

Environmental Consultant:

Ralph J. Tella, LSP #7473
Lord Environmental, A Coneco Engineers & Scientists Company, Inc.
4 First Street
Bridgewater, MA 02324
508-697-3191 x101

Construction Manager:

David Fontaine, Jr
Fontaine Bros., Inc.
12 E. Worcester Street
Worcester, MA 01604
413.244.3463

Regulatory Authority:

James McQuade
Section Chief-Solid Waste Management
Mass Department of Environmental Protection
Central Regional Office
8 Bond Street
Worcester, MA. 01606

2.0 REGULATORY REQUIREMENTS

All activities described in this SMP will be done in accordance with the Massachusetts Contingency Plan regulations at 310 CMR 40.0000, and the Solid Waste regulations at 310 CMR 19.

3.0 SOIL ACCEPTANCE CRITERIA

3.1 CHEMICAL CRITERIA

Soil Acceptance Criteria has been established for various constituents in soil intended to be used at the Fish Road Soil Reuse Facility in accordance with their operating permit. These criteria, provided on the attached **Table 1**, considered the existing soil and groundwater categories, published concentrations of "natural" soil, and the maximum concentrations of Site contaminants detected.

Average concentration data will not be accepted.

3.2 PHYSICAL CRITERIA

All soil intended to be used for reuse at the Fish Road Soil Reuse Facility will be inspected by a facility representative during the off-loading of trucks and must meet visual and olfactory screening criteria prior to being accepted or placed.

4.0 SOIL TESTING REQUIREMENTS

4.1 LABORATORY ANALYSES

As representative composite samples of topsoil and fill collected from the Clinton Middle School property have been pre-characterized for the full suite of Comm-97 parameters and only arsenic has been shown to exceed RCS-1/2 Reportable Concentrations, testing for only total arsenic via EPA Methods 3050B/6010D is required. A summary table of the Comm-97 testing is attached as **Table 1**.

Note that there are several volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) with detection limits that are higher than the Fish Road Soil Acceptance Criteria (SAC). Additionally, two VOCs have detection limits that are higher than RCS-1 Reportable Concentrations. However, there is no site history that would support the use or storage of these compounds ever on-site.

4.2 SAMPLE COLLECTION & FREQUENCY

Composite soil samples are preferred to represent the managed soil. An LSP or other qualified environmental professional must justify the compositing procedure as being representative of the material sampled. In no case shall soil displaying physical signs of contamination (see **Section 3.2**) be mixed or composited with soils that do not display these criteria.

All sampling will be conducted in accordance with MassDEP regulations and guidance as appropriate. Samples will be collected at the Clinton Middle School property at a frequency of **one per 500 cubic yards** (750-850 tons) for acceptance criteria.

Supplemental testing may be required at the discretion of the reviewing professional prior to acceptance of the managed soil.

5.0 TRANSPORT OF EXCAVATED SOIL

All managed soil must be transported using either a MassDEP Material Shipping Record (MSR) or Bill of Lading form.

6.0 SOIL SUBMITTAL PROCESS

A Soil Submittal Package must be provided for review and approval by representatives of the Landfill. Items required in the package include:

- LSP/QEP Opinion letter stating that the proposed managed soil meets the Fish Road Acceptance Criteria;
- The LSP/QEP Opinion letter must also describe any extenuating circumstances or other information germane to the laboratory analyses, QA/QC, sampling procedures, results, etc.;
- A summary table of results with comparison to the Acceptance Criteria;
- Copies of all laboratory reports with chain-of-custody and QA/QC forms;
- Quantity of soil;
- Physical description /soil classification;
- Field Screening data;
- Site drawing/sketch of soil origin and sampling locations; and
- Signed MSR or BOL forms.

The Soil Submittal Package will be sent to:

W.L. French Excavating Corporation
14 Sterling Road
Billerica, MA
978-663-2623

7.0 ON-SITE SOIL RE-USE

To guide the proper on-site re-use of excavated soil for final design purposes at the Clinton Middle School property, the Contractor will follow plans provided by the

architect. Due to the elevated arsenic concentrations detected at the Clinton Middle School property, the following requirements will be followed for all naturally occurring concentrations of arsenic.

To limit exposure potential in proposed development areas where human activity is likely to be greater than other areas of the property such as playgrounds, athletic fields, and gardens, it is recommended that this naturally occurring soil be either:

- buried at a depth at least three feet below surface grade with "clean" fill less than 20 mg/kg;
- located under permanent structures or pavement; or
- covered with filter fabric or other effective membrane under a minimum of 12 inches of "clean" topsoil (i.e., <20 mg/kg), mulch, or subgrade material for athletic field turf.

At other areas of the proposed development less accessible such as roadways or narrow strips between walkways, it will be acceptable to use these excavated soils as sub-grade fill under the design's landscaping, assuming appropriate measures are taken to mitigate erosion.

ATTACHMENTS

Table 1

Comm-97 plus MCP 14 Metals - Laboratory Analyses Results
Clinton Middle School - 100 West Boylston Street, Clinton, MA

NETLAB Case Number: 4H13053	B-102 (Fill)		B-102 (Native Soil)		B-104 (Fill)		B-104 (Native Soil)		B-106 (Fill)		B-106 (Native Soil)		B-109 (Fill)		B-109 (Native Soil)		B-111 (Fill)		B-111 (Native Soil)		B-118 (Fill)		B-118 (Native Soil)							
Date Sampled:	8/8/24		8/8/24		8/8/24		8/8/24		8/8/24		8/8/24		8/8/24		8/8/24		8/8/24		8/8/24		8/8/24		8/8/24							
Parameter	Sample Result	RL	Sample Result	RL	Sample Result	RL	Sample Result	RL	Sample Result	RL	Sample Result	RL	Sample Result	RL	Sample Result	RL	Sample Result	RL	Sample Result	RL	Sample Result	RL	Sample Result	RL	Units	RCS-1	RCS-2	LL	UL	Fish Road SAC
General Chemistry																														
Flashpoint	> 200	70	> 200	70	> 200	70	> 200	70	> 200	70	> 200	70	> 200	70	> 200	70	> 200	70	> 200	70	> 200	70	> 200	70	degrees F					Non-Ignitable
Specific Conductance	**6.6**	2	**3.2**	2	**5.8**	2	**3.8**	2	**5.1**	2	**4.9**	2	**6.1**	2	**4.3**	2	**3.3**	2	**4.2**	2	**28.9**	2	**27.5**	2	uS/cm			8000	4000	2,000
pH	**7.1**		**7.1**		**6.6**		**6.5**		**6.4**		**6.2**		**6.2**		**6.1**		**6.1**		**6.3**		**6.1**		**5.7**		SU					5 to 9
Polychlorinated Biphenyls (PCBs)																														
Aroclor-1016	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg	1	4			
Aroclor-1221	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg	1	4			
Aroclor-1232	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg	1	4			
Aroclor-1242	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg	1	4			
Aroclor-1248	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg	1	4			
Aroclor-1254	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg	1	4			
Aroclor-1260	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg	1	4			
Aroclor-1262	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg					
Aroclor-1268	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg					
PCBs (Total)	ND	0.065	ND	0.064	ND	0.071	ND	0.068	ND	0.065	ND	0.067	ND	0.071	ND	0.064	ND	0.072	ND	0.073	ND	0.073	ND	0.067	mg/kg	1	4	2	2	0.1
Reactivity																														
Cyanide	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	mg/kg	30	100			>250
Sulfide	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	mg/kg					>500
Semivolatile organic compounds																														
1,2,4-Trichlorobenzene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	2	6			0.2
1,2-Dichlorobenzene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	9	100			0.9
1,3-Dichlorobenzene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	3	200			0.3
1,4-Dichlorobenzene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	1			0.07
Phenol	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.9	10			0.1
2,4,5-Trichlorophenol	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	4	600			0.4
2,4,6-Trichlorophenol	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	20			0.07
2,4-Dichlorophenol	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	40			0.07
2,4-Dimethylphenol	ND	0.334	ND	0.335	ND	0.364	ND	0.342	ND	0.341	ND	0.348	ND	0.37	ND	0.338	ND	0.358	ND	0.367	ND	0.365	ND	0.343	mg/kg	0.7	100			0.07
2,4-Dinitrophenol	ND	0.334	ND	0.335	ND	0.364	ND	0.342	ND	0.341	ND	0.348	ND	0.37	ND	0.338	ND	0.358	ND	0.367	ND	0.365	ND	0.343	mg/kg	3	50			0.3
2,4-Dinitrotoluene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	10			0.07
2,6-Dinitrotoluene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	100	1000			10
2-Chloronaphthalene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1000	10000			100
2-Chlorophenol	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	100			0.07
2-Methylnaphthalene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	80			0.7
Nitrobenzene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	500	5000			50
2-Methylphenol	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	500	5000			50
2-Nitroaniline	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg					NS
2-Nitrophenol	ND	0.334	ND	0.335	ND	0.364	ND	0.342	ND	0.341	ND	0.348	ND	0.37	ND	0.338	ND	0.358	ND	0.367	ND	0.365	ND	0.343	mg/kg	100	1000			10
3,3'-Dichlorobenzidine	ND	0.334	ND	0.335	ND	0.364	ND	0.342	ND	0.341	ND	0.348	ND	0.37	ND	0.338	ND	0.358	ND	0.367	ND	0.365	ND	0.343	mg/kg	3	20			0.3
3-Nitroaniline	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg					NS
4,6-Dinitro-2-methylphenol	ND	0.334	ND	0.335	ND	0.364	ND	0.342	ND	0.341	ND	0.348	ND	0.37	ND	0.338	ND	0.358	ND	0.367	ND	0.365	ND	0.343	mg/kg	50	500			5
4-Bromophenyl phenyl ether	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	100	1000			10
4-Chloro-3-methylphenol	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1000	10000			100
4-Chloroaniline	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1	3			0.1
4-Chlorophenyl phenyl ether	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1000	10000			100
4-Nitroaniline	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg					100
4-Nitrophenol	ND	0.334	ND	0.335	ND	0.364	ND	0.342	ND	0.341	ND	0.348	ND	0.37	ND	0.338	ND	0.358	ND	0.367	ND	0.365	ND	0.343	mg/kg	100	1000			10
Acenaphthene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	4	3000			4
Acenaphthylene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	2	10			1
Aniline	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1000	10000			100
Anthracene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1000	3000			10
Benzo(a)anthracene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	20	300			7
Benzo(a)pyrene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	2	30			2
Benzo(b)fluoranthene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	20	300			7
Benzo(g,h,i)perylene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1000	3000			10
Benzo(k)fluoranthene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	200	3000			10
Benzoic acid	ND	1.01	ND	1.02	ND	1.1	ND	1.04	ND	1.03	ND	1.05	ND	1.12	ND	1.02	ND	1.09	ND	1.11	ND	1.11	ND	1.04	mg/kg	1000	10000			100
Biphenyl	ND	0.02	ND	0.02	ND	0.022	ND	0.021	ND	0.021	ND	0.021	ND	0.022	ND	0.02	ND	0.022	ND	0.022	ND	0.022	ND	0.021	mg/kg	0.05	6			0.05
Bis(2-chloroethoxy)methane	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	500	5000			50
Bis(2-chloroethyl)ether	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	0.7			0.07
Bis(2-chloroisopropyl)ether	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	0.7			0.07
Bis(2-ethylhexyl)phthalate	ND	0.405	ND	0.406	ND	0.441	ND	0.414	ND	0.413	ND	0.421	ND	0.448	ND	0.41	ND	0.434	ND	0.445	ND	0.442	ND	0.415	mg/kg	100	700			9
Butyl benzyl phthalate	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	100	1000			10
Chrysene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	200	3000			20
Di-n-octyl phthalate	ND	0.202	ND	0.203	ND	0.221	ND	0.207	ND	0.206	ND	0.211	ND	0.224	ND	0.205	ND	0.217	ND	0.223	ND	0.221	ND	0.208	mg/kg	1000	10000			100
Dibenz(a,h)anthracene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	2	30			0.7
Dibenzofuran	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	100	1000			10
Diethyl phthalate	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	10	200			1
Dimethyl phthalate	ND	0.334	ND	0.335	ND	0.364	ND	0.342	ND	0.341	ND	0.348	ND	0.37	ND	0.338	ND	0.358	ND	0.367	ND	0.365	ND	0.343	mg/kg	0.7	50			0.07
Di-n-butyl phthalate	ND	0.202	ND	0.203	ND	0.221	ND	0.207	ND	0.206	ND	0.211	ND	0.224	ND	0.205	ND	0.217	ND	0.223	ND	0.221	ND	0.208	mg/kg	50	500			5
Fluoranthene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1000	3000			40
Fluorene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1000	3000			10
Hexachlorobenzene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	0.9			0.07
Hexachlorobutadiene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	30	100			3
Hexachlorocyclopentadiene	ND	0.334	ND	0.335	ND	0.364	ND	0.342	ND	0.341	ND	0.348	ND	0.37	ND	0.338	ND	0.358	ND	0.367	ND	0.365	ND	0.343	mg/kg	50	500			5
Hexachloroethane	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	3			0.07
Indeno(1,2,3-cd)pyrene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	20	300			7
Isophorone	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	100	1000			10
Naphthalene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	4	20			4
N-Nitrosodimethylamine	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	50	500			5
N-Nitrosodi-n-propylamine	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	50	500			5
N-Nitrosodiphenylamine	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	100	1000			10
Pentachlorophenol	ND	0.334	ND	0.335	ND	0.364	ND	0.342	ND	0.341	ND	0.348	ND	0.37	ND	0.338	ND	0.358	ND	0.367	ND	0.365	ND	0.343	mg/kg	3	10			0.3
Phenanthrene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	10	1000			10
Pyrene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	1000	3000			40
m&p-Cresol	ND	0.263	ND	0.264	ND	0.287	ND	0.269	ND	0.268	ND	0.274	ND	0.291	ND	0.266	ND	0.282	ND	0.289	ND	0.287	ND	0.27	mg/kg	500	5000			50
Pyridine	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	500	5000			50
Azobenzene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg					NS
Total Dichlorobenzene	ND	0.132	ND	0.132	ND	0.143	ND	0.135	ND	0.134	ND	0.137	ND	0.146	ND	0.133	ND	0.141	ND	0.145	ND	0.144	ND	0.135	mg/kg	0.7	4			NS
Total Metals																														
Antimony	ND	0.73	ND	0.74	ND	0.83	ND	0.77	ND	0.72	ND	0.72	ND	0.79	ND	0.73	ND	0.82	ND	0.79	ND	0.74	ND	0.78	mg/kg	20	40			10
Arsenic	**11.5**	1.11	**21.7**	1.12	**16.8**	1.25	**29.9**	1.17	**26.2**	1.09	**13**	1.09	**9.41**	1.19	**16.4**	1.1	**11.2**	1.24	**9.76**	1.2	**10.9**	1.12	**17.6**	1.19	mg/kg	**20**	**20**	40	40	<100
Barium	**15.6**	0.37	**12.6**	0.37	**13.9**	0.41	**12.9**	0.38	**14.7**	0.36	**17.2**	0.36	**21.4**	0.39	**8.7**	0.36	**14.5**	0.41	**30.9**	0.39	**16.5**	0.37	**13.4**	0.39	mg/kg	1000	3000			375
Beryllium	ND	0.37	ND	0.37	ND	0.41	ND	0.38	ND	0.36	ND	0.36	ND	0.39	ND	0.36	ND	0.41	ND	0.39	ND	0.37	ND	0.39	mg/kg	100	200			4
Cadmium	ND	0.56	ND	0.56	ND	0.63	ND	0.58	ND	0.54	ND	0.54	ND	0.6	ND	0.55	ND	0.62	ND	0.6	ND	0.56	ND	0.59	mg/kg	80	80	80	30	20
Chromium	**12.1**	0.56	**10.5**	0.56	**11.3**	0.63	**13.1**	0.58	**18**	0.54	**9.87**	0.54	**12.8**	0.6	**10.3**	0.55	**10.5**	0.62	**12.2**	0.6	**9**	0.56	**14.4**	0.59	mg/kg	100	200	1000	1000	100
Lead	**6.75**	0.56	**7.22**	0.56	**10.1**	0.63	**8.36**	0.58	**13.3**	0.54	**5.09**	0.54	**6.16**	0.6	**6.53**	0.55	**7.33**	0.62	**4.02**	0.6	**9.7**	0.56	**7.41**	0.59	mg/kg	200	600	2000	1000	200
Nickel	**26.3**	0.56	**14.3**	0.56	**11.4**	0.63	**21.5**	0.58	**21.7**	0.54	**12.3**	0.54	**14.3**	0.6	**11.9**	0.55	**7.23**	0.62	**10.8**	0.6	**8.1**	0.56	**17.8**	0.59	mg/kg	700	1000			150
Selenium	ND	1.11	ND	1.12	ND	1.25	ND	1.17	ND	1.09	ND	1.09	ND	1.19	ND	1.1	ND	1.24	ND	1.2	ND	1.12	ND	1.19	mg/kg	400	800			5
Silver	ND	1.11	ND	1.12	ND	1.25	ND	1.17	ND	1.09	ND	1.09	ND	1.19	ND	1.1	ND	1.24	ND	1.2	ND	1.12	ND	1.19	mg/kg	100	200			6
Vanadium	**10.1**	0.37	**12.1**	0.37	**12.4**	0.41	**11.9**	0.38	**17.1**	0.36	**10.8**	0.36	**13.9**	0.39	**10.1**	0.36	**11.1**	0.41	**12.9**	0.39	**11**	0.37	**15**	0.39	mg/kg	500	800			225
Zinc	**38.1**	2.2	**32.6**	2.2	**28.7**	2.5	**42.2**	2.3	**47.1**	2.2	**29**	2.2	**33**	2.4	**32**	2.2	**21**	2.5	**26.9**	2.4	**26.9**	2.2	**46.7**	2.4	mg/kg	1000	3000			500
Thallium	ND	0.37	ND	0.37	ND	0.41	ND	0.38	ND	0.36	ND	0.36	ND	0.39	ND	0.36	ND	0.41	ND	0.39	ND	0.37	ND	0.39	mg/kg	8	70			6
Mercury	ND	0.097	ND	0.097	ND	0.106	ND	0.102	**0.141**	0.1	ND	0.102	ND	0.106	ND	0.099	ND	0.106	ND	0.105	ND	0.108	ND	0.098	mg/kg	20	40	10	10	3
Total Petroleum Hydrocarbons																														
Total Petroleum Hydrocarbons	**38**	27	ND	27	ND	29	**39**	27	ND	27	ND	28	ND	30	ND	27	**50**	28	ND	30	ND	29	**35**	28	mg/kg	1000	3000	5000	2500	500
Volatile Organic Compounds 8260C (5035-LL)																														
Acetone	ND	0.125	ND	0.086	ND	0.111	ND	0.107	ND	0.08	ND	0.097	ND	0.117	ND	0.077	ND	0.095	ND	0.11	ND	0.118	ND	0.11	mg/kg	6	50			0.6
Benzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	2	200			0.2
Bromobenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
Bromochloromethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					NS
Bromodichloromethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.1	0.1			0.01
Bromoform	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.1	1			0.01
Bromomethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.5	0.5			0.05
2-Butanone	ND	0.125	ND	0.086	ND	0.111	ND	0.107	ND	0.08	ND	0.097	ND	0.117	ND	0.077	ND	0.095	ND	0.11	ND	0.118	ND	0.11	mg/kg	4	50			0.4
tert-Butyl alcohol	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			NS
sec-Butylbenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					NS
n-Butylbenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					NS
tert-Butylbenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
Methyl t-butyl ether (MTBE)	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.1	100			0.01
Carbon Disulfide	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
Carbon Tetrachloride	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	5	5			0.5
Chlorobenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	1	3			0.1
Chloroethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
Chloroform	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.2	0.2			0.02
Chloromethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
4-Chlorotoluene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					1
2-Chlorotoluene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
1,2-Dibromo-3-chloropropane (D	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	10	100			1
Dibromochloromethane	ND	*0.006*	ND	0.004	ND	*0.006*	ND	0.005	ND	0.004	ND	0.005	ND	*0.006*	ND	0.004	ND	0.005	ND	0.005	ND	*0.006*	ND	*0.006*	mg/kg	0.005	0.03			0.0005
1,2-Dibromoethane (EDB)	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.1	0.1			0.01
Dibromomethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	500	5000			50
1,2-Dichlorobenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	9	100			0.9
1,3-Dichlorobenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	3	200			0.3
1,4-Dichlorobenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.7	1			0.07
1,1-Dichloroethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.4	9			0.04
1,2-Dichloroethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.1	0.1			0.01
1,2 Dichloroethene, Total	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.3	0.4			NS
trans-1,2-Dichloroethene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	1	1			0.1
cis-1,2-Dichloroethene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.1	0.1			0.01
1,1-Dichloroethene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	3	40			0.3
1,2-Dichloropropane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.1	0.1			0.01
2,2-Dichloropropane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					0.01
cis-1,3-Dichloropropene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.01	0.1			0.001
trans-1,3-Dichloropropene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.01	0.1			0.001
1,1-Dichloropropene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					0.001
1,3-Dichloropropene (cis + trans)	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.01	0.4			NS
Diethyl ether	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
1,4-Dioxane	ND	0.125	ND	0.086	ND	0.111	ND	0.107	ND	0.08	ND	0.097	ND	0.117	ND	0.077	ND	0.095	ND	0.11	ND	0.118	ND	0.11	mg/kg	0.2	5			0.02
Ethylbenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	40	1000			4
Hexachlorobutadiene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	30	100			3
2-Hexanone	ND	0.125	ND	0.086	ND	0.111	ND	0.107	ND	0.08	ND	0.097	ND	0.117	ND	0.077	ND	0.095	ND	0.11	ND	0.118	ND	0.11	mg/kg	100	1000			10
Isopropylbenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	1000	10000			100
p-Isopropyltoluene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
Methylene Chloride	ND	0.055	ND	0.034	ND	0.022	ND	0.043	ND	0.031	ND	0.033	ND	0.043	ND	0.007	ND	0.036	ND	0.05	ND	0.059	ND	0.052	mg/kg	0.1	3			0.01
4-Methyl-2-pentanone	ND	0.125	ND	0.086	ND	0.111	ND	0.107	ND	0.08	ND	0.097	ND	0.117	ND	0.077	ND	0.095	ND	0.11	ND	0.118	ND	0.11	mg/kg	0.4	50			0.04
Naphthalene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	4	20			0.4
n-Propylbenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
Styrene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	3	4			0.3
1,1,1,2-Tetrachloroethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.1	0.1			0.01
Tetrachloroethene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	1	4			0.1
Tetrahydrofuran	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	500	5000			50
Toluene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	30	1000			3
1,2,4-Trichlorobenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	2	6			0.2
1,2,3-Trichlorobenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					NS
1,1,2-Trichloroethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.1	2			0.01
1,1,1-Trichloroethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	30	600			3
Trichloroethene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.3	0.3			0.03
1,2,3-Trichloropropane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
1,3,5-Trimethylbenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	10	100			1
1,2,4-Trimethylbenzene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	1000	10000			100
Vinyl Chloride	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	0.3	0.7			0.07
o-Xylene	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					10
m&p-Xylene	ND	0.012	ND	0.009	ND	0.011	ND	0.011	ND	0.008	ND	0.01	ND	0.012	ND	0.008	ND	0.009	ND	0.011	ND	0.012	ND	0.011	mg/kg					10
Total xylenes	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	100			10
1,1,2,2-Tetrachloroethane	ND	*0.006*	ND	0.004	ND	*0.006*	ND	0.005	ND	0.004	ND	0.005	ND	*0.006*	ND	0.004	ND	0.005	ND	0.005	ND	*0.006*	ND	*0.006*	mg/kg	0.005	0.02			0.0005
tert-Amyl methyl ether	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					NS
1,3-Dichloropropane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	500	5000			50
Ethyl tert-butyl ether	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg					NS
Diisopropyl ether	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	100	1000			10
Trichlorofluoromethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	1000	10000			100
Dichlorodifluoromethane	ND	0.006	ND	0.004	ND	0.006	ND	0.005	ND	0.004	ND	0.005	ND	0.006	ND	0.004	ND	0.005	ND	0.005	ND	0.006	ND	0.006	mg/kg	1000	10000			100

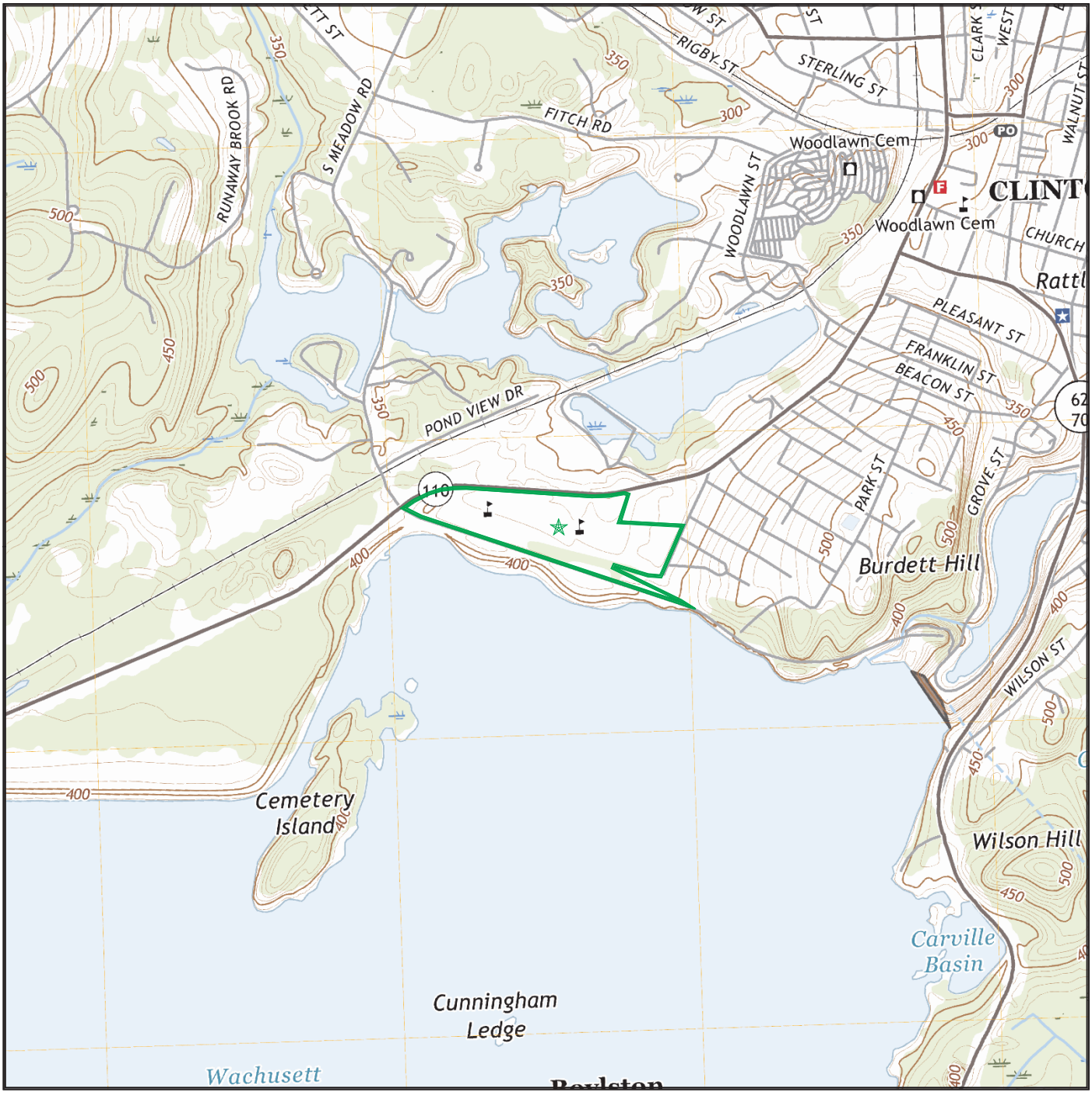
Notes:

Cells with this color indicate: analyte was detected over laboratory reporting limi
Cells with this color indicate: analyte was detected above reportable concentration standar
Cells with this color indicate: RL is over the criteria
NS: No Standard Listed in SAC
ND: Not Detectec
RL: Reporting Limit
Fish Road SAC: Fish Road - Dudley, MA - Soil Acceptance Critri
RCS-1: MassDEP Reportable Concentration S-
RCS-2: MassDEP Reportable Concentration S-
LL: Lined Landfill MA Comm-97 Disposal Criteria
UL: Unlined Landfill MA Comm-97 Disposal Criteria

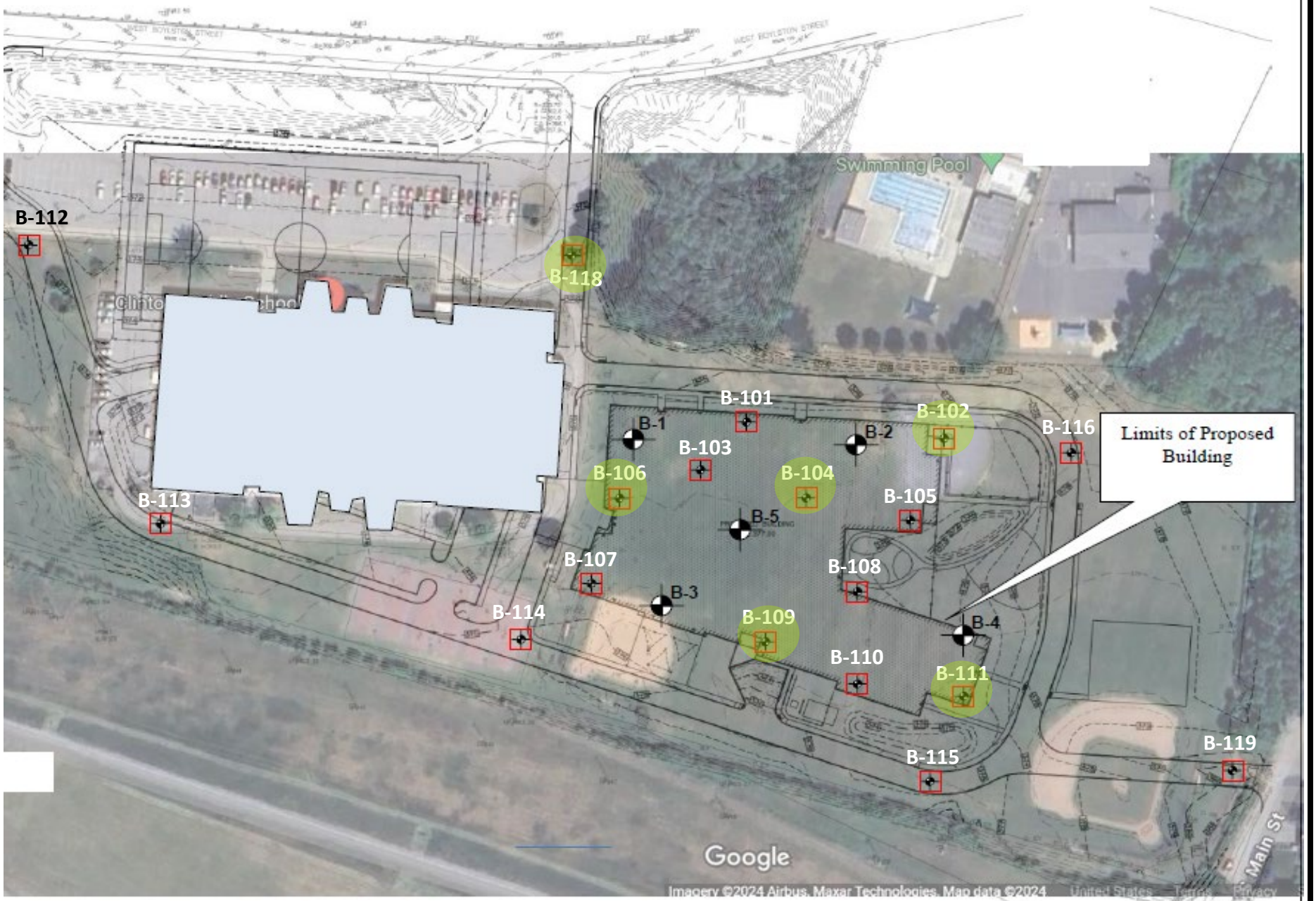
Figure 1: Site Locus

USGS 7.5 Minute Topographic Map

100 WEST BOYLSTON STREET CLINTON, MA 01510



Map Image Position: TP
Map Reference Code & Name: 11743625 Clinton
Map State(s): MA
Version Date: 2018



Client: Lamoureux Pagano Associates	Project: Proposed Clinton Middle School	Figure 3 – Proposed 2024 Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Clinton, MA	LGCI Project No.: 2341	Date: July 2024

Soil samples collected for laboratory analysis, submitted by Lord Environmental for sol disposal characterization

Lord Environmental

A Coneco Engineers and Scitentists, Inc. Company

4 First Street
Bridgewater, MA 02324
(508) 697-3191

REFERENCE:

Lahlaf Geotechnical Consulting, Inc.
2024 Proposed Boring Location Plan

NORTH

FIGURE 1:
Soil Boring Locations

100 West Bolyston Street,
Clinton, Massachusetts

Figure 3: MassDEP Priority Resource Map - Clinton Middle School

MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

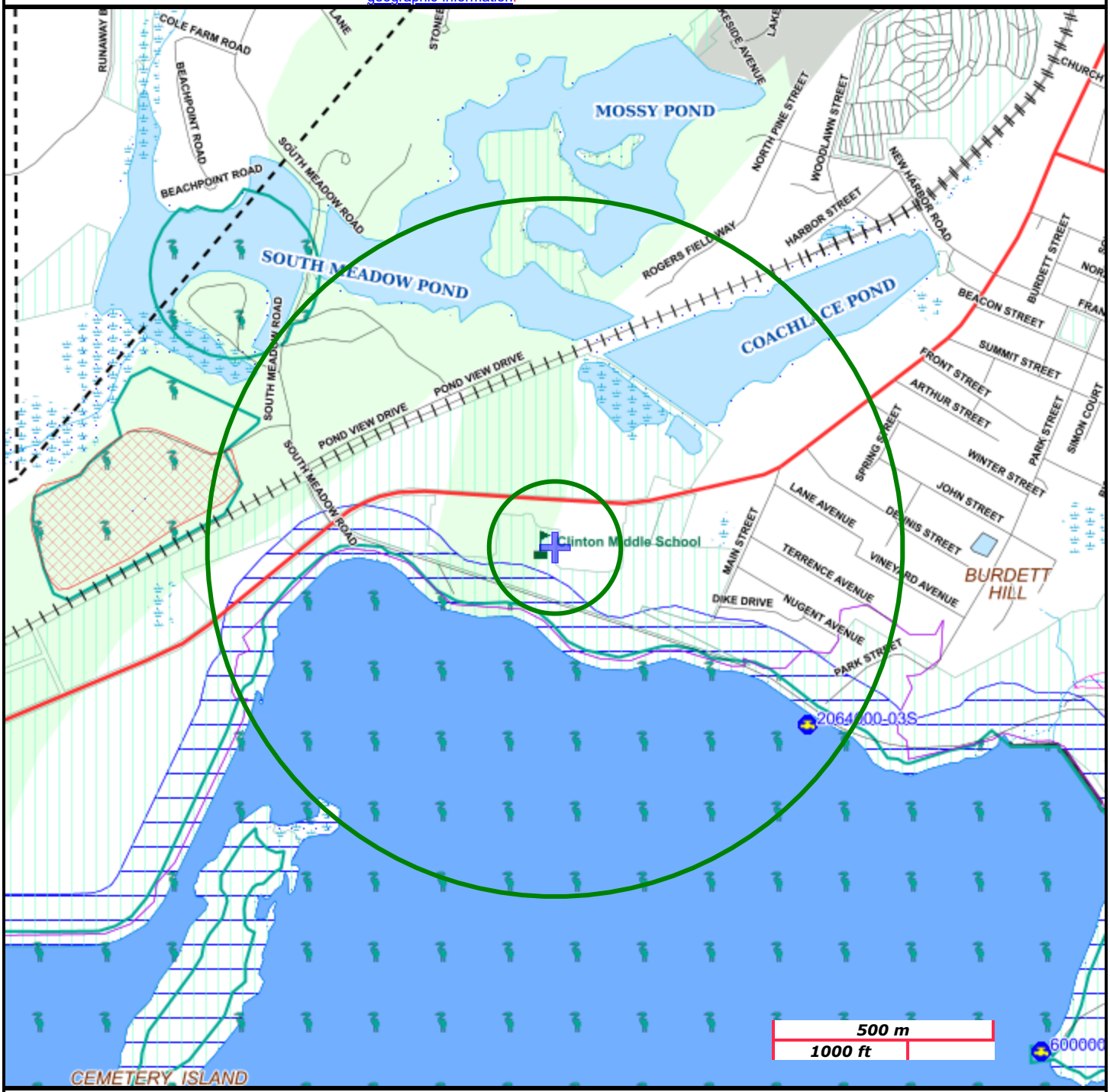
Site Information:

100 WEST BOYLSTON STREET CLINTON, MA

NAD83 UTM Meters:
4698706mN , 277555mE (Zone: 19)
September 16, 2024

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: https://www.mass.gov/orgs/massgis-bureau-of-geographic-information.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

NHESP Pri-Hab of Rare Species; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

Fish Road Reclamation Project
Dudley, MA
Phase I and Phase II Acceptance Criteria
Table 1

Test	Parameter	Fish Road <RCS-1 Acceptance Criteria	RCS-1 Reportable Concentration
PID (ppmv)	Total Organic Vapors	**<5**	**NA**
VOCs (mg/kg)	Acetone (2-propanone)	**0.6**	**6**
	Acrylonitrile	**10**	**100**
	Benzene	**0.2**	**2**
	Bromobenzene	**10**	**100**
	Bromochloromethane	**—**	**NE**
	Bromodichloromethane	**0.01**	**0.1**
	Bromoform	**0.01**	**0.1**
	Bromomethane	**0.05**	**0.5**
	2-Butanone (MEK)	**0.4**	**4**
	n -Butylbenzene	**—**	**NE**
	sec -Butylbenzene	**—**	**NE**
	tert -Butylbenzene	**10**	**100**
	Carbon Disulfide	**10**	**100**
	Carbon Tetrachloride	**0.5**	**5**
	Chlorobenzene	**0.1**	**1**
	Chloroethane	**10**	**100**
	Chloroform	**0.02**	**0.2**
	Chloromethane	**10**	**100**
	2-Chlorotoluene (*ortho*)	**10**	**100**
	4-Chlorotoluene	**1**	**10**
	1,2-Dibromo-3-chloropropane	**1**	**10**
	Dibromochloromethane	**0.0005**	**0.005**
	1,2-Dibromoethane (EDB)	**0.01**	**0.1**
	Dibromomethane	**50**	**500**
	1,2-Dichlorobenzene (*o* -DCB)	**0.9**	**9**
	1,3-Dichlorobenzene (*m* -DCB)	**0.3**	**3**
	1,4-Dichlorobenzene (*p* -DCB)	**0.07**	**0.7**
	trans -1,4-Dichloro-2-butene	**1**	**10**
	Dichlorodifluoromethane	**100**	**1,000**
	1,1-Dichloroethane	**0.04**	**0.4**
	1,2-Dichloroethane	**0.01**	**0.1**
	1,1-Dichloroethene	**0.3**	**3**
	cis -1,2-Dichloroethene	**0.01**	**0.1**
	trans -1,2-Dichloroethene	**0.1**	**1**
	1,2-Dichloropropane	**0.01**	**0.1**
	1,3-Dichloropropane	**50**	**500**
	2,2-Dichloropropane	**0.01**	**0.1**
	1,1-Dichloropropene	**0.001**	**0.01**
	cis -1,3-Dichloropropene	**0.001**	**0.01**
	trans -1,3-Dichloropropene	**0.001**	**0.01**
	Di-isopropyl ether	**10**	**100**
	1,4-Dioxane	**0.02**	**0.2**
	Ethanol	**10**	**100**
	Ethylbenzene	**4**	**40**
	Ethyl ether	**10**	**100**
	Hexachlorobutadiene	**3**	**30**
	2-Hexanone (MBK)	**10**	**100**
	Isopropylbenzene	**100**	**1,000**
	2-Isopropyltoluene (*ortho*)	**—**	**NE**
	4-Isopropyltoluene (*para*)	**10**	**100**
	Methyl Tertiary Butyl Ether (MTBE)	**0.01**	**0.1**
	4-Methyl-2-pentanone (MIBK)	**0.04**	**0.4**
	Methylene Chloride (DCM)	**0.01**	**0.1**
	Naphthalene	**0.4**	**4**
	n -Propylbenzene	**10**	**100**
	Styrene	**0.3**	**3**
	Tertiary butyl ether	**10**	**100**
	1,1,1,2-Tetrachloroethane	**0.01**	**0.1**
	1,1,2,2-Tetrachloroethane	**0.0005**	**0.005**
	Tetrachloroethene (PCE)	**0.1**	**1**
	Tetrahydrofuran	**50**	**500**
	Toluene	**3**	**30**
	1,2,3-Trichlorobenzene	**—**	**NE**
	1,2,4-Trichlorobenzene	**0.2**	**2**
	1,1,1-Trichloroethane (TCA)	**3**	**30**
	1,1,2-Trichloroethane	**0.01**	**0.1**
	Trichloroethene (TCE)	**0.03**	**0.3**
	Trichlorofluoroethane	**—**	**NE**
	Trichlorofluoromethane	**100**	**1,000**
	1,2,3-Trichloropropane	**10**	**100**
	1,2,4-Trimethylbenzene	**100**	**1,000**
	1,3,5-Trimethylbenzene	**1**	**10**
	Vinyl chloride	**0.07**	**0.7**
	m, p -Xylenes	**10**	**100**
	o -Xylenes	**10**	**100**
	Xylenes (total)	**10**	**100**
TPH (mg/kg)	Total Petroleum Hydrocarbons Petroleum Identification (qualitative)	**500**	**1,000**

Notes
NE = No Established standard

Fish Road Reclamation Project
Dudley, MA
Phase I and Phase II Acceptance Criteria
Table 1

Test	Parameter	Fish Road <RCS-1 Acceptance Criteria	RCS-1 Reportable Concentration
SVOCs (mg/kg)	Acenaphthene	**4**	**4**
	Acenaphthylene	**1**	**1**
	Acetophenone	**100**	**1,000**
	Aniline	**100**	**1,000**
	Anthracene	**10**	**1,000**
	Benzo(a)anthracene	**7**	**7**
	Benzidine	**1**	**10**
	Benzo(a)pyrene	**2**	**2**
	Benzo(b)fluoranthene	**7**	**7**
	Benzo(g,h,i)perylene	**10**	**1,000**
	Benzo(k)fluoranthene	**10**	**70**
	Benzoic acid	**100**	**1,000**
	Benzyl butyl phthalate	**10**	**100**
	Biphenyl	**0.05**	**0.05**
	bis (2-chloroethoxy)methane	**50**	**500**
	bis (2-Chloroethyl)ether	**0.07**	**0.7**
	bis (2-Chloroisopropyl)ether	**0.07**	**0.7**
	bis (2-Ethylhexyl)phthalate	**9**	**90**
	4-Bromophenyl phenyl ether	**10**	**100**
	Carbazole	**—**	**NE**
	4-Chloroaniline (*para*)	**0.1**	**1**
	2-Chloronaphthalene	**100**	**1,000**
	4-Chloro-3-methylphenol	**100**	**1,000**
	2-Chlorophenol	**0.07**	**0.7**
	4-Chlorophenyl phenyl ether	**100**	**1,000**
	Chrysene	**20**	**70**
	Dibenzo(a,h)anthracene	**0.7**	**0.7**
	Dibenzofuran	**10**	**100**
	3,3'-Dichlorobenzidine	**0.3**	**3**
	1,2-Dichlorobenzene (*o* -DCB)	**0.9**	**9**
	1,3-Dichlorobenzene (*m* -DCB)	**0.3**	**3**
	1,4-Dichlorobenzene (*p* -DCB)	**0.07**	**0.7**
	2,4-Dichlorophenol	**0.07**	**0.7**
	Diethyl Phthalate	**1**	**10**
	2,4-Dimethylphenol	**0.07**	**0.7**
	Dimethyl Phthalate	**0.07**	**0.7**
	Di-*n* -Butyl Phthalate	**5**	**50**
	4,6-Dinitro-2-methylphenol	**5**	**50**
	2,4-Dinitrophenol	**0.3**	**3**
	2,4-Dinitrotoluene	**0.07**	**0.7**
	2,6-Dinitrotoluene	**10**	**100**
	Di-*n* -Octyl Phthalate	**100**	**1,000**
	1,2-Diphenylhydrazine	**5**	**50**
	Fluoranthene	**40**	**1,000**
	Fluorene	**10**	**1,000**
	Hexachlorobenzene	**0.07**	**0.7**
	Hexachlorobutadiene	**3**	**30**
	Hexachlorocyclopentadiene	**5**	**50**
	Hexachloroethane	**0.07**	**0.7**
	Indeno(1,2,3-cd)pyrene	**7**	**7**
	Isophorone	**10**	**100**
	2-Methylnaphthalene	**0.7**	**0.7**
	2-Methylphenol (o-cresol)	**50**	**500**
	3&4-Methylphenol (m&p-cresol)	**50**	**500**
	Naphthalene	**4**	**4**
	2-Nitroaniline (*ortho*)	**—**	**NE**
	3-Nitroaniline (*meta*)	**—**	**NE**
	4-Nitroaniline (*para*)	**100**	**1,000**
	Nitrobenzene	**50**	**500**
	N-Nitrosodimethylamine	**5**	**50**
	N-Nitrosodi-*n* -propylamine	**5**	**50**
	N-Nitrosodiphenylamine	**10**	**100**
	2-Nitrophenol (*ortho*)	**10**	**100**
	4-Nitrophenol (*para*)	**10**	**100**
	Pentachloronitrobenzene	**10**	**100**
	Pentachlorophenol	**0.3**	**3**
	Phenanthrene	**10**	**10**
	Phenol	**0.1**	**1**
	Pyrene	**40**	**1,000**
	Pyridine	**50**	**500**
	1,2,4,5-Tetrachlorobenzene	**100**	**1,000**
	1,2,4-Trichlorobenzene	**0.2**	**2**
	2,4,5-Trichlorophenol	**0.4**	**4**
	2,4,6-Trichlorophenol	**0.07**	**0.7**
PCBs	No Aroclor identification	**0.1**	**1**

Notes
NE = No Established standard
NT = Not Tested (for that parameter)
Total SVOCs must be less than 100

Fish Road Reclamation Project
Dudley, MA
Phase I and Phase II Acceptance Criteria
Table 1

Test	Parameter	Fish Road <RCS-1 Acceptance Criteria	RCS-1 Reportable Concentration
Total Metals (mg/kg)	Antimony	**10**	**20**
	Arsenic	**20**	**20**
	*Arsenic (naturally occuring)	**<100**	**NE**
	Barium	**375**	**1,000**
	Beryllium	**4**	**90**
	Cadmium	**20**	**70**
	Chromium (total)	**100**	**100**
	Lead	**200**	**200**
	Mercury	**3**	**20**
	Nickel	**150**	**600**
	Selenium	**5**	**400**
	Silver	**6**	**100**
	Thallium	**6**	**8**
	Vanadium	**225**	**400**
	Zinc	**500**	**1,000**
Chlorinated Pesticides & Herbicides (mg/kg) (2)	Alachlor	**10**	**100**
	Aldrin	**0.008**	**0.08**
	α-BHC	**5**	**50**
	β-BHC	**1**	**10**
	γ-BHC (Lindane, γ-HCH)	**0.0003**	**0.003**
	δ-BHC	**1**	**10**
	Chlordane	**0.5**	**5**
	4,4-DDD (p,p')	**0.8**	**8**
	4,4-DDE (p,p')	**0.6**	**6**
	4,4-DDT (p,p')	**0.6**	**6**
	Dieldrin	**0.008**	**0.08**
	α-Endosulfan (I)	**0.05**	**0.5**
	β-Endosulfan (II)	**0.05**	**0.5**
	Endosulfan Sulfate	**"See listed constituents"**	
	Endrin	**1**	**10**
	Endrin Aldehyde	**1**	**10**
	Endrin ketone	**1**	**10**
	Heptachlor	**0.03**	**0.3**
	Heptachlor Epoxide	**0.01**	**0.1**
	Hexachlorobenzene	**0.07**	**0.7**
	Methoxychlor	**20**	**200**
	Toxaphene	**1**	**10**
	2,4-D	**10**	**100**
	2,4-DB	**10**	**100**
	Dalapon	**100**	**1,000**
	Dicamba	**50**	**500**
	Dichlorprop	**—**	**NE**
	Dinoseb	**50**	**500**
	MCPA	**10**	**100**
	MCPP	**—**	**NE**
	2,4,5-T	**10**	**100**
	2,4,5-TP (Silvex)	**10**	**100**
Other	Percent Solids	**No Free Liquids**	**—**
	pH (Standard Units)	**5-9 S.U.**	**>2.0 or <12.5 S.U.**
	Corrosivity (positive/negative)	**Negative**	**Negative**
	Specific Conductance (µmhos/cm)	**2,000**	**—**
	Flashpoint (°F)	**Non-Ignitable**	**Non-Ignitable**
	Ignitability (°F)	**>140 °F**	**>140 °F**
	Cyanide Reactivity	**<250**	**Non-Reactive**
	Sulfide Reactivity	**<500**	**Non-Reactive**
	Reactivity (positive/negative)	**None**	**Negative**
	Percent Solids	**No Free Liquids**	
	Ammedable Cyanide (1)	**3**	**30**
	Asbestos (1)	**ND**	**1%**
	Dioxins (1)	**<0.0000002**	**0.000002**
	Perchlorate Compounds (1)	**<0.01**	**0.1**
	Per- and Polyfluoroalkyl Substances (PFAS) (1)	**ND**	**NE**

Notes
NE = No Established standard
NT = Not Tested (for that parameter)
* Naturally occuring arsenic acceptance criteria does not apply to soil originating from out-of-state.
(1) Must analyze if considered to be a chemical of concern at generating site
(2)Herbicides or pesticides <10% applicable RCs (and no known or potential source)

LGCI
Lahlaf Geotechnical Consulting, Inc.

October 7, 2024

Mr. Eric D. Moore
Lamoureux Pagano Associates
108 Grove Street, Suite 300
Worcester, MA 01605
Phone: (508) 752-2831
E-mail: EMoore@lpaa.com

Re: **Geotechnical Report**
Proposed Clinton Middle School
Clinton, Massachusetts
LGCI Project No. 2341

Dear Mr. Moore:

Lahlaf Geotechnical Consulting, Inc. (LGCI) has completed a geotechnical study for the proposed Clinton Middle School in Clinton, 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.

GEOTECHNICAL REPORT
PROPOSED CLINTON MIDDLE SCHOOL
CLINTON, MASSACHUSETTS

LGCI Project No. 2341
October 7, 2024

Prepared for:

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Phone: (508) 752-2831

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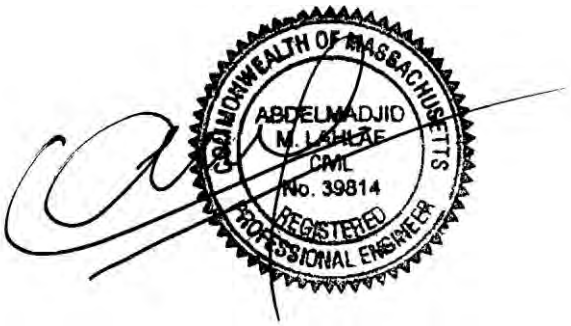


Abdelmadjid M. Lahlaf, Ph.D., P.E.
Principal Engineer

TABLE OF CONTENTS

List of Tables and Figures

List of Appendices

1. PROJECT INFORMATION

1.1 Project Authorization

This geotechnical report presents the results of the subsurface explorations and a geotechnical evaluation performed by Lahlaf Geotechnical Consulting, Inc. (LGCI) for the proposed Clinton Middle School in Clinton, Massachusetts. We performed our services in two (2) phases:

- We performed our preliminary phase services in general accordance with our proposal No. 23110 dated September 12, 2023. Ms. Kathryn Crockett of Lamoureux Pagano Associates (LPA) authorized our services by signing the proposal on September 19, 2023.

- We performed our Design Development (DD) phase services in general accordance with our proposal No. 24043 dated May 16, 2024. Mr. Eric D. Moore of LPA authorized our services by signing the proposal on June 27, 2024.

1.2 Purpose and Scope of Services

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

- Coordinated our exploration locations with LPA.

- Marked the exploration locations at the site and notified Dig Safe Systems Inc. (Dig Safe) and the Town of Clinton for utility clearance.

- Engaged a drilling subcontractor for five (5) days to advance twenty-four (24) soil borings at the site, including five (5) soil borings as part of our preliminary phase services, and nineteen (19) soil borings as part of our DD phase services.

- Engaged an excavation subcontractor for two (2) days to excavate eight (8) test pits at the site as part of our DD phase services. An LGCI field representative performed two (2) double ring infiltrometer tests in two (2) test pits (one each).

- Provided an LGCI geotechnical field representative at the site to coordinate and observe the borings, describe the soil samples, prepare field logs, and perform the double ring infiltrometer tests.

- Submitted eight (8) soil samples from the explorations for laboratory testing: two (2) soil samples during our preliminary phase, and six (6) soil samples during out DD phase, four (4) soil samples from the borings and two (2) samples from the two (2) double ring infiltrometer test pits.

- Prepared this geotechnical report containing the results of our subsurface explorations and our recommendations for foundation design and construction.

LGCI had submitted a preliminary report titled: "Preliminary Geotechnical Report, Proposed Clinton Middle School, Clinton, Massachusetts," dated October 7, 2023. The current report contain the results of our October 7, 2023 preliminary report and supersedes it.

Our scope includes preparing specifications, reviewing the geotechnical aspect of the foundation drawings, and providing general consultation during the design phase. Recommendations for stormwater management, erosion control, pavement design, site specific seismic and liquefaction analyses, pile analysis and design, slope stability analyses, FEMA 100-year flood elevation, historic uses of site, contaminated soil and groundwater treatment and disposal requirements and techniques, and 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, our discussions with LPA, and on the following documents:

- Drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St., Clinton, MA 01510," (Existing Conditions Plan) prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by LPA via e-mail on September 26, 2023.

- Drawing titled: "Conceptual Site Layout Plan, Clinton Middle School, 100W Boylston St., Clinton, MA 01510," (Site Plan) prepared by Nitsch Engineering, Inc., dated June 23, 2023, and provided to LGCI by LPA via e-mail on September 7, 2023.

- Document titled: "Feasibility Study PDP," (Previous Explorations Report) prepared by LPA, undated, and provided to LGCI by LPA via e-mail on September 7, 2023.

The site is located at 100 West Boylston Street in Clinton, Massachusetts, as shown in Figure 1. The site is bordered by West Boylston Street on the northern side, by Main Street and private properties on the eastern side, by Dike Path on the southern side, and by Clinton High School on the western side. The site is currently occupied by the existing Clinton Middle School building and its associated parking lot, driveways, and athletic fields. The existing parking lot is located north of the existing school building, and the existing athletic fields are located to the south and east of the existing school building. The existing driveway loops around the existing school building and connects to the existing parking lot. The site is accessible via an entryway leading to West Boylston Street.

Based on the Existing Conditions Plan, the grades at the site generally range between El. 360 feet near the northeastern corner of the site and El. 378 feet near the southern edge of the site. The existing grades in the existing parking lot located to the north of the existing building range between El. 370 feet and El. 372 feet. The existing grades around the existing school building range between El. 374 feet and El. 375 feet. The existing grades within the athletic fields range between El. 374 feet and El. 378 feet. The grades gradually drop in a northerly direction from the athletic fields to a wooded depression near West Boylston Street from El. 374 feet to El. 360 feet.

1.4 Historic Topographic Maps

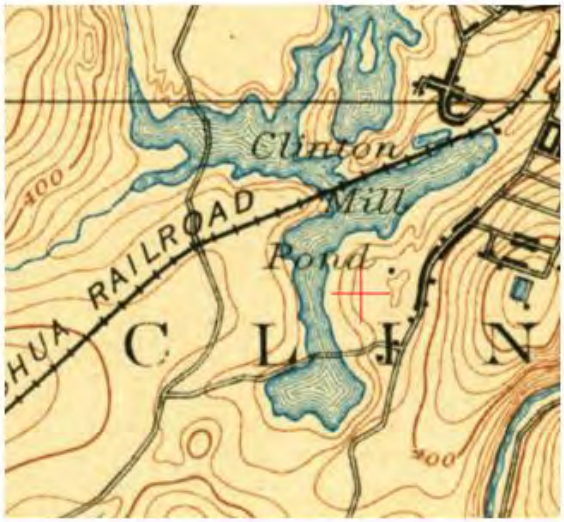
LGCI reviewed historic topographic maps from 1889, 1943, 1965, and 1979 available from https://livingatlas.arcgis.com/topoexplorer/index.html. The maps are shown on the next page with a red "+" denoting the site location.

The historic topographic map from 1889 shows Clinton Mill Pond to the west of the site within the area of the existing Clinton High School building. The 1889 topographic map shows the area of the existing eastern athletic fields at an elevation of about El. 360 feet. The 1943 topographic map shows that Clinton Mill Pond was filled to reclaim land. The 1943 topographic map shows the elevation in the location of the existing eastern athletic fields at an elevation between El. 370 feet and El. 380 feet. The 1965 topographic map and the 1979 topographic map show that the elevation in the location of the existing eastern athletic fields has not significantly changed since 1943, including after the construction of the existing middle school building, which was constructed in 1975.

LGCI also reviewed topographic maps available on the website: www.beforetherewasadam.com that describes the construction history of the nearby northern dike of the Wachusett Reservoir. Based on information available on the website, the grades at the site were disturbed and fill was placed at the site during the construction of the North Dike.

Based on an aerial view of the site obtained from google.com/maps, the limit of the site is located about 230 feet from the North Dike path and about 350 feet from the water line at the North Dike at the nearest point near the southeastern corner of the site shown below

Aerial View of Site and North Dike



Topographical map from 1889

Topographical map from 1943

Topographical map from 1965

Topographical map from 1979

1.5 Project Description

Our understanding of the proposed construction is based on our discussions with LPA and the documents listed in Section 1.3 of this geotechnical report.

We understand that the Town of Clinton has engaged LPA to design a new school to replace the existing Clinton Middle School. Based on our discussions with LPA and referencing the Site Plan, we understand that the proposed construction will consist of an irregularly shaped building located in the athletic field east of the existing Clinton Middle School building. We understand that the proposed building will have a footprint of about 86,700 square feet and will have a first finished floor elevation (FFE) at El. 375 feet. The existing grades within the footprint of the proposed

building range between El. 374 feet and El. 377 feet; thus, requiring fills up to 1 foot and cuts up to 2 feet to achieve the proposed grade of the proposed building. We understand that the proposed building will not have a basement.

We understand that the proposed construction will also include a paved parking lot and an athletic field located within the existing Clinton Middle School building and the existing parking lot located to the north of the existing school. Paved driveways will be located around the perimeter of the proposed building and proposed parking lot. The site will be accessible via access roads connected to West Boylston Street and Main Street. The grading details for the proposed parking lot, roadways, and athletic field are not available at the time of this geotechnical report.

1.6 Elevation Datum

We understand that the elevations provided in the Existing Conditions Plan and Site Plan are referenced with respect to the North American Vertical Datum of 1988 (NAVD 1988). No datum is referenced in the Previous Explorations Report.

2. SITE AND SUBSURFACE CONDITIONS

2.1 Surficial Geology

LGCI reviewed a surficial geologic map titled: "Surficial Materials Map of the Clinton Quadrangle, Massachusetts," prepared by Stone, B.D. and Stone J.R., Scientific Investigation Map 3402, Quadrangle 85 – Clinton, 2018.

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

The artificial fill consists of earth materials and manmade materials that have been artificially emplaced.

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 Previous Explorations Performed by Others

Based on the Previous Explorations Report, we understand that Raymond Concrete Pile Company of Boston, Massachusetts advanced eight (8) soil borings (Boring No. 1 to Boring No. 8) at the site in July of 1956. The 1956 borings were performed within the existing athletic fields to the east of the existing middle school. The 1956 boring logs indicate that the subsurface conditions consisted of up to 1.5 feet of topsoil overlying compact sand and gravel. The borings were advanced from ground surface elevations ranging between El. 380.4 feet and El. 386.4 feet. Groundwater was encountered in the 1956 borings at elevations ranging between El. 361.5 feet and El. 364.8 feet. The ground surface elevations provided in the 1956 boring logs do not match the elevations provided in the Existing Conditions Plan and are, in general, about 10 feet higher in elevation than the grades shown in the Existing Conditions Plan. Since a datum was not included in the logs, it is not known how the elevations shown in the logs of the previous explorations relate to the existing grades.

We understand that New England Test Boring Corp. of East Boston, Massachusetts advanced eight (8) soil borings (Boring-A to Boring-H) at the site in January of 1974. The 1974 borings were

performed within and around the footprint of the existing Clinton Middle School. The 1974 boring logs indicate that, in general, the subsurface conditions consisted of up to 2.5 feet of topsoil and fill, overlying medium dense to very dense sand and gravel. In borings C, D, and E, located near the southwestern corner of the existing middle school, the subsurface conditions consisted of 9 to 14 feet of topsoil, fill, and peat overlying a medium dense to very dense sand and gravel. The borings were advanced from ground surface elevations ranging between El. 377.3 feet and El. 384.5 feet. Groundwater was not encountered within the 1974 borings. The ground surface elevations provided in the 1974 boring logs do not match the elevations provided in the Existing Conditions Plan and are, in general, up to about 10 feet higher in elevation than the grades shown in the Existing Conditions Plan. An elevation datum was not provided in the logs of the 1974 borings.

In 1974, four (4) additional soil borings (B-101 to B-104) were advanced at the site. The additional 1974 boring logs do not indicate who advanced the borings. The locations of the additional 1974 borings are not referenced in the Previous Explorations Report. The additional 1974 boring logs indicate that, in general, the subsurface conditions consisted of 5 to 15 feet of topsoil, fill, and buried organic soil overlying a medium dense to compact sand and gravel. In boring B-101, the subsurface conditions consisted of 40 feet of topsoil, fill, and buried organic soil overlying a medium dense sand and gravel, overlying a very stiff silt. Boring B-101 was advanced from ground surface elevation El. 350.3 feet and borings B-102 to B-104 were advanced from ground surface elevations ranging between El. 378.4 feet and El. 384.1 feet. Groundwater was encountered in borings B-101 and B-103 at elevations of El. 323.1 feet and El. 354.0 feet, respectively. An elevation datum was not provided in the logs of the additional 1974 borings.

We understand that Miller Engineering & Testing and Environmental Drilling, Inc. advanced nineteen (19) soil borings (B-3, B-4, B-7, B-8, B-8A to B-8C, B-9, B-13, B-13A, B-14, B-14A, B-15, B-15A, NB-B, NB-BA, NB-BB, NB-E, and NB-EA) at the site in July and August of 1996. The 1996 borings were performed within and around the footprint of the existing Clinton High School building. The 1996 boring logs indicate that the subsurface conditions consisted of 5 to 25 feet of topsoil, fill, and organics overlying sand. Boring B-8 terminated in the fill layer at a depth of 16 feet beneath the ground surface. The 1996 boring logs do not provide ground surface elevations for the 1996 borings. The 1996 borings do not provide any information on groundwater within the borings.

The logs of the previous borings described in this section are included in Appendix A.

2.3 LGCI's Explorations

2.3.1 General

LGCI coordinated our exploration locations with LPA and marked the exploration locations in the field. LGCI notified Dig Safe and the Town of Clinton 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.

2.3.2 LGCI's Soil Borings

As part of our preliminary phase services, LGCI engaged Soil Exploration Corp. (Soil X) of Leominster, Massachusetts to advance five (5) soil borings (B-1 to B-5) at the site on September 25, 2023. The borings were advanced with a Diedrich D-70 Turbo ATV Drill Rig using 4-1/4" inner-diameter hollow stem augers. The borings extended to depths of 22 feet beneath the ground surface. Upon completion, the boreholes were backfilled with the soil cuttings.

As part of our DD phase services, LGCI engaged Soil Exploration Corp. (Soil X) of Leominster, Massachusetts to advance nineteen (19) soil borings (B-101 to B-117, B-TP-1, and B-TP-3) at the site on July 31, 2024, August 1 and 2, 2024, and August 8, 2024. The borings were advanced with a Mobile Drill B-57 ATV Drill Rig using 4-1/4" inner-diameter hollow stem augers. The borings extended to depths ranging between 10 and 41 feet beneath the ground surface. Upon completion, the boreholes were backfilled with the soil cuttings, sand, and bentonite (as noted in the boring logs). Soil X installed one groundwater observation well in boring B-103-OW.

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

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

2.3.3 LGCI's Test Pits

As part of our DD phase services, LGCI engaged Saunders Construction (Saunders) of Reading, Massachusetts to excavate (8) test pits (TP-1 to TP-8) at the site on September 26 and 27, 2024. The test pits were excavated with a Kubota KX080-4 excavator with a smooth-edge bucket. The test pits extended to depths ranging between 10.0 and 10.9 feet beneath the ground surface. Upon completion, the test pits were backfilled with the excavated material.

An LGCI geotechnical field representative observed and logged the test pits and double ring infiltrometer tests in the field. The LGCI geotechnical field representative also performed two (2) double ring infiltrometer tests in test pits TP-2 and TP-8 (one in each). Both tests were performed within the sand and gravel layer.

2.3.4 Exploration Logs and Locations

The boring locations are shown in Figure 3. Appendix B contains LGCI's boring logs, and Appendix C contains the test pit logs. Table 1 includes a summary of LGCI's borings and Table 2 includes a summary of the tests pits.

2.4 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.

Topsoil – A layer of surficial organic topsoil was encountered at the ground surface in all borings, except borings B-114, B-117, B-TP-1, and B-TP-3. The topsoil was also encountered in all test pits, except test pit TP-6. The thickness of the topsoil ranged between 0.3 and 2.9 feet.

Asphalt – A layer of surficial asphalt was encountered at the ground surface in borings B-114, B-117, B-TP-1, and B-TP-3. The thickness of the asphalt ranged between 0.3 and 0.7 feet.

Subsoil – A layer of subsoil was encountered beneath the topsoil or asphalt in borings B-107, B-109, B-110, B-115, and B-TP-3. The subsoil was also encountered beneath the fill or buried organic soil (described below) in test pits TP-1, TP-4, TP-5, and TP-8. The subsoil extended to depths ranging between 3.3 and 9.0 feet beneath the ground surface. The samples within this layer were mostly described as silty sand. Four (4) sample was described as poorly graded sand. The fines content in the subsoil ranged between 10 and 30 percent, and the gravel content ranged between 0 and 35 percent. The subsoil contained traces of organic soil. One (1) sample contained traces of wood, and one (1) sample contained traces of asphalt.

The SPT N-values in this layer ranged between 2 blows per foot (bpf) and 7 bpf, indicating loose to medium dense material. Please note that the high SPT N-values recorded in the subsoil may be due to obstructions such as cobbles and boulders present in the subsoil and may not represent the true density of the subsoil.

Fill – A layer of fill was encountered beneath the topsoil, asphalt, or subsoil in all borings and test pits. The fill extended to depths ranging between 1.3 and 16.0 feet beneath the ground surface. The samples within this layer were mostly described as silty sand or poorly graded sand. Two (2) samples were described as well graded sand, two (2) samples were described as poorly graded gravel, and one (1) sample was described as sandy silt. The fines content in the fill ranged between 0 and 45 percent, and the gravel content ranged between 0 and 45 percent. When described as a silt or gravel, the sand content ranged between 25 and 40 percent. The fill contained traces of organic soil and roots. Two (2) samples contained traces of organic odor, one (1) sample contained traces of bricks, one (1) sample contained traces of petroleum odor, and one (1) sample contained traces of asphalt. Cobbles of up to 6 inches were encountered in test pit TP-3.

One (1) layer of buried organic soil was encountered in borings B-4, B-106, and B-111, between depths of 4.0 to 4.8 feet beneath the ground surface, 4.0 to 4.3 feet beneath the ground surface, and 4.0 to 4.3 feet beneath the ground surface, respectively. Two (2) layers of buried organic soil were also encountered in boring B-103-OW between depths of 4.0 to 4.8 feet and 6.0 to 6.5 feet beneath the ground surface.

The SPT N-values in this layer ranged between 2 blows per foot (bpf) and 74 bpf, with most values ranging between 11 bpf and 47 bpf, indicating mostly medium dense to dense material. Please note that the high SPT N-values recorded in the fill may be due to obstructions such as cobbles and boulders present in the fill and may not represent the true density of the fill.

The excavation effort in the fill layer ranged between easy to moderate.

Buried Organic Soil – A layer of buried organic soil was encountered beneath the subsoil or fill in borings B-107, B-109 to B-112, and B-115 and test pit TP-4. In borings B-107, B-109 to B-111, and B-115, the buried organic soil extended to depths ranging between 4.6 and 8.4 feet beneath the ground surface. In boring B-112, the buried organic soil extended to a depth of 38 feet, which is likely due to the former Mill Pond that ran through the area of the boring, according to the 1889 Topographic Map. The buried organic soil extended to a depth of 1.9 feet beneath the ground surface in test pit TP-4. The samples in this layer were described as silty sand. The fines content ranged between 25 and 40 percent, and the gravel content ranged between 0 and 5 percent. The buried organic soil contained traces of roots, peat, and wood. One (1) sample from boring B-112 contained traces of pond deposits.

Sand and Gravel – A layer of sand and gravel was encountered beneath the layer of fill or buried organic soil in all borings, except in boring B-112, and extended to the termination depths of the borings, except in borings B-3 and B-107, where the sand and gravel extended to a depth of 15.0 and 20.0 feet beneath the ground surface, respectively. A layer of sand and gravel was also encountered in all test pits, except for test pits TP-1 and TP-3, and extended to the termination depth of test pit TP-2. The layer extended to depths ranging between 6.0 and 9.6 feet beneath the ground surface in the other test pits. The samples in this layer were mostly described as poorly graded sand and well graded sand. Eight (8) samples were described as silty sand, three (3) samples were described as well graded gravel, and three (3) samples were described as poorly graded gravel. The fines content in this layer ranged between 0 and 35 percent, and the gravel content ranged between 0 and 45 percent. When described as a gravel, the sand content in this layer ranged between 25 and 40 percent. Two (2) samples of the sand and gravel contained traces of weathered rock. Cobbles of up to 8 inches were encountered in test pit TP-4.

The SPT N-values in this layer ranged between 6 bpf and 112 bpf, with most values ranging between 10 and 49 bpf, indicating mostly medium dense to dense material. Please note that the high SPT N-values in the sand and gravel may be due to obstructions such as cobbles and boulders in the sand and gravel, and may not represent the true density of the sand and gravel.

The excavation effort in the sand and gravel layer ranged between easy to difficult.

Silt – A layer of silt was encountered beneath the sand and gravel in borings B-3 and B-107, and extended to the termination depth of 22.0 feet beneath the ground surface in both borings. The samples in this layer were described as sandy silt. The sand content in this layer ranged between 30 and 35 percent, and the gravel content ranged between 0 and 5 percent. The silt was described as non-plastic to slightly plastic.

The SPT N-values in this layer ranged between 12 bpf and 20 bpf, indicating stiff to very stiff material.

2.5 Groundwater

Groundwater was encountered in boring B-107 at a depth of 21 feet beneath the ground surface.

In the groundwater observation well in boring B-103-OW, groundwater was not encountered at the time of installment nor on August 8 nor September 27, 2024, i.e., seven (7) days and 57 days after installation, respectively.

The groundwater information reported herein is based on observations made during or shortly after the completion of drilling or excavation, and 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.

2.6 Laboratory Test Data

LGCI submitted six (6) soil samples collected from the borings and test pits for grain-size analysis. The results of the grain-size analyses are provided in the test data sheets included in Appendix D 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-2	S2	Sand & Gravel	2.0 – 4.0	40.5	49.6	9.9
B-5	S3	Fill	4.0 – 6.0	19.0	56.6	24.4
B-106	S2 Bot. 11”	Fill	2.0 – 4.0	24.2	31.5	44.3
B-109	S4	Fill	6.0 – 8.0	5.2	37.0	57.8
B-110	S3 Bot. 11”	Natural Soil	4.0 – 6.0	52.1	34.7	13.2
B-111	S3 Bot. 10”	Fill	4.0 – 6.0	14.0	54.4	31.6
TP-2	INF-TP-2	Sand and Gravel	4.9	1.5	60.5	38.0
TP-8	INF-TP-8	Sand and Gravel	3.5	20.8	75.1	4.1

2.7 Double Ring Infiltrometer Test Results

LGCI provided a geotechnical field representative to perform double ring infiltrometer tests in test pits TP-2 and TP-8 at depths of 4.9 and 3.5 feet beneath the ground surface, respectively. The excavation was first advanced to the test depth where the test pit bottom was leveled using the excavator bucket. After the infiltrometer rings were driven into the ground, the test was conducted by filling the rings with water. The test pit was advanced deeper after the completion of the test.

The test results are included in Appendix E.

The results include plots of the hydraulic conductivity for flow within the inner and outer rings. The stabilized portion of the plot for the inner ring indicates the permeability value. The results indicate the following approximate permeability, K, values:

TP-2: K = 1.7 E-04 cm/sec.
TP-8: K = 1.6 E-02 cm/sec.

3. EVALUATION AND RECOMMENDATIONS

3.1 General

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

3.1.1 Surficial Topsoil, Existing Fill, and Buried Organic Soil

- Surficial topsoil, existing fill, and buried organic soil were encountered in the borings and test pits. These materials are not suitable to support foundations.

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

- The existing fill was observed to be variable in composition and density. In addition, variable amounts of organic matter were noted in several of the fill samples. 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 as well as the underlying buried organic soil should be entirely removed from within the proposed building footprint and replaced with Structural Fill. We anticipate that the removal will extend, in some areas, up to depths of about 12 feet, but will be less than 10 feet over most of the proposed building footprint. The removal may extend to greater depths at locations not explored by LGCI. Laterally, the removal should extend beyond the proposed building footprint a distance equal to the distance between the bottom of the proposed footings and the top of the natural sand and gravel, or 5 feet, whichever is greater.

- LGCI considered the option of improving the existing fill and the underlying buried organic soil by means of aggregate piers or rigid inclusions. However, we believe that aggregate piers or rigid inclusions are not practical at this site as the depth to the bottom of the fill is 6 feet or less over more than 1/3 of the proposed building footprint.

- The subgrade of footings should be prepared in accordance with the recommendations in Section 4.1.

- Within paved areas, the existing fill and buried organic soil should be removed to the top of the natural sand and gravel or to a depth of 18 inches beneath the bottom of the proposed pavement. The existing fill and buried organic soil 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

Based on the results of the borings, the subsurface conditions are suitable to support shallow spread and continuous footings bearing on Structural Fill placed directly on top of the sand and gravel layer after entirely removing the surficial topsoil, the existing fill, and buried organic soil. Our recommendation for net allowable bearing capacity in the sand and gravel 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.

3.1.3 Reuse of Onsite Materials

Traces of organic soil were observed in a few samples in the existing fill. In addition, the existing fill was silty. Accordingly, most of the existing fill may not be reused as Structural Fill or Ordinary Fill. The portion of the existing fill free of organic matter, i.e., with less than 3 percent by weight organic matter, could be reused as Ordinary Fill. Likewise, some of the natural sand and gravel may be used as Ordinary Fill and Structural Fill.

Additional recommendation for reuse of onsite soils are presented in Section 4.4.

The project environmental engineer should be consulted before reusing onsite soils.

3.2 Foundation Recommendations

3.2.1 Footing Design

- We recommend entirely removing the asphalt, the surficial topsoil, buried organic soil, and the existing fill from within the proposed building footprint as described in Section 3.1.

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

- We recommend designing the proposed footings using a net allowable bearing pressure of 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 and gravel. 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 a slabs-on-grade bearing on a minimum of 12 inches of Structural Fill placed directly on top of the natural sand and gravel. The subgrade of the slabs should be prepared as described in Section 4.1.

- To reduce the potential for dampness in the proposed floor slab, the project architect may consider placing a vapor barrier beneath the floor slab. The vapor barrier should be protected from puncture during the placement of the proposed slab reinforcement.

- For the design of the floor slab bearing on the materials described above, we recommend using a modulus of subgrade reaction, k_{s1}, of 100 tons per cubic foot (tcf). Please note that the values of k_{s1} are for a 1 x 1 square foot area. These values should be adjusted for larger areas using the following expression:

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

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): 0.194g
- Spectral Response Acceleration at 1 sec. (S_1): 0.068g
- 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}: 0.310g
- Adjusted spectral response S_{M1}: 0.163g

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, 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 0.50 between the natural sand and gravel and the bottom of the wall. Below-grade walls should be designed for minimum factors of safety of 1.5 for sliding and 2.0 for overturning.

3.5.2 Seismic Pressures

In accordance with the Massachusetts State Building Code, 9th Edition (MSBC 9th Edition), Section 1610, a lateral earthquake force equal to $0.100*(S_s)*(F_a)*\gamma*H^2$ should be included in the design of the walls (for horizontal backfill), where S_s is the maximum considered

earthquake spectral response acceleration (defined in Section 3.4), F_a is the site coefficient (defined in Section 3.4), γ is the total unit weight of the soil backfill, and H is the height of the wall.

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

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

3.5.3 Perimeter Drains

- We recommend that free-draining material be placed within 3 feet of the exterior of walls of below-ground spaces, if any. To reduce the potential for dampness in below-ground spaces, proposed below-ground walls should be damp-proofed.

- We recommend that drains be provided behind the exterior of walls of below-ground spaces, if any. The drains should consist of 4-inch perforated PVC pipes installed with the slots facing down. Perimeter drains should be installed at the bottom of the wall in 18 inches of crushed stone wrapped in a geotextile for separation and filtration.

To the extent possible, groundwater collected by the wall drains should be discharged in a lower area if gravity flow is possible. In any case, the groundwater collected by the wall drains should be discharged in accordance with municipal, state, and other applicable standards.

3.6 Parking Lots, Driveways, and Sidewalks

3.6.1 General

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

- We recommend entirely removing the asphalt and topsoil from within the proposed driveways, parking lots, and walkways and sidewalks.

- The existing fill and buried organic soil should be improved in accordance with the recommendations in Section 4.1.

- Cobbles and boulders should be removed to at least 18 inches below the bottom of the pavement.

3.6.2 Sidewalks

- Sidewalks should be placed on a minimum of 12 inches of Structural Fill with less than 5 percent fines.

- To reduce the potential for heave caused by surface water penetrating under the sidewalk, the joints between sidewalk concrete sections should be sealed with a waterproof compound. The sidewalks should be sloped away from the building or other vertical surfaces to promote flow of water. To the extent possible, roof leaders should not discharge onto sidewalk surfaces.

3.6.3 Pavement Sections

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

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

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

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

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

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

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

3.7 Underground Utilities

Boulders at the bottom of utility trenches should be removed to at least 12 inches below the pipe invert and the resulting excavation should be backfilled with suitable backfill. Utilities should be placed on suitable bedding material in accordance with the manufacturer's recommendations.

"Cushion" material should be placed, by hand, above the utility pipe in maximum 6-inch lifts. The lift should be compacted by hand to avoid damage to the utility. Where the bedding/cushion material consists of crushed stone, it should be wrapped in a geotextile fabric.

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

4. CONSTRUCTION CONSIDERATIONS

4.1 Subgrade Preparation

- Organic materials, existing fill, buried organic soil, buried subsoil, abandoned utilities, buried foundations, and other below-ground structures should be entirely removed from within the 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 and buried organic soil 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 or organic soil are observed, the soft zone or organic 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 or buried subsoil 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, the existing fill and natural sand and gravel can be reused as recommended in Section 3.1.3.

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.

To reduce the amount of soil to be disposed of offsite, the onsite material, including the existing fill and the natural sand and gravel, could be blended with imported rock or trap rock and processed in a crusher to produce fill meeting the gradation requirements of the materials described in Section 4.3. Suitable imported material and amended/improved materials should be stockpiled separately from unimproved onsite soils. If the onsite material are processed on site for reuse, the blending

ratios used during crushing should be established at the start of the earthwork operations by preparing batches of processed materials using different blending ratios and submitting the processed material for testing. LGCI should be present during the preparation of the blending and processing.

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. 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 Lamoureux Pagano Associates for the proposed Clinton Middle School in Clinton, Massachusetts as conceived at this time.

6. 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 Clinton, MA topographic map from http://mapserver.mytopo.com.

Table 1 - Summary of LGCI's Borings
Proposed Clinton Middle School
Clinton, MA
LGCI Project No. 2341

Boring No.	Ground Surface Elevation (ft.)[1]	Groundwater[2] Depth / El. (ft.)	Bottom of Topsoil / **Asphalt** Depth / El. (ft.)	Bottom of Subsoil Depth / El. (ft.)	Bottom of Fill Depth / El. (ft.)	Bottom of Buried Organic Soil Depth / El. (ft.)	Bottom of Sand and Gravel Depth / El. (ft.)	Bottom of Silt Depth / El. (ft.)	Bottom of Boring Depth / El. (ft.)
2023 Borings									
B-1	374.0	- / -	2.0 / **372.0**	- / -	4.0 / **370.0**	- / -	22.0 [3]/ **352.0**	- / -	22.0 / **352.0**
B-2	375.0	- / -	0.7 / **374.3**	- / -	2.0 / **373.0**	- / -	22.0 [3]/ **353.0**	- / -	22.0 / **353.0**
B-3	376.0	- / -	0.3 / **375.7**	- / -	6.0 / **370.0**	- / -	15.0 / **361.0**	22.0 [4]/ **354.0**	22.0 / **354.0**
B-4	377.0	- / -	2.0 / **375.0**	- / -	10.0 [5]/ **367.0**	- / -	22.0 [3]/ **355.0**	- / -	22.0 / **355.0**
B-5	375.0	- / -	2.0 / **373.0**	- / -	6.0 / **369.0**	- / -	22.0 [3]/ **353.0**	- / -	22.0 / **353.0**
2024 Borings									
B-101	374.0	- / -	2.5 / **371.5**	- / -	12.0 / **362.0**	- / -	22.0 [3]/ **352.0**	- / -	22.0 / **352.0**
B-102	375.0	- / -	0.8 / **374.2**	- / -	8.8 / **366.2**	- / -	20.0 [3]/ **355.0**	- / -	20.0 / **355.0**
B-103-OW	375.0	- / -	2.3 / **372.7**	- / -	9.4 [6]/ **365.6**	- / -	22.0 [3]/ **353.0**	- / -	22.0 / **353.0**
B-104	375.0	- / -	2.0 / **373.0**	- / -	8.0 / **367.0**	- / -	22.0 [3]/ **353.0**	- / -	22.0 / **353.0**
B-105	375.0	- / -	2.0 / **373.0**	- / -	8.0 / **367.0**	- / -	22.0 [3]/ **353.0**	- / -	22.0 / **353.0**
B-106	375.0	- / -	2.2 / **372.8**	- / -	6.0 [7]/ **369.0**	- / -	22.0 [3]/ **353.0**	- / -	22.0 / **353.0**
B-107	376.0	21.0 / **355.0**	2.4 / **373.6**	4.0 / **372.0**	- / -	4.6 / **371.4**	20.0 / **356.0**	22.0 [4]/ **354.0**	22.0 / **354.0**
B-108	376.0	- / -	2.0 / **374.0**	- / -	8.0 / **368.0**	- / -	22.0 [3]/ **354.0**	- / -	22.0 / **354.0**
B-109	376.0	- / -	2.0 / **374.0**	4.0 / **372.0**	8.0 / **368.0**	8.3 / **367.7**	22.0 [3]/ **354.0**	- / -	22.0 / **354.0**
B-110	376.0	- / -	2.0 / **374.0**	4.0 / **372.0**	- / -	4.4 / **371.6**	22.0 [3]/ **354.0**	- / -	22.0 / **354.0**
B-111	377.0	- / -	2.0 / **375.0**	- / -	6.0 [8]/ **371.0**	8.4 / **368.6**	22.0 [3]/ **355.0**	- / -	22.0 / **355.0**
B-112	372.0	- / -	2.0 / **370.0**	- / -	16.0 / **356.0**	38.0 / **334.0**	- / -	41.0 [9]/ **331.0**	41.0 / **331.0**
B-113	373.0	- / -	2.0 / **371.0**	- / -	6.0 / **367.0**	- / -	12.0 [3]/ **361.0**	- / -	12.0 / **361.0**
B-114	375.0	- / -	**0.3** / **374.7**	- / -	2.3 / **372.7**	- / -	12.0 [3]/ **363.0**	- / -	12.0 / **363.0**
B-115	377.0	- / -	2.9 / **374.1**	4.0 / **373.0**	- / -	6.0 / **371.0**	10.0 [3]/ **367.0**	- / -	10.0 / **367.0**
B-116	376.0	- / -	0.8 / **375.2**	- / -	8.0 / **368.0**	- / -	10.0 [3]/ **366.0**	- / -	10.0 / **366.0**
B-117	372.0	- / -	**0.5** / **371.5**	- / -	11.0 / **361.0**	- / -	17.0 [3]/ **355.0**	- / -	17.0 / **355.0**
B-TP-1	371.0	- / -	**0.7** / **370.3**	- / -	11.0 / **360.0**	- / -	13.0 [3]/ **358.0**	- / -	13.0 / **358.0**
B-TP-3	374.0	- / -	**0.5** / **373.5**	9.0 / **365.0**	7.0 / **367.0**	- / -	13.0 [3]/ **361.0**	- / -	13.0 / **361.0**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boyleston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.
2. Groundwater was measured during drilling, at the end of drilling, after drilling, or based on sample moisture, whichever is shallower.
3. Boring terminated in the sand and gravel layer.
4. Boring terminated in the silt layer.
5. A layer of buried organic soil was encountered in boring B-4 within the fill layer between depths of 4.0 feet and 4.8 feet.
6. Two layers of buried organic soil was encountered in boring B-103-OW within the fill layer between depths of 4.0 to 4.8 feet and 6.0 to 6.5 feet.
7. A layer of buried organic soil encountered in boring B-106 within the fill layer between depths of 4.0 to 4.3 feet.
8. A layer of buried organic soil encountered in boring B-111 within the fill layer between depths of 4.0 to 4.3 feet.
9. Boring terminated in the sand layer.
10. "-" means groundwater or layer was not encountered.

Table 2 - Summary of LGCI's Test Pits
Proposed Clinton Middle School
Clinton, MA
LGCI Project No. 2341

Test Pit No.	Ground Surface Elevation (ft.)[1]	Groundwater[2] Depth / El. (ft.)	Bottom of Topsoil Depth / El. (ft.)	Bottom of Fill Depth / El. (ft.)	Bottom of Buried Organic Soil Depth / El. (ft.)	Bottom of Subsoil Depth / El. (ft.)	Bottom of Sand and Gravel Depth / El. (ft.)	Bottom of Test Pit Depth / El. (ft.)
TP-1	377.0	- / -	0.7 / **376.3**	6.8 / **370.2**	- / -	7.5 / **369.5**	10.9 [3]/ **366.1**	10.9 / **366.1**
TP-2	374.0	- / -	0.8 / **373.2**	3.8 / **370.2**	- / -	- / -	10.0 [3]/ **364.0**	10.0 / **364.0**
TP-3	375.0	- / -	0.8 / **374.2**	9.0 / **366.0**	- / -	- / -	10.1 [3]/ **364.9**	10.1 / **364.9**
TP-4	376.0	- / -	0.9 / **375.1**	1.3 [4]/ **374.7**	1.9 / **374.1**	3.9 / **372.1**	10.0 [3]/ **366.0**	10.0 / **366.0**
TP-5	377.0	- / -	1.2 / **375.8**	2.8 / **374.2**	- / -	4.0 / **373.0**	10.4 [3]/ **366.6**	10.4 / **366.6**
TP-6	375.0	- / -	- / -	8.0 / **367.0**	- / -	- / -	10.1 [3]/ **364.9**	10.1 / **364.9**
TP-7	376.0	- / -	0.7 / **375.3**	3.5 / **372.5**	- / -	- / -	10.2 [3]/ **365.8**	10.2 / **365.8**
TP-8	376.0	- / -	0.8 / **375.2**	2.3 [4]/ **373.7**	- / -	3.3 / **372.7**	10.3 [3]/ **365.7**	10.3 / **365.7**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates, vie e-mail on September 26, 2023.
2. Groundwater was not encountered during test pit excavations.
3. Test pit terminated in the sand and gravel layer.
4. "-" means groundwater or layer was not encountered.

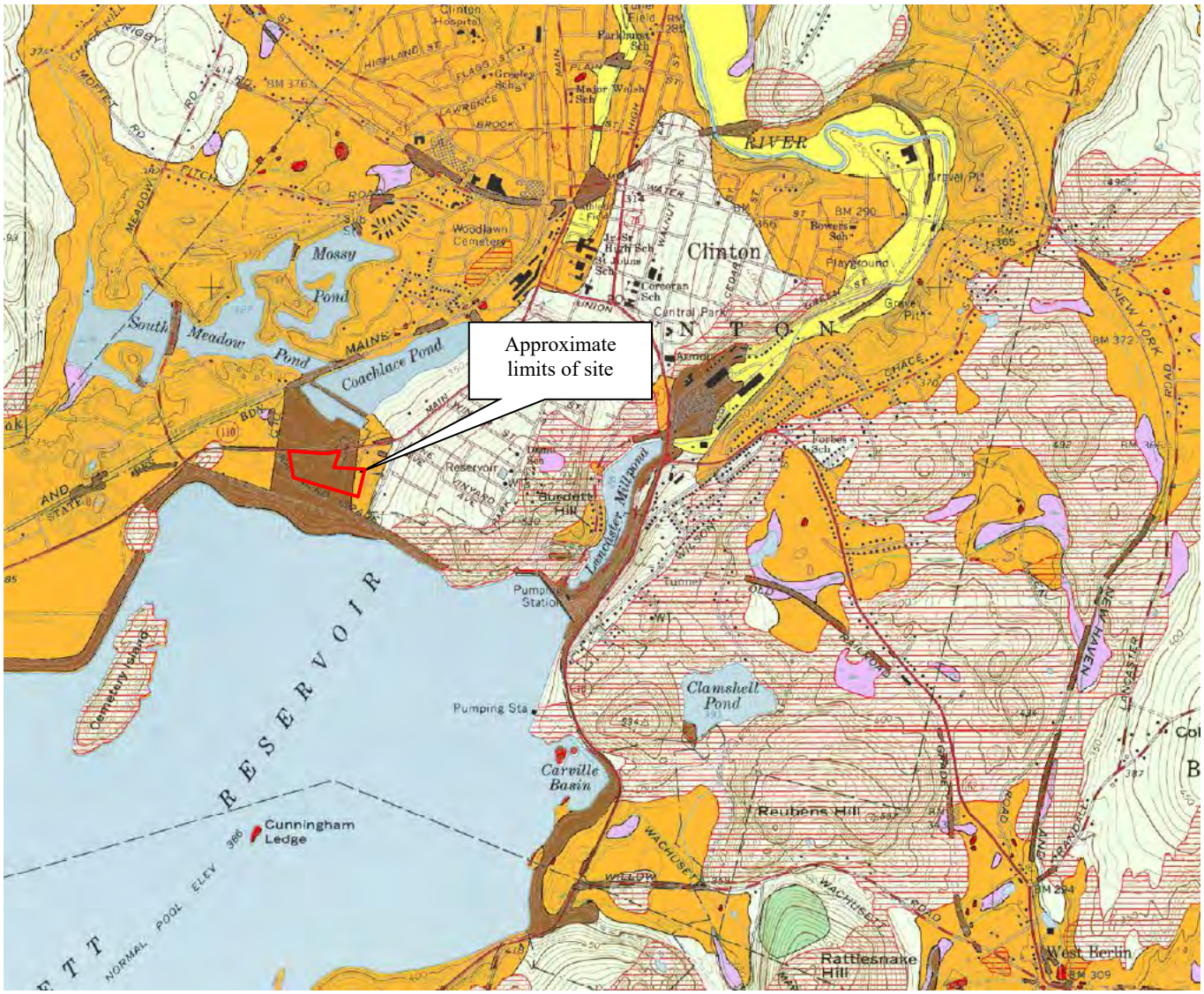
N

Contour Intervals: 3 meters

0.4 mi

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

Client:	Project:	Figure 1 – Site Location Map	
Lamoureux Pagano Associates	Proposed Clinton Middle School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Clinton, MA	LGCI Project No.: 2341	Date: Oct. 2024



Coarse deposits consist of *gravel deposits*, *sand and gravel deposits*, and *sand deposits*, not differentiated in this report. *Gravel deposits* are composed of at least 50 percent gravel-size clasts; cobbles and boulders predominate; minor amounts of sand occur within gravel beds, and sand comprises a few separate layers. Gravel layers generally are poorly sorted, and bedding commonly is distorted and faulted due to postdepositional collapse related to melting of ice. *Sand and gravel deposits* occur as mixtures of gravel and sand within individual layers and as layers of sand alternating with layers of gravel. Sand and gravel layers generally 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

Artificial fill—Earth materials and manmade materials that have been artificially emplaced, primarily in highway and railroad embankments and in dams; unit may also include landfills, urban-development areas, and filled coastal wetlands

Note: Figure based on map titled: "Surficial Materials Map of the Clinton Quadrangle, Massachusetts," prepared by Stone, J.R., and Stone, B.D., Scientific Investigation Map 3402, Quadrangle 85 – Clinton, 2018.

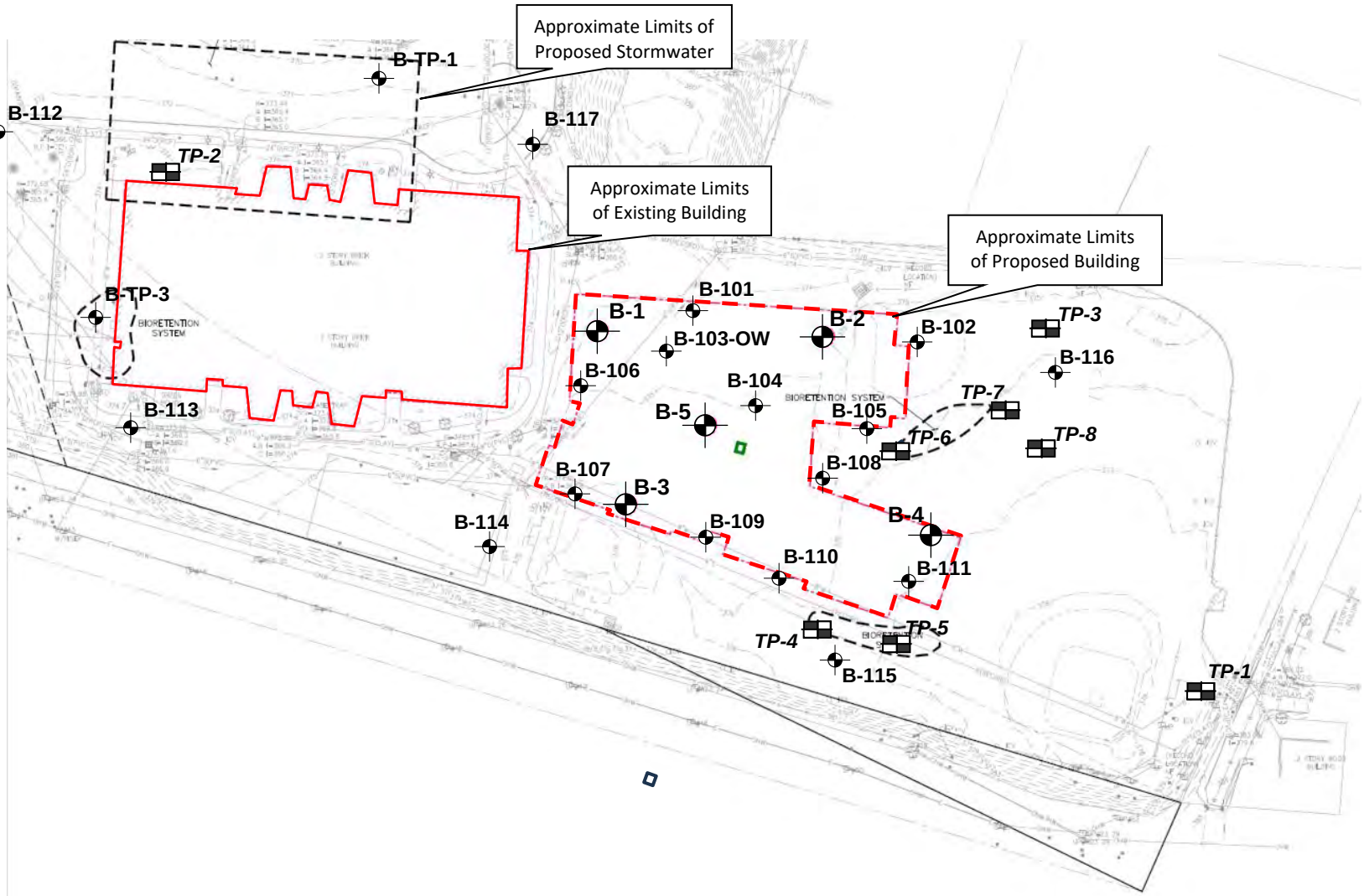
Client:	Project:	Figure 2 – Surficial Geologic Map	
Lamoureux Pagano Associates	Proposed Clinton Middle School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Clinton, MA	LGCI Project No.: 2341	Date: Oct. 2024

Legend

Approximate location of borings advanced by Soil Exploration Corp. (Soil X) of Leominster, MA on September 25, 2023, and observed by Lahlaf Geotechnical Consulting, Inc. (LGCI).

Approximate location of borings advanced by Soil Exploration Corp. (Soil X) of Leominster, MA between July 31 and August 8, 2024, and observed by LGCI.

Approximate location of test pits performed by Saunders Construction (Saunders) of Reading, MA on September 26 and 27, 2024 and observed by LGCI.



Approximate Scale (ft.)

60 30 0 60 120

Note

Figure based on drawing titled: "Test Pit Location Plan" prepared by Lamoureux Pagano Associates (LPA), dated July 23, 2024, and provided to LGCI by the LPA via e-mail on July 25, 2024.

Client: Lamoureux Pagano Associates	Project: Proposed Clinton Middle School	Figure 3 – Boring and Test Pit Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Clinton, MA	LGCI Project No.: 2341	Date: Oct. 2024

Appendix A – Logs of Borings by Others

LPA|A
LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
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STAMP

CONSULTANT

PROJECT

MSBA Module 3

Clinton Middle School

DRAWING TITLE

CONCEPTUAL SITE LAYOUT PLAN

REVISIONS

No.	Description	Date

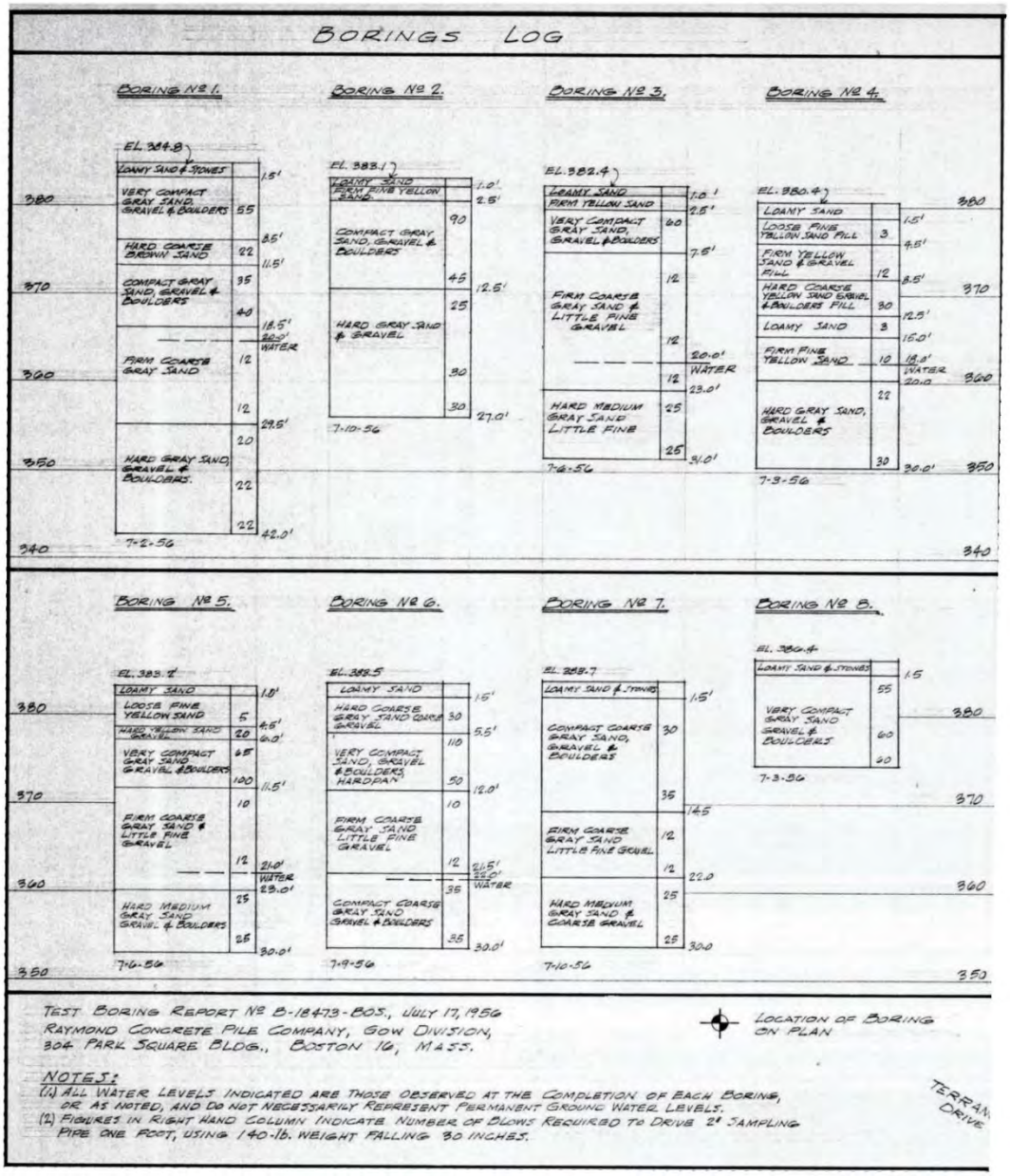
FILE:	
JOB NO:	#1605
SCALE:	
DWN BY:	AC
CKD BY:	RC
DATE	10-25-2023

CP-1

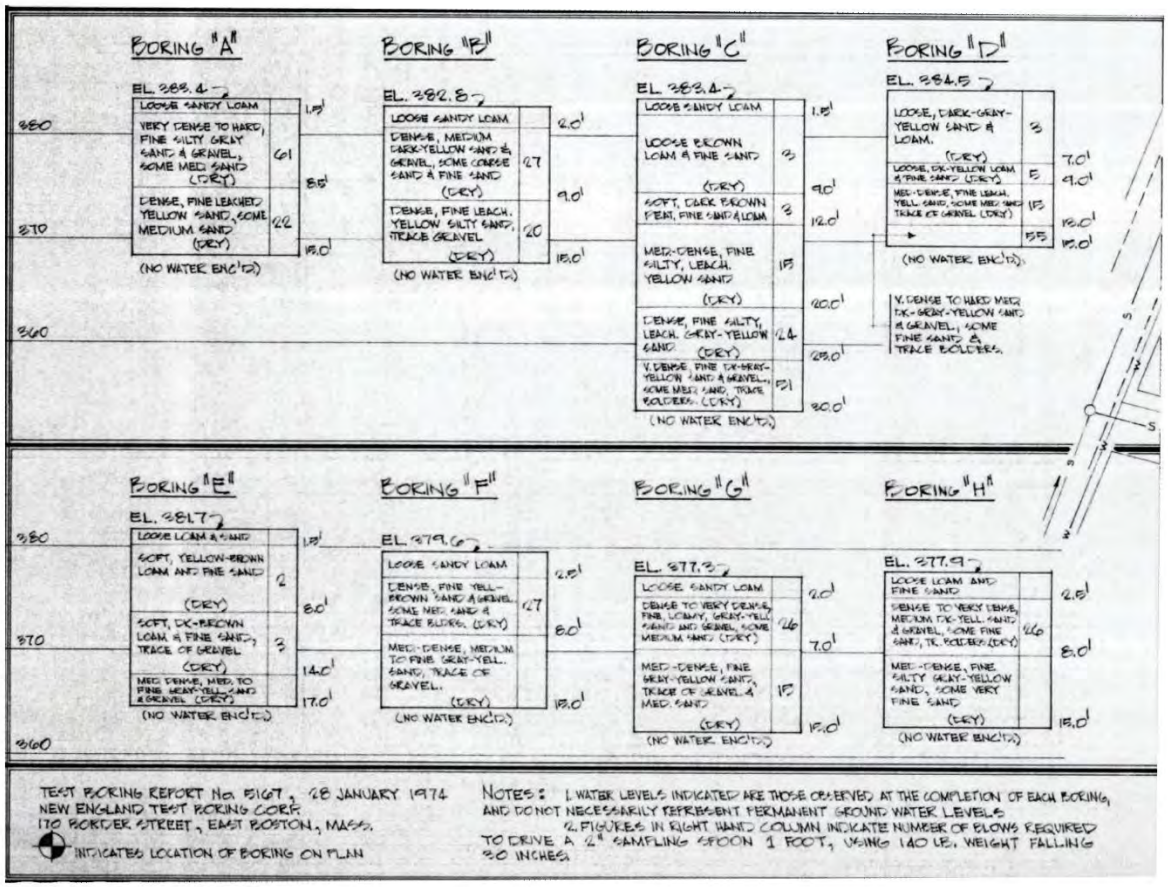
INTRODUCTION

Below are the assembled logs for site borings taken in 1956, 1974, and 1996, in and around the footprints of the existing Clinton Middle School, and Clinton High School. Boring locations shown on 3.1.4.J site plan.

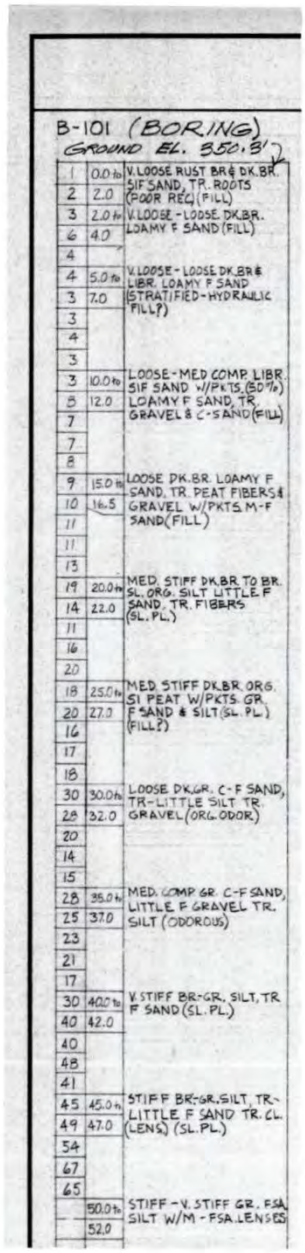
BORINGS LOG 1956



BORINGS LOG 1974



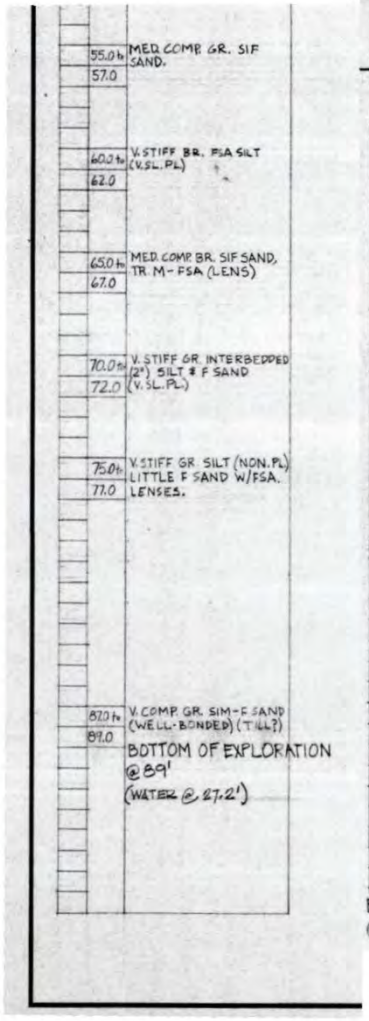
BORINGS LOG 1974



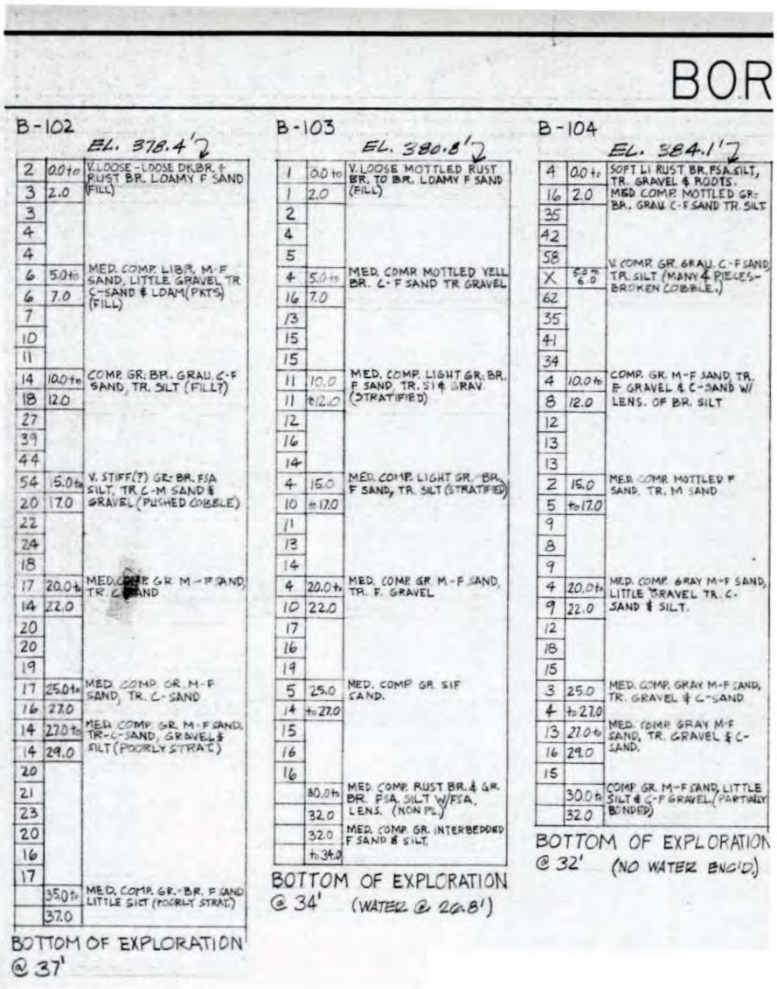
B-101 (BORING)
GROUND EL. 350.3'

1	0.0 to	V. LOOSE RUST BR & DK.BR. SIF SAND, TR. ROOTS (POOR REC) (FILL)
2	2.0	
3	2.0 to	V. LOOSE - LOOSE DK.BR. LOAMY F SAND (FILL)
6	4.0	
4		
4	5.0 to	V. LOOSE - LOOSE DK.BR & LIBR. LOAMY F SAND (STRATIFIED - HYDRAULIC FILL?)
3	7.0	
3		
3		
3	10.0 to	LOOSE - MED COMP. LIBR. SIF SAND W/PKTS. (50%) LOAMY F SAND, TR. GRAVEL & C-SAND (FILL)
8	12.0	
7		
7		
8		
9	15.0 to	LOOSE DK.BR. LOAMY F SAND, TR. PEAT FIBERS & GRAVEL W/PKTS. M-F SAND (FILL)
10	16.5	
11		
11		
13		
19	20.0 to	MED. STIFF DK.BR. TO BR. SL. ORG. SILT LITTLE F SAND, TR. FIBERS (SL. PL.)
14	22.0	
11		
16		
20		
18	25.0 to	MED. STIFF DK.BR. ORG. SI PEAT W/PKTS. GR. F SAND & SILT (SL. PL.) (FILL?)
20	27.0	
16		
17		
18		
30	30.0 to	LOOSE DK.GR. C-F SAND, TR-LITTLE SILT TR. GRAVEL (ORG. ODOR)
28	32.0	
20		
14		
15		
28	35.0 to	MED. COMP. GR. C-F SAND, LITTLE F GRAVEL TR. SILT (ODOROUS)
25	37.0	
23		
21		
17		
30	40.0 to	V. STIFF BR-GR. SILT, TR F SAND (SL. PL.)
40	42.0	
40		
48		
41		
45	45.0 to	STIFF BR-GR. SILT, TR-LITTLE F SAND TR. CL. (LENS) (SL. PL.)
49	47.0	
54		
67		
65		
	50.0 to	STIFF - V. STIFF GR., FSA SILT W/M - FSA LENSES
	52.0	

B-101 CONTINUED



	55.0 to	MED. COMP. GR. SIF SAND.
	57.0	
	60.0 to	V. STIFF BR. FSA SILT (V.SL.PL.)
	62.0	
	65.0 to	MED. COMP. BR. SIF SAND, TR. M-FSA (LENS)
	67.0	
	70.0 to	V. STIFF GR. INTERBEDDED (2") SILT & F SAND
	72.0	(V. SL. PL.)
	75.0 to	V. STIFF GR. SILT (NON. PL.) LITTLE F SAND W/FSA.
	77.0	LENSES.
	87.0 to	V. COMP. GR. SIM-F SAND
	89.0	(WELL-BONDED) (TILL?)
		BOTTOM OF EXPLORATION @ 89'
		(WATER @ 27.2')



B-102
EL. 378.4'

2	0.0 to	V. LOOSE - LOOSE DK.BR. & RUST BR. LOAMY F SAND (FILL)
3	2.0	
3		
4		
4		
6	5.0 to	MED. COMP. LIBR. M-F SAND, LITTLE GRAVEL TR C-SAND & LOAM (PKTS) (FILL)
6	7.0	
7		
10		
11		
14	10.0 to	COMP. GR. BR., GRAV. C-F SAND, TR. SILT (FILL?)
18	12.0	
27		
39		
44		
54	15.0 to	V. STIFF(?) GR. BR. FSA SILT, TR C-M SAND & GRAVEL (PUSHED COBBLE)
20	17.0	
22		
24		
18		
17	20.0 to	MED. COMP. GR. M-F SAND, TR. C-SAND
14	22.0	
20		
20		
19		
17	25.0 to	MED. COMP. GR. M-F SAND, TR-C-SAND, GRAVEL & SILT (POORLY STRAT.)
16	27.0	
14	27.0 to	
14	29.0	
20		
21		
23		
20		
16		
17		
	35.0 to	MED. COMP. GR.-BR. F SAND LITTLE SILT (POORLY STRAT.)
	37.0	

BOTTOM OF EXPLORATION @ 37'

B-103
EL. 380.8'

1	0.0 to	V. LOOSE MOTTLED RUST BR. TO BR. LOAMY F SAND (FILL)
1	2.0	
2		
4		
5		
4	5.0 to	MED. COMP MOTTLED YELL BR. C-F SAND TR GRAVEL
16	7.0	
13		
15		
15		
11	10.0	MED. COMP. LIGHT GR. BR. F SAND, TR. SI & GRAV. (STRATIFIED)
11	to 12.0	
12		
16		
14		
4	15.0	MED. COMP. LIGHT GR. BR. F SAND, TR. SILT (STRATIFIED)
10	to 17.0	
11		
13		
14		
4	20.0 to	MED. COMP GR M-F SAND, TR. F. GRAVEL
10	22.0	
17		
16		
19		
5	25.0	MED. COMP GR SIF SAND.
14	to 27.0	
15		
16		
	30.0 to	MED. COMP. RUST BR. & GR. BR. FSA. SILT W/FSA. LENS. (NON PL.)
	32.0	
	32.0	MED. COMP. GR. INTERBEDDED F SAND & SILT
	to 34.0	

BOTTOM OF EXPLORATION @ 34' (WATER @ 29.8')

B-104
EL. 384.1'

4	0.0 to	SOFT LI RUST BR. FSA SILT, TR. GRAVEL & ROOTS.
16	2.0	MED COMP. MOTTLED GR-BR. GRAY C-F SAND TR. SILT
35		
42		
58		V. COMP. GR. GRAY C-F SAND TR. SILT (MANY 4" PIECES-BROKEN COBBLE.)
X	58.5 to 60	
62		
35		
41		
34		
4	10.0 to	COMP. GR. M-F SAND, TR. F. GRAVEL & C-SAND W/ LENS. OF BR. SILT
8	12.0	
12		
13		
13		
2	15.0	MED. COMP. MOTTLED F SAND, TR. M SAND
5	to 17.0	
9		
8		
9		
4	20.0 to	MED. COMP. GRAY M-F SAND, LITTLE GRAVEL TR. C-SAND & SILT.
9	22.0	
12		
18		
15		
3	25.0	MED. COMP. GRAY M-F SAND, TR. GRAVEL & C-SAND
4	to 27.0	
13	27.0 to	MED. COMP GRAY M-F SAND, TR. GRAVEL & C-SAND.
16	29.0	
15		
	30.0 to	COMP. GR. M-F SAND, LITTLE SILT & C-F GRAVEL (PARTIALLY BONDED)
	32.0	

BOTTOM OF EXPLORATION @ 32' (NO WATER ENG'D.)

BORINGS LOG 1996

TABLE 1

SUMMARY OF SUBSURFACE CONDITIONS AT TEST BORINGS
PROPOSED NEW HIGH SCHOOL BUILDING
CLINTON, MASSACHUSETTS
GSI Project No. 96194

Boring No.	Depth of Fill (ft)	Depth to Top of Organics (ft)	Depth to Sand Strata (ft)
B-3	20.5	20.5	25
B-4	13	13	14.5
B-7	13	13	20
B-8	16 (B.O.B)	NE	NE
B-8A	13	13	21
B-8B	7	7	16
B-8C	5	NE	5
B-9	3	3	8
B-13	7	NE	7
B-13A	12	NE	12
B-14	8	NE	8
B-14A	10.5	NE	10.5
B-15	7	NE	7
B-15A	6	NE	6
NB-B	12	12	15
NB-BA	11	11	16
NB-BB	6	6	8
NB-E	7	NE	7
NB-EA	11	NE	11

NOTES:
1. Test borings B-1 through B-18 were drilled by Miller Engineering & Testing during July, 1996. Test borings B-8A,B,C, B-13A, B-14A, and B-15A were drilled by Environmental Drilling, Inc. during August, 1996 under the observation of Geotechnical Services, Inc.
2. NE means strata not encountered.

Appendix B – LGCI's Boring Logs

LGCI
Lahlaf Geotechnical Consulting, Inc.

BORING LOG

B-1
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/25/23 **DATE COMPLETED:** 9/25/23
BORING LOCATION: Near NW corner of prop. building
COORDINATES: NA
SURFACE EI.: 374 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not encountered
AT END OF DRILLING: Dry at the end of drilling
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TG **CHECKED BY:** JKW

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	3-2-2-4 (4)	24/16		Topsoil	2.0	S1 - Topsoil
		2						372.0	
			S2	14-28-46-49 (74)	24/19		Fill	4.0	S2 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse angular gravel, trace of organic soil, gray to brown, moist
	370.0	4						370.0	
5			S3	33-52-60-39 (112)	24/11				S3 - Well Graded GRAVEL with Silt and Sand (GW-GM), fine to coarse, angular, 10-15% fines, 30-35% fine to coarse sand, gray, moist
		6	S4	10-14-16-20 (30)	24/17				S4 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 5-10% fines, 15-20% fine to coarse subangular gravel, light brown, moist
	365.0	8							
10		10	S5	6-6-5-6 (11)	24/1				S5 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 5-10% fines, 15-20% fine to coarse subangular gravel, light brown, moist
		12					Sand and Gravel		
	360.0								
15		15	S6	4-4-6-8 (10)	24/16				S6 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, light brown, moist
		17							
	355.0								
20		20	S7	5-4-5-7 (9)	24/15				S7 - Poorly Graded SAND (SP), fine to medium, trace coarse, 0-5% fines, light brown, moist
		22						22.0	
	350.0								Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

LGCI
Lahlaf Geotechnical Consulting, Inc.

BORING LOG

B-2
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/25/23 **DATE COMPLETED:** 9/25/23
BORING LOCATION: Near NE corner of prop. building
COORDINATES: NA
SURFACE EI.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not encountered
AT END OF DRILLING: Dry at the end of drilling
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TG **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.7	S1 - Top 8": Topsoil
			S1	3-15-18-28 (33)	24/16		Fill	374.3	Bot. 8": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 20-25% fine to coarse subangular gravel, brown, moist
		2						2.0	
			S2	24-26-32-32 (58)	24/18			373.0	S2 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 40-45% fine to coarse subangular gravel, brown, moist
		4							
5	370.0		S3	30-31-29-25 (60)	24/8				S3 - Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 20-25% fine to coarse subangular gravel, brown, moist
		6	S4	23-24-25-22 (49)	24/17				S4 - Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 30-35% fine to coarse subangular gravel, brown, moist
		8							
10	365.0								
		10	S5	6-6-8-9 (14)	24/12				S5 - Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 25-30% fine to coarse subangular gravel, brown, moist
		12					Sand and Gravel		
15	360.0								
		15	S6	8-13-21-16 (34)	24/7				S6 - Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 30-35% fine to coarse subangular gravel, brown, moist
		17							
20	355.0								
		20	S7	12-13-11-12 (24)	24/13				S7 - Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 20-25% fine to coarse subangular gravel, brown, moist
		22						22.0	
									Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25	350.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

BORING LOG

B-3
PAGE 1 OF 1

LGCI
Lahlaf Geotechnical Consulting, Inc.

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/25/23 **DATE COMPLETED:** 9/25/23
BORING LOCATION: Near SW corner of prop. building
COORDINATES: NA
SURFACE El.: 376 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not encountered
AT END OF DRILLING: Dry at the end of drilling
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TG **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.3 / 375.7	S1 - Top 3": Topsoil
	375.0		S1	3-3-8-10 (11)	24/18				Bot. 15": Silty SAND (SM), fine to medium, 20-25% fines, 5-10% fine to coarse angular gravel, trace of organic soil, orange brown to dark brown, moist
		2	S2	8-9-6-5 (15)	24/17		Fill		S2 - Similar to S1 Bot. 15"
		4	S3	3-2-3-2 (5)	24/14				S3 - Poorly Graded with Silt (SP-SM), fine, 10-15% fines, brown, moist
5	370.0	6	S4	26-34-33-41 (67)	24/17			6.0 / 370.0	S4 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 30-35% fine to coarse angular gravel, gray to brown, moist
		8							
10		10	S5	12-14-9-8 (23)	24/14		Sand and Gravel		S5 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 15-20% fine to coarse angular gravel, gray to brown, moist
	365.0	12							
15		15	S6	6-7-9-10 (16)	24/17			15.0 / 361.0	S6 - Sandy SILT (ML), non-plastic, 30-35% fine sand, gray, moist
	360.0	17					Silt		
20		20	S7	7-9-11-10 (20)	24/17				S7 - Sandy SILT (ML), non-plastic, 30-35% fine sand, gray, moist
	355.0	22						22.0	Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

BORING LOG

B-4
PAGE 1 OF 1

LGCI Lahlaf Geotechnical Consulting, Inc.

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/25/23 **DATE COMPLETED:** 9/25/23
BORING LOCATION: Near SE corner of prop. building
COORDINATES: NA
SURFACE El.: 377 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not encountered
AT END OF DRILLING: Dry at the end of drilling
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TG **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0							
	375.0	2	S1	2-2-3-4 (5)	24/19		Topsoil	2.0	S1 - Topsoil
		2	S2	7-8-6-7 (14)	24/12		Fill	375.0	S2 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, gray, moist
		4						4.0	
5			S3	10-14-16-13 (30)	24/19		Buried Organic Soil	373.0 4.8	S3 - Top 10": Silty SAND (SM), fine to medium, 25-30% fines, 0-5% fine subangular gravel, trace of wood, trace of roots, trace of organic soil, brown, moist
		6						372.2	Bot. 9": Poorly Graded SAND with Silt (SP-SM), fine, 10-15% fines, 0-5% fine to coarse subangular gravel, brown, moist
	370.0		S4	15-24-18-22 (42)	24/15		Fill		S4 - Silty SAND (SM), fine to medium, 15-20% fines, 5-10% fine angular gravel, trace of organic soil, dark brown, moist
		8							
10		10				1		10.0 367.0	REMARK 1: Strata change assumed.
			S5	5-8-9-11 (17)	24/15				S5 - Poorly Graded SAND (SP), medium, 0-5% fines, 5-10% fine angular gravel, brown, moist
	365.0	12							
		14							
15			S6	5-7-8-10 (15)	24/15		Sand and Gravel		S6 - Poorly Graded SAND (SP), medium, 0-5% fines, 0-5% fine to coarse angular gravel, brown, moist
		16							
	360.0								
20		20	S7	4-5-7-8 (12)	24/16				S7 - Poorly Graded SAND (SP), fine, 0-5% fines, light brown, moist
	355.0	22						22.0	
									Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-5
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/25/23 **DATE COMPLETED:** 9/25/23
BORING LOCATION: Near center of prop. building
COORDINATES: NA
SURFACE EI.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not encountered
AT END OF DRILLING: Dry at the end of drilling
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TG **CHECKED BY:** JKW

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	2-3-5-8 (8)	24/21		Topsoil	2.0 / 373.0	S1 - Topsoil
		2	S2	9-15-23-20 (38)	24/22		Fill		S2 - Silty SAND (SM), fine to medium, 25-30% fines, trace of organic soil, dark brown, moist
		4	S3	8-9-27-39 (36)	24/21			6.0 / 369.0	S3 - Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, 15-20% fine subangular gravel, trace of organic soil, dark brown, moist
5	370.0	6	S4	34-25-22-16 (47)	24/17		Sand and Gravel		S4 - Well Graded GRAVEL with Sand (GW), fine to coarse, angular, 0-5% fines, 25-30% fine to coarse sand, gray, moist
		8	S5	11-11-10-11 (21)	24/8				S5 - Well Graded SAND (SW), fine to coarse, 0-5% fines, 10-15% fine angular gravel, brown, moist
10	365.0	10	S6	9-14-13-11 (27)	24/8				S6 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 20-25% fine to coarse subangular gravel, brown, moist
		12							
15	360.0	15	S7	6-6-6-9 (12)	24/14				S7 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 20-25% fine to coarse subangular gravel, brown, moist
		17							
20	355.0	20	S8	8-10-10-10 (20)	24/12			22.0	S8 - Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 15-20% fine to coarse subrounded gravel, brown, moist
		22							Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25	350.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-101
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 7/31/24 **DATE COMPLETED:** 7/31/24
BORING LOCATION: Near north side of proposed building
COORDINATES: NA
SURFACE El.: 374 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 70's / Cloudy
GROUNDWATER LEVELS:
- **DURING DRILLING:** NE
- **AT END OF DRILLING:** NE
- **OTHER:** -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (3-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

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	3-6-8-20 (14)	24/18		Topsoil	2.5 371.5	S1 - Topsoil
		2	S2	23-31-30-60 (61)	24/14				S2 - Top 6": Silty SAND (SM), fine to medium, 15-20% fines, 0-5% fine subangular gravel, trace of roots, trace of organic soil, brown, moist (topsoil) Bot. 8": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, ~10% fines, 15-20% fine subangular gravel, gray, moist
	370.0	4	S3	22-10-12-17 (22)	24/12				S3 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, 0-5% fine subrounded gravel, brown, moist
5		6							
		7	S4	14-21-12-16 (33)	24/10		Fill		S4 - Poorly Graded SAND with Gravel (SP), fine to coarse, 0-5% fines, 15-20% fine subrounded gravel, gray, moist
	365.0	9							
10		10	S5	10-9-9-8 (18)	24/8				S5 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine subangular gravel, trace of roots, brown, moist
		12						12.0 362.0	
	360.0	14	S6	7-5-7-6 (12)	24/12		Sand and Gravel		S6 - Well-Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 35-40% fine to coarse subangular gravel, gray to brown, moist
15		16							
	355.0								
20		20	S7	4-5-5-4 (10)	24/20				S7 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, 10-15% fine to coarse subangular gravel, brown, moist
		22						22.0	
	350.0								Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-102
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 7/31/24 **DATE COMPLETED:** 7/31/24
BORING LOCATION: Near NE corner of proposed building
COORDINATES: NA
SURFACE EI.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 20 ft.
WEATHER: 70's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: NE
AT END OF DRILLING: NE
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (3-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark
		0	S1	5-7-9-15 (16)	24/12	
		2	S2	18-20-19-21 (39)	24/12	
		4	S3	9-14-15-19 (29)	24/21	
5	370.0	6	S4	21-19-15-17 (34)	24/12	
		8	S5	21-15-15-11 (30)	24/15	
10	365.0	10	S6	3-7-7-7 (14)	24/13	
		12	S7	10-7-8-9 (15)	24/8	
15	360.0	14				
		15	S8	5-6-6-3 (12)	24/12	
		17				
		19	S9	2-5-7-6 (12)	24/7	
20	355.0	21				
25	350.0					

Strata	Depth El.(ft.)	Material Description
Topsoil	0.8 / 374.2	S1 - Top 9": Topsoil
Fill		Bot. 3": Poorly Graded GRAVEL (GP), fine to coarse, subangular, 0-5% fines, 25-30% fine to coarse sand, gray, moist S2 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 5-10% fines, 20-25% fine subangular gravel, gray to brown, moist S3 - Top 9": Silty SAND (SM), fine to medium, 15-20% fines, trace of organic soil, brown, moist Bot. 12": Poorly Graded SAND with Gravel (SP), fine to coarse, 0-5% fines, 40-45% fine to coarse subangular gravel, brown, moist S4 - Similar to Bot. S3, 30-35% gravel S5 - Top 9": Silty SAND (SM), fine to medium, 15-20% fines, 0-5% fine subangular gravel, trace of organic soil, brown, moist
	8.8 / 366.2	
Sand and Gravel		Bot. 6": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, ~10% fines, 15-20% fine subrounded gravel, gray to brown, moist S6 - Poorly Graded SAND with Gravel (SP), fine to coarse, 0-5% fines, 20-25% fine to coarse subrounded gravel, gray, moist S7 - Similar to S6 S8 - Poorly Graded GRAVEL with Sand (GP), fine to coarse, subangular, 0-5% fines, 35-40% fine to coarse sand, gray to brown, moist S9 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, 10-15% fine to coarse subangular gravel, gray, moist
	20.0	Bottom of borehole at 20.0 feet. Borehole backfilled with drill cuttings.

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-103-OW
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/1/24 **DATE COMPLETED:** 8/1/24
BORING LOCATION: Near NW corner of proposed building
COORDINATES: NA
SURFACE El.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: NE
AT END OF DRILLING: NE
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

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	0-4-6-12 (10)	24/12		Topsoil	2.3	S1 - Topsoil
		2	S2	19-20-18-17 (38)	24/19		Fill	372.7 4.0	S2 - Top 4": Topsoil Bot. 15": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 20-25% fine to coarse subrounded gravel, gray, moist
		4	S3	15-12-20-28 (32)	24/21		Buried Organic Soil	371.0 4.8	S3 - Top 9": Buried Organic Soil, trace of roots
5	370.0						Fill	370.2 6.0	Bot. 12": SIlty SAND (SM), fine to medium, 20-25% fines, gray, moist
		6	S4	41-29-26-30 (55)	24/23		Buried Organic Soil	369.0 6.5	S4 - Top 6": Buried Organic Soil
		8	S5	17-10-11-13 (21)	24/21		Fill	368.5 9.4	Bot. 17": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 10-15% fines, 15% fine subangular gravel, gray, moist S5 - Top 17": Similar to S4 Bot. 17", trace of organic soil
10	365.0	10	S6	7-11-15-17 (26)	24/10		Sand and Gravel	365.6	Bot. 4": Well-Graded SAND (SW), fine to coarse, brown, moist S6 - Well-Graded SAND (SW), fine to coarse, ~5% fines, 10-15% fine subrounded gravel, brown to gray with black, moist
		12							
15	360.0	15	S7	2-8-8-6 (16)	24/12				S7 - Similar to S6, 20-25% fine to coarse subrounded gravel, trace of weathered rock
		17							
20	355.0	20	S8	6-7-8-10 (15)	24/18				S8 - Similar to S7
		22						22.0	Bottom of borehole at 22.0 feet. Installed groundwater observation well.
25	350.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-104
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 7/31/24 **DATE COMPLETED:** 7/31/24
BORING LOCATION: Near NW corner of proposed building
COORDINATES: NA
SURFACE EI.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

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	4-4-4-5 (8)	24/10		Topsoil	2.0	S1 - Topsoil
		2	S2	5-13-17-21 (30)	24/12		Fill	373.0	S2 - Top 6": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, trace of roots, trace of organic soil, brown, moist Bot. 6": Silty SAND (SM), fine to medium, 15-20% fines, 5-10% fine subangular gravel, light brown, moist
		4	S3	7-7-9-8 (16)	24/14				S3 - Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine to coarse subrounded gravel, brown to gray, moist
5	370.0	6	S4	6-11-12-13 (23)	24/9				S4 - Silty SAND (SM), fine to medium, 15-20% fines, trace of organic soil, trace of roots, brown, moist
		8	S5	10-10-10-8 (20)	24/12			8.0	
10	365.0	10	S6	6-8-9-9 (17)	24/10		Sand and Gravel	367.0	S5 - Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 20-25% fine subrounded gravel, gray to brown, moist S6 - Similar to S5, 15-20% fine subrounded gravel
		12	S7	2-4-7-8 (11)	24/12				S7 - Similar to S5
		14							
15	360.0	15	S8	2-4-7-8 (11)	24/0				S8 - No recovery
		17							
20	355.0	20	S9	8-9-11-12 (20)	24/10				S9 - Similar to S5
		22						22.0	
25	350.0								Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-105
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 7/31/24 **DATE COMPLETED:** 7/31/24
BORING LOCATION: East side of proposed building
COORDINATES: NA
SURFACE EI.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 70's / Rain
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

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	3-4-3-4 (7)	24/19		Topsoil	2.0	S1 - Topsoil
		2	S2	9-9-17-14 (26)	24/16		Fill	373.0	S2 - Top 10": Silty SAND (SM), fine to medium, 15-20% fines, 5-10% fine subrounded gravel, trace of roots, trace of organic soil, brown, moist Bot. 6": Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, 5-10% fine subrounded gravel, moist
		4							
5	370.0		S3	6-9-11-12 (20)	24/21				S3 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, 15-20% fine subrounded gravel, brown, moist
		6	S4	9-21-18-27 (39)	24/18				S4 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, 10-15% fine to coarse subrounded gravel, trace of roots, brown, moist
		8						8.0	
10	365.0						Sand and Gravel	367.0	
		10	S5	8-8-8-7 (16)	24/0				S5 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, gray to brown, moist
		12							
15	360.0								
		15	S6	10-8-7-8 (15)	24/0				S6 - Similar to S5, 10-15% fine to coarse subrounded gravel
		17							
20	355.0								
		20	S7	6-6-7-8 (13)	24/0				S7 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 0-5% fines, gray to brown, moist
		22						22.0	
25	350.0								Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

LGCI
Lahlaf Geotechnical Consulting, Inc.

BORING LOG

B-106
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/1/24 **DATE COMPLETED:** 8/1/24
BORING LOCATION: West side of proposed building
COORDINATES: NA
SURFACE EI.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: NE
AT END OF DRILLING: NE
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

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	2-3-4-4 (7)	24/12		Topsoil	2.2	S1 - Topsoil
		2	S2	10-11-10-15 (21)	24/14		Fill	372.8 4.0	S2 - Top 3": Topsoil Bot. 11": Silty SAND with Gravel (SM), ~45% fines, 20-25% fine to coarse subangular gravel, olive gray, moist
5	370.0	4	S3	6-23-24-35 (47)	24/11		Buried Organic Soil Fill	371.0 4.3 370.7 6.0	S3 - Top 4": Buried Organic Soil Bot. 7": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 15-20% fine subangular gravel, gray, moist
		6	S4	40-28-15-18 (43)	24/20		Sand and Gravel	369.0	S4 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 5-10% fines, 20-25% fine subangular gravel, gray, moist
10	365.0	8							
		10	S5	11-7-7-9 (14)	24/13				S5 - Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine subrounded gravel, olive gray, moist
15	360.0	12							
		15	S6	8-11-17-11 (28)	24/8				S6 - Poorly Graded SAND with Gravel (SP), fine to coarse, ~5% fines, 15-20% fine to coarse subrounded gravel, gray, moist
20	355.0	17							
		20	S7	9-8-9-9 (17)	24/8				S7 - Similar to S6, 20-25% fine to coarse subrounded gravel
		22						22.0	Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25	350.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-107
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/1/24 **DATE COMPLETED:** 8/1/24
BORING LOCATION: Near SW corner of proposed building
COORDINATES: NA
SURFACE EI.: 376 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 21.0 ft. / El. 355.0 ft. Based on sample moisture
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	375.0	0							
			S1	3-6-4-8 (10)	24/9		Topsoil		S1 - Topsoil
		2						2.4	
			S2	11-10-12-9 (22)	24/13		Subsoil	373.6	S2 - Top 5": Topsoil, 0-5% gravel Bot. 8": Silty SAND (SM), fine to medium, 25-30% fines, orange to brown, moist
		4						4.0	
5			S3	7-19-23-16 (42)	24/18		Buried Organic Soil	372.0 4.6 371.4	S3 - Top 7": Buried Organic Soil Bot. 11": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 5-10% fines, 35-40% fine to coarse angular gravel, gray to black, moist
	370.0	6	S4	18-23-79	18/19				S4 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, ~10% fines, 20% fine to coarse subrounded gravel, olive gray, moist
		7.5							
10		10	S5	8-8-7-7 (15)	24/0	1	Sand and Gravel		REMARK 1: Hollow stem auger grinding on possible boulder and cobbles at a depth of 10 feet. S5 - No Recovery
	365.0	12							
15									
	360.0	15	S6	6-7-7-7 (14)	24/20				S6 - Silty SAND (SM), fine, 20-25% fines, olive gray, moist
		17							
20								20.0	
	355.0	20	S7	6-6-6-6 (12)	24/20		Silt	356.0	S7 - Sandy SILT (ML), slightly plastic, ~30% fine sand, 0-5% gravel, olive gray, wet
		22						22.0	Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-108
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/2/24 **DATE COMPLETED:** 8/2/24
BORING LOCATION: East side of proposed building
COORDINATES: NA
SURFACE EI.: 376 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: NE
AT END OF DRILLING: NE
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	375.0	0	S1	2-4-5-7 (9)	24/17		Topsoil	2.0	S1 - Topsoil
		2	S2	13-19-13-11 (32)	24/10		Fill	374.0	S2 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, 0-5% fine subangular gravel, gray, moist
5		4	S3	11-8-8-14 (16)	24/13				S3 - Silty SAND with Gravel (SM), fine to medium, 30-35% fines, ~15% fine angular to subangular gravel, dark olive gray, moist
	370.0	6	S4	25-23-21-42 (44)	24/13				S4 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, 10-15% fine subangular gravel, trace of petroleum odor, gray to brown, moist
		8	S5	14-9-9-11 (18)	24/16			8.0	
10		10	S6	13-8-11-11 (19)	24/5		Sand and Gravel	368.0	S5 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, gray, moist
	365.0	12							S6 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, ~10% fines, 15-20% fine to coarse subangular gravel, gray, moist
15		15	S7	9-9-10-12 (19)	24/5				S7 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 5-10% fines, 15-20% fine to coarse subangular gravel, gray, moist
	360.0	17							
20		20	S8	6-11-8-6 (19)	24/16				S8 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, olive gray, moist
	355.0	22						22.0	
25									Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-109
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/2/24 **DATE COMPLETED:** 8/2/24
BORING LOCATION: South side of proposed building
COORDINATES: NA
SURFACE EI.: 376 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: NE
AT END OF DRILLING: NE
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	375.0	0	S1	3-3-6-12 (9)	24/16		Topsoil	2.0	S1 - Topsoil
		2	S2	8-9-9-9 (18)	24/13		Subsoil	374.0 4.0	S2 - Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine subangular gravel, trace of wood, trace of organic soil, brown, moist
5		4	S3	6-9-8-7 (17)	24/11		Fill	372.0	S3 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, trace of fine gravel, trace of organic soil, gray to brown, moist
	370.0	6	S4	14-11-12-20 (23)	24/14				S4 - Sandy SILT (ML), 35-40% fine to coarse sand, ~5% fine subangular gravel, trace of organic soil, gray to brown, moist
		8	S5	23-18-20-20 (38)	24/21		Buried Organic Soil	8.0 368.0 8.3 367.7	S5 - Top 4": Buried Organic Soil Bot. 17": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, trace coarse, 10-15% fines, 15-20% fine subangular gravel, gray to brown, moist
10		10	S6	12-15-17-15 (32)	24/14				S6 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, trace coarse, 10-15% fines, 15-20% fine subrounded gravel, gray, moist
	365.0	12							
15		15	S7	5-3-5-5 (8)	24/14		Sand and Gravel		S7 - Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, gray, moist
	360.0	17							
20		20	S8	2-5-5-7 (10)	24/16				S8 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, light to dark gray with orange stripes, moist
	355.0	22						22.0	
25									Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-110
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/2/24 **DATE COMPLETED:** 8/2/24
BORING LOCATION: South side of proposed building
COORDINATES: NA
SURFACE EI.: 376 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: NE
AT END OF DRILLING: NE
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	375.0	0							
			S1	2-4-8-7 (12)	24/10		Topsoil	2.0	S1 - Topsoil
		2						374.0	
			S2	10-11-9-9 (20)	24/11		Subsoil	4.0	S2 - Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine subangular gravel, trace of organic soil, orange, moist
		4						372.0	
5			S3	7-21-28-28 (49)	24/16		Buried Organic Soil	4.4	S3 - Top 5": Buried Organic Soil
	370.0	6						371.6	Bot. 11": Well-Graded GRAVEL with Silt and Sand (GW-GM), fine to coarse, subangular, 10-15% fines, ~35% fine to coarse sand, gray, moist
			S4	38-35-27-20 (62)	24/11				S4 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, ~10% fines, 20-25% fine subangular to angular gravel, gray, moist (appears stratified)
		8	S5	12-8-6-5 (14)	24/10				S5 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, 0-5% fine subangular gravel, dark to light gray, moist
10		10	S6	9-7-8-10 (15)	24/12				S6 - Similar to S5
	365.0	12					Sand and Gravel		
15		15	S7	5-6-6-9 (12)	24/14				S7 - Well-Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 15-20% fine subangular gravel, light to dark gray, moist
	360.0	17							
20		20	S8	3-2-4-5 (6)	24/14				S8 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, 0-5% fine gravel, light to dark gray, moist
	355.0	22						22.0	
25									Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-111
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/2/24 **DATE COMPLETED:** 8/2/24
BORING LOCATION: Near SE corner of proposed building
COORDINATES: NA
SURFACE El.: 377 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0							
	375.0	2	S1	1-4-6-7 (10)	24/16		Topsoil	2.0	S1 - Topsoil
		4	S2	14-21-20-17 (41)	24/1		Fill	375.0 4.0	S2 - Poorly Graded GRAVEL with Silt and Sand (GP-GM), fine to coarse, angular, 0-5% fines, 30-35% fine to medium sand, gray to brown, moist
5		6	S3	17-9-7-5 (16)	24/13		Buried Organic Soil Fill	373.0 4.3 372.7 6.0	S3 - Top 3": Buried Organic Soil Bot. 10": Silty SAND (SM), mostly fine to medium, 30-35% fines, 10-15% fine subangular gravel, gray, moist
	370.0	8	S4	13-8-7-9 (15)	24/8		Buried Organic Soil	371.0	S4 - Buried Organic Soil
		10	S5	7-7-8-7 (15)	24/19			8.4 368.6	S5 - Top 4": Buried Organic Soil Bot. 15": Silty SAND (SM), fine to medium, 20-25% fines, olive gray, moist
10			S6	10-7-8-7 (15)	24/13				S6 - Silty SAND (SM), fine, 15-20% fines, gray, moist (stratified)
	365.0	12							
15		15	S7	15-13-13-10 (26)	24/6		Sand and Gravel		S7 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 15-20% fine subangular gravel, gray, moist
	360.0	17							
20		20	S8	4-5-5-9 (10)	24/12				S8 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, gray, moist (stratified)
	355.0	22						22.0	Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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Lahlaf Geotechnical Consulting, Inc.

BORING LOG

B-112

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/8/24 **DATE COMPLETED:** 8/8/24
BORING LOCATION: West of exisiting building
COORDINATES: NA
SURFACE EI.: 372 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 41 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	370.0	0	S1	2-3-2-3 (5)	24/10		Topsoil	2.0 370.0	S1 - Topsoil
		2	S2	3-3-2-3 (5)	24/19		Fill		S2 - Silty SAND (SM), fine, 20-25% fines, trace of organic soil, dark brown, moist
		4	S3	4-2-3-2 (5)	24/9				S3 - Similar to S2
5	365.0	6	S4	2-2-1-2 (3)	24/15				S4 - Similar to S2
		8	S5	1-2-2-1 (4)	24/24				S5 - Similar to S2
10		10	S6	1-2-1-3 (3)	24/12				S6 - Silty SAND (SM), fine, 30-35% fines, trace of organic soil, dark brown, moist
	360.0	12	S7	3-3-4-3 (7)	24/2				S7 - Similar to S6
		14	S8	1-3-3-3 (6)	24/24				S8 - Similar to S6, trace of asphalt
15		16	S9	2-2-3-3 (5)	24/24			16.0 356.0	S9 - Silty SAND (SM), fine, 30-35% fines, trace of organic soil, trace of wood, dark brown, moist (possible pond deposit)
	355.0	18	S10	2-3-3-2 (6)	24/9		Buried Organic Soil		S10 - Silty SAND (SM), fine, 35-40% fines, trace of organic soil, trace of peat, dark brown, moist
20		20	S11	1-1-1-2 (2)	24/24				S11 - Similar to S10, ~10% organics, wet
	350.0	22							
		24							S12 - Similar to S10, wet
25				2-2-2-2					

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.
2. Based on an 1886 topographic map, the former Mill Pond ran through this boring location.

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BORING LOG

B-112
PAGE 2 OF 2

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		24	S12	(4)	24/24				
		26							
	345.0								
		29							S13 - Similar to S10, 30-35% fines, numerous roots, black to gray, wet
30			S13	2-2-2-4 (4)	24/24				
		31					Buried Organic Soil		
	340.0								
35									
	335.0								
								38.0	
								334.0	
		39					Sand and Gravel		S14 - Poorly Graded SAND with Silt (SP-SM), medium to coarse, 5-10% fines, 5-10% fine subrounded gravel, gray, wet
40			S14	10-10-10-21 (20)	24/20				
		41						41.0	
	330.0								Bottom of borehole at 41.0 feet. Borehole backfilled with drill cuttings.
45									
	325.0								
50									
	320.0								
55									
	315.0								
60									

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BORING LOG

B-113
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/8/24 **DATE COMPLETED:** 8/8/24
BORING LOCATION: Near SW corner of existing building
COORDINATES: NA
SURFACE EI.: 373 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 12 ft.
WEATHER: 80's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

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	4-5-10-16 (15)	24/5		Topsoil	2.0	S1 - Topsoil
	370.0	2	S2	5-3-3-2 (6)	24/4		Fill	371.0	S2 - Silty SAND (SM), fine to medium, 15-20% fines, 0-5% fine subangular gravel, trace of organic soil, dark brown to orange, moist
		4	S3	5-3-2-3 (5)	24/16				S3 - Poorly Graded SAND with Silt (SP-SM), fine, 10-15% fines, light brown to brown, moist
5		6	S4	5-5-5-7 (10)	24/20			6.0	
	365.0	8	S5	12-10-13-17 (23)	24/11		Sand and Gravel	367.0	S4 - Similar to S3, light brown S5 - Similar to S3, light brown
10		10	S6	24-25-30-28 (55)	24/17				S6 - Poorly Graded GRAVEL with Silt and Sand (GP-GM), fine to coarse, 5-10% fines, 35-40% fine to coarse sand, brown, moist
		12						12.0	
	360.0								Bottom of borehole at 12.0 feet. Borehole backfilled with drill cuttings.
15									
	355.0								
20									
	350.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-114
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/1/24 **DATE COMPLETED:** 8/1/24
BORING LOCATION: On roadway south of proposed building
COORDINATES: NA
SURFACE EI.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 12 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0	375.0	0.5	G1		4/4		Asphalt	0.3 / 374.7	G1 - Asphalt
			S1	6-15-27-30 (42)	24/4		Fill		S1 - Well-Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 15-20% angular gravel, brown to black, moist
		2.3	S2	29-25-25-21 (50)	24/10			2.3 / 372.7	S2 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 15-20% fine to coarse subangular gravel, gray, moist
5	370.0	4.3							
		5	S3	18-21-22-18 (43)	24/17		Sand and Gravel		S3 - Poorly Graded SAND with Gravel (SP), fine to coarse, 0-5% fines, 20-25% fine subangular gravel, gray to brown, moist
		7	S4	22-21-13-13 (34)	24/11				S4 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 5-10% fines, 10-15% fine subangular gravel, gray, moist
10	365.0	9							
		10	S5	4-3-4-3 (7)	24/15				S5 - Poorly Graded SAND (SP), fine to medium, light to dark gray, moist
		12						12.0	Bottom of borehole at 12.0 feet. Borehole backfilled with drill cuttings. Sidewalk restored with cold patch asphalt.
15	360.0								
20	355.0								
25	350.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-115
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/2/24 **DATE COMPLETED:** 8/2/24
BORING LOCATION: Near south side of proposed building
COORDINATES: NA
SURFACE EI.: 377 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 90's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	375.0	0	S1	3-5-4-3 (9)	24/8		Topsoil	2.9	S1 - Topsoil S2 - Top 10": Topsoil
		2	S2	2-3-2-2 (5)	24/18		Subsoil	374.1 4.0	Bot. 8": Silty SAND (SM), fine to medium, 20% fines, orange to brown, moist
5		4	S3	3-12-19-33 (31)	24/8		Buried Organic Soil	373.0 6.0	S3 - Buried Organic Soil
	370.0	6	S4	33-34-34-41 (68)	24/13		Sand and Gravel	371.0	S4 - Poorly Graded SAND with Silt and Gravel (SP-SM) fine to medium, 5-10% fines, 15-20% fine subangular gravel, gray, moist
		8	S5	12-24-25-24 (49)	24/12				S5 - Similar to S4 (coarse gravel stuck at the tip of the split spoon)
10		10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	365.0								
15									
	360.0								
20									
	355.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-116
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 7/31/24 **DATE COMPLETED:** 7/31/24
BORING LOCATION: Within access road NE of the proposed Building
COORDINATES: NA
SURFACE El.: 376 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Jose Valentin
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	375.0	0	S1	3-6-9-15 (15)	24/22		Topsoil	0.8	S1 - Top 9": Topsoil
		2	S2	8-9-7-7 (16)	24/4		Fill	375.3	Bot. 13": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subrounded gravel, trace of organic, trace of roots, brown, moist S2 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine subangular gravel, trace of roots, brown, moist
5		4	S3	5-1-2-7 (3)	24/20				S3 - Similar to S2, 5-10% fine gravel, trace of wood
	370.0	6	S4	5-14-16-10 (30)	24/14				S4 - Top 5": Similar to S2, ~5% fine gravel Bot. 9": Poorly Graded SAND (SP) fine to medium, ~5% fines, 10-15% fine subangular gravel, gray to brown, moist
		8	S5	13-6-19-20 (25)	24/9			8.0	
10		10					Sand and Gravel	368.0	S5 - Poorly Graded SAND (SP), fine to medium, 0-5% fines, gray to brown, moist
	365.0							10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
15									
	360.0								
20									
	355.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-117
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/8/24 **DATE COMPLETED:** 8/8/24
BORING LOCATION: Near NE corner of existing building
COORDINATES: NA
SURFACE EI.: 372 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 17 ft.
WEATHER: 80's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0		0	G1		0.5/0.5		Asphalt	0.5 371.5	G1 - Asphalt
	370.0	1	S1	10-10-20-20 (30)	24/13		Fill		S1 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 10-15% fines, 15-20% fine to coarse subangular gravel, olive gray to brown, moist
		3	S2	25-22-15-10 (37)	24/14				S2 - Similar to S1, 15-20% fines, olive gray
5		5	S3	10-6-5-6 (11)	24/0				S3 - No recovery
	365.0	7	S4	8-11-12-13 (23)	24/12				S4 - Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine subangular gravel, trace of organic soil, brown to dark brown, moist
		9	S5	4-7-9-15 (16)	24/11				S5 - Similar to S4, no organic soil
10		11	S6	11-9-8-11 (17)	24/9			11.0 361.0	S6 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine, 10-15% fines, 20-25% fine to coarse angular gravel, gray to brown, moist
	360.0	13	S7	9-7-9-7 (16)	24/12		Sand and Gravel		S7 - Similar to S6, coarse, 5-10% fines, 30-35% gravel
15		15						17.0	
	355.0								Bottom of borehole at 17.0 feet. Borehole backfilled with drill cuttings.
20									
	350.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-TP-1
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/8/24 **DATE COMPLETED:** 8/8/24
BORING LOCATION: North of existing building
COORDINATES: NA
SURFACE EI.: 371 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 13 ft.
WEATHER: 80'S / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	G1		8/8		Asphalt	0.7	G1 - Asphalt
	370.0	0.7						370.3	
		1	S1	11-13-16-14 (29)	24/15		Fill		S1 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, trace of coarse, 10-15% fines, 20-25% fine to coarse subangular gravel, brown, moist
		3	S2	17-12-9-8 (21)	24/14				S2 - Similar to S1, ~15% fine to coarse subangular gravel
5		5	S3	9-5-4-3 (9)	24/13				S3 - Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine to coarse subangular gravel, brown to olive gray, moist
	365.0	7	S4	4-4-3-3 (7)	24/8				S4 - Similar to S3
		9	S5	4-4-3-14 (7)	24/10				S5 - Silty SAND (SM), fine to medium, 30-35% fines, 10-15% fine subangular gravel, trace of organic soil, trace of roots, dark brown, wet
10								11.0	
	360.0	11	S6	22-18-17-17 (35)	24/13		Sand and Gravel	360.0	S6 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 5-10% fines, 20-25% fine to coarse subangular gravel, brown, moist
		13						13.0	Bottom of borehole at 13.0 feet. Borehole backfilled with drill cuttings.
15									
	355.0								
20									
	350.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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BORING LOG

B-TP-3
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 8/8/24 **DATE COMPLETED:** 8/8/24
BORING LOCATION: Near west side of existing building
COORDINATES: NA
SURFACE EI.: 374 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 13 ft.
WEATHER: 80's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil Exploration Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Mobile Drill B-57 ATV
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: **CHECKED BY:**

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0		0	G1		6/6		Asphalt	0.5 / 373.5	G1 - Asphalt
		0.5 – 1	S1	7-11-10-8 (21)	24/14		Fill		S1 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 10-15% fines, 15-20% fine to coarse subangular gravel, trace of organic soil, light brown, moist
	370.0	3	S2	2-6-3-4 (9)	24/18				S2 - Silty SAND (SM), fine, 25-30% fines, trace of organic soil, dark brown to orange, moist
5		5	S3	3-3-2-3 (5)	24/0				S3 - No Recovery
		7	S4	5-3-4-14 (7)	24/15		Subsoil	7.0 / 367.0	S4 - Top 10": Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, 30-35% fine to coarse subangular gravel, trace of organic soil, trace of asphalt, dark brown, moist Bot. 5": Poorly Graded SAND with Silt (SP-SM), fine to medium, trace of coarse, 10-15% fines, 0-5% fine subangular gravel, orange, moist
	365.0	9	S5	12-35-24-28 (59)	24/12		Sand and Gravel	9.0 / 365.0	S5 - Poorly Graded GRAVEL with Silt and Sand (GP-GM), fine to coarse, ~10% fines, 30-35% fine to coarse, brown, moist
10		11 – 13	S6	20-27-21-19 (48)	24/15				S6 - Poorly Graded SAND with Gravel (SP), ~5% fines, 30-35% fine subangular gravel, brown, moist
	360.0							13.0	Bottom of borehole at 13.0 feet. Borehole backfilled with drill cuttings.
15									
	355.0								
20									
	350.0								
25									

GENERAL NOTES:

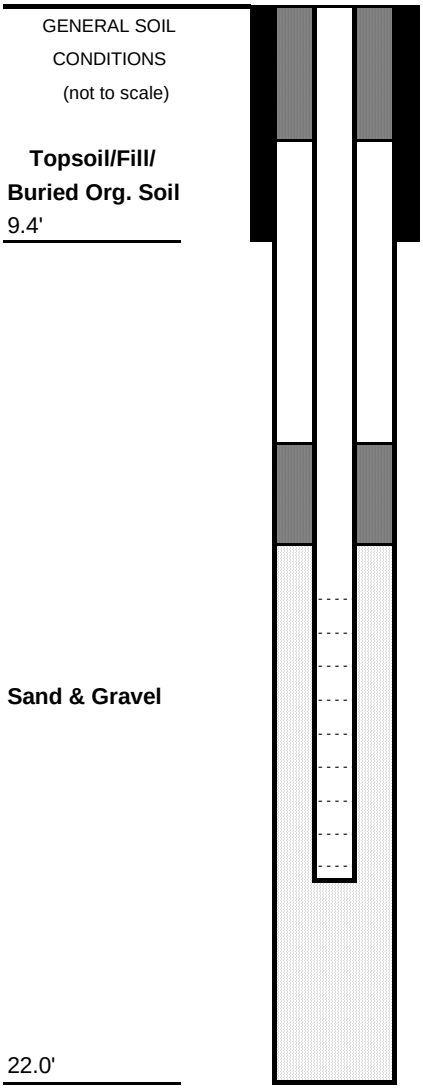
1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

Lahlaf Geotechnical Consulting, Inc.

GROUNDWATER OBSERVATION WELL INSTALLATION REPORT

Boring No. : **B-103-OW**

Project Name:	**Proposed Clinton Middle School, Clinton, Massachusetts**		
LGCI Project Number:	**2341**		
Client:	**Lamoureux Pagano Associates**		
Drilling Subcontractor:	Soil X Corp.	Date Started:	8/1/24
Drilling Foreman:	Jose Valentin	Date Completed:	8/1/24
LGCI Engineer:	SL	Location:	Near NW corner of proposed building
Ground Surface Elevation:	375 feet	Total Depth of Boring:	22 feet
Groundwater Depth:	NE	Drill Rig Type:	Mobile Drill B-57 ATV
		Drilling Method:	4.25" ID Hollow Stem Auger



Riser Stickup 0' above ground surface

THICKNESS OF SURFACE SEAL	0.4 foot
TYPE OF SURFACE SEAL	Concrete
TYPE OF SURFACE CASING	Roadway Box
ID OF SURFACE CASING	5 inches
DEPTH TO BOTTOM OF CASING	1.0 foot
ID OF RISER PIPE	2 inches
TYPE OF RISER PIPE	Schedule 40 PVC
TYPE OF BACKFILL AROUND RISER PIPE	Filter sand
DEPTH TO TOP OF SEAL	8 feet
TYPE OF SEAL	Bentonite
DEPTH TO BOTTOM OF SEAL	10 feet
DEPTH TO TOP OF PERVIOUS SECTION	10 feet
TYPE OF PERVIOUS SECTION	Schedule 40 PVC
DESCRIBE OPENINGS	0.01 inch slots
ID OF PERVIOUS SECTION	2 inches
TYPE OF BACKFILL AROUND PERVIOUS SECTION	Filter sand
DEPTH TO BOTTOM OF PERVIOUS SECTION	20 feet
DEPTH TO BOTTOM OF SAND COLUMN	22 feet
TYPE OF BACKFILL BELOW PERVIOUS SECTION	Filter sand
DIAMETER OF BOREHOLE	4.25 inches
DEPTH TO BOTTOM OF BOREHOLE	22 feet

NOTES: The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

Appendix C – LGCI's Test Pit Logs

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TEST PIT LOG

TP-1
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/26/24 **DATE COMPLETED:** 9/26/24
TEST PIT LOCATION: Near SW corner of school property
COORDINATES: NA
SURFACE EL.: 377 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10.9 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** NE
▼ **AT END OF EXCAVATION:** NE

EXCAVATION SUBCONTRACTOR: Saunders Construction
EXCAVATION FOREMAN: Paul Meniates
EXCAVATOR TYPE/MODEL: Kubota KX 080-4
WEATHER: 60's / Sunny
TEST PIT DIMENSIONS: 11.4' x 6.2'
LOGGED BY: / **CHECKED BY:** JKW

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	0.7	0 ft. - 0.7 ft.: Topsoil
	375.0	E		Fill	376.3	0.7 ft. - 6.8 ft.: Silty SAND (SM), fine to medium, 15-20% fines, 0-5% fine subangular gravel, trace of organic soil, trace of roots, brown, moist
2.5						
	372.5	M				
5.0						
	370.0	M			6.8	
				Subsoil	7.5	6.8 ft. - 7.5 ft.: Poorly Graded SAND with Silt (SP-SM), fine to medium, 0-5% fines, 0-5% fine to coarse subangular gravel, trace of roots, orange, moist
7.5					369.5	
	367.5	M		Sand and Gravel		7.5 ft. - 10.9 ft.: Poorly Graded SAND (SP), fine to medium, 0-5% fines, 0-5% fine subangular gravel, light brown, moist
10.0					10.9	
						Bottom of test pit at 10.9 feet. Test pit backfilled with excavated material.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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TEST PIT LOG

TP-2
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/27/24 **DATE COMPLETED:** 9/27/24
TEST PIT LOCATION: Near NW corner of existing building
COORDINATES: NA
SURFACE EL.: 374 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** NE
▼ **AT END OF EXCAVATION:** NE

EXCAVATION SUBCONTRACTOR: Saunders Construction
EXCAVATION FOREMAN: Paul Meniates
EXCAVATOR TYPE/MODEL: Kubota KX 080-4
WEATHER: 60's / Sunny
TEST PIT DIMENSIONS: 12.8' x 6'
LOGGED BY: / **CHECKED BY:** JKW

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	0.8	0 ft. - 0.8 ft.: Topsoil
	372.5	E		Fill	373.2	0.8 ft. - 3.8 ft.: Poorly Graded SAND (SP), mostly fine, 0-5% fines, 10-15% fine to coarse subangular gravel, trace of roots, brown, moist
2.5		M			3.8	
	370.0	M		Sand and Gravel	370.2	3.8 ft. - 4.9 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, light brown, moist
5.0			1			4.9 ft. - 5.5 ft.: Silty SAND (SM), mostly fine, 35-30% fines, 0-5% fine subangular gravel, trace of roots, light brown, moist REMARK 1: Double ring infiltrometer test performed at depth of 4.9 feet. 5.5 ft. - 10 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, light brown, moist
	367.5					
7.5		D				
	365.0					
10.0					10.0	Bottom of test pit at 10.0 feet. Test pit backfilled with excavated material.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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TEST PIT LOG

TP-3
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/26/24 **DATE COMPLETED:** 9/26/24
TEST PIT LOCATION: Near NE corner of proposed building
COORDINATES: NA
SURFACE EL.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10.1 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** NE
▼ **AT END OF EXCAVATION:** NE

EXCAVATION SUBCONTRACTOR: Saunders Construction
EXCAVATION FOREMAN: Paul Meniates
EXCAVATOR TYPE/MODEL: Kubota KX 080-4
WEATHER: 60's / Sunny
TEST PIT DIMENSIONS: 12' x 5.5'
LOGGED BY: / **CHECKED BY:** JKW

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth / El. (ft.)	Material Description
		M		Topsoil	0.8 / 374.2	0 ft. - 0.8 ft.: Topsoil
2.5	372.5					0.8 ft. - 9 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, ~15% fine to coarse subangular gravel, trace roots, cobbles up to 6", brown moist
5.0	370.0	M		Fill		
7.5	367.5					
		M		Sand and Gravel	9.0 / 366.0	9 ft. - 10.1 ft.: Poorly Graded SAND with Silt (SP-SM), fine, trace medium, 5-10% fines, 0-5% fine subrounded gravel, grey, moist
10.0	365.0				10.1	Bottom of test pit at 10.1 feet. Test pit backfilled with excavated material.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

LGCI
Lahlaf Geotechnical Consulting, Inc.

TEST PIT LOG

TP-4

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/27/24 **DATE COMPLETED:** 9/27/24
TEST PIT LOCATION: Near Southern face of proposed building
COORDINATES: NA
SURFACE EL.: 376 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** NE
▼ **AT END OF EXCAVATION:** NE

EXCAVATION SUBCONTRACTOR: Saunders Construction
EXCAVATION FOREMAN: Paul Meniates
EXCAVATOR TYPE/MODEL: Kubota KX 080-4
WEATHER: 60's / Sunny
TEST PIT DIMENSIONS: 10' x 6'
LOGGED BY: / **CHECKED BY:** JKW

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	0.9	0 ft. - 0.9 ft.: Topsoil
	375.0	E		Fill	1.3	0.9 ft. - 1.3 ft.: Poorly Graded SAND with Silt (SP-SM), fine to medium, trace coarse, 10-15% fines, 0-5% fine subrounded gravel, trace of roots, brown, moist
		E		Buried Organic Soil	1.9 374.1	1.3 ft. - 1.9 ft.: Silty SAND (SM), fine to medium, 25-30% fines, 0-5% fine subangular gravel, trace of roots, trace of organic soil, dark brown to black, moist
2.5		E		Subsoil		1.9 ft. - 3.9 ft.: Silty SAND (SM), fine to medium, 15-20% fines, 0-5% subangular gravel, orange to brown, moist
	372.5	M			3.9 372.1	
5.0		M		Sand and Gravel		3.9 ft. - 8.3 ft.: Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 20-25% fine to coarse subrounded gravel, cobbles up to 8" make up 10-15% of stockpile, brown, moist
	370.0					
7.5						
	367.5	M				8.3 ft. - 10 ft.: Silty SAND (SM), mostly fine, 25-30% fines, grey, moist
10.0					10.0	
						Bottom of test pit at 10.0 feet. Test pit backfilled with excavated material.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

TEST PIT LOG

TP-5
PAGE 1 OF 1

LGCI Lahlaf Geotechnical Consulting, Inc.

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/27/24 **DATE COMPLETED:** 9/27/24
TEST PIT LOCATION: Near SE corner of proposed building
COORDINATES: NA
SURFACE EL.: 377 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10.4 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** NE
▼ **AT END OF EXCAVATION:** NE

EXCAVATION SUBCONTRACTOR: Saunders Construction
EXCAVATION FOREMAN: Paul Meniates
EXCAVATOR TYPE/MODEL: Kubota KX 080-4
WEATHER: 60's / Sunny
TEST PIT DIMENSIONS: 10' x 5'
LOGGED BY: / **CHECKED BY:** JKW

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	1.2	0 ft. - 1.2 ft.: Topsoil
	375.0	E		Fill	375.8	1.2 ft. - 2.8 ft.: Silty SAND (SM), fine to medium, trace coarse, 20-25% fines, trace of organic soil, trace of roots, black to dark brown, moist
2.5		E			2.8	
		M		Subsoil	374.2	2.8 ft. - 4 ft.: Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, 0-5% fine subrounded gravel, orange, moist
	372.5				4.0	
5.0		M		Sand and Gravel	373.0	4 ft. - 9.6 ft.: Well Graded SAND with Gravel (SW), 0-5% fines, 30-35% fine to coarse subrounded gravel, light brown to grey, moist
	370.0					
7.5						
	367.5					
10.0		M			10.4	9.6 ft. - 10.4 ft.: Silty SAND (SM), mostly fine, 20-25% fines, 0-5% fine subangular gravel, grey, moist
						Bottom of test pit at 10.4 feet. Test pit backfilled with excavated material.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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Lahlaf Geotechnical Consulting, Inc.

TEST PIT LOG

TP-6
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/26/24 **DATE COMPLETED:** 9/26/24
TEST PIT LOCATION: Near Eastern face of proposed building
COORDINATES: NA
SURFACE EL.: 375 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10.1 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** NE
▼ **AT END OF EXCAVATION:** NE

EXCAVATION SUBCONTRACTOR: Saunders Construction
EXCAVATION FOREMAN: Paul Meniates
EXCAVATOR TYPE/MODEL: Kubota KX 080-4
WEATHER: 60's / Sunny
TEST PIT DIMENSIONS: 11.5' x 6'
LOGGED BY: / **CHECKED BY:** JKW

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Fill		0 ft. - 2.7 ft.: Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, 0-5% fine to coarse subangular gravel, trace of roots, trace of organics, dark brown, moist
2.5	372.5					
		M				2.7 ft. - 6.9 ft.: Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 10-15% fines, 10-15% fine to coarse subangular gravel, trace of roots, brown, moist
5.0	370.0	M				
7.5	367.5	M				6.9 ft. - 8 ft.: Silty SAND (SM), fine to medium, 15-20% fines, 5-10% fine subangular gravel, trace of roots, brown, moist
		D		Sand and Gravel	8.0 367.0	8 ft. - 9.5 ft.: Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 30-35% fine to coarse subangular gravel, brown, moist
		M				
10.0	365.0	M			10.1	9.5 ft. - 10.1 ft.: Poorly Graded SAND (SP), fine to medium. 0-5% fines, grey, moist
						Bottom of test pit at 10.1 feet. Test pit backfilled with excavated material.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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TEST PIT LOG

TP-7
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/26/24 **DATE COMPLETED:** 9/26/24
TEST PIT LOCATION: Near Eastern face of proposed building
COORDINATES: NA
SURFACE EL.: 376 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10.2 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** NE
▼ **AT END OF EXCAVATION:** NE

EXCAVATION SUBCONTRACTOR: Saunders Construction
EXCAVATION FOREMAN: Paul Meniates
EXCAVATOR TYPE/MODEL: Kubota KX 080-4
WEATHER: 60's / Sunny
TEST PIT DIMENSIONS: 11.6' x 8'
LOGGED BY: / **CHECKED BY:** JKW

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	0.7	0 ft. - 0.7 ft.: Topsoil
	375.0	E		Fill	375.3	0.7 ft. - 3.5 ft.: Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, 10-15% fines, ~15% fine to coarse subangular gravel, trace of roots, brown to light brown, moist
2.5		M				
	372.5				3.5	
		M		Sand and Gravel	372.5	3.5 ft. - 6 ft.: Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 35-40% fine to coarse subangular gravel, brown, moist
5.0						
	370.0					6 ft. - 10.2 ft.: Poorly Graded SAND with Silt (SP-SM), fine to medium, trace coarse, ~10% fines, 0-5% fine subangular gravel, grey, moist
7.5		M				
	367.5					
10.0					10.2	
						Bottom of test pit at 10.2 feet. Test pit backfilled with excavated material.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

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Lahlaf Geotechnical Consulting, Inc.

TEST PIT LOG

TP-8
PAGE 1 OF 1

CLIENT: Lamoureux Pagano Associates
PROJECT NAME: Prop. Clinton Middle School
LGCI PROJECT NUMBER: 2341
PROJECT LOCATION: Clinton, MA

DATE STARTED: 9/26/24 **DATE COMPLETED:** 9/26/24
TEST PIT LOCATION: Near Eastern face of proposed building
COORDINATES: NA
SURFACE EL.: 376 ft. NAVD 88 (see note 1) **TOTAL DEPTH:** 10.3 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** NE
▼ **AT END OF EXCAVATION:** NE

EXCAVATION SUBCONTRACTOR: Saunders Construction
EXCAVATION FOREMAN: Paul Meniates
EXCAVATOR TYPE/MODEL: Kubota KX 080-4
WEATHER: 60's / Sunny
TEST PIT DIMENSIONS: 10' x 7'
LOGGED BY: / **CHECKED BY:** JKW

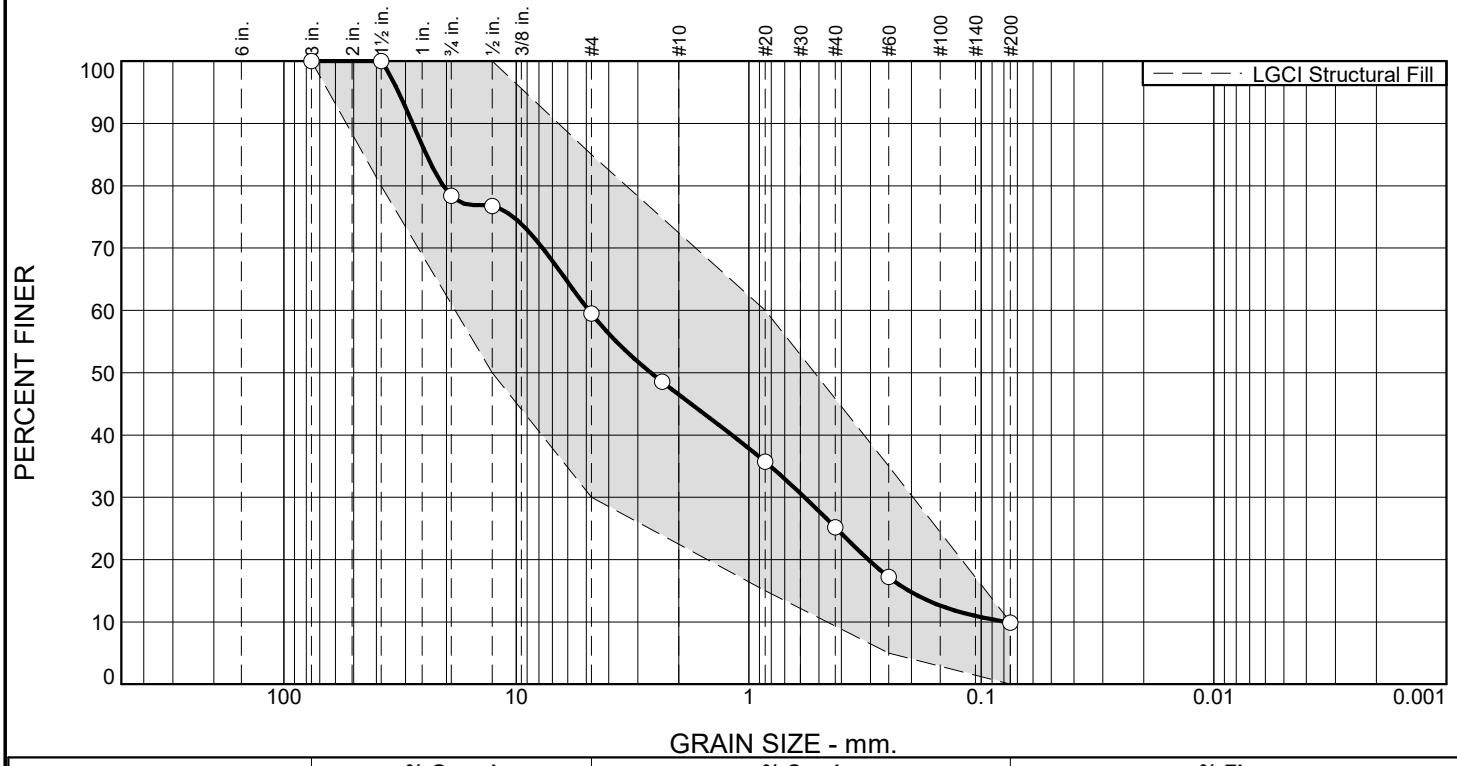
Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	0.8	0 ft. - 0.8 ft.: Topsoil
	375.0	E		Fill	375.2	0.8 ft. - 2.3 ft.: Poorly Graded SAND with Silt (SP-SM), moslty fine, trace coarse, ~10% fines, 5-10% fine to coarse subangular gravel, trace of roots, light brown, moist
		M				
		E			2.3	
2.5		E		Subsoil		2.3 ft. - 3 ft.: Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 0-5% fine to coarse subangular gravel, trace roots, orange, moist
		E			3.3	3 ft. - 3.3 ft.: Poorly Graded SAND (SP), fine to medium, trace coarse, 5-10% fines, 0-5% fine to coarse subangular gravel, trace of roots, light brown, moist
	372.5	E	1	Sand and Gravel	372.7	3.3 ft. - 3.5 ft.: Poorly Graded SAND (SP), fine to coarse, 0-5% fines, 10-15% fine to coarse subangular gravel, greyish brown, moist
		E				3.5 ft. - 7.9 ft.: Poorly Graded SAND with Gravel (SP), mostly medium, 0-5% fines, 20-25% mostly fine subangualar gravel, trace of roots, light brown, moist
5.0						REMARK 1: Double ring infiltrometer test performed at depth of 3.5 feet.
	370.0	M				
7.5						7.9 ft. - 10.3 ft.: Poorly Graded SAND (SP), mostly fine, 0-5% fines, grey, moist
	367.5	M				
10.0					10.3	Bottom of test pit at 10.3 feet. Test pit backfilled with excavated material.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boylston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.

Appendix D – Laboratory Test Results

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	21.6	18.9	13.0	21.3	15.3	9.9	

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"	78.4		
0.5"	76.8	50.0 - 100.0	
#4	59.5	30.0 - 85.0	
#8	48.6		
#20	35.7	15.0 - 60.0	
#40	25.2		
#60	17.2	5.0 - 35.0	
#200	9.9	0.0 - 10.0	

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 40-45% fine to coarse subangular gravel, brown

Atterberg Limits (ASTM D 4318)

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

Classification

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

Coefficients

D_{90}= 27.9346 D_{85}= 24.3650 D_{60}= 4.8736
D_{50}= 2.6361 D_{30}= 0.5760 D_{15}= 0.2044
D_{10}= 0.0784 C_u= 62.17 C_c= 0.87

Remarks

Natural sand and gravel sample

Date Received: 9/25/23 **Date Tested:** 9/27/23

Tested By: JKW

Checked By: TG

Location: Boring B-2
Sample Number: S2 **Depth:** 2.0'-4.0'

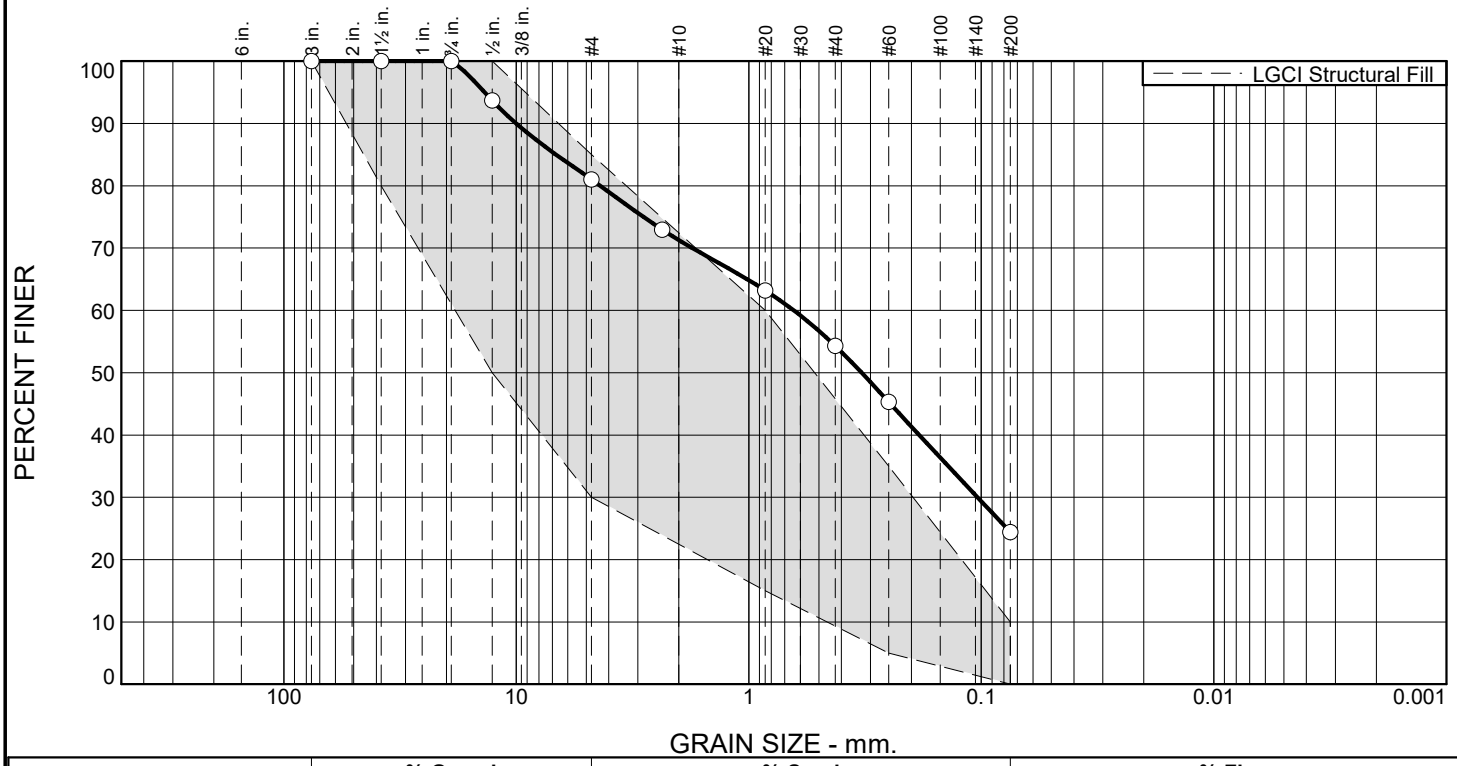
Date Sampled: 9/25/23

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Lamoureux Pagano Associates
Project: Proposed Clinton Middle School, Clinton MA,

Project No: 2341 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
		″	″ ^	^	″ ″		

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
˘		.	
^ ˘			
˘	″ ^	˘	
	.	. ˘	
.	^		
	˘	˘ ˘	;
	˘		
˘	˘	˘ ˘	;
			;
			;

* /*&, 6WUXFWXUDO)LOO

Material Description

$670 ' ·· &ODVVLILFDWLRQ¸ 6LOW\ ILQH WR FRDUVH ˘ ILQHV ˘ I RI RUJDQLF VRLO EURZQ

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

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

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

)LOO VDPSOH

Date Received: ″ ˘ **Date Tested:** ″ ^

Tested By: - . :

Checked By: 7 *

Location: %RULQJ % ˘ **Date Sampled:** ″ ˘

Sample Number: 6 **Depth:** ˘

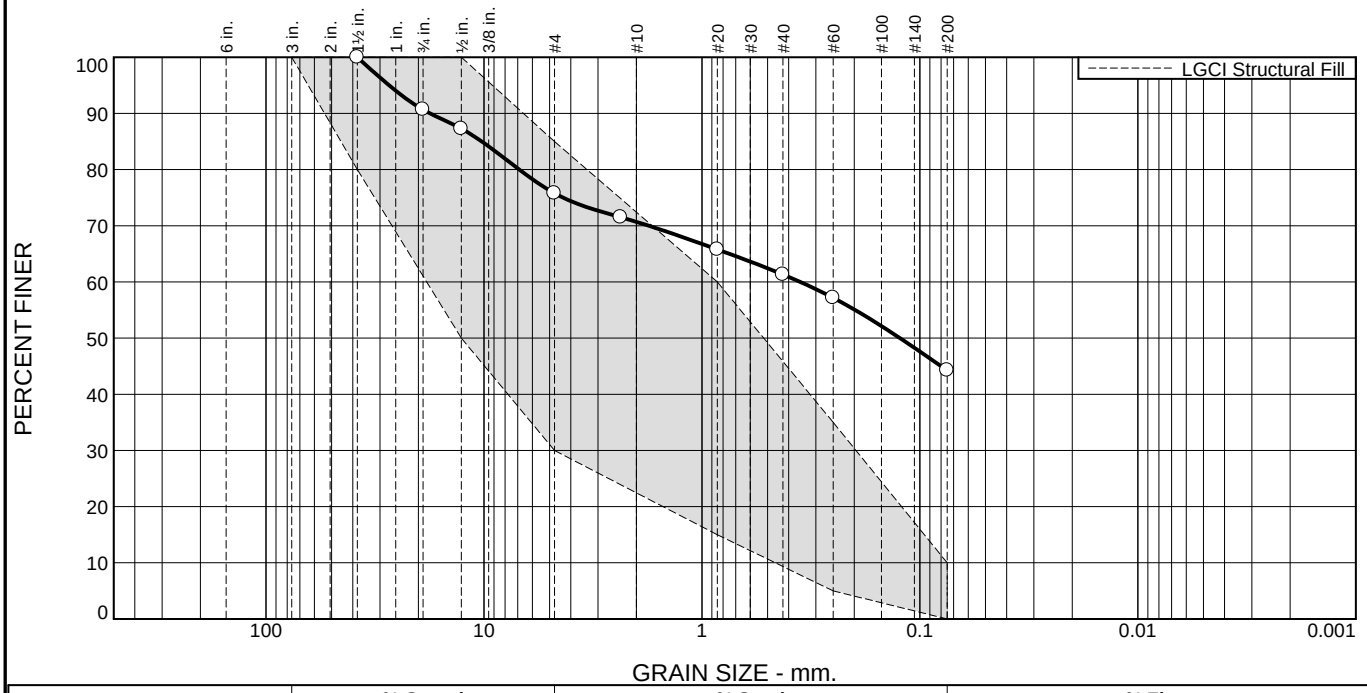
LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: /DPRXUHX[3DJDQR $VVRFLDWHV

Project: 3URSRVHG &OLQWRQ 0LGGOH 6FKRR

Project No: **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.3	14.9	5.1	9.4	17.0	44.3	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0	80.0 - 100.0	
3/4"	90.7		
1/2"	87.3	50.0 - 100.0	
#4	75.8	30.0 - 85.0	
#8	71.5		
#20	65.8	15.0 - 60.0	X
#40	61.3		
#60	57.2	5.0 - 35.0	X
#200	44.3	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), mostly fine to medium, 45% fines, 25% fine to coarse gravel, olive grey, moist

Atterberg Limits (ASTM D 4318)

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

Classification

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

Coefficients

D_{90}= 17.6841 D_{85}= 10.2375 D_{60}= 0.3539
D_{50}= 0.1235 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill Sample.

Date Received: 8/1/24 **Date Tested:** 8/12/24

Tested By: SP

Checked By: SG

Location: B-106
Sample Number: S2 Bot. 11" **Depth:** 2'-4'

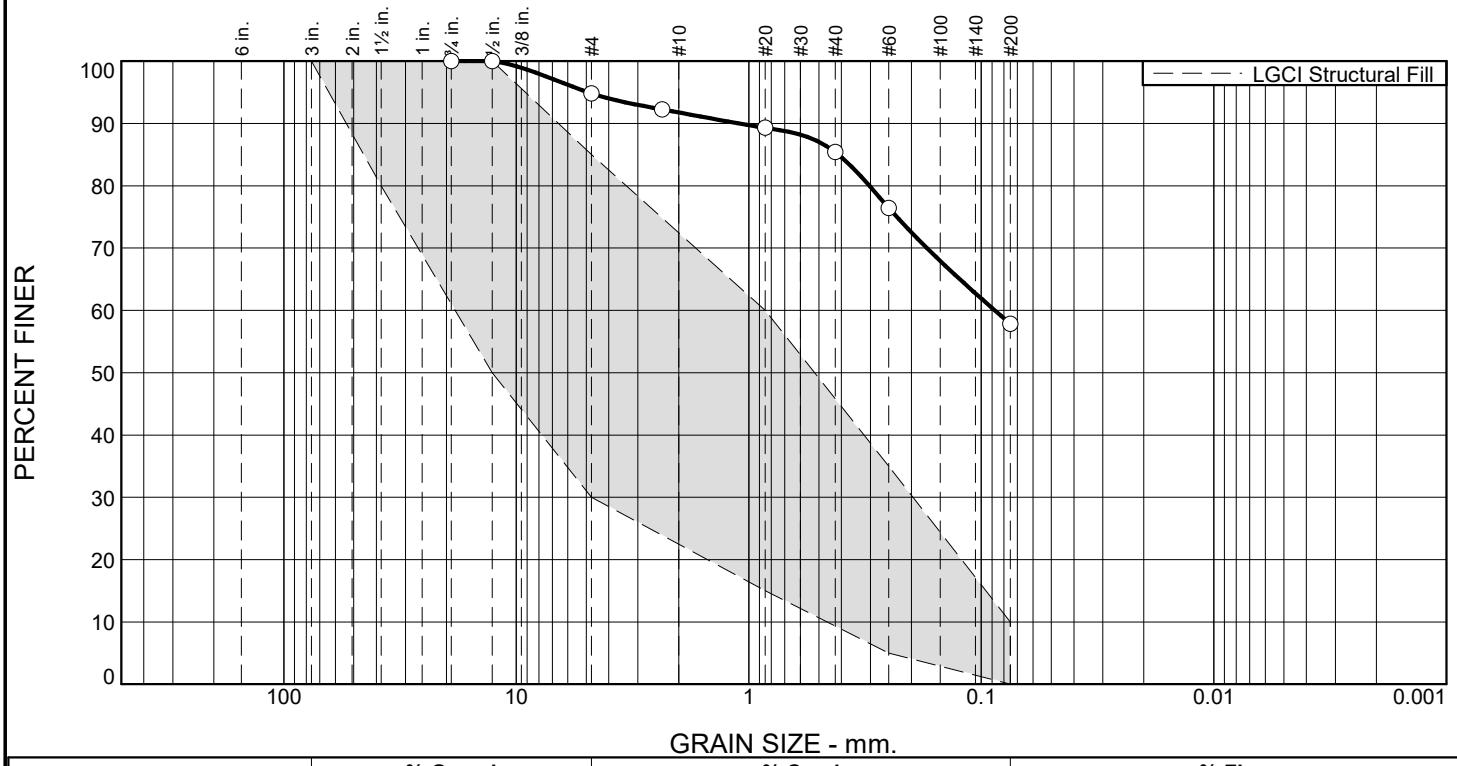
Date Sampled: 8/1/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Lamoureux Pagano Associates
Project: Proposed Clinton Middle School

Project No: 2341 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.2	3.0	6.4	27.6	57.8	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/4"	100.0		
1/2"	100.0	50.0 - 100.0	
#4	94.8	30.0 - 85.0	X
#8	92.3		
#20	89.3	15.0 - 60.0	X
#40	85.4		
#60	76.5	5.0 - 35.0	X
#200	57.8	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Sandy SILT (ML), 35-40% fine to coarse sand, 5% fine subangular gravel, trace of organic soil, gray to brown, moist

Atterberg Limits (ASTM D 4318)

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

Classification

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

Coefficients

D_{90}= 1.0962 D_{85}= 0.4115 D_{60}= 0.0874
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill Sample.

Date Received: 8/2/24 **Date Tested:** 8/12/24

Tested By: LC

Checked By: SG

Location: B-109
Sample Number: S4 **Depth:** 6'-8'

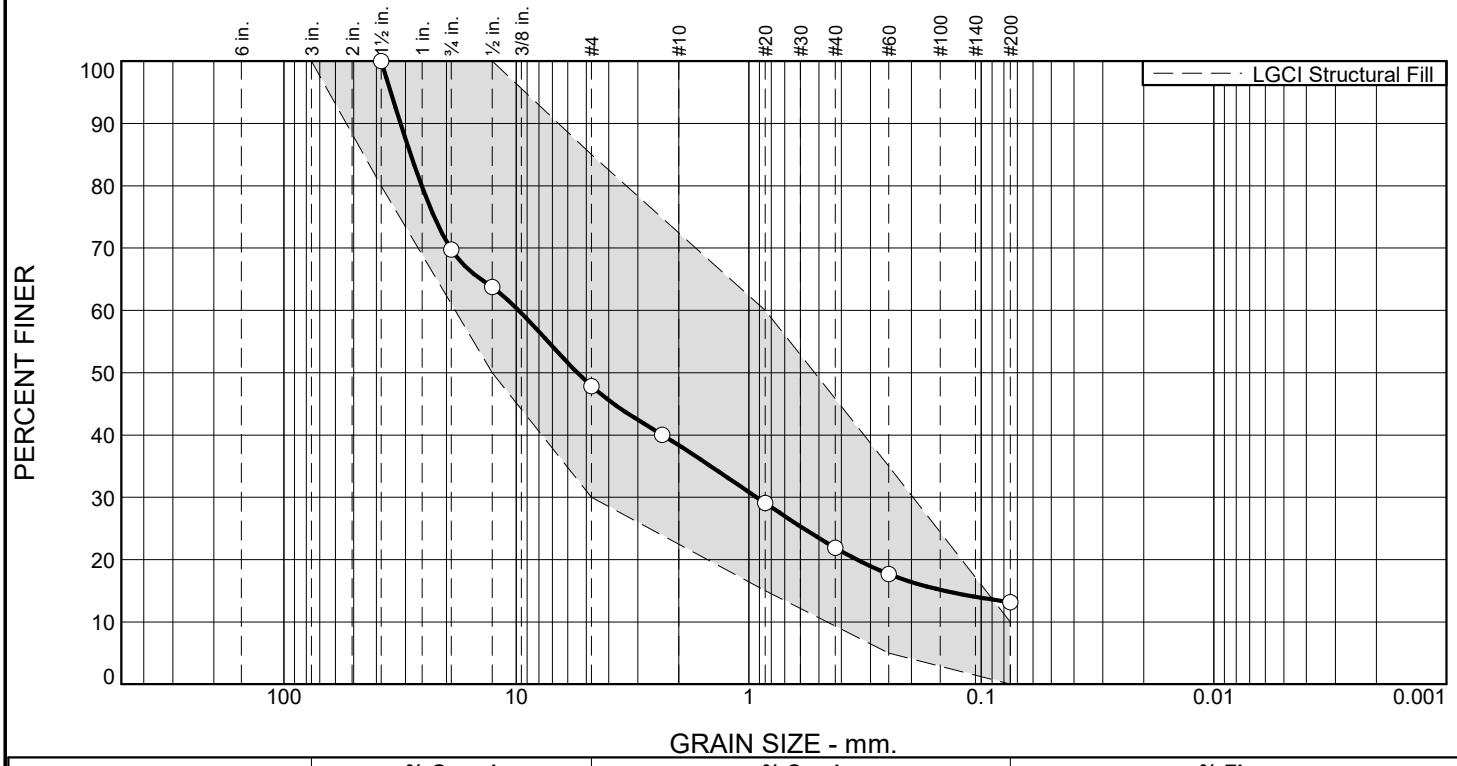
Date Sampled: 8/2/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Lamoureux Pagano Associates
Project: Proposed Clinton Middle School

Project No: 2341 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	30.2	21.9	9.5	16.5	8.7	13.2	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0	80.0 - 100.0	
3/4"	69.8		
1/2"	63.8	50.0 - 100.0	
#4	47.9	30.0 - 85.0	
#8	40.0		
#20	29.1	15.0 - 60.0	
#40	21.9		
#60	17.7	5.0 - 35.0	
#200	13.2	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Well Graded GRAVEL with Silt and Sand (GW-GM), fine to coarse, subangular, 10-15% fines, 35% fine to coarse sand, gray, moist

Atterberg Limits (ASTM D 4318)

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

Classification

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

Coefficients

D_{90}= 31.4750 D_{85}= 28.4549 D_{60}= 9.7680
D_{50}= 5.4583 D_{30}= 0.9248 D_{15}= 0.1442
D_{10}= C_u= C_c=

Remarks

Natural Sample.

Date Received: 8/2/24 **Date Tested:** 8/12/24

Tested By: LC

Checked By: SG

Location: B-110
Sample Number: S3 Bot. 11" **Depth:** 4'-6'

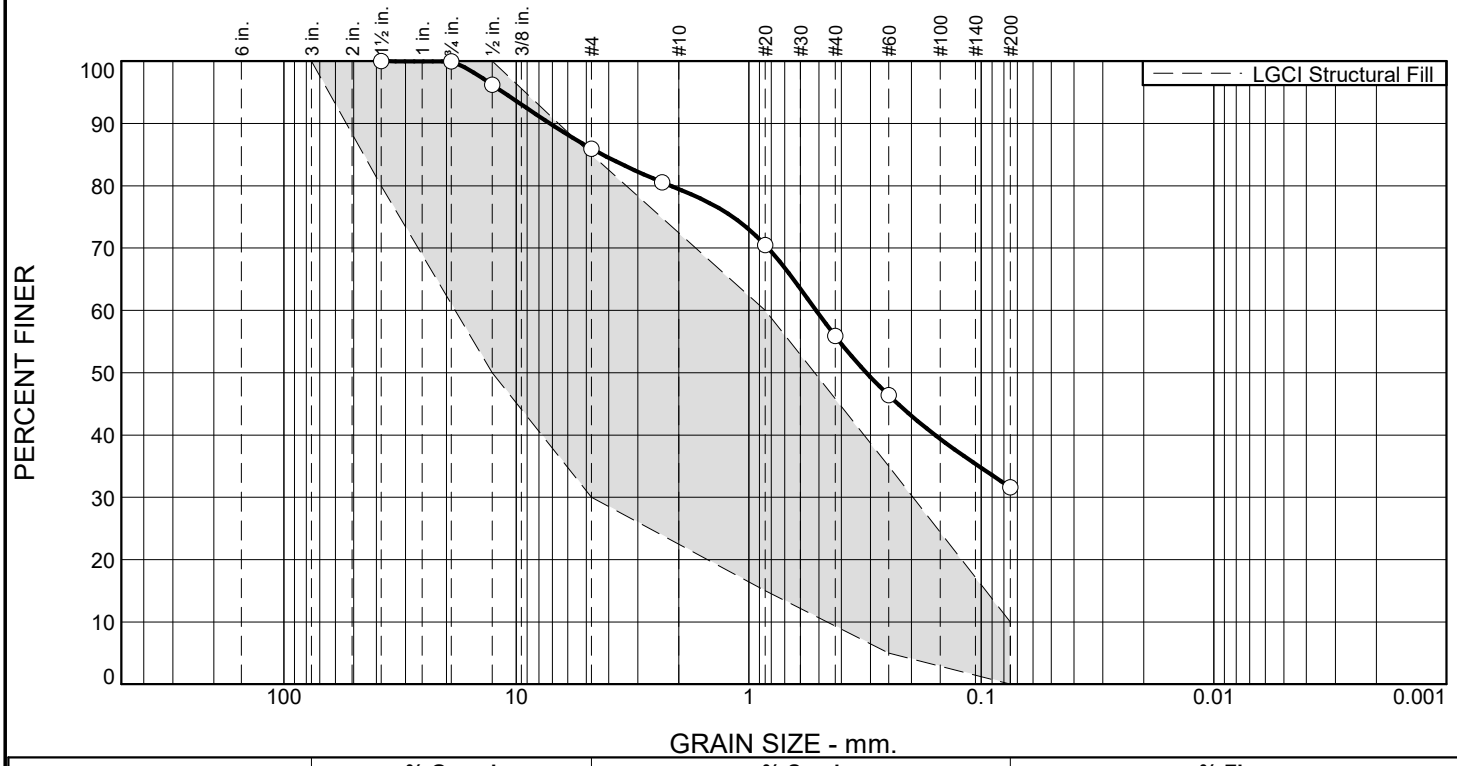
Date Sampled: 8/2/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Lamoureux Pagano Associates
Project: Proposed Clinton Middle School

Project No: 2341 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	14.0	6.5	23.6	24.3	31.6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0	80.0 - 100.0	
3/4	100.0		
1/2"	96.2	50.0 - 100.0	
#4	86.0	30.0 - 85.0	X
#8	80.6		
#20	70.5	15.0 - 60.0	X
#40	55.9		
#60	46.4	5.0 - 35.0	X
#200	31.6	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND (SM), mostly fine to medium, 30-35% fines, 10-15% fine subangular gravel, gray, moist

Atterberg Limits (ASTM D 4318)

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

Classification

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

Coefficients

D_{90}= 7.1549 D_{85}= 4.2530 D_{60}= 0.5136
D_{50}= 0.3120 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill Sample.

Date Received: 8/2/24 **Date Tested:** 8/12/24

Tested By: LC

Checked By: SG

Location: B-111
Sample Number: S3 Bot. 10" **Depth:** 4'-6'

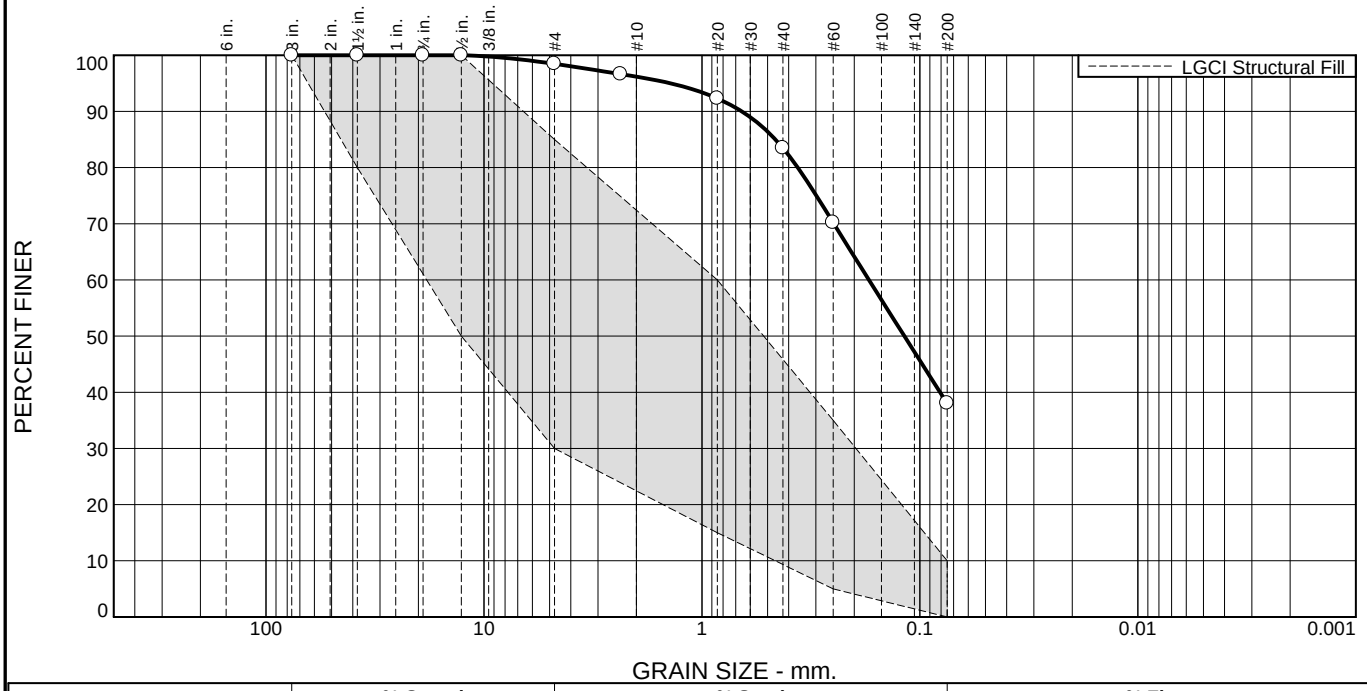
Date Sampled: 8/2/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Lamoureux Pagano Associates
Project: Proposed Clinton Middle School

Project No: 2341 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	2.3	12.7	45.5	38.0	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1 1/2"	100.0	80.0 - 100.0	
3/4"	100.0		
1/2"	100.0	50.0 - 100.0	
#4	98.5	30.0 - 85.0	X
#8	96.6		
#20	92.3	15.0 - 60.0	X
#40	83.5		
#60	70.2	5.0 - 35.0	X
#200	38.0	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND (SM), mostly fine, 35-40% fines, 0-5% fine subangular gravel, trace roots, light brown

Atterberg Limits (ASTM D 4318)

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

Classification

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

Coefficients

D_{90}= 0.6563 D_{85}= 0.4603 D_{60}= 0.1714
D_{50}= 0.1178 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sand and Gravel Sample
Infiltrometer Test Sample

Date Received: 9/27/24 **Date Tested:** 9/30/24

Tested By: SP

Checked By: SG

Location: TP-2
Sample Number: INF-TP-2 **Depth:** 4.9'

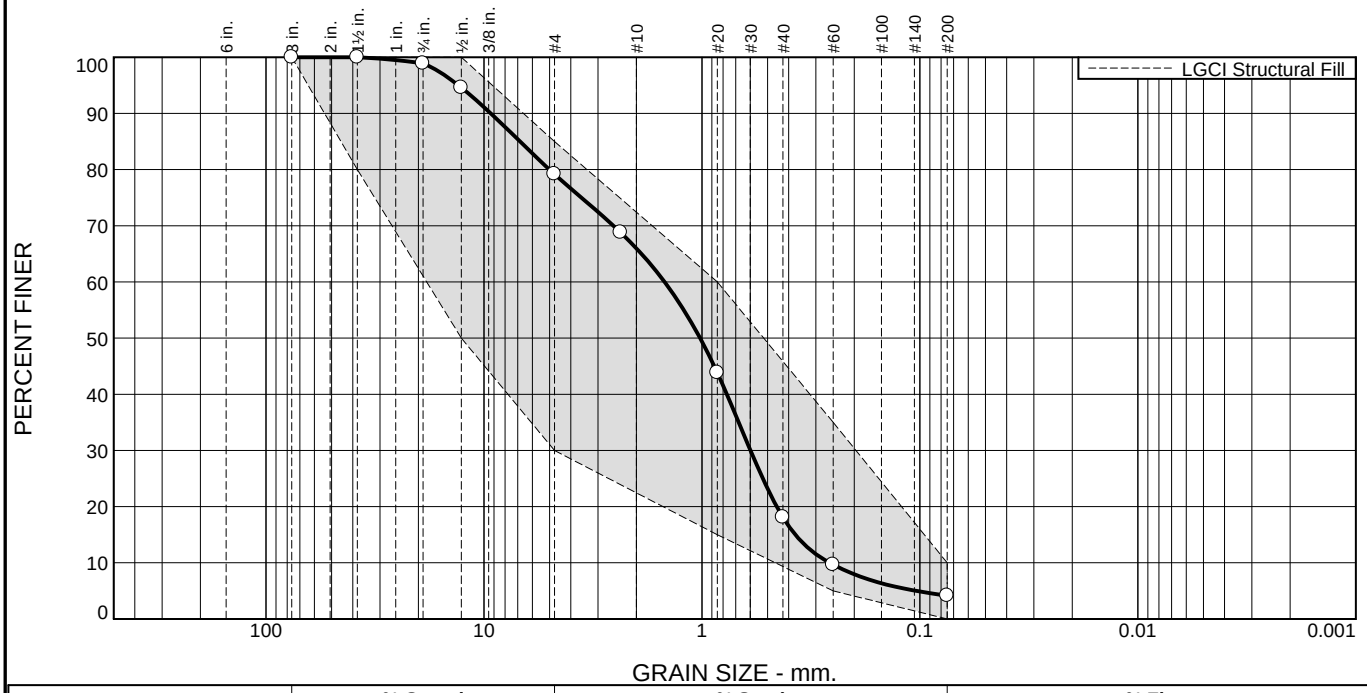
Date Sampled: 9/27/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Lamoureux Pagano Associates
Project: Proposed Clinton Middle School
Clinton, MA

Project No: 2341 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.1	19.7	13.2	47.9	14.0	4.1	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1 1/2"	100.0	80.0 - 100.0	
3/4"	98.9		
1/2"	94.6	50.0 - 100.0	
#4	79.2	30.0 - 85.0	
#8	68.8		
#20	43.8	15.0 - 60.0	
#40	18.1		
#60	9.7	5.0 - 35.0	
#200	4.1	0.0 - 10.0	

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Poorly Graded SAND with Gravel (SP), mosly medium, 0-5% fines, 20-25% fine to coarse subangular gravel, trace roots, light brown

Atterberg Limits (ASTM D 4318)

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

Classification

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

Coefficients

D_{90}= 9.3123 D_{85}= 6.8333 D_{60}= 1.4844
D_{50}= 1.0198 D_{30}= 0.5989 D_{15}= 0.3729
D_{10}= 0.2593 C_u= 5.72 C_c= 0.93

Remarks

Sand and Gravel Sample
Infiltrometer Test Sample

Date Received: 9/27/24 **Date Tested:** 9/30/24

Tested By: SP

Checked By: SG

Location: TP-8
Sample Number: INF-TP-8 **Depth:** 3.5'

Date Sampled: 9/26/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Lamoureux Pagano Associates
Project: Proposed Clinton Middle School
Clinton, MA
Project No: 2341 **Figure**

Appendix E – Double Ring Infiltrometer Test Results

LGCI
Lahlaf Geotechnical Consulting, Inc.

Double Ring Infiltrometer Test

Project: Prop. Clinton Middle School
Clinton, MA
2341

Test Location: TP-2

Test Procedure: General accordance with ASTM D 3385

Test Date 9/27/2024

LGCI Representative: MBH

Weather Conditions: 70's sunny

Test Depth: 4.9 feet

Groundwater Depth: NE

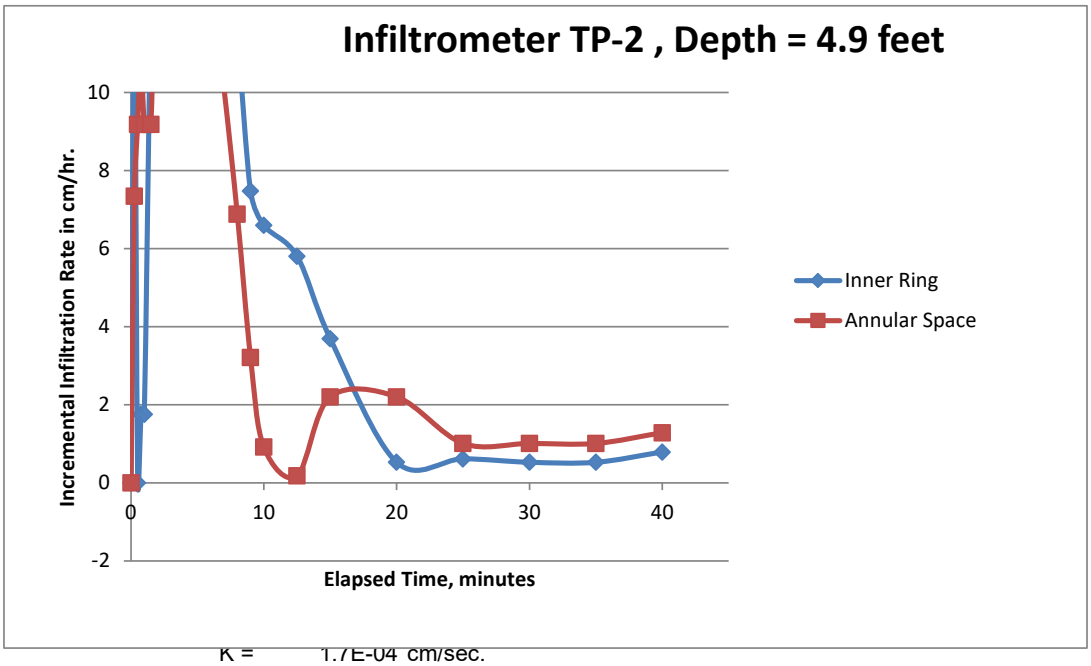
Soil Stratum:

Silty SAND (SM), mostly fine, 35-40% fines, 0-5% fine subangular gravel, trace roots, light brown

	Inner Ring	Annular Space
Area (sq. cm)	730	2189
Depth Driven (in)	3	3
Water Depth (in)	3	3
Mariotte tube (cc/div.)	53.52	167.53

Elapsed Time	Time Increment	Inner Ring			Annular Space		
		Reading	Volume	Infiltration Rate	Reading	Volume	Infiltration Rate
(min)	(min)	(div)	(cc)	(cm/hr.)	(div)	(cc)	(cm/hr.)
0	0	58.0	0	0	57.0	0	0
0.25	0.25	57.3	37	12.3	56.6	67	7.3
0.5	0.25	57.3	0	0.0	56.1	84	9.2
0.75	0.25	57.2	5	1.8	55.5	101	11.0
1	0.25	57.1	5	1.8	55.0	84	9.2
1.5	0.5	55.6	80	13.2	54.0	168	9.2
2	0.5	52.5	166	27.3	52.2	302	16.5
2.5	0.5	49.5	161	26.4	50.6	268	14.7
3	0.5	45.6	209	34.3	48.5	352	19.3
3.5	0.5	42.0	193	31.7	46.6	318	17.4
4	0.5	38.5	187	30.8	44.8	302	16.5
5	1	32.7	310	25.5	41.7	519	14.2
6	1	27.8	262	21.6	38.9	469	12.9
7	1	24.6	171	14.1	36.7	369	10.1
8	1	22.0	139	11.4	35.2	251	6.9
9	1	20.3	91	7.5	34.5	117	3.2
10	1	18.8	80	6.6	34.3	34	0.9
12.5	2.5	15.5	177	5.8	34.2	17	0.2
15	2.5	13.4	112	3.7	33.0	201	2.2
20	5	12.8	32	0.5	30.6	402	2.2
25	5	12.1	37	0.6	29.5	184	1.0
30	5	11.5	32	0.5	28.4	184	1.0
35	5	10.9	32	0.5	27.3	184	1.0
40	5	10.0	48	0.8	25.9	235	1.3

Notes:
At the end of the test, the test pit was continued to a depth of 10 feet. A less silty layer was encountered below the test layer at a depth of 5.5 feet.
An infiltrometer test could not be performed in the less silty layer as the excavation was not safe to set up the testing apparatus.



K = 1.7E-04 cm/sec.

LGCI
Lahlaf Geotechnical Consulting, Inc.

Double Ring Infiltrometer Test

Project: Prop. Clinton Middle School
Clinton, MA
2341

Test Location: TP-8

Test Procedure: General accordance with ASTM D 3385

Test Date 9/26/2024

LGCI Representative: MBH

Weather Conditions: 60's cloudy

Test Depth: 3.5 feet

Groundwater Depth: NE

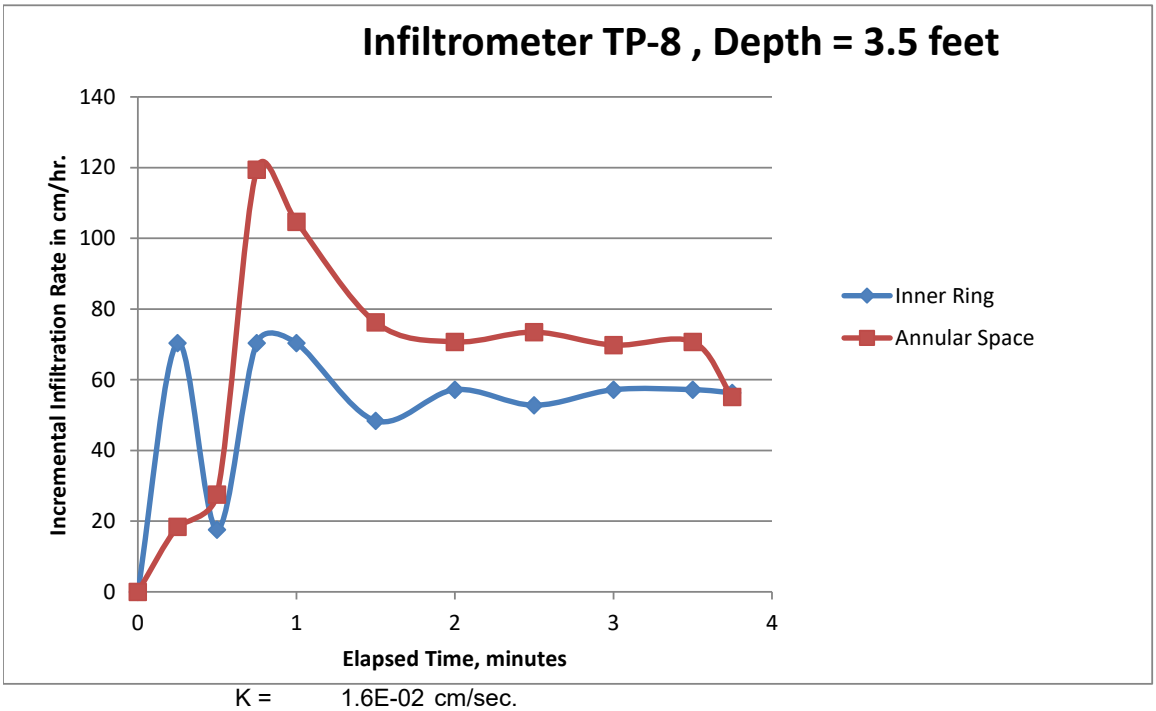
Soil Stratum:

Poorly Graded SAND with Gravel (SP), moslty medium, 0-5% fines, 20-25% fine to coarse subangular 3" gravel, trace roots, light brown

	Inner Ring	Annular Space
Area (sq. cm)	730	2189
Depth Driven (in)	3	3
Water Depth (in)	3	3
Mariotte tube (cc/div.)	53.52	167.53

Elapsed Time	Time Increment	Inner Ring			Annular Space		
		Reading	Volume	Infiltration Rate	Reading	Volume	Infiltration Rate
(min)	(min)	(div)	(cc)	(cm/hr.)	(div)	(cc)	(cm/hr.)
0	0	57.0	0	0	57.0	0	0
0.25	0.25	53.0	214	70.4	56.0	168	18.4
0.5	0.25	52.0	54	17.6	54.5	251	27.6
0.75	0.25	48.0	214	70.4	48.0	1089	119.4
1	0.25	44.0	214	70.4	42.3	955	104.7
1.5	0.5	38.5	294	48.4	34.0	1390	76.2
2	0.5	32.0	348	57.2	26.3	1290	70.7
2.5	0.5	26.0	321	52.8	18.3	1340	73.5
3	0.5	19.5	348	57.2	10.7	1273	69.8
3.5	0.5	13.0	348	57.2	3.0	1290	70.7
3.75	0.25	9.8	171	56.3	0.0	503	55.1

Notes: Infiltrometer test performed in TP-8 at the civil engineer's request.



K = 1.6E-02 cm/sec.

October 15, 2024 Presentation

DORE + WHITTIER

LPA|A

FONTAINE

Clinton Middle School Project School
Building Committee Remote Meeting No.032

October 15, 2024

1. **Call to Order & number of voting members present**
2. **Carriage House Project Invoices for Approval (Vote expected)**
3. Previous Meeting Minutes and Topics for Approval **(vote expected)**
4. Clinton Middle School Invoices and Commitments for Approval **(Vote expected)**
5. LPA|A Update
6. Other Topics not Reasonably Anticipated 48 hours prior to the Meeting.
7. Public Comment
8. Next Meetings
9. Adjourn

COA Carriage House Invoice for Approval

Firm: **Spencer, Sullivan & Vogt, Inc.**

Amount: **$4,920.00**

"Motion to approve SSV invoice 2407-05, in the amount of $4,920.00, made by_____ , 2nd_____."

PBC Roll Call Vote:

Brian Delorey

Chris Magliozzi

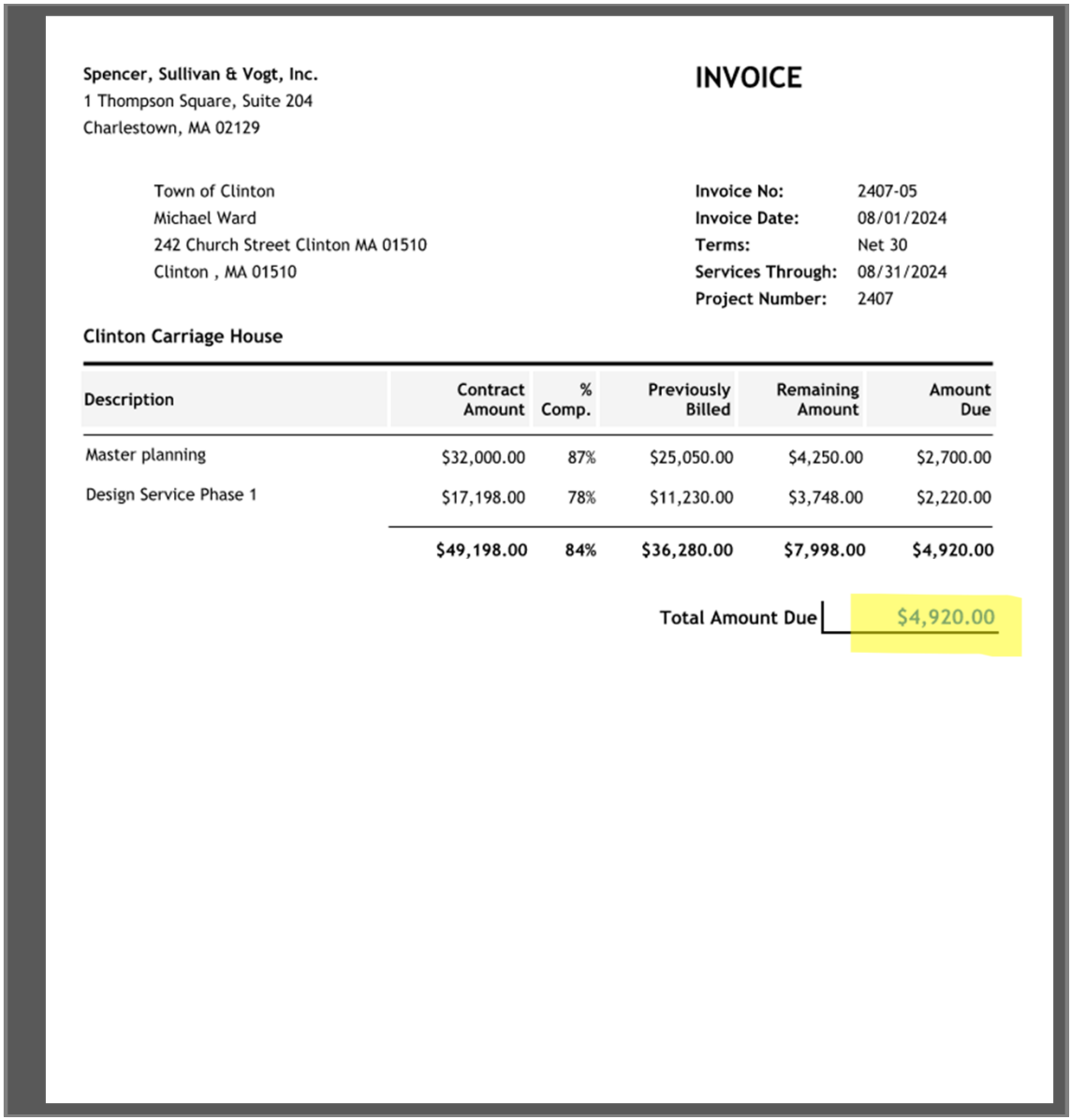
Chris McGown

Michael Moran

Michael Ward

Steven Meyer

Timothy O'Toole



Spencer, Sullivan & Vogt, Inc.
1 Thompson Square, Suite 204
Charlestown, MA 02129

INVOICE

Town of Clinton
Michael Ward
242 Church Street Clinton MA 01510
Clinton , MA 01510

Invoice No: 2407-05
Invoice Date: 08/01/2024
Terms: Net 30
Services Through: 08/31/2024
Project Number: 2407

Clinton Carriage House

Description	Contract Amount	% Comp.	Previously Billed	Remaining Amount	Amount Due
Master planning	$32,000.00	87%	$25,050.00	$4,250.00	$2,700.00
Design Service Phase 1	$17,198.00	78%	$11,230.00	$3,748.00	$2,220.00
	$49,198.00	**84%**	**$36,280.00**	**$7,998.00**	**$4,920.00**

Total Amount Due $4,920.00

COA Carriage House Invoice for Approval

Firm: **Spencer, Sullivan & Vogt, Inc.**

Amount: **$2,650.00**

"Motion to approve SSV invoice 2407-06,in the amount of $2,650.00, made by_____ , 2nd_____ ."

PBC Roll Call Vote:

Brian Delorey

Chris Magliozzi

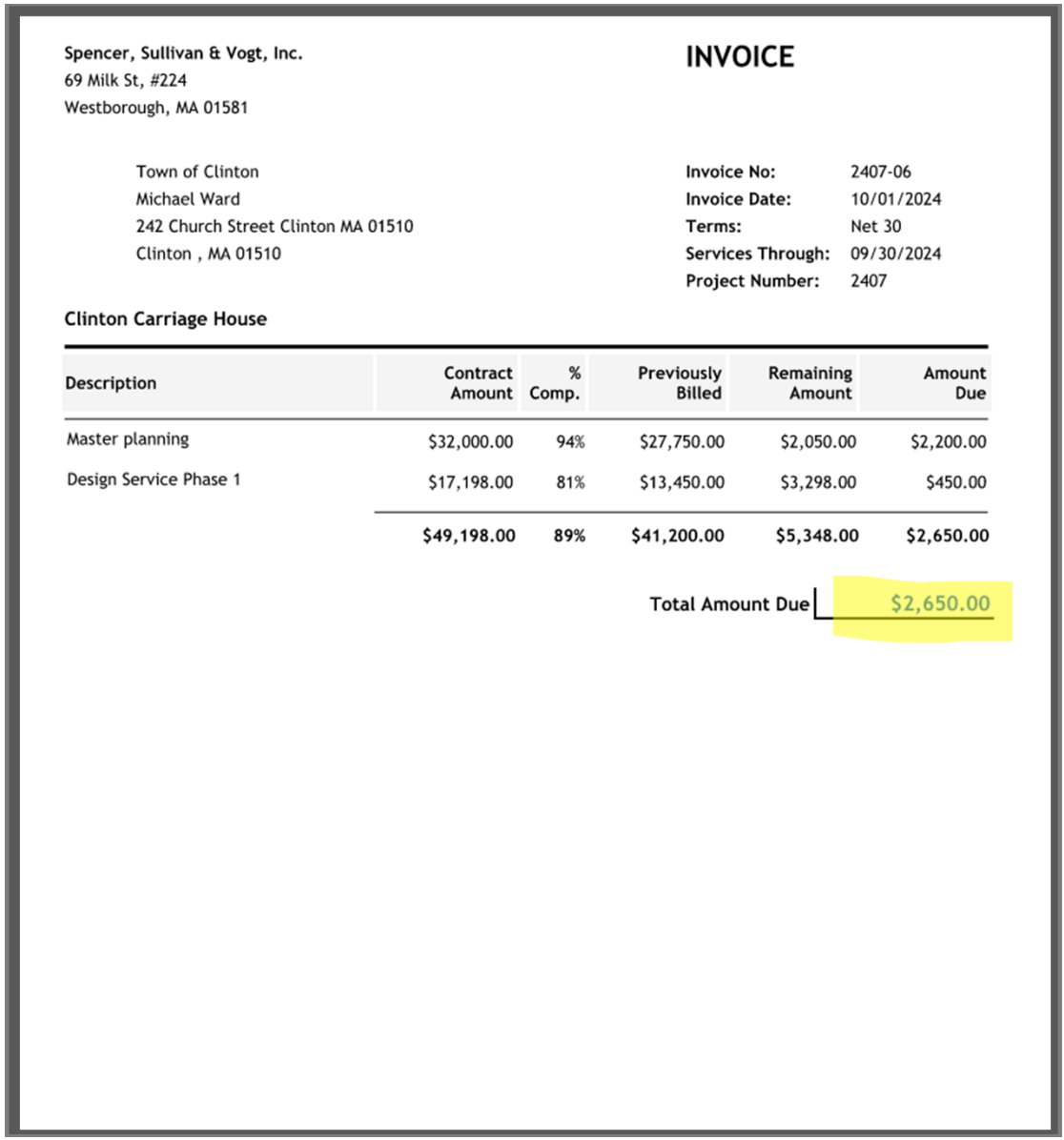
Chris McGown

Michael Moran

Michael Ward

Steven Meyer

Timothy O'Toole



Spencer, Sullivan & Vogt, Inc.
69 Milk St, #224
Westborough, MA 01581

INVOICE

Town of Clinton
Michael Ward
242 Church Street Clinton MA 01510
Clinton , MA 01510

Invoice No:	2407-06
Invoice Date:	10/01/2024
Terms:	Net 30
Services Through:	09/30/2024
Project Number:	2407

Clinton Carriage House

Description	Contract Amount	% Comp.	Previously Billed	Remaining Amount	Amount Due
Master planning	$32,000.00	94%	$27,750.00	$2,050.00	$2,200.00
Design Service Phase 1	$17,198.00	81%	$13,450.00	$3,298.00	$450.00
	$49,198.00	**89%**	**$41,200.00**	**$5,348.00**	**$2,650.00**

Total Amount Due $2,650.00

1. Call to Order & number of voting members present
2. Carriage House Project Invoices for Approval (Vote expected)
3. **Previous Meeting Minutes and Topics for Approval (vote expected)**
4. Clinton Middle School Invoices and Commitments for Approval **(Vote expected)**
5. LPA|A Update
6. Other Topics not Reasonably Anticipated 48 hours prior to the Meeting.
7. Public Comment
8. Next Meetings
9. Adjourn

Previous Meeting Minutes for Approval : September 17, 2024

"Motion to approve September 17, 2024, Meeting Minutes by_____ , 2nd_____ ."

PBC Roll Call Vote:

Brian Delorey

Chris Magliozzi

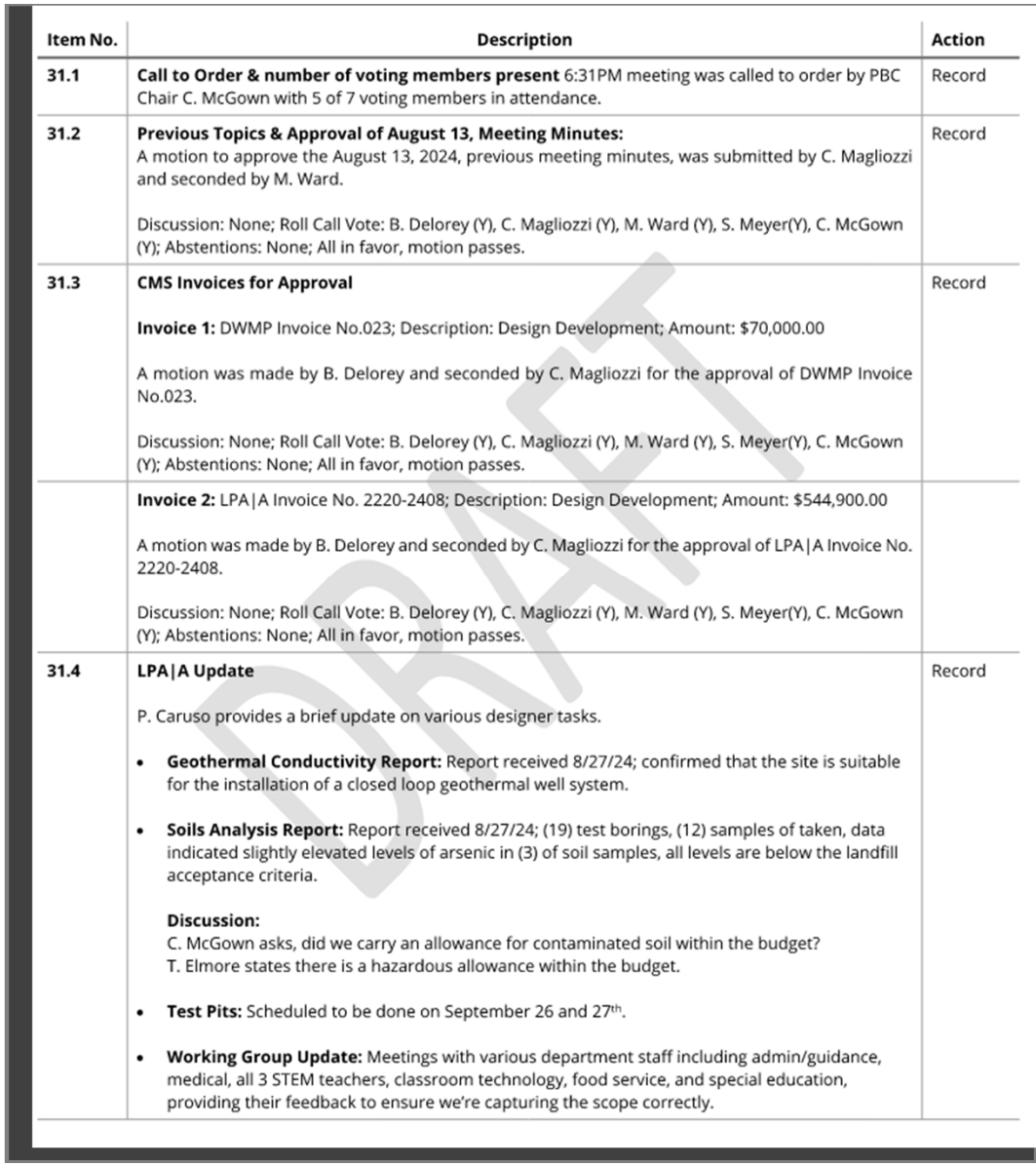
Chris McGown

Michael Moran

Michael Ward

Steven Meyer

Timothy O'Toole



Item No.	Description	Action
31.1	**Call to Order & number of voting members present** 6:31PM meeting was called to order by PBC Chair C. McGown with 5 of 7 voting members in attendance.	Record
31.2	**Previous Topics & Approval of August 13, Meeting Minutes:** A motion to approve the August 13, 2024, previous meeting minutes, was submitted by C. Magliozzi and seconded by M. Ward. Discussion: None; Roll Call Vote: B. Delorey (Y), C. Magliozzi (Y), M. Ward (Y), S. Meyer(Y), C. McGown (Y); Abstentions: None; All in favor, motion passes.	Record
31.3	**CMS Invoices for Approval** **Invoice 1:** DWMP Invoice No.023; Description: Design Development; Amount: $70,000.00 A motion was made by B. Delorey and seconded by C. Magliozzi for the approval of DWMP Invoice No.023. Discussion: None; Roll Call Vote: B. Delorey (Y), C. Magliozzi (Y), M. Ward (Y), S. Meyer(Y), C. McGown (Y); Abstentions: None; All in favor, motion passes.	Record
	Invoice 2: LPA|A Invoice No. 2220-2408; Description: Design Development; Amount: $544,900.00 A motion was made by B. Delorey and seconded by C. Magliozzi for the approval of LPA|A Invoice No. 2220-2408. Discussion: None; Roll Call Vote: B. Delorey (Y), C. Magliozzi (Y), M. Ward (Y), S. Meyer(Y), C. McGown (Y); Abstentions: None; All in favor, motion passes.	
31.4	**LPA|A Update** P. Caruso provides a brief update on various designer tasks. • **Geothermal Conductivity Report:** Report received 8/27/24; confirmed that the site is suitable for the installation of a closed loop geothermal well system. • **Soils Analysis Report:** Report received 8/27/24; (19) test borings, (12) samples of taken, data indicated slightly elevated levels of arsenic in (3) of soil samples, all levels are below the landfill acceptance criteria. **Discussion:** C. McGown asks, did we carry an allowance for contaminated soil within the budget? T. Elmore states there is a hazardous allowance within the budget. • **Test Pits:** Scheduled to be done on September 26 and 27th. • **Working Group Update:** Meetings with various department staff including admin/guidance, medical, all 3 STEM teachers, classroom technology, food service, and special education, providing their feedback to ensure we're capturing the scope correctly.	Record

1. Call to Order & number of voting members present
2. Carriage House Project Invoices for Approval (Vote expected)
3. Previous Meeting Minutes and Topics for Approval (vote expected)
4. **Clinton Middle School Project: Invoices and Commitment for Approval (Vote expected)**
5. LPA|A Update
6. Other Topics not Reasonably Anticipated 48 hours prior to the Meeting.
7. Public Comment
8. Next Meetings
9. Adjourn

Invoice for Approval

Firm: **Dore & Whittier Management Partners**

Description: **Design Development**

Amount: **$70,000.00**

“Motion to approve DWMP Invoice No.024, in the amount of $70,000, made by_____ , 2nd_____ .”

PBC Roll Call Vote:

Brian Delorey

Chris Magliozzi

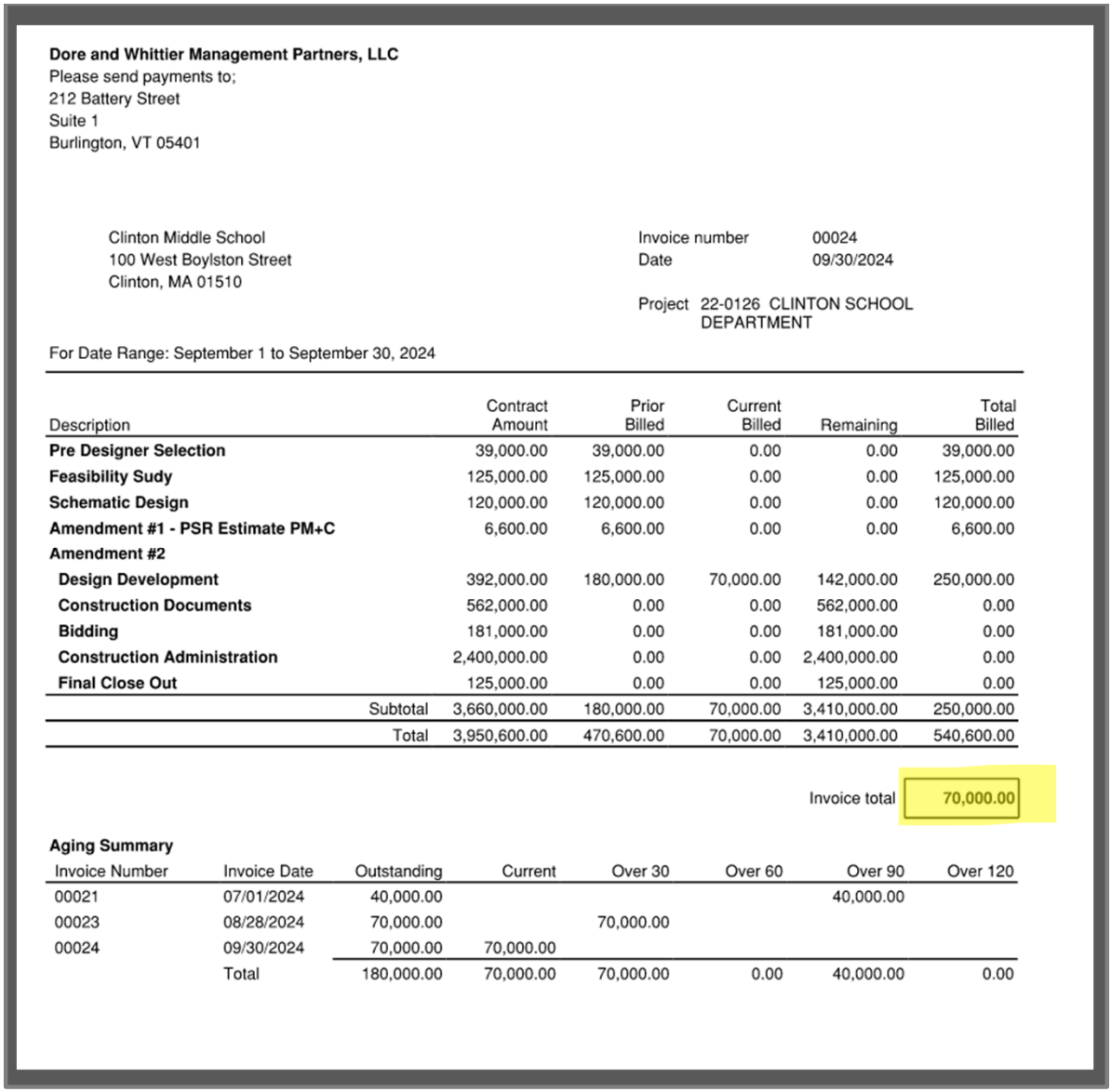
Chris McGown

Michael Moran

Michael Ward

Steven Meyer

Timothy O’Toole



Dore and Whittier Management Partners, LLC
Please send payments to;
212 Battery Street
Suite 1
Burlington, VT 05401

Clinton Middle School
100 West Boylston Street
Clinton, MA 01510

Invoice number 00024
Date 09/30/2024

Project 22-0126 CLINTON SCHOOL DEPARTMENT

For Date Range: September 1 to September 30, 2024

Description	Contract Amount	Prior Billed	Current Billed	Remaining	Total Billed
Pre Designer Selection	39,000.00	39,000.00	0.00	0.00	39,000.00
Feasibility Sudy	125,000.00	125,000.00	0.00	0.00	125,000.00
Schematic Design	120,000.00	120,000.00	0.00	0.00	120,000.00
Amendment #1 - PSR Estimate PM+C	6,600.00	6,600.00	0.00	0.00	6,600.00
Amendment #2					
Design Development	392,000.00	180,000.00	70,000.00	142,000.00	250,000.00
Construction Documents	562,000.00	0.00	0.00	562,000.00	0.00
Bidding	181,000.00	0.00	0.00	181,000.00	0.00
Construction Administration	2,400,000.00	0.00	0.00	2,400,000.00	0.00
Final Close Out	125,000.00	0.00	0.00	125,000.00	0.00
Subtotal	3,660,000.00	180,000.00	70,000.00	3,410,000.00	250,000.00
Total	3,950,600.00	470,600.00	70,000.00	3,410,000.00	540,600.00

Invoice total 70,000.00

Aging Summary

Invoice Number	Invoice Date	Outstanding	Current	Over 30	Over 60	Over 90	Over 120
00021	07/01/2024	40,000.00				40,000.00	
00023	08/28/2024	70,000.00		70,000.00			
00024	09/30/2024	70,000.00	70,000.00				
	Total	180,000.00	70,000.00	70,000.00	0.00	40,000.00	0.00

Invoice for Approval

Firm: **Lamoureux Pagano Associates | Architects**

Description: **Design Development**

Amount: **$544,900**

"Motion to approve LPA|A Invoice No. 2220-2409, in the amount of $544,900.00 made by_____ , 2nd_____ ."

PBC Roll Call Vote:

Brian Delorey

Chris Magliozzi

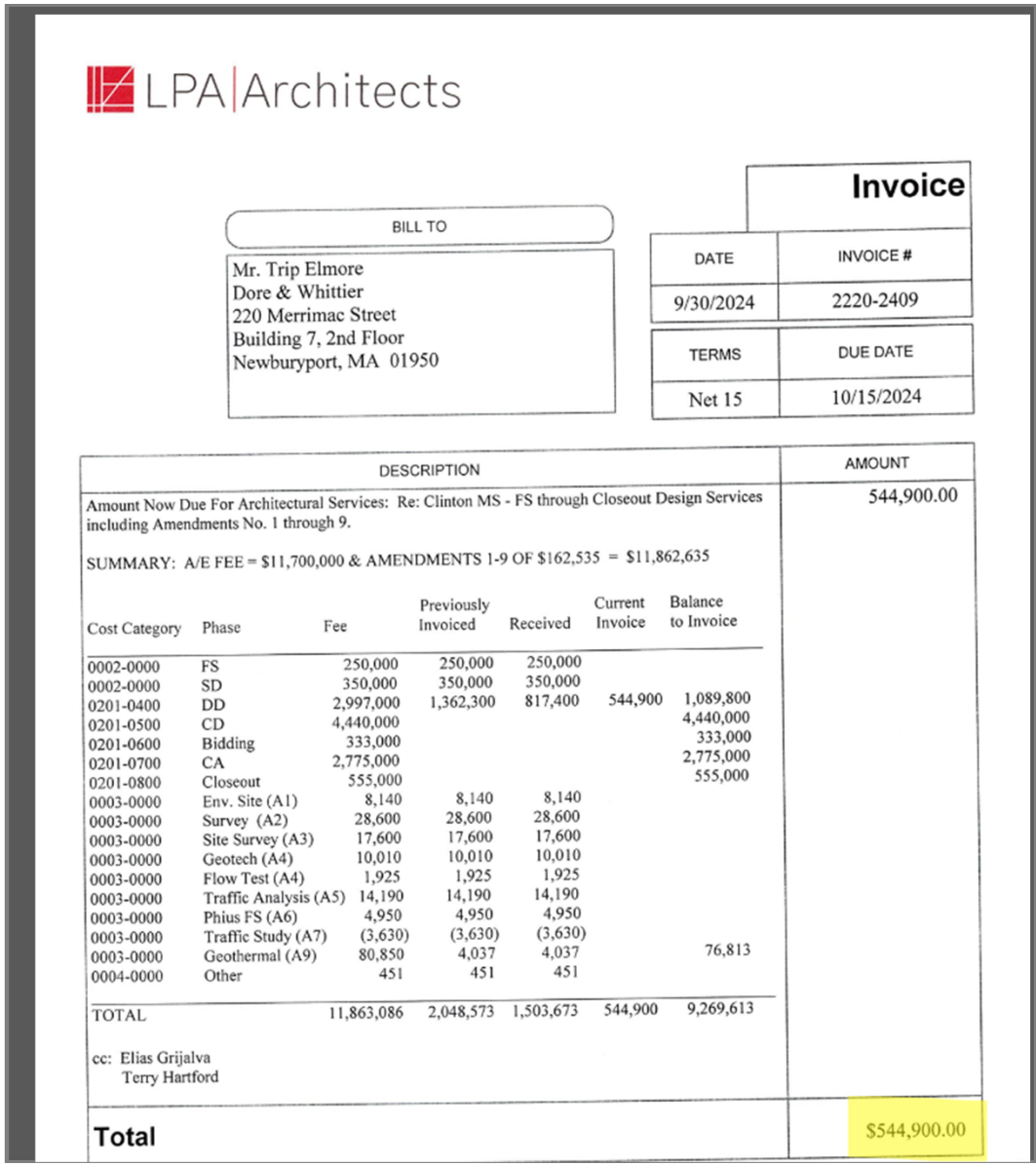
Chris McGown

Michael Moran

Michael Ward

Steven Meyer

Timothy O'Toole



LPA|Architects

Invoice

BILL TO

Mr. Trip Elmore
Dore & Whittier
220 Merrimac Street
Building 7, 2nd Floor
Newburyport, MA 01950

DATE	INVOICE #
9/30/2024	2220-2409
TERMS	**DUE DATE**
Net 15	10/15/2024

DESCRIPTION	AMOUNT
Amount Now Due For Architectural Services: Re: Clinton MS - FS through Closeout Design Services including Amendments No. 1 through 9.	544,900.00

SUMMARY: A/E FEE = $11,700,000 & AMENDMENTS 1-9 OF $162,535 = $11,862,635

Cost Category	Phase	Fee	Previously Invoiced	Received	Current Invoice	Balance to Invoice
0002-0000	FS	250,000	250,000	250,000		
0002-0000	SD	350,000	350,000	350,000		
0201-0400	DD	2,997,000	1,362,300	817,400	544,900	1,089,800
0201-0500	CD	4,440,000				4,440,000
0201-0600	Bidding	333,000				333,000
0201-0700	CA	2,775,000				2,775,000
0201-0800	Closeout	555,000				555,000
0003-0000	Env. Site (A1)	8,140	8,140	8,140		
0003-0000	Survey (A2)	28,600	28,600	28,600		
0003-0000	Site Survey (A3)	17,600	17,600	17,600		
0003-0000	Geotech (A4)	10,010	10,010	10,010		
0003-0000	Flow Test (A4)	1,925	1,925	1,925		
0003-0000	Traffic Analysis (A5)	14,190	14,190	14,190		
0003-0000	Phius FS (A6)	4,950	4,950	4,950		
0003-0000	Traffic Study (A7)	(3,630)	(3,630)	(3,630)		
0003-0000	Geothermal (A9)	80,850	4,037	4,037		76,813
0004-0000	Other	451	451	451		
TOTAL		11,863,086	2,048,573	1,503,673	544,900	9,269,613

cc: Elias Grijalva
Terry Hartford

Total $544,900.00

Commitment for Approval

Firm: **Lamoureux Pagano Associates | Architects**

Description: **Amendment No.010- Geotechnical Boring Locations and Test Pits**

Amount: **$3,960.00**

"Motion to approve LPA|A Amendment No.010, in the amount of $3,960.00, made by_____ , 2nd_____ ."

PBC Roll Call Vote:

Brian Delorey

Chris Magliozzi

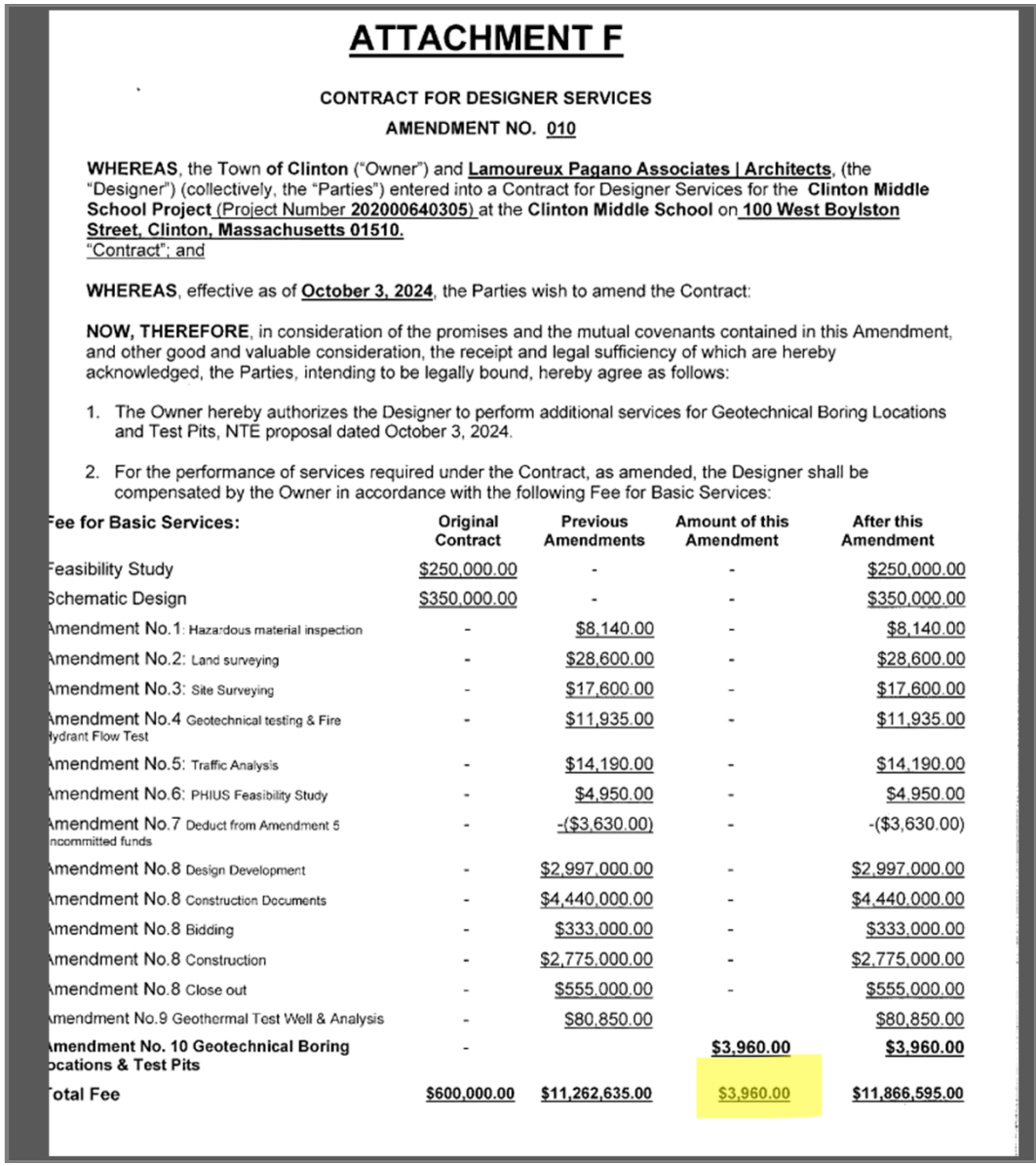
Chris McGown

Michael Moran

Michael Ward

Steven Meyer

Timothy O'Toole



ATTACHMENT F

CONTRACT FOR DESIGNER SERVICES

AMENDMENT NO. 010

WHEREAS, the Town **of Clinton** ("Owner") and **Lamoureux Pagano Associates | Architects**, (the "Designer") (collectively, the "Parties") entered into a Contract for Designer Services for the **Clinton Middle School Project** (Project Number **202000640305**) at the **Clinton Middle School** on **100 West Boylston Street, Clinton, Massachusetts 01510.**
"Contract"; and

WHEREAS, effective as of **October 3, 2024**, the Parties wish to amend the Contract:

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained in this Amendment, and other good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

1. The Owner hereby authorizes the Designer to perform additional services for Geotechnical Boring Locations and Test Pits, NTE proposal dated October 3, 2024.

2. For the performance of services required under the Contract, as amended, the Designer shall be compensated by the Owner in accordance with the following Fee for Basic Services:

Fee for Basic Services:	**Original Contract**	**Previous Amendments**	**Amount of this Amendment**	**After this Amendment**
Feasibility Study	$250,000.00	-	-	$250,000.00
Schematic Design	$350,000.00	-	-	$350,000.00
Amendment No.1: Hazardous material inspection	-	$8,140.00	-	$8,140.00
Amendment No.2: Land surveying	-	$28,600.00	-	$28,600.00
Amendment No.3: Site Surveying	-	$17,600.00	-	$17,600.00
Amendment No.4 Geotechnical testing & Fire Hydrant Flow Test	-	$11,935.00	-	$11,935.00
Amendment No.5: Traffic Analysis	-	$14,190.00	-	$14,190.00
Amendment No.6: PHIUS Feasibility Study	-	$4,950.00	-	$4,950.00
Amendment No.7 Deduct from Amendment 5 uncommitted funds	-	-($3,630.00)	-	-($3,630.00)
Amendment No.8 Design Development	-	$2,997,000.00	-	$2,997,000.00
Amendment No.8 Construction Documents	-	$4,440,000.00	-	$4,440,000.00
Amendment No.8 Bidding	-	$333,000.00	-	$333,000.00
Amendment No.8 Construction	-	$2,775,000.00	-	$2,775,000.00
Amendment No.8 Close out	-	$555,000.00	-	$555,000.00
Amendment No.9 Geothermal Test Well & Analysis	-	$80,850.00		$80,850.00
Amendment No. 10 Geotechnical Boring Locations & Test Pits	-		**$3,960.00**	**$3,960.00**
Total Fee	**$600,000.00**	**$11,262,635.00**	$3,960.00	**$11,866,595.00**

1. Call to Order & number of voting members present
2. Carriage House Project Invoices for Approval (Vote expected)
3. Previous Meeting Minutes and Topics for Approval (vote expected)
4. Clinton Middle School Project: Invoices and Commitment for Approval (Vote expected)
5. **LPA|A Update**
6. Other Topics not Reasonably Anticipated 48 hours prior to the Meeting.
7. Public Comment
8. Next Meetings
9. Adjourn

Soil Management Plan

- Received from Geoenvironmental Consultant on 9/26/24.
- Previously noted to you that there were a few soil samples that had elevated levels of arsenic which was not unexpected.
- Provides recommendations for potential off-site disposal options as well as instructions for on-site re-use.

7.0 On-Site Soil Re-Use

To guide the proper on-site re-use of excavated soil for final design purposes at the Clinton Middle School property, the Contractor will follow plans provided by the architect. Due to the elevated arsenic concentrations detected at the Clinton Middle School property, the following requirements will be followed for all naturally occurring concentrations of arsenic.

To limit exposure potential in proposed development areas where human activity is likely to be greater than other areas of the property such as playgrounds, athletic fields, and gardens, it is recommended that this naturally occurring soil be either:

- buried at a depth at least three feet below surface grade with "clean" fill less than 20 mg/kg;
- located under permanent structures or pavement; or
- covered with filter fabric or other effective membrane under a minimum of 12 inches of "clean" topsoil (i.e., <20 mg/kg), mulch, or subgrade material for athletic field turf.

At other areas of the proposed development less accessible such as roadways or narrow strips between walkways, it will be acceptable to use these excavated soils as sub-grade fill under the design's landscaping, assuming appropriate measures are taken to mitigate erosion.

SOIL MANAGEMENT PLAN

Test Pits

- Completed on September 26 and 27.
- 2 infiltrometer tests were conducted.
- A total of 8 test pits were excavated and backfilled throughout the site.

Geotechnical Report

- Received on 10/07/24 and immediately forwarded to the team.
- Provides comprehensive information that the structural engineer will use in designing footings and foundations.
- Provides information relative to depths of unsuitable soils that will need to removed and replaced with structural fill.

Boring No.	Ground Surface Elevation (ft.)[1]	Groundwater[2] Depth / El. (ft.)	Bottom of Topsoil / **Asphalt** Depth / El. (ft.)	Bottom of Subsoil Depth / El. (ft.)	Bottom of Fill Depth / El. (ft.)	Bottom of Buried Organic Soil Depth / El. (ft.)	Bottom of Sand and Gravel Depth / El. (ft.)	Bottom of Silt Depth / El. (ft.)	Bottom of Boring Depth / El. (ft.)
2023 Borings									
B-1	374.0	- / -	2.0 / **372.0**	- / -	4.0 / **370.0**	- / -	22.0 [3] / **352.0**	- / -	22.0 / **352.0**
B-2	375.0	- / -	0.7 / **374.3**	- / -	2.0 / **373.0**	- / -	22.0 [3] / **353.0**	- / -	22.0 / **353.0**
B-3	376.0	- / -	0.3 / **375.7**	- / -	6.0 / **370.0**	- / -	15.0 / **361.0**	22.0 [4] / **354.0**	22.0 / **354.0**
B-4	377.0	- / -	2.0 / **375.0**	- / -	10.0 [5] / **367.0**	- / -	22.0 [3] / **355.0**	- / -	22.0 / **355.0**
B-5	375.0	- / -	2.0 / **373.0**	- / -	6.0 / **369.0**	- / -	22.0 [3] / **353.0**	- / -	22.0 / **353.0**
2024 Borings									
B-101	374.0	- / -	2.5 / **371.5**	- / -	12.0 / **362.0**	- / -	22.0 [3] / **352.0**	- / -	22.0 / **352.0**
B-102	375.0	- / -	0.8 / **374.2**	- / -	8.8 / **366.2**	- / -	20.0 [3] / **355.0**	- / -	20.0 / **355.0**
B-103-OW	375.0	- / -	2.3 / **372.7**	- / -	9.4 [6] / **365.6**	- / -	22.0 [3] / **353.0**	- / -	22.0 / **353.0**
B-104	375.0	- / -	2.0 / **373.0**	- / -	8.0 / **367.0**	- / -	22.0 [3] / **353.0**	- / -	22.0 / **353.0**
B-105	375.0	- / -	2.0 / **373.0**	- / -	8.0 / **367.0**	- / -	22.0 [3] / **353.0**	- / -	22.0 / **353.0**
B-106	375.0	- / -	2.2 / **372.8**	- / -	6.0 [7] / **369.0**	- / -	22.0 [3] / **353.0**	- / -	22.0 / **353.0**
B-107	376.0	21.0 / **355.0**	2.4 / **373.6**	4.0 / **372.0**	- / -	4.6 / **371.4**	20.0 / **356.0**	22.0 [4] / **354.0**	22.0 / **354.0**
B-108	376.0	- / -	2.0 / **374.0**	- / -	8.0 / **368.0**	- / -	22.0 [3] / **354.0**	- / -	22.0 / **354.0**
B-109	376.0	- / -	2.0 / **374.0**	4.0 / **372.0**	8.0 / **368.0**	8.3 / **367.7**	22.0 [3] / **354.0**	- / -	22.0 / **354.0**
B-110	376.0	- / -	2.0 / **374.0**	4.0 / **372.0**	- / -	4.4 / **371.6**	22.0 [3] / **354.0**	- / -	22.0 / **354.0**
B-111	377.0	- / -	2.0 / **375.0**	- / -	6.0 [8] / **371.0**	8.4 / **368.6**	22.0 [3] / **355.0**	- / -	22.0 / **355.0**
B-112	372.0	- / -	2.0 / **370.0**	- / -	16.0 / **356.0**	38.0 / **334.0**	- / -	41.0 [9] / **331.0**	41.0 / **331.0**
B-113	373.0	- / -	2.0 / **371.0**	- / -	6.0 / **367.0**	- / -	12.0 [3] / **361.0**	- / -	12.0 / **361.0**
B-114	375.0	- / -	**0.3** / **374.7**	- / -	2.3 / **372.7**	- / -	12.0 [3] / **363.0**	- / -	12.0 / **363.0**
B-115	377.0	- / -	2.9 / **374.1**	4.0 / **373.0**	- / -	6.0 / **371.0**	10.0 [3] / **367.0**	- / -	10.0 / **367.0**
B-116	376.0	- / -	0.8 / **375.2**	- / -	8.0 / **368.0**	- / -	10.0 [3] / **366.0**	- / -	10.0 / **366.0**
B-117	372.0	- / -	**0.5** / **371.5**	- / -	11.0 / **361.0**	- / -	17.0 [3] / **355.0**	- / -	17.0 / **355.0**
B-TP-1	371.0	- / -	**0.7** / **370.3**	- / -	11.0 / **360.0**	- / -	13.0 [3] / **358.0**	- / -	13.0 / **358.0**
B-TP-3	374.0	- / -	**0.5** / **373.5**	9.0 / **365.0**	7.0 / **367.0**	- / -	13.0 [3] / **361.0**	- / -	13.0 / **361.0**

1. The ground surface elevation was interpolated to the nearest foot from drawing titled: "Existing Conditions Plan, Clinton Middle School, 100W Boyleston St, Clinton, MA 01510," prepared by Nitsch Engineering, Inc., dated June 22, 2023, and provided to LGCI by Lamoureux Pagano Associates via e-mail on September 26, 2023.
2. Groundwater was measured during drilling, at the end of drilling, after drilling, or based on sample moisture, whichever is shallower.
3. Boring terminated in the sand and gravel layer.
4. Boring terminated in the silt layer.
5. A layer of buried organic soil was encountered in boring B-4 within the fill layer between depths of 4.0 feet and 4.8 feet.
6. Two layers of buried organic soil was encountered in boring B-103-OW within the fill layer between depths of 4.0 to 4.8 feet and 6.0 to 6.5 feet.
7. A layer of buried organic soil encountered in boring B-106 within the fill layer between depths of 4.0 to 4.3 feet.
8. A layer of buried organic soil encountered in boring B-111 within the fill layer between depths of 4.0 to 4.3 feet.
9. Boring terminated in the sand layer.
10. "-" means groundwater or layer was not encountered.

Existing Environmental Sound Report

- Received on 9/23/24 and immediately forwarded to the team.
- 2 monitors were set up for a week on site to record exterior ambient sound levels
- Recommends that no additional specification of building envelope construction is warranted and standard 1” insulating glass is sufficient.

Recommended Criteria

Based on the ambient levels presented in Table 1, new equipment will need to produce sound levels below the MassDEP criteria presented in Table 2 (and produce no pure tones).

Although not required by MassDEP, we provide the lower recommended criteria in Table 2 as design goals to reduce the sound impact on the community. We will use these criteria in our review of exterior HVAC and other equipment sound to neighboring properties, with findings and recommendations provided in a written report.

Table 2 – Applicable Limits

Location	Daytime MassDEP Criteria	Recommended Daytime Criteria	Nighttime MassDEP Criteria	Recommended Nighttime Criteria
SM1	44	39	40	35
SM2	38	33	38	33

Exterior Building Shell

LEED requirements state that, if hourly peak L_{eq} sound levels exceed 60 dBA, building envelope specifications must be provided in order to achieve appropriate interior sound levels. This threshold is exceeded slightly on one brief occasion in the measurement data. It is our opinion that this event does not warrant additional specification of building envelope construction. Standard 1-inch insulated glazing (¼-inch monolithic glass / ½ inch air space / ¼-inch monolithic glass) will be sufficient for the project.

ENVIRONMENTAL SOUND REPORT

Working Groups Update

- Safety and Security Working Group 9/18/24
- Media Center and Maker Space Working Group 9/19/24
- History Graphics Working Group 9/20/24
- Science Labs Working Group 9/23/24
- New School Storage Spaces Working Group 9/25/24
- Sustainability Working Group 9/30/24
- Playground Equipment Working Group 10/01/24
- Interior Design Working Group 10/07/24
- PE/Athletics Working Group 10/08/24
  purpose was to introduce new staff members to the project.
- Art Rooms Working Group 10/09/24
- Have Music Working Group tomorrow, 10/16/24

National Grid:

- LPA|A and D+W met with Heather Mills (Senior Project Coordinator) from National Grid on 10/02/24 to discuss the process. There will be 2 tracks:
  - Track 1- temp and permanent power (usually a 1-year turnaround time)
  - Track 2- Distributed Generation (DG) as it relates to the photovoltaic system.
- Step Zero process has been applied for- essentially a snapshot in time of cost, scope, and schedule that National Grid provides in a 3-week period.

Clinton Planning Board:

- Cannot start the process until 4 deliverables are provided including site plan approval from the Clinton Planning Board.
  - Not expected to meet with the Planning Board until after 100% DD drawings are available; current plan is to meet with the Planning Board at the December 3rd meeting as they require the application and all required documents to be submitted by October 31st.
  - Given the holidays as well as the Planning Board's own peer review process, final approval is not expected until a month or more into the new year.
  - The Team's objective is to be proactive to help expedite the approval process by meeting with the various Town departments in advance of the Planning Board.

NATIONAL GRID UPDATE

Wetlands Update:

- Report from Wetland Biologist was received on 8/29/24 and determined that NO Wetland Resource Areas occur **on the site.**

- Recommends having the Clinton Conservation Commission confirm the findings through a Request for Determination of Applicability (RDA).

- Will get on ConCom's agenda for the November meeting; too late to meet their deadline for this month's meeting on 10/23.

Summary

LEC conducted a site evaluation on August 14, 2024, to determine the presence of Wetland Resource Areas subject to jurisdiction under the *Act* and the *Act Regulations*. Based on our site evaluation and review of pertinent maps and site plans, LEC determined that no Wetland Resource Areas occur on Site. While a potential isolated wetland or ILSF may occur off site within 96 South Main Street, there is no 100-foot Buffer Zone associated with these areas. LEC recommends having the Clinton Conservation Commission confirm LEC's findings through the submittal of a Request for Determination of Applicability.

Thank you for the opportunity to provide these services. Should you have any questions or require additional information, do not hesitate to contact me in our Worcester office at 508-753-7077 or at akendall@lecenvironmental.com.

Salvaged Items from the Existing School

- On 9/23/24, LPA|A's kitchen consultant met with the kitchen staff at the existing middle school to determine what pieces of existing equipment will be reused at the new school.
- On 10/04/24, LPA and D+W met with the building inspector to review the project. At that meeting, the building inspector mentioned that he would like to salvage and re-purpose one of the rooftop mechanical units as well as the existing generator inside the school.
- No decision needs to be made now but should be on the committee's radar for future discussion.

- **Floor Mixer:** Hobart H-600-T (Serial No. 11-090-302)
- **Hot Holding Cabinet:** Carter Hoffman (HL2-18-93, Serial No. 022023801814)
- **Hot Holding Cabinet:** Winholt (Model not available)
- **Slicer:** Hobart HS7N (Serial No. 31-1640-337)
- **Vegetable Slicer:** Robot Coupe CL50
- **Washer:** Whirlpool (Model WFW5620HW3, Serial No. CB0700770)
- **Dryer:** Whirlpool (Model WED5620HW2, Serial No. MA4469131)

SALVAGED ITEMS

EMERGENCY POWER:

- Egress and exit lighting
- Fire Alarm System
- PA System
- Emergency communication (DAS) system
- Elevator cab lighting
- Automatic doors
- Kitchen Ansul System

STANDBY POWER (recommended):

- Geothermal system to prevent building from freezing (essentially the entire mechanical room)
  - Spaces include classrooms, stair entries, **Lobby, Cafeteria, Band room, Admin area,** Media Center, and Science labs
- Telecom and server room lighting, power, and A/C systems
- Building Management System (BMS)
- Radon fans on roof
- Power outlets at roof equipment, mechanical rooms, loading area, cafeteria, and kitchen
- Elevator
- Kitchen Cooler/Freezer Only
- Selected Mechanical Loads
- Selected Areas of the building

From Programming Meeting on 1/27/23:

- At a minimum, the proposed generator should support basic heating/cooling , and functionality for the community use areas, corridors and bathrooms.

Questions for PBC/SBC:

- Advise if any other cooking loads and/or ventilation loads should be on standby power in the kitchen.
- Advise on what areas of the building should have mechanical systems powered for heat and/or A/C.
- Advise on what areas of the building should be on standby power; i.e.: Admin, Cafeteria, Gym

EMERGENCY/STANDBY POWER

As of the schematic design phase (SD), the estimated available square footage for photovoltaic (PV) cells is the following:

- **Roof PV array** | 28,830sf | +/-400kW array*
- **Parking Lot Canopy PV array** | 7,350sf | +/-100kW array*
- **TOTAL** | 36,180sf | +/-500kW array

PHOTOVOLTAIC SYSTEM ON NEW SCHOOL:

- 500kW estimated generation = 405,000kWh/year
- 405,000kWh/year x $0.22/kWh = **$89,100/year***

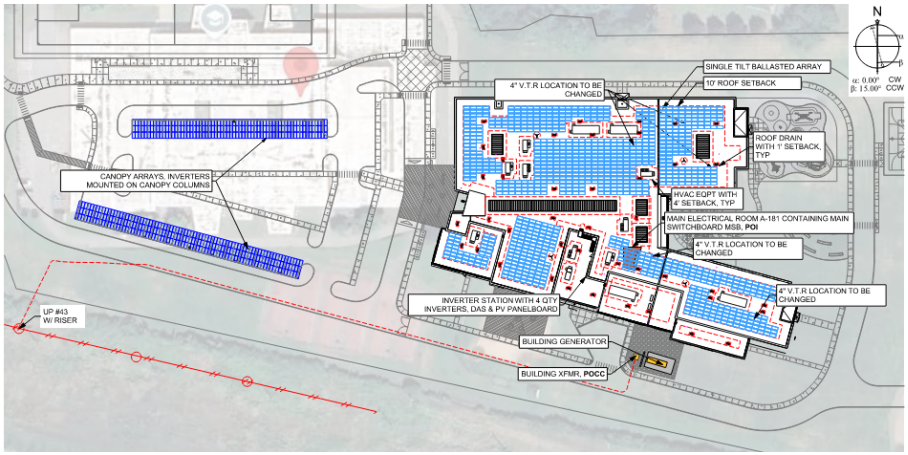
By comparison, the existing school uses:
~444,000kWh/year

POINTS TO NOTE:

- New school is 6,000sf bigger
- New school is fully electric
- Utility rate will likely increase in future

***These numbers are estimates only and are subject to change due to factors such as early design phase and not having the opportunity to meet with the Town Fire Chief.**

PHOTOVOLTAIC SYSTEM (from 1/30/24)



	MODULES COUNT	DC POWER	AC POWER
ROOFTOP	966/ 485W	466.57 kWdc	400 kWac
CANOPY	420/ 485W	203.7 kWdc	180 kWac

3 SIMILAR BALLASTED ARRAY

4 SIMILAR CANOPY ARRAY

As of 50% Design Development phase (DD), we're able to achieve ~466kW of power from just the ROOF.

Our recommendation, from a time efficiency and cost perspective, is to remove the canopy from the scope and only include the roof PV system in the BASE scope of work with final decision made once the DD cost estimate is complete.

PHOTOVOLTAIC SYSTEM

Design Development Progress

11/01/24	The DD drawings will be going to the cost estimator AND the Commissioning Agent
11/--/24	November PBC/SBC meeting
11/20/24	Anticipated date of first Conservation Committee meeting
11/26/24	Cost reconciliation with the team
12/03/24	Anticipated date of first Planning Board meeting
12/03/24	The cost estimate will be presented to the PBC/SBC. PBC/SBC will vote to authorize DD submission to MSBA.
12/06/24	The DD submission to MSBA

1. Call to Order & number of voting members present
2. Carriage House Project Invoices for Approval (Vote expected)
3. Previous Meeting Minutes and Topics for Approval (vote expected)
4. Clinton Middle School Project: Invoices and Commitment for Approval (Vote expected)
5. LPA|A Update
6. **Other Topics not Reasonably Anticipated 48 hours prior to the Meeting.**
7. **Public Comment**
8. **Next Meetings**
9. Adjourn

Next Meetings

NEXT SBC MEETINGS TO BE SCHEDULED:

NOVEMBER 12 OR 19 (PICK A DAY)

DECEMBER 04, 2024 – VOTE TO SUBMIT DD PACKAGE

1. Call to Order & number of voting members present
2. Carriage House Project Invoices for Approval (Vote expected)
3. Previous Meeting Minutes and Topics for Approval (vote expected)
4. Clinton Middle School Project: Invoices and Commitment for Approval (Vote expected)
5. LPA|A Update
6. Other Topics not Reasonably Anticipated 48 hours prior to the Meeting.
7. Public Comment
8. Next Meetings
9. **Adjourn**

Adjourn

"Motion to Adjourn by _____,
2nd by _____"

PBC Roll Call Vote:

Brian Delorey

Chris Magliozzi

Chris McGown

Michael Moran

Michael Ward

Steven Meyer

Timothy O'Toole

Thank You