king + king
ARCHITECTS

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Syracuse, New York 13202
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November 5, 2026

ADDENDUM NO. 2 - TO ALL PLAN HOLDERS OF RECORD

Maine-Endwell Central School District
2022 Capital Improvement Project – Phase 5
Homer Brink Elementary– SED # 03-11-01-06-0-001-023

King + King Project #23-44-7956



License Expiration Date: 5/31/2029

GENERAL

A. All Bidders and Contractors shall take note of the following changes, additions, interpretations, clarifications, etc., in connection with the Drawings and Specifications and other Contract Documents. The following instructions have precedence over anything contrarily shown on the drawings or described in the Specification Documents.

B. Bidders shall carefully examine all items and determine for themselves what Subcontractors are affected, and notify all Bidders on subcontracts of changes, explanations, interpretations, or additions affecting their work.

C. Work described in this Addendum shall be in accordance with Specifications for like items in remainder of building and complete with all labor and materials required.

D. The directions, instructions and information contained in this Addendum shall be incorporated into the Bidding Documents and shall be taken into consideration and be included in the Contractors' bids.

E. Bidders shall acknowledge receipt of this Addendum by inserting its number and date in the space designated in the Bid Form. Failure to do so will be considered an informality, and may be cause for disqualification of the bid.

F. This Addendum consists of **4** pages and the following attachments: Pre-Bid Meeting Sign-In Sheet, Pre-Bid Meeting Agenda, Geotechnical Data Report and GC Bid Form.

I. PART 1 – GENERAL REQUIREMENTS

A. CLARIFICATIONS

1. The Sign-in Sheet and Agenda for the Pre-Bid Walk Through held on October 27th, 2026 are attached to this addendum.

2. GENERAL CONSTRUCTION BID FORM

a. **REPLACE** the General Construction BID FORM in its entirety with the attached form. (A Unit Price for pressure grouting has been incorporated).

3. INFORMATION AVAILABLE TO BIDDERS

a. Refer to the list of INFORMATION AVAILABLE TO BIDDERS and **ADD:** "GEOTECHNICAL DATA REPORT, Maine-Endwell CSD – 2019 Capital Improvement Project, (Number of Pages – 66), Prepared by: CME Associates, Inc., August 2019." Attached to this Addendum and limited to the Homer Brink Elementary school.

B. SPECIFICATIONS

1. SECTION 011000 – SUMMARY OF WORK

a. Refer to paragraph 1.2.F.1.b GENERAL CONTRACTOR and **DELETE** "(except what is shown on Drawings B E3.01 & B E3.02)".

b. Refer to paragraph 1.2.F.3.a ELECTRICAL CONTRACTOR and **REVISE** to read: "The Electrical Contractor shall furnish all labor, Equipment, Subcontractors, Hoisting, Supervision, Management and Administration as required for on this contract as listed in the following specification sections and as shown on the following drawings, included, but not limited to Removal of existing electrical components shown to be removed and the installation of new electrical components as shown on Drawings B E0.00, B E0.01, B E0.02, B E0.03, B E0.04, B E1.01, B E1.02, BE1.03, B E1.04, B E1.05, B E3.01, B E3.02, B E4.01, B E4.02, B E5.01, B E5.02, B E6.01, B E6.02, B E9.01 & B E9.02."

c. Refer to 1.2.F.3.b ELECTRICAL CONTRACTOR and **REVISE** to read: "Specifications Sections are all Division 01 General Requirements, Division 25, Electrical, Division 27 Communications, Division 28 Electronic Safety & Security."

d. Refer to paragraph 3.1.A and **REVISE** to read "The General Contractor will provide portable toilets as noted below."

1. SECTION 012200 – UNIT PRICES

a. Refer to SECTION 3.1 LIST OF UNIT PRICES – PART A GENERAL CONSTRUCTION WORK (GC) and **ADD** the following:

8. "UNIT PRICE NO. GC-08: PRESSURE GROUTING (Below Slab)

a. Description : Pressure grout void beneath existing structural slab.

b. Unit of Measurement: Cubic Yard, installed"

B. DRAWINGS – None.

II. PART 2 – SITE

A. CLARIFICATIONS

1. There is no existing shoring in place in area of site work included in Alternate No. GC-03. Should Alternate No. GC-03 be accepted, new shoring/bracing/piling shall be designed by the Contractor's engineer and installed as shown on BL1.01 and BL1.02. See Site Earthwork Specification Section 312201, paragraphs 2.4 and 3.4.

B. SPECIFICATIONS

C. DRAWINGS

III. PART 3 – ASBESTOS – None.

IV. PART 4 – STRUCTURAL

A. CLARIFICATIONS

1. The General Contractor is responsible for shoring, refer to specification sections 017300 and 024100 and drawing ST0.02.

2. The General Contractor is responsible construction/erection sequencing and coordination.

3. The existing W16 girders shall be shored prior to removals of the attached W16 or W12 beams. The existing W16 girders should be attached to the new W16 beams once those are installed. Refer to detail 5/ST9.02 for more information regarding these connections. The design of this connection is by the steel fabricator and shall be provided on the steel shop drawings for review and approval.

B. SPECIFICATIONS

C. DRAWINGS

1. B ST0.01 – PARTIAL FIRST FLOOR DEMOLITION PLAN

a. Refer to General Note #3 and **REVISE** to read "PRESSURE GROUTING: PRESSURE GROUT THE 6" DEEP VOID BENEATH THE EXISTING STRUCTURAL SLAB. IF DURING CONSTRUCTION THE DEPTH OF THE VOID IS DISCOVERED TO BE DIFFERENT THAN 6", CONTRACTOR SHALL PROVIDE A CHANGE ORDER BASED ON THE CONDITIONS DISCOVERED IN THE FIELD AND THE UNIT PRICE FOR GROUT MATERIAL INCLUDED IN THEIR BID. CONTRACTOR SHALL SUBMIT AN ENGINEERED GROUTING PLAN FOR INSTALLATION OF THIS GROUT FOR REVIEW AND APPROVAL. THE GROUTING INSTALLATION MUST OCCUR BEFORE THE START OF DEMOLITION."

V. PART 5 – ARCHITECTURAL

A. CLARIFICATIONS – None.

B. DRAWINGS

1. B /A4.01 – ENLARGED PLANS – GROUND FLOOR AREA 'A'
   a. Refer to B1/ ENLARGED CONSTRUCTION PLAN – GROUND FLOOR – AREA 'A' and **ADD** a callout note at the foundation wall separating Crawlspace G17.1 and the Unexcavated area along existing column line B that reads: "INSTALL FOUNDATION SHEET WATERPROOFING FULL HEIGHT ON UNEXCAVATED FACING SIDE OF FOUNDATION WALL".

C. SPECS – None.

VI. PART 6 – MECHANICAL – None.

VII. PART 7 – ELECTRICAL – None.

VIII. PART 8 – PLUMBING – None.

END OF ADDENDUM NO. 2

ATTENDEES

M-E CSD – Ph 5 HB Gym
Pre-Bid Conference
October 27, 2026

ATTENDEE NAME (Please Print)	COMPANY NAME	PHONE/CELL NO.	E-MAIL ADDRESS
Roger Gates	J&K	607-343-0293	roger.gates@jandkplumbing.net
Steven Hudut	IBC		
Mike James	K+K		
Elise Ranieri	K+K		
Anthony Contento	Contento	607-745-4949	Anthony@Contentosny.com
Mark Yacavone	Contento	607-591-0791	Mark@Contentosny.com
Justin Crocker	LNP	607-321-3392	jcrocker@lnpsi.com
Lane Tidereneel	LeChase		

ATTENDEES

M-E CSD – Ph 5 HB Gym
Pre-Bid Conference
October 27, 2026

ATTENDEE NAME (Please Print)	COMPANY NAME	PHONE/CELL NO.	E-MAIL ADDRESS
Nate Graham	NJGB	607 340 5443	Nathan@NJGrahamInc.com
Adriano Giammarino	Maceri	607754-7070	Adriano@ARmoggi.com
Jay Klein	CFI Sales & Serv.	607-343-7857	JayK@cfipa.com
John Kabat	W&D Smith & Sons	607-422-1580	JKABAT@SMITHSITEDEV.com
Brian Grinter	LeChase	607-238-6555	briangrinter@lechase.com
Daniel Maisa	FE Jones	516-380 7121	dmaisa@uhlune.com
Timothy Rogers	Picciano	(607) 621-7803	frog2cs@nps.com

ATTENDEES

M-E CSD – Ph 5 HB Gym
Pre-Bid Conference
October 27, 2026

ATTENDEE NAME (Please Print)	COMPANY NAME	PHONE/CELL NO.	E-MAIL ADDRESS
Devon Clark	Streeter Associates	(607) 734-4151	dclark@streeterassociates.com
BRETT CERRETANI	FAHS	607-231-1726	BCERRETANI@FAHSCONSTRUCTION.COM
Gary Lasky	LCP Group	607-761-1623	gLASky@LCPGroup.net
John Mack	AJG ASSOCIATES	607 238 9406	PM1@AJGASSOCIATES.COM
Joe Mcneilly	Daniel J. Lynch	607 206-9673	joe@djlynchinc.com
Denver Tyler	Gorick	570 2405168	denver@gorickconstruction.com
Scott Allegrino	Gorick	—	sallegrino@gorickconstruction.com

PRE-BID CONFERENCE AGENDA

October 27, 2026

MAINE-ENDWELL CENTRAL SCHOOL DISTRICT
PROJECT: 2022 CAPITAL IMPROVEMENTS
PHASE 5 - HOMER BRINK GYM

1. Sign in Sheet, Cell phones off, Bathrooms, Intro's

2. Project Contacts:

PRIMARY CONTACTS

CM Firm:	LeChase Construction Services, LLC 31 Lewis Street, Suite 303 Binghamton, NY 13901 (607) 772-2500 (607) 772-2504 fax
CM Contacts:	Brian Grinter (607) 238 – 6555 mobile brian.grinter@lechase.com Mark Pencek (607) 242 – 9070 mobile mark.pencek@lechase.com
A/E Firm:	King + King Architects 358 West Jefferson Street Syracuse, New York 13202 (315)671-2400 office (315)671-7891 fax
Contact:	Mike James mjames@kingarch.com Elise Ranieri eranieri@kingarch.com

BID and CONTRACT INFORMARION

3. Bids are Due: **November 17, 2026 2;00 PM**
Deliver Bids to the District Office
Bid opening in SDR at 2:10 PM.

Alternates:
GC-01 to 05
MC none
PC none
EC-01 to 02

4. Bid period requests for information:
Submit in writing to Mike James at K&K mjames@kingarch.com
Deadline for Pre-bid RFI's is November 10, 2026

5. Bid Security:
Bid Bond, Certified Check or Cashier's Check
Performance & Payment Bonding:
AIA Forms only: A312

6. Article 8 of the Labor Law
   - Are required to register with the New York State Department of Labor (NYSDOL) under Labor Law Section 220-i.
   - **Contractors need to register before submitting any new bids or commencing new work on a covered project on or after December 30, 2024. Subcontractors need to register before commencing new work on a covered project on or after December 30, 2024.**

7 Insurance: AIA 232, Article 11
Builder Risk provided by Owner (11.1.4.5)

8. Product substitutions and equivalents:
Be aware of process; Specification Section AIA 701, 3.3

9. Taxes/Permits:
Owner is Exempt from Sales Tax on **capital improvements**.
Building Permit has been obtained from SED.
Contractors responsible for trade specific permits

10. Wage Rates: This is a prevailing wage rate project.

11. Building Examination Dates:
Daily: 9:00 AM to 5:00 PM
Contact: Brian Grinter, 607-238-6555

12. Site visits
    - Today: immediately following meeting
    - Future: Access to the site must be made 24 hours in advance as the building is occupied. Visitors are required to bring a valid NYS Drivers License. No photographs of students or staff is allowed.

13. Notice To Proceed: December 4, 2026
    Start Job Meetings: December 9, 2026
    Start of Construction: June 28, 2027
    Postings: June 14, 2027

14. Substantial Completion:
    August 31, 2028

15. Bid Scope Highlights

A Project will be constructed under four prime contracts.
   a. General Contract: GC-1
   b. Mechanical Contract: MC-1
   c. Plumbing Contract: PC-1
   d. Electric Contract: EC-1

16. Additional Info

A. PLUMBING:
- Demo domestic supplies and returns to allow demolition.
- Reconnect before school starts.
- New Storm and Sanitary below grade, existing slab trenching, backfill.
- Mixing Valve work in the Boiler Room.
- 3" Isolation valve on domestic service.
- 4 New Rest Rooms.
- New Water Coolers.

B. ELECTRICAL:
- Demo Electrical service to Gym and safe off for demolition.
- New 200amp service to new Gym.
- New feeders for 100amp 3ph service to new pumps.

- New feeders for roof top equipment.
- Exit sign upgrade throughout the building.
- All work shown on B E3.01, B E3.02 , including excavation, concrete and blacktop.

C. MECHANICAL:

- Demo mechanical piping for demolition.
- Reconnect before school starts.
- RTU w ACCU-01, a UV, fan coils and an EVR system.
- New Water to Water Heat Pump, new CWP's, Air Separator and an Expansion Tank.

D. GENERAL:

- ACM Abatement
- Mass Demolition, including design services for Shoring.
- Construct the Logistics Area and restore upon completion.
- Foundations.
- Building structural steel, masonry, storefronts, curtain walls, laminated panels and roofing.
- Complete new multi-purpose Gymnasium with bleachers, 3 basketball courts, scoreboard and wrestling mat storage system.
- Interior Renovations.
- Site Improvements.

17. Post Bid / Pre-Contract
    - Bid descope meetings November 18, 19 & 20
    - Attendees: Project Manager & Estimator
    - Resume: Superintendent, if not in attendance
    - Review descope agenda
    - List of subcontractors "in the running"
    - List of key vendors "in the running"
    - List of Key Concerns

18. Questions:
    Pre-Bid Conference questions from contractors will be recorded and addressed by an addendum.

    All pre-bid RFI's will be answered by addendum.

GENERAL CONSTRUCTION BID FORM

FOR

PROJECT

Maine Endwell Central School District

2022 Capital Improvement Project – Phase 5
Homer Brink Elementary School

SEE INVITATION TO BID FOR DATE, TIME AND PLACE FOR RECEIPT OF BIDS

The undersigned _____
(Name of Bidder)

_____
(Address)

Contact: _____

Phone: _____

Email: _____

The Bidder hereby certifies that he has visited the site and has examined and fully comprehends the requirements and intent of the Plans and Project Manual of the proposed work, and being familiar with all the conditions surrounding the construction of the project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, supplies, plant and equipment, and other facilities necessary or proper for or incidental to the performance of the proposed work and does hereby agree to perform all

GENERAL CONSTRUCTION WORK (GC)

of the project in accordance with the Contract Documents at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

The Bidder agrees to furnish all Materials, Labor, and all other costs for the Total Lump Sum Base Bid of

_____DOLLARS ($_____)

These amounts, and the amounts indicated for Alternates, if any, shall be shown in words and figures. In the event of discrepancy, words will govern.

ALLOWANCES (See Project Manual Section 012100)

The Bidder acknowledges the amount shown above **includes** the following allowances:

ALLOWANCE NO. GC-01 Contingency Cash Allowance $ 225,000.00

ALTERNATES (See Project Manual Section 012300)

The Bidder shall submit the following Alternate Bids in accordance with Contract Documents. Alternate bids, if accepted by the Owner, shall become a part of the Contract and shall comply with all of the applicable Contract Documents.

Note: Where the Alternate work does not add to or subtract from the cost of the Base Bid of this work, write the word "None" in the space for Total Add or Deduct. Where the word ADD and the word DEDUCT appear together below, cross out non-applicable word.

ALTERNATE NO. GC-01: BUS LOOP LIGHTING
The Bidder shall state the amount to be ADDED to the Base Bid if this Alternate is accepted.

Total ADD_____DOLLARS ($_____)

ALTERNATE NO. GC-02: PLAYGROUND & UPPER PARKING LOT LIGHTING
The Bidder shall state the amount to be ADDED to the Base Bid if this Alternate is accepted.

Total ADD_____DOLLARS ($_____)

ALTERNATE NO. GC-03: TEMPORARY SLOPE REGRADING AT THE EAST PARKING LOT
The Bidder shall state the amount to be ADDED to the Base Bid if this Alternate is accepted.

Total ADD_____DOLLARS ($_____)

ALTERNATE NO. GC-04: STAIR ST-1 – STAIR TREAD AND LANDING REPLACEMENT
The Bidder shall state the amount to be ADDED to the Base Bid if this Alternate is accepted.

Total ADD_____DOLLARS ($_____)

ALTERNATE NO. GC-05: STAIR ST-2 – STAIR TREAD AND LANDING REPLACEMENT
The Bidder shall state the amount to be ADDED to the Base Bid if this Alternate is accepted.

Total ADD_____DOLLARS ($_____)

UNIT PRICES (See Project Manual Section 012200)

The Bidder shall set forth the cost of all unit prices listed below. Should the work listed below be increased or decreased from the amounts shown on the Contract Drawings and/or Project Manual, upon written notice from the Architect, the undersigned Bidder agrees that the prices quoted below (including all insurance, applicable taxes, equipment, overhead and profit), shall be the basis of his compensation or deduction, as the case may be, for such increase or decrease in his work. All work added shall be at the

quoted unit prices, and all work deleted shall be at the quoted unit prices less ten percent (10%). Changes shall be processed in accordance with Contract Documents.

ITEM	UNIT OF QUANTITY	TOTAL
GC-01: Undercutting	per cubic yard, installed	$_____
GC-02: Soil Stabilization Fabric	per square yard, installed	$_____
GC-03: Rock Removal	per cubic yard, installed	$_____
GC-04: Heavy Duty Asphalt	per square yard, installed	$_____
GC-05: Standard Concrete Sidewalk/Pads	per square foot, installed	$_____
GC-06: Sodded Lawn	per square yard, installed	$_____
GC-07: 4" Storm Water Management Trench (SMT)	per linear foot, installed	$_____
GC-08: Pressure Grouting (Below Slab)	per cubic yard, installed	$_____

RIGHT TO WAIVE OR REJECT

The Bidder understands that the right is reserved by the Owner to accept or reject any or all bids.

QUALIFICATION OF BIDDER

Upon request after the bid opening, the Bidder shall submit a fully executed AIA A305 Contractor's Qualification Statement, to be qualified as the lowest responsible bidder.

All contractors and subcontractors submitting bids or performing construction work on public work projects or private projects covered by Article 8 of the Labor Law are required to register with the New York State Department of Labor (NYSDOL) under Labor Law Section 220-i. The Bidder encloses with this Bid a copy of its valid NYSDOL Certificate of Registration. Application for registration is not accepted as a proof of registration and a Bid not accompanied by a valid NYSDOL Certificate of Registration is subject to rejection.

WITHDRAWAL OF BIDS

The Bidder agrees that this bid may not be withdrawn for a period of forty-five (45) calendar days after closing time of same.

PERFORMANCE-PAYMENT BOND

The Bidder agrees, if awarded the Contract, to execute and deliver performance and matching payment bonds in the form bound in the Specifications, both in the amount of the Contract; and to deliver

insurance certificates and endorsements for insurance required by the Specifications, upon execution of the Contract. Award of the Contract shall be contingent upon review and acceptance of bonds and insurance by the Owner.

TIME

The Bidder agrees to commence work when directed by the Owner in a Notice-To-Proceed, and to complete the work as specified in Section 011100 "Summary".

BID SECURITY

The Bidder encloses with this Bid this Bid Security required by the Contract Documents in the form of a Certified Check ( ), or Bid Bond ( ) (check one) in the amount of _____ _____DOLLARS ($_____) which represents not less than 5% of the Base Bid.

ADDENDUM RECEIPT

The Bidder Acknowledges Addendum No. ___Dated_____
___Dated_____
___Dated_____
___Dated_____
___Dated_____

SIGNED:_____

TITLE: _____

FOR: _____
(Firm - Indicate if Corporation, Partnership, Individual, Other)

FIRM ADDRESS: _____

STATE INCORPORATED, IF INCORPORATED: _____

CORPORATE SEAL, IF INCORPORATED, SHALL BE STAMPED BELOW

DATE: _____

NON-COLLUSIVE BIDDING CERTIFICATION:

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief: (1) the prices in this bid have been arrived at independently without collusion, consultation, communications, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

SIGNED: _____

TITLE: _____

FOR: _____
(Firm - Indicate if Corporation, Partnership, Individual, Other)

FIRM ADDRESS: _____

STATE INCORPORATED, IF INCORPORATED: _____

CORPORATE SEAL, IF INCORPORATED, SHALL BE STAMPED BELOW

DATE: _____

Certification of Compliance with the
NEW YORK STATE IRAN DIVESTMENT ACT OF 2012
(Must be signed and returned with Bid)

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, Bidder/Contractor (or any assignee) certifies that it is not on the "Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012" list ("Prohibited Entities List") posted on the OGS website at: http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, Bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended.

During the term of the Contract, should the Owner receive information that a person (as defined in State Finance Law §165-a) is in violation of the above-referenced certifications, The Owner will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then the Owner shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, seeking compliance, recovering damages, or declaring the Contractor in default.

The Owner reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of this certificate as to compliance with the New York State Iran Divestment Act of 2012.

NAME (PRINT OR TYPE) _____

SIGNATURE _____

TITLE _____

Certification Of Compliance with the
DAVIS-BACON ACT
(Must be signed and returned with Bid)

_____, a representative of _____, hereby swears to and certifies that, to the best of his or her knowledge and belief:

1. Neither _____, nor any substantially owned-affiliated entity of the Bidder (collectively the "Bidder"), has been found to be in violation of the Davis-Bacon Act pursuant to 40 U.S.C. 3144, the Copeland Act pursuant to 18 U.S.C. 874 and 40 U.S.C. 3145 or the Contract Work Hours and Safety Standards Act pursuant to 40 U.S.C. 332, or their New York State counterparts.

2. If the Bidder has been found to be in violation of the Davis-Bacon Act, the Copeland Act, the Contract Work Hours and Safety Standards Act, or any of their New York State counterparts, state the name of the agency, the date of the violation, the nature of the violation and any consequence of the violation, including warnings, fines and debarments below.

3. The Bidder is not currently under investigation by any local, state or federal government agency. If Bidder is under investigation, state the name of the agency, the date of the alleged violation and the nature of the alleged violation below.

4. The Bidder's Dun & Bradstreet D-U-N-S number is _____.

5. I have authority to execute this certification, knowing it will be relied upon by the Owner of this Project.

SIGNED: _____

TITLE: _____

FOR: _____
(Name of Bidder)

STATE OF NEW YORK)
COUNTY OF)

On _____, before me, the undersigned, a Notary Public in and for said to me State, personally appeared _____ personally known to me or proved on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity(ies), and that by his/her signature(s) on the instrument, the individual(s) or the person on behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public

Certification of Compliance with the
NEW YORK STATE FINANCE LAW §139-L
(Must be signed and returned with Bid)

State Finance Law §139-L requires bidders on state procurements to certify that they have a written policy addressing sexual harassment prevention in the workplace and provide annual sexual harassment training (that meets the Department of Labor's model policy and training standards) to all its employees.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of N.Y. State Labor Law §201-G.

SIGNED: _____

TITLE: _____

FOR: _____
(Name of Bidder)

END OF BID FORM

CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

August 29, 2019

IBI Group
59-61 Court Street, Suite 300
Binghamton, New York 13901
Phone: 607.422.8697

Attn: Mr. Ronald J. Yates, III, P.E., LEED AP, CAPD
ronald.yates@ibigroup.com

Re: Geotechnical Data Report
Maine-Endwell CSD – 2019 Capital Improvements Project
Maine and Endwell, New York
CME Report No.: 27540B-01-0819

1.0 INTRODUCTION

CME Associates, Inc. (CME) was retained by IBI Group (Client) to provide subsurface exploration services for the subject project. CME conducted a subsurface exploration consisting of 32 Test Borings, 6 Infiltration Tests and 20 Asphalt Coring for the subject project between 08/07/19 and 08/15/19. Laboratory soil index testing was also performed on selected soil samples retrieved from the Test Borings.

The Scope of Basic Services and this report have been provided pursuant to the written autherization of CME Proposal/Agreement No.: 05.5804, dated 06/28/19, by Client. This report provides a summary of exploration activities conducted at the subject project sites and the laboratory test results. All other geotechnical items contracted in the agreement will follow under separate cover.

A summary of field explorations conducted for this project is given in table 1.

Table 1: Exploration Summary			
Asphalt Coring/Test Boring	**Project Site**	**Test Boring**	**Project Site**
HS-1	HS	HB-1 (Note 1)	HB
HS-2	HS	HB-2	HB
HS-3	HS	HB-3	HB
HS-4	HS	HB-4	HB
HS-5	HS	HB-5	HB
HS-6	HS	HB-6	HB
HS-7	HS	HB-7	HB
HS-8	HS	**Test Boring / Infiltration Test**	**Project Site**
HS-9	HS	MS-1/IT-1	MS
HS-10	HS	MS-2/IT-2	MS
HS-11	HS	MS-3/IT-3	MS
HS-12	HS	MS-4/IT-4	MS
HS-13	HS	MS-5/IT-5	MS
BG-2	BG	MS-6/IT-6	MS
BG-3	BG	Note 1: Asphalt Core obtained	
BG-4	BG	HS – Maine-Endwell High School	
BG-5	BG	BG – Maine-Endwell CSD Bus Garage	
BG-6	BG	MS – Maine-Endwell Middle School	
BG-7	BG	HB – M-E Homer Brink Elementary School	

2.0 EXPLORATION METHODOLOGY

2.1 Exploration Layout and Utility Clearance

The Test Boring locations were marked in the field by CME using the attached Soil Boring Display Plans, labeled SB-001, SB-002, SB-003 and SB-004, all dated 07/24/19, provided by Client.

Following the field mark out, CME contacted Dig Safely New York (DSNY) to clear public utilities at the exploration locations. Private utilities at the exploration locations were cleared by others. No utility conflicts were noted at the as-drilled exploration locations.

CME Exploration Location Plans, labeled ELP-1, ELP-2, ELP-3, ELP-4 and ELP-5, are attached, which depict the approximate exploration locations.

GPS coordinates and elevation at grade for all exploration locations were obtained using hand-held GPS survey equipment (Spectra Precision Ranger 3). Please refer to the attached GPS Coordinates and Elevations Tables, labeled Table 1 to Table 4, for GPS coordinates, elevation at grade and benchmark used.

2.2 Test Borings

The Test Borings were advanced using a Central Mine Equipment Model 550X, ATV-mounted, rotary exploration drill rig, equipped with 3-¼" I.D. hollow stem augers and drive sampling tools. Soil sampling was conducted using a 140-pound automatic hammer dropping through a distance of 30 inches to drive a 2" O.D. split barrel sampler in general conformance with ASTM Standard Practice D1586. The boreholes were backfilled with auger cuttings and asphalt cold patch to closely match existing grade.

Soil samples were logged and visually classified in the field by CME drillers and/or an on-site Geologist, and a portion of each soil sample was placed and sealed in a glass jar. The soil classifications were later reviewed by a Geologist and spot checked by the undersigned engineer in CME's AASHTO re:source[1] Accredited East Syracuse Laboratory using the modified Burmister Soil Classification System, as described in the attached document entitled, "*General Information & Key to Test Boring Logs*" (Key). The Test Boring Logs are attached.

2.3 Infiltration Testing

The Infiltration Tests were performed in general conformance with the New York State Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements. The test locations and depths were selected by Client. The test details and results are given in the attached Infiltration Test Reports.

2.4 Asphalt Coring

The asphalt pavement cores were extracted using a portable core drill, equipped with a six inch (6") nominal diameter thin-wall, diamond impregnated core barrel, with water used as a lubricant. After extracting the pavement core, a Test Boring was advanced through the core hole to 10 feet below grade, to sample subbase course and subgrade materials. Upon completion, each hole was backfilled with material recovered and topped with asphalt cold patch, which was compacted with a hand tamper to nearly match existing grade. Pavement Core Photographs and a Pavement Core Summary Table are attached.

2.7 Laboratory Testing

Laboratory soil index testing, consisting of Natural Moisture Content Testing and Particle Size Analysis, on soil samples selected by the undersigned engineer, was conducted at CME's AASHTO re:source Accredited East Syracuse Laboratory. Please refer to the attached Laboratory Test Summary Report for the ASTM test methods and test results.

3.0 STANDARD OF CARE

CME endeavored to conduct services identified herein in a manner consistent with that level of care and skill ordinarily exercised by members of the industry currently practicing in the same locality and under similar conditions as this project. No warranty, either expressed or implied, is made or intended by CME's proposal, contract, and written and oral reports, all of which warranties are hereby expressly disclaimed. CME shall not be responsible for the acts or omissions of Client, its contractors, agents and consultants. CME may rely upon information supplied by Client, its contractors, agents and consultants or information available from generally accepted reputable sources, without independent verification, and CME assumes no responsibility for the accuracy thereof.

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[1]**AASHTO re:source** – American Association of State Highway & Transportation Officials (AASHTO) Materials Reference Laboratory, a Federal Agency having jurisdiction to assess laboratory competency according to the Standards of the United States of America. CME East Syracuse accreditation includes testing of Portland Cement Concrete, Aggregate and Soil Materials. www.AASHTOresource.org.

4.0 CLOSING

CME's services have been provided according to the requirements of the referenced CME Proposal/Agreement. No other representations, expressed or implied, are intended or made with respect to the information provided herein, and including but not limited to, its suitability for use by others.

Respectfully Submitted,
CME Associates, Inc.

Roonak Ghaderi, Ph.D.
Staff Geotechnical Engineer

Reviewed By,
CME Associates, Inc.

Anas N. Anasthas, P.E.
Geotechnical Engineer

Attachment Listing:

Soil Boring Display Plans, SB-001 to SB-004 (4 of 4)
CME Exploration Location Plans, ELP-1 to ELP-5 (5 of 5)
GPS Coordinates and Elevations Tables, Table 1 to Table 4 (4 of 4)
CME Subsurface Exploration-Test Boring Logs[2] (34 of 34)
Infiltration Test Reports, IT-1 to IT-6 (6 of 6)
Asphalt Core Summary Table (2 of 2)
Asphalt Core Photographs (6 of 6)
CME Laboratory Test Summary Report (4 of 4)
General Information & Key to Test Boring Logs (4 of 4)

[2] HB-1 to HB-7, HS-1 to HS-13, BG-2 to BG-7 and MS-1 to MS-6



LEGEND

B-6 SOIL BORING

SOIL BORING LOCATION PLAN

SCALE: 1-IN. = 80-FT

N

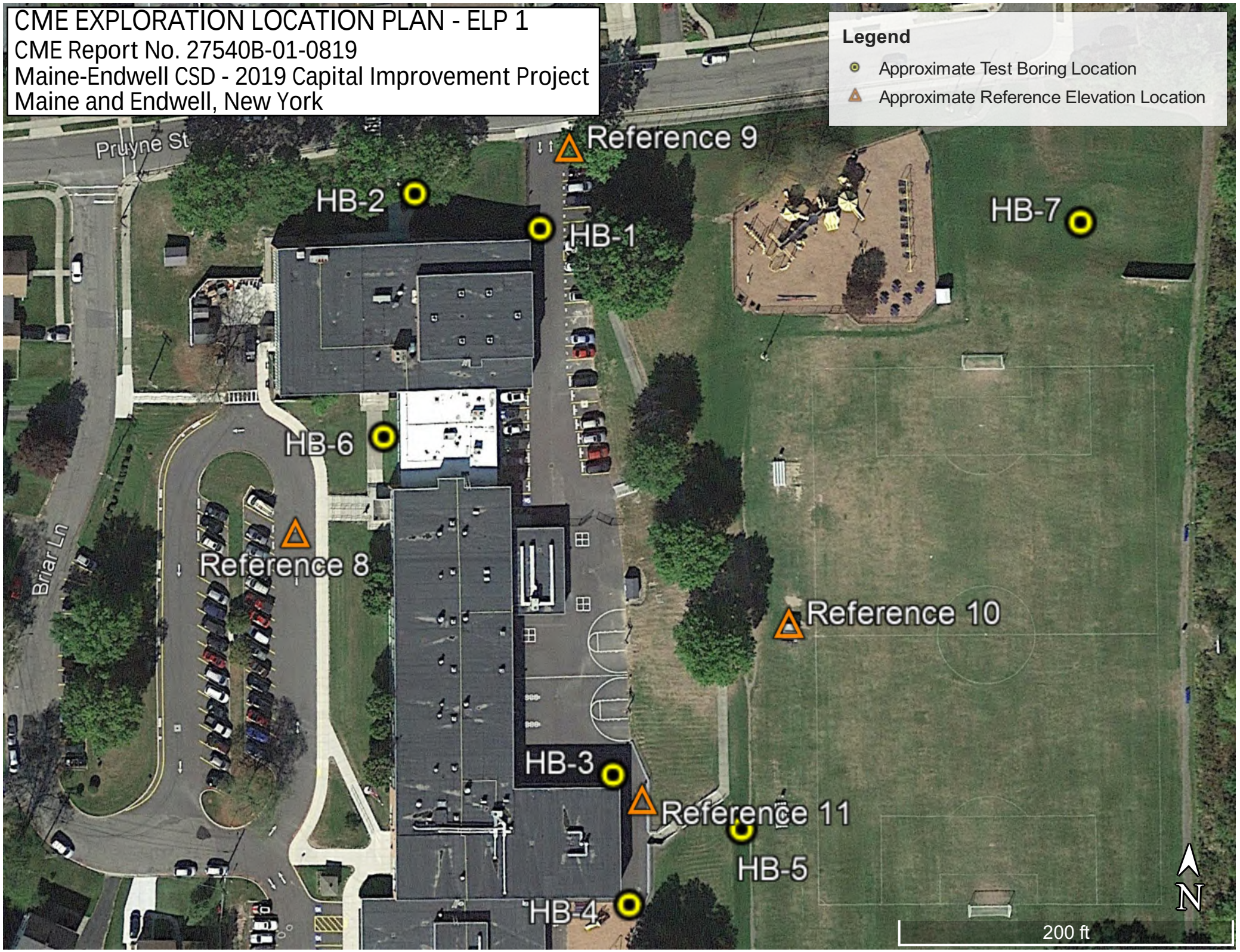
0 80 160

Date:	2019-07-24
Scale:	AS NOTED
Ref. Dwg:	
Drawing No.:	SB-004
Drawn by:	RY
Designed by:	RY
Checked by:	ST
BCK-IBI Project No.:	
Client Project No.:	

Project Name:
MAINE-ENDWELL CENTRAL SCHOOL DISTRICT
712 FARM TO MARKET ROAD
ENDWELL, NY 13760

Sheet Title:
SOIL BORING LOCATION
M-E HOMER BRINK ELEMENTARY SCHOOL

IBI
IBI GROUP
59-61 Court Street, Suite 300
Binghamton, NY 13901-1956, USA
tel 607 772 0007 fax 607 723 4121
ibigroup.com


CME EXPLORATION LOCATION PLAN - ELP 1
CME Report No. 27540B-01-0819
Maine-Endwell CSD - 2019 Capital Improvement Project
Maine and Endwell, New York
Legend
Approximate Test Boring Location
Approximate Reference Elevation Location
Pruyne St
Briar Ln
Reference 9
HB-2
HB-1
HB-7
HB-6
Reference 8
Reference 10
HB-3
Reference 11
HB-5
HB-4
N
200 ft

Attachment to CME Report No.: 27540B-01-0819

GPS Coordinates and Elevations

Maine-Endwell CSD - 2019 Capital Improvements Project, Maine and Endwell, New York

TABLE 1			
Boring ID	**Latitude**	**Longitude**	**Elevation (FT. AMSL)**
HB-1	42.11920452	-76.01605002	914.1
HB-2	42.11926042	-76.01634724	901.0
HB-3	42.11826657	-76.01583993	915.5
HB-4	42.11804554	-76.01579296	915.5
HB-5	42.11818863	-76.01554261	937.0
HB-6	42.11883561	-76.01640322	914.2
HB-7	42.11923306	-76.01481412	940.5
Reference 8	42.11866006	-76.01660911	908.2
Reference 9	42.11934501	-76.01599173	908.7
Reference 10	42.11853634	-76.01545355	937.4
Reference 11	42.11822378	-76.01577444	914.9

Notes:

AMSL: Above Mean Sea Level

1. GPS coordinates were obtained utilizing a Spectra Precision Ranger 3.
2. NYSDOT CORS positions are based on NAD 83 (2011).
3. Elevations are based on the North American Vertical Datum of 1988 (NAVD 1988).
4. Reference 8 refers to center of utility manhole west of main entrance.
5. Reference 9 refers to center of stormwater catch basin located by the road at the rear parking lot.
6. Reference 10 refers to center of electrical utility box cover, northeast of HB-5.
7. Reference 11 refers to center of stormwater catch basin located southeast of HB-3.

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-01-0819

Client: IBI Group
Date Started: 08/08/19 **Finished:** 08/08/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 914.1'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/08/19	While drilling	None Noted	18.5'
08/08/19	Before casing removed	None Noted	18.5'
08/08/19	After casing removed	None Noted	out
08/08/19	After casing removed	caved @ 9.7'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX		0.0	0.5			0.5	Asphalt	
	H	1	0.5	2.0	SS/12	3-4-5		FILL; Brown cmf gravel, cmf sand, silt (moist)	9
	O	2	2.0	4.0	SS/14	4-10-10-9		Brown SILT, little cmf GRAVEL, trace cmf SAND (moist, very stiff) *Geotechnical fabric at top of sample*	20
	L	3	4.0	6.0	SS/17	5-6-6-7		Brown SILT, little cmf SAND, trace mf GRAVEL (moist, stiff)	12
5	O	4	6.0	8.0	SS/20	5-5-3-4		Brown SILT, trace cmf SAND (moist, stiff)	8
	W	5	8.0	10.0	SS/22	5-12-22-18		Brown cmf GRAVEL, some cmf SAND, some SILT (moist, compact)	34
	S								
10	T								
	E								
	M								
		6	13.5	15.0	SS/16	4-5-6		Brown cmf SAND, some mf GRAVEL, some SILT (moist, medium compact)	11
	A								
15	U								
	G								
	E								
	R								
		7	18.5	20.0	SS/17	14-20-17		Brown cmf GRAVEL, some cmf SAND, some SILT (moist, compact)	37
20	XXX							Bottom of Boring @ 20.0'	

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-01-0819

Client: IBI Group
Date Started: 08/09/19 **Finished:** 08/09/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 901.0'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/09/19	While drilling	None Noted	8.0'
08/09/19	Before casing removed	None Noted	8.0'
08/09/19	After casing removed	None Noted	out
08/09/19	After casing removed	caved @ 2.0'	out

LOG OF BORING SAMPLES / CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	Classification of Material (**c** – coarse, **m** – medium, **f** – fine; **and** – 35 to 50 %, **some** – 20 to 35 %, **little** – 10 to 20 %, **trace** – 0 to 10 %)	SPT "N" or RQD
0	XXX	1A	0.0	0.5	SS/17	2-9-11-10	0.5	Topsoil and Organic Material (moist)	20
		1B	0.5	2.0				Brown SILT, little cmf SAND, trace mf GRAVEL, trace ROOTS (moist, very stiff)	
	H								
		2	2.0	4.0	SS/15	13-12-10-14		Brown SILT, some cmf GRAVEL, some cmf SAND (moist, very stiff)	22
		3	4.0	6.0	SS/19	14-12-10-8		Brown SILT, trace cmf SAND (moist, very stiff)	22
5	S								
		4	6.0	8.0	SS/18	9-10-14-18		Brown SILT, trace fine GRAVEL, trace cmf SAND, trace ROOTS (moist, very stiff)	24
		5	8.0	10.0	SS/20	24-19-17-17		Brown/Grey cmf GRAVEL, some cmf SAND, some SILT (moist, compact)	36
10	A								
	XXX							Bottom of Boring @ 10.0'	
15									
20									

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-01-0819

Client: IBI Group
Date Started: 08/08/19 **Finished:** 08/08/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 915.5'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:** M. Schumacher, PG
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/08/19	While drilling	None Noted	13.5'
08/08/19	Before casing removed	None Noted	13.5'
08/08/19	After casing removed	None Noted	out
08/08/19	After casing removed	caved @ 6.3'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX		0.0	0.7			0.7	Asphalt	
	H	1	0.7	2.0	SS/9	4-7-6		Miscellaneous FILL; Brown cmf sand, mf gravel, silt, slag, asphalt (moist) *Geotextile fabric at tip of spoon*	13
		2	2.0	4.0	SS/18	7-8-9-10		Brown SILT, little cmf GRAVEL, little cmf SAND, trace CLAY (moist, very stiff)	17
5	S	3	4.0	6.0	SS/18	11-10-14-15		Brown CLAY, some SILT, some cmf SAND, little mf GRAVEL (moist, very stiff)	24
		4	6.0	8.0	SS/21	21-26-25-31		Brown SILT, little mf GRAVEL, trace cmf SAND, trace CLAY (moist, hard)	51
10	A	5	8.0	10.0	SS/17	13-14-29-30		Similar as above (moist, hard)	43
15		6	13.5	15.0	SS/16	13-21-30		Brown SILT, little cmf SAND, trace mf GRAVEL (moist, hard)	51
20	XXX							Bottom of Boring @ 15.0'	

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod
Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-01-0819

Client: IBI Group
Date Started: 08/08/19 **Finished:** 08/08/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 915.5'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:** M. Schumacher, PG
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/08/19	While drilling	None Noted	30.0'
08/08/19	Before casing removed	None Noted	36.5'
08/08/19	After casing removed	None Noted	out
08/08/19	After casing removed	caved @ 19.8'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX		0.0	0.5			0.5	Asphalt	
		1	0.5	2.0	SS/9	4-6-100@3"		FILL; Brown silt, mf gravel, cmf sand (moist) *Geotextile fabric at tip of spoon*	100+
	H							*Augers grinding @ 1.8' on obstruction*	
	O	2	2.0	4.0	SS/0	100@0"		FILL; Rock fragments in spoon *Cobble @1.8 to 2.5'*	100+
	L								
	L	3	4.0	6.0	SS/12	31-27-25-21		Brown SILT, little mf GRAVEL, little cmf SAND (moist, hard) *Possible Fill*	52
5	O								
	W	4	6.0	8.0	SS/18	31-30-26-27		Brown cmf GRAVEL, some cmf SAND, some SILT, some CLAY (moist, hard) *Possible Fill*	56
		5	8.0	10.0	SS/13	17-18-18-28		Brown SILT, little mf GRAVEL, little cmf SAND (moist, hard)	36
	S								
10	T								
	E								
	M								
		6	13.5	15.0	SS/19	12-16-16		Brown SILT, little cmf GRAVEL, little cmf SAND (moist, hard)	32
	A								
15	U								
	G								
	E								
	R								
		7	18.5	20.0	SS/14	29-30-35		Grey SILT, trace CLAY (moist, hard)	65
20								Continued on page 2	

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod
Remarks:

LOG OF BORING SAMPLES								CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
20	H O L L O W S T E M A U G E R XXX							Continued from page 1	
		8	23.5	25.0	SS/18	16-23-36		Similar as above	59
25								*Drills harder @ 25.0 to 25.7*	
		9	28.5	30.0	SS/19	14-20-20		Grey/Brown SILT, little mf GRAVEL, trace cmf SAND (moist, hard)	40
30								*Drills hard @ 31.0 to 32.0*	
		10	33.5	35.0	SS/8	50-100@3"		Grey SILT and ROCK fragments (moist, hard) *Split spoon refusal @ 34.3'*	100+
35								*Auger refusal @ 36.5'*	
								Bottom of Boring @36.5'	
40									

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-01-0819

Client: IBI Group
Date Started: 08/09/19 **Finished:** 08/09/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 937.0'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/09/19	While drilling	None Noted	23.5'
08/09/19	Before casing removed	None Noted	23.5'
08/09/19	After casing removed	None Noted	out
08/09/19	After casing removed	caved @ 13.7'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX	1A	0.0	1.0	SS/16	1-4-11-9	1.0	Topsoil and Organic Material (moist)	15
	H	1B	1.0	2.0				Brown cmf GRAVEL, some SILT, some cmf SAND (moist, medium compact)	
	O	2	2.0	4.0	SS/15	15-16-20-32		Similar as above (moist, compact) ~Possible Fill~	36
	L								
	L	3	4.0	6.0	SS/14	15-10-11-12		Brown SILT and CLAY, little mf GRAVEL, trace cmf SAND (moist, very stiff)	21
5	O								
	W	4	6.0	8.0	SS/13	17-25-23-29		Brown SILT, some cmf GRAVEL, little cmf SAND, trace CLAY (moist, hard)	48
		5	8.0	10.0	SS/22	21-19-20-26		Brown SILT, little fine GRAVEL, little cmf SAND (moist, hard)	39
	S								
10	T								
	E								
	M								
		6	13.5	15.0	SS/16	6-19-23		Brown/Grey SILT, little cmf SAND, trace fine GRAVEL (moist, hard)	42
	A								
15	U								
	G								
	E								
	R								
		7	18.5	20.0	SS/9	19-100@3"		Grey/Brown SILT and cmf GRAVEL, little cmf SAND (moist)	100+
20								*Possible boulder or cobble 19.3' to 20.5'*	
								Continued on page 2	

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

LOG OF BORING SAMPLES								CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
20	H							Continued from page 1	
	S								
	A	8	23.5	25.0	SS/13	13-18-40		Grey/Brown SILT, some cmf GRAVEL, little cmf SAND (moist, hard) *Rock fragments in bottom of spoon shoe*	58
25	XXX							Bottom of Boring @ 25.0'	
30									
35									
40									

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-01-0819

Client: IBI Group
Date Started: 08/09/19 **Finished:** 08/09/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 914.2'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/09/19	While drilling	None Noted	18.5'
08/09/19	Before casing removed	None Noted	18.5'
08/09/19	After casing removed	None Noted	out
08/09/19	After casing removed	caved @ 10.2'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine / **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX	1A	0.0	1.0	SS/15	1-1-3-4	1.0	Topsoil and Organic Material (moist)	4
	H	1B	1.0	2.0				Brown SILT, trace cmf SAND, trace fine GRAVEL (moist, medium stiff)	
	O	2	2.0	4.0	SS/14	6-6-7-4		Brown SILT, little CLAY, trace fine GRAVEL, trace cmf SAND (moist, stiff) ~Possible Fill~	13
	L								
	L	3	4.0	6.0	SS/15	3-3-2-4		Brown SILT, little CLAY, little cmf GRAVEL, trace cmf SAND (moist, medium stiff)	5
5	O								
	W	4	6.0	8.0	SS/19	3-4-5-6		Brown SILT, trace cmf GRAVEL, trace cmf SAND (moist, stiff)	9
		5	8.0	10.0	SS/20	10-7-7-24		Brown/Grey mottled SILT, trace cmf SAND (moist, stiff)	14
	S								
10	T								
	E								
	M								
		6	13.5	15.0	SS/18	10-8-8		Brown SILT, trace mf GRAVEL, trace cmf SAND, trace CLAY (moist, very stiff)	16
	A								
15	U								
	G								
	E								
	R								
		7	18.5	20.0	SS/15	6-7-10		Brown SILT, little mf GRAVEL, trace cmf SAND (moist, very stiff)	17
20	XXX							Bottom of Boring @ 20.0'	

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-01-0819

Client: IBI Group
Date Started: 08/09/19 **Finished:** 08/09/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 940.5'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/09/19	While drilling	None Noted	8.0'
08/09/19	Before casing removed	None Noted	8.0'
08/09/19	After casing removed	None Noted	out
08/09/19	After casing removed	caved @ 2.5'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine / **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX	1A	0.0	1.0	SS/15	1-2-8-20	1.0	Topsoil and Organic Material (moist)	10
	H	1B	1.0	2.0				Brown/Grey SILT and cmf GRAVEL, little cmf SAND (moist, stiff)	
		2	2.0	4.0	SS/16	12-13-15-18		Brown SILT, little mf GRAVEL, little cmf SAND (moist, very stiff)	28
5	S	3	4.0	6.0	SS/19	9-9-10-12		Brown SILT, little cmf SAND, trace CLAY, trace mf GRAVEL (moist, very stiff)	19
		4	6.0	8.0	SS/22	12-16-16-14		Similar as above (moist, hard)	32
10	A	5	8.0	10.0	SS/24	14-16-16-20		Brown SILT, some cmf GRAVEL, little cmf SAND (moist, hard)	32
	XXX							Bottom of Boring @ 10.0'	
15									
20									

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

Pavement Core Summary

Attachment to CME Report Number: 27540B-01-0819

Project Name: Maine-Endwell CSD - 2019 Capital Improvements Project
Maine and Endwell, New York

Prepared By: Bryan Reles
Date: 8/23/2019

Asphalt Core ID	Thickness of Top Course (in.)	Thickness of Binder Course (in.)	Total Core Thickness (in.)	Subbase Course Material		Geotextile Fabric Present Below Subbase?	Visual Subgrade Soil Classification (3)	Notes
				Thickness (in.) (2)	Visual Soil Classification (3)			
HS-1	0	4 3/8	4 3/8	less than 19	Brown cmf sand and cmf gravel, trace silt	Yes	See Test Boring Log.	Recovered in two pieces. No discernable top course.
HS-2	0	4 3/8	4 3/8	19	Brown cmf gravel and cmf sand, trace silt	Yes	See Test Boring Log.	Recovered in two pieces. No discernable top course.
HS-3	0	4 1/2	4 1/2	less than 19	Brown cmf sand, some cmf gravel, trace silt	Yes	See Test Boring Log.	Recovered in two pieces. No discernable top course.
HS-4	0	4 5/8	4 5/8	19	Brown mf gravel and cmf sand, trace silt	Yes	See Test Boring Log.	Recovered in two pieces. No discernable top course. Vertical fracture through bottom piece.
HS-5	0	4 1/2	4 1/2	less than 13	Grey cmf gravel, little cmf sand, trace silt	Yes	See Test Boring Log.	Recovered in two pieces. No discernable top course.
HS-6	0	5 1/4	5 1/4	less than 7	Grey cmf gravel, little cmf sand, trace silt	Yes	See Test Boring Log.	Recovered in two pieces. No discernable top course.
HS-7	0	4 5/8	4 5/8	less than 14	Grey cmf gravel, trace cm sand, trace silt	Yes	See Test Boring Log.	No discernable top course.
HS-8	0	3 7/8	3 7/8	12	Grey cmf gravel, little cmf sand, trace silt	Yes	See Test Boring Log.	No discernable top course.
HS-9	0	5 1/4	5 1/4	less than 7	Grey cmf gravel, little cmf sand, trace silt	Yes	See Test Boring Log.	No discernable top course.
HS-10	0	5	5	less than 13	Grey cmf gravel, little cmf sand, trace silt	Yes	See Test Boring Log.	Recovered in two pieces. No discernable top course. Vertical fracture through top piece.

Remarks: 1) See attached Pavement Core Photographs.

2) Approximate thickness estimated using sample recovery in split-spoon and/or change of material depth. Actual thickness may vary.

3) See "General Information & Key to Test Boring Log" for methods used in visual classification.

Pavement Core Summary

Attachment to CME Report Number: 27540B-01-0819

Project Name: Maine-Endwell CSD - 2019 Capital Improvements Project
Maine and Endwell, New York

Prepared By: Bryan Reles
Date: 8/23/2019

Asphalt Core ID	Thickness of Top Course (in.)	Thickness of Binder Course (in.)	Total Core Thickness (in.)	Subbase Course Material		Geotextile Fabric Present Below Subbase?	Visual Subgrade Soil Classification (3)	Notes
				Thickness (in.) (2)	Visual Soil Classification (3)			
HS-11	0	3 1/2	3 1/2	0	None observed	No	See Test Boring Log.	No discernable top course.
HS-12	1 7/8	2 3/8	4 1/4	less than 20	Brown cmf gravel, little cmf sand, little silt	Yes	See Test Boring Log.	Recovered in two pieces.
HS-13	1 1/4	2 3/8	3 5/8	19	Brown cmf sand and mf gravel, trace silt & Brown cmf gravel and cmf sand, little silt	Yes	See Test Boring Log.	
BG-2	0	5 3/8	5 3/8	0	None observed	No	See Test Boring Log.	No discernable top course.
BG-3	0	6 1/4	6 1/4	0	None observed	No	See Test Boring Log.	Recovered in two pieces. No discernable top course.
BG-4	0	5 1/2	5 1/2	0	None observed	No	See Test Boring Log.	Recovered in two pieces. No discernable top course.
BG-5	0	5 3/4	5 3/4	0	None observed	No	See Test Boring Log.	No discernable top course.
BG-6	0	6 1/4	6 1/4	less than 18	Grey mf gravel, some cmf sand, trace silt	No	See Test Boring Log.	Recovered in two pieces. No discernable top course.
BG-7	0	4 3/8	4 3/8	0	None observed	No	See Test Boring Log.	Recovered in three pieces. No discernable top course. Vertical fracture through bottom piece.
HB-1	0	6 1/4	6 1/4	0	None observed	No	See Test Boring Log.	No discernable top course.

Remarks: 1) See attached Pavement Core Photographs.

2) Approximate thickness estimated using sample recovery in split-spoon and/or change of material depth. Actual thickness may vary.

3) See "General Information & Key to Test Boring Log" for methods used in visual classification.



Photograph 1: Core HS-1



Photograph 2: Core HS-2



Photograph 3: Core HS-3



Photograph 4: Core HS-4



Photograph 5: Core HS-4 – View of vertical fracture in bottom piece



Photograph 6: Core HS-5



Photograph 7: Core HS-6



Photograph 8: Core HS-7



Photograph 9: Core HS-8



Photograph 10: Core HS-9



Photograph 11: Core HS-10



Photograph 12: Core HS-10 – view of vertical fracture through top piece



Photograph 13: Core HS-11



Photograph 14: Core HS-12



Photograph 15: Core HS-13



Photograph 16: Core BG-2



Photograph 9: Core BG-3



Photograph 10: Core BG-4



Photograph 11: Core BG-5



Photograph 12: Core BG-6



Photograph 9: Core BG-7



Photograph 10: Core BG-7 – view of vertical fracture through bottom piece



Photograph 11: Core HB-1

CME Associates, Inc.

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www.cmeassociates.com

LABORATORY TEST SUMMARY
Maine-Endwell CSD – 2019 Capital Improvements Project, Maine and Endwell, New York
CME Report No.: 27540L-01-0819
August 28, 2019

CME Representatives obtained soil samples from Test Borings advanced as part of the Subsurface Exploration Program conducted for the subject project. Selected samples were delivered to CME's East Syracuse facility, an AASHTO re:source[1] accredited laboratory for various laboratory testing. The results are presented below:

Sample ID Notations: B - Test Boring, S – Sample

I. Natural Moisture Content (ASTM D2216)

Sample ID	Natural Moisture (%)
HB-4, S-1	9.2
HB-4, S-2	0.6
HB-4, S-3	7.9
HB-4, S-4	6.7
HB-4, S-5	9.0
HB-4, S-6	8.7
HB-4, S-7	21.0
HB-4, S-8	20.2
HB-4, S-9	12.2
HB-4, S-10	4.3

[1]**AASHTO re:source** – American Association of State Highway & Transportation Officials (AASHTO) Materials Reference Laboratory, a Federal Agency having jurisdiction to assess laboratory competency according to the Standards of the United States of America. CME East Syracuse accreditation includes testing of Portland Cement Concrete, Aggregate and Soil Materials. www.AASHTOresource.org.

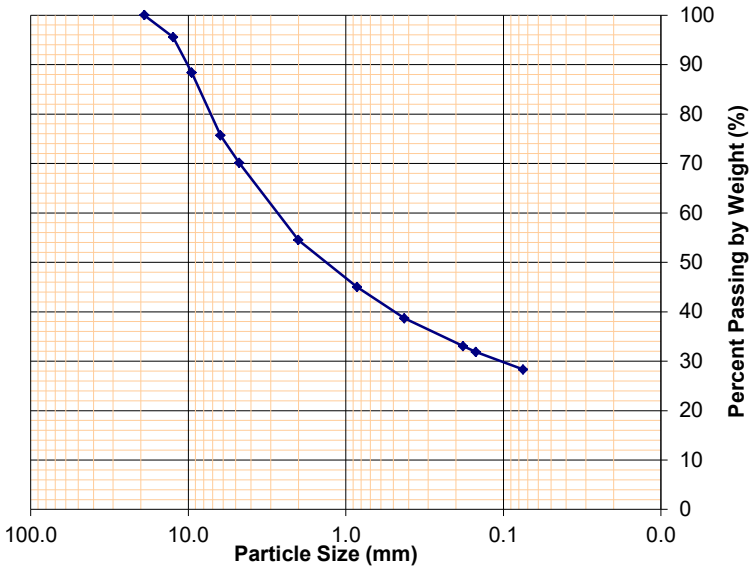
II. Particle Size Analysis (ASTM D422)

Sample #
HB-1, S-6

Classification
Brown cmf SAND, some mf GRAVEL, some SILT

Grain Size Distribution Curve

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
3/4"	19.0	100
1/2"	12.5	96
3/8"	9.5	88
1/4"	6.25	76
No.4	4.75	70
No.10	2.00	54
No.20	0.850	45
No.40	0.425	39
No.80	0.180	33
No.100	0.150	32
No.200	0.075	28

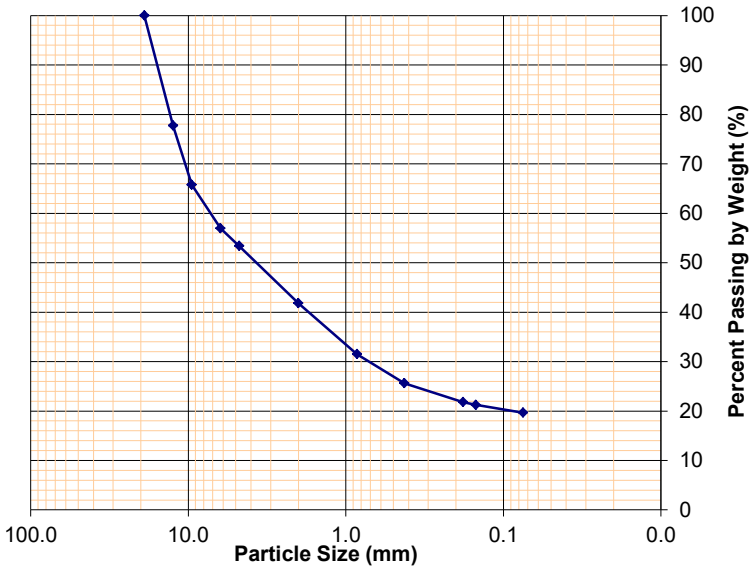


Sample #
HB-1, S-7

Classification
Brown mf GRAVEL, some cmf SAND, some SILT

Grain Size Distribution Curve

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
3/4"	19.0	100
1/2"	12.5	78
3/8"	9.5	66
1/4"	6.25	57
No.4	4.75	53
No.10	2.00	42
No.20	0.850	32
No.40	0.425	26
No.80	0.180	22
No.100	0.150	21
No.200	0.075	20

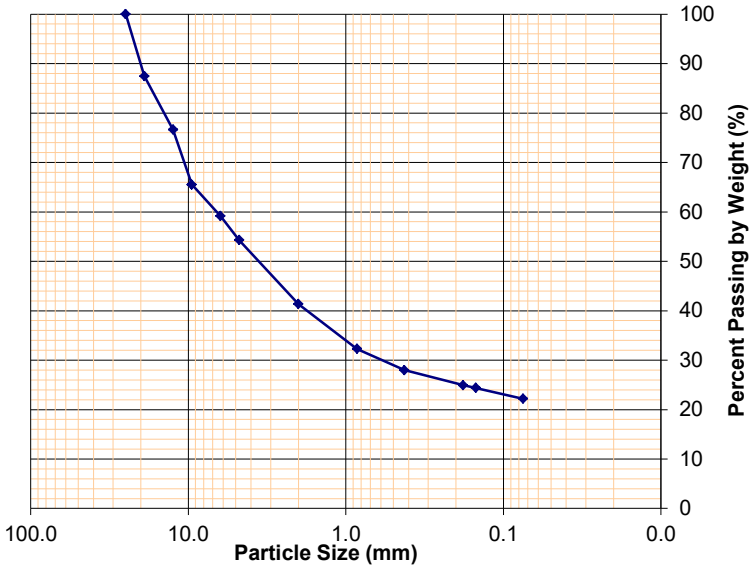


Sample #
HB-2, S-5

Classification
Brown/Grey mf GRAVEL, some cmf SAND, some SILT

Grain Size Distribution Curve

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
1"	25.0	100
3/4"	19.0	87
1/2"	12.5	77
3/8"	9.5	66
1/4"	6.25	59
No.4	4.75	54
No.10	2.00	41
No.20	0.850	32
No.40	0.425	28
No.80	0.180	25
No.100	0.150	24
No.200	0.075	22

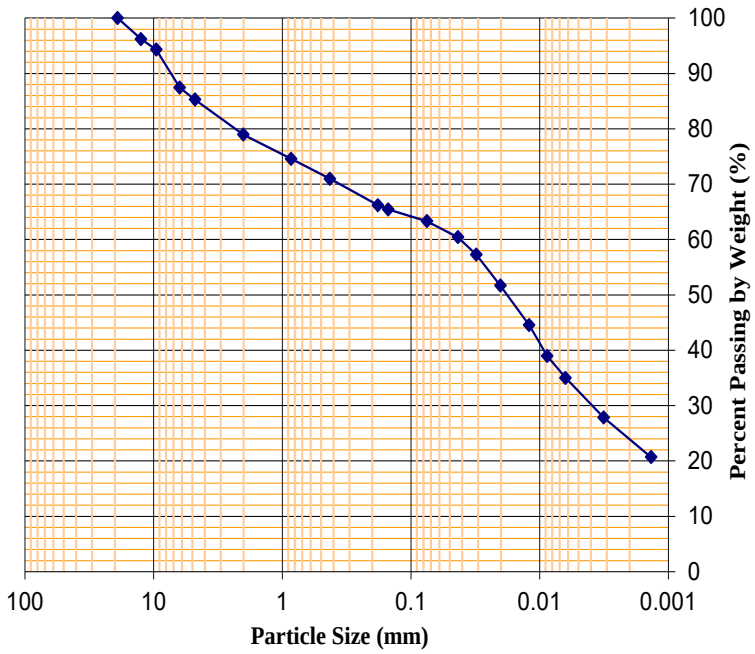


Sample #
HB-3, S-3

Classification
Brown CLAY, some SILT, some cmf SAND, little mf GRAVEL

Sieve Designation	Size (mm)	Percent Passing by Weight (%)
3/4"	19.0	100
1/2"	12.5	96
3/8"	9.50	94
1/4"	6.25	87
No.4	4.75	85
No.10	2.00	79
No.20	0.850	75
No.40	0.425	71
No.80	0.180	66
No.100	0.150	65
No.200	0.075	63
Hydrometer	0.043	60
	0.031	57
	0.020	52
	0.012	45
	0.009	39
	0.006	35
	0.003	28
	0.001	21

Grain Size Distribution Curve



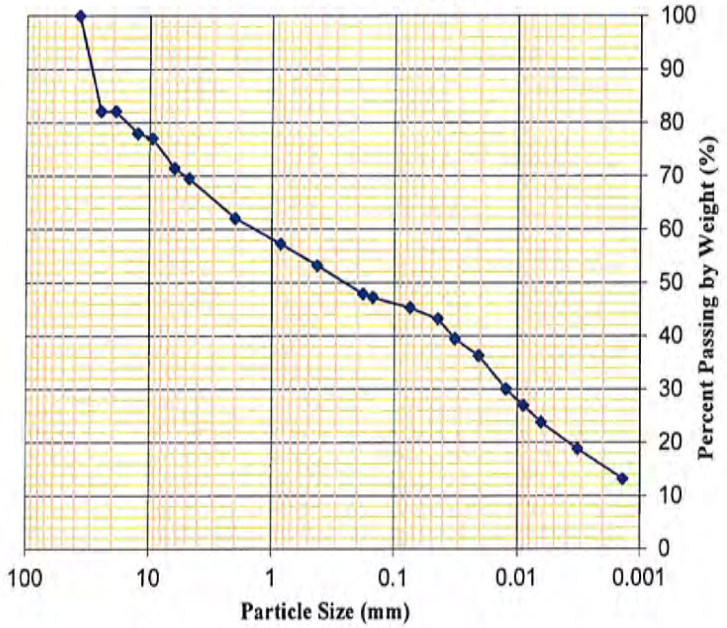
CME Associates, Inc.

Sample #
HB-4, S-4

Classification
Brown cmf GRAVEL, some cmf SAND, some SILT, some CLAY

Sieve Designation	Size (mm)	Percent Passing by Weight (%)
1 1/2"	37.5	100
1"	25.0	82
3/4"	19.0	82
1/2"	12.5	78
3/8"	9.50	77
1/4"	6.25	71
No.4	4.75	69
No.10	2.00	62
No.20	0.850	57
No.40	0.425	53
No.80	0.180	48
No.100	0.150	47
No.200	0.075	45
Hydrometer	0.044	43
	0.032	39
	0.021	36
	0.012	30
	0.009	27
	0.006	24
	0.003	19
	0.001	13

Grain Size Distribution Curve



If you have any questions regarding this report please contact our office.

Michael Curry
Laboratory Supervisor

GENERAL INFORMATION & KEY TO TEST BORING LOGS

The **Subsurface Exploration – Test Boring Logs produced by CME Associates, Inc**. present the observations and mechanical data collected by the driller while at the site, supplemented, at times, by classification of the materials removed from the borings determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Exploration Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the proposed construction. The evaluation must consider all the recorded details and their significance relative to each other. Often, analyses of standard boring data indicate the need for additional testing and sampling procedures to more accurately evaluate the subsurface conditions. Any evaluations of the contents of CME's report and the recovered samples must be performed by Licensed Professionals having experience in Soil Mechanics and Foundation Engineering. The information presented in this Key defines some of the procedures and terms used on the CME Exploration Logs to describe the conditions encountered. Refer to the Log on page 4 for key number.

Key No. **Description**

1. The figures in the **DEPTH SCALE** column define the vertical scale of the Boring Log.

2. **CASING BLOWS/FOOT** – shows the number of blows required to advance the casing a distance of 12 inches. The casing size, the hammer weight and the length of drop are noted under the **Methods of Investigation**. If the casing is advanced by means other than driving, the method of advancement will be indicated under **Methods of Investigation** at the top of the Log. If Hollow Stem Augers or Coring is used, it will be so noted in this column.

3. The **SAMPLE I.D.** is used for identification on the sample containers and in the Laboratory Test Report or Summary.

4. The **DEPTH OF SAMPLE** column gives the exact depth range from which a sample was recovered.

5. The **SAMPLE TYPE/RECOVERY** column is used to signify the various type of sample attempt. "SS is Split Spoon, "P" is Piston tube, "U" is Undisturbed tube. For soil samples, the recovered length of the sample is also indicated, in inches. If a rock core sample is taken, the core bit size designation is given here.

6. **BLOWS ON SAMPLER** – shows the results of the "Standard Penetration Test (SPT) ASTM D1586", recording the number of blows required to drive a split spoon sampler into the soil beneath the casing. The number of blows required for each six inches of penetration is recorded. The total number of blows required for the 6 inch to 18 inch interval is summarized in the **SPT "N"** column and represents the "Standard Penetration Number". The outside diameter of the sampler, the hammer weight and the length of drop are noted in the **Methods of Investigation** portion of the log. A "WH" or "WR" in this column indicates that the sample spoon advanced the 6 inch interval under **W**eight of **H**ammer or **W**eight of **R**ods, respectively.

7. The **DEPTH OF CHANGE** column designates the depth (in feet) that the driller noted a compactness or stratum change. In soft materials or soil strata exhibiting a consistent relative density, it is difficult for the driller to determine the exact change from one stratum to the next. In addition, a grading or gradual change may exist. In such cases the depth noted is approximate or estimated only and may be represented by a dashed line.

8. **CLASSIFICATION OF MATERIAL** – **Soil materials** encountered and sampled are described by the driller on the original log. Notes of the driller observations are also placed in this column. Recovered samples may also be visually classified by a Soil Technician upon receipt in the Laboratory. Visual sample classification is by Burmister System and strata may be classified additionally by the Unified System. The Burmister System is a type of visual-manual textural classification estimated by the Driller or Technician on the basis of weight-fraction of the recovered soil. See Table 1 **"Classification of Materials"**. The description of the relative soil compactness or consistency is based upon the standard penetration number as defined in Table 2. The description of the soil moisture condition is described as dry, moist, wet, or saturated. Water used to advance the boring may have affected the in-situ moisture content of the sample. Special terms are used as required to describe materials in greater detail, such terms are listed in ASTM D653. When sampling gravelly soils with a standard two-inch O.D. Split Spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders, cobbles, and large gravel is sometimes, but not necessarily, detected by an evaluation of the casing and sampler blows or through the "action" of the drill rig as reported by the driller.

   The Description of **Rock** is based upon the recovered rock core. Terms frequently used in the description are included in Table 3. The length of core run is defined as length of penetration between retrievals of the core barrel from the bore hole, expressed in inches. The core recovery expressed the length of core recovered from the core barrel per core run, in percent. The size core barrel used is noted in **Column 5**. The more commonly used sizes of core barrels are denoted "AX" and "NX". An "NX" core, being larger in diameter than "AX" core, often produces better recovery, and is frequently utilized where accurate information regarding the geologic conditions and engineering

properties is needed. A better estimate of in-situ rock quality is provided by a modified core recovery ratio known as the **"Rock Quality Designation" (RQD)**. This ratio is determined by considering only pieces of core that are at least 4 inches long and are hard and sound. Breaks obviously caused by drilling are ignored. The diameter of the core should preferably be not less than 2 inches (NX). The percentage ratio between the total length of such core recovered and the length of core drilled on a given run is the RQD. Table 4 gives the rock quality description as related to the **RQD**.

9. The **SPT "N"** or **RQD** is given in this column as applicable to the specific sample taken. In Very Compact coarse grained soils the N-value may be indicated as 50+, and in Hard fine-grained soils the N-value may be indicated as 30+. This typically means that the blow count was achieved prior to driving the sampler the entire 6 inch interval or the sampler refused further penetration. For the "NX" rock cores, the RQD is reported here, expressed in percent.

10. **GROUND WATER OBSERVATIONS** and timing noted by the driller are shown in this section. It is important to realize that the reliability of the water level observations depend upon the soil type (water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the borings may have influenced the observations. Ground water levels typically fluctuate seasonally so those noted on the log are only representative of that exhibited during the period of time noted on the log. One or more perched or trapped water levels may exist in the ground seasonally. All the available readings should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or ground water observation well installations.

TABLE 1 - VISUAL CLASSIFICATION OF MATERIALS (BURMISTER)	
GROUP	**TEXTURAL CLASSIFICATION SIZES**
BOULDERS	larger than 12" diameter
COBBLES	12" diameter to 3" sieve
GRAVEL	3" - coarse - 1" - medium - 1/2" - fine - #4 sieve
SAND	#4 - coarse - #10 - medium - #40 - fine - #200 sieve
SILT	#200 sieve (0.074mm) to 0.005mm size (see below *)
CLAY	0.005mm size to 0.001 mm size (see below *)

ABBREVIATIONS	**PERCENT OF TOTAL SAMPLE BY WEIGHT**	
f - fine	and	35 to 50%
m - medium	some	20 to 35%
c - coarse	little	10 to 20%
	trace	0 to 10%

***PLASTICITY DESCRIPTIONS**			
TERM	**PLASTICITY INDEX**	**DRY STRENGTH**	**FIELD TEST**
Non-plastic	0-3	Very low	falls apart easily
Slightly plastic	4 - 15	Slight	easily crushed by fingers
Plastic	15 - 30	Medium	difficult to crush
Highly plastic	31 or more	High	impossible to crush with fingers

*TABLE 2 - DESCRIPTION OF SOIL COMPACTNESS OR CONSISTENCY based on SPT "N"**		
Primary Soil Type	**Descriptive Term of Compactness**	**Range of Standard Penetration Resistance (N)**
COARSE GRAINED SOILS	Very loose	less than 4 blows per foot
(More than half of Material is larger than No. 200 sieve size.)	Loose	4 to 10
	Medium compact	10 to 30
	Compact	30 to 50
	Very compact	Greater than 50
FINE GRAINED SOILS	Descriptive Term of Consistency	Range of Standard Penetration Resistance (N)
(more than half of material is smaller that No. 200 sieve size)	Very soft	less than 2 blows per foot
	Soft	2 to 4
	Medium stiff	4 to 8
	Stiff	8 to 15
	Very Stiff	15 to 30
	Hard	Greater than 30
*The number of blows of 140 pound weight falling 30 inches to drive 2 inch O.D., 1-3/8 inch I.D. sampler 12 inches is defined as the Standard Penetration Resistance designated "N".		

TABLE 3 - ROCK CLASSIFICATION TERMS		
Rock Classification Terms		**Field Test or Meaning of Term**
Hardness	Soft	Scratched by fingernail
	Medium Hard	Scratched easily by penknife
	Hard	Scratched with difficulty by penknife
	Very Hard	Cannot be scratched by penknife
Weathering	Very Weathered Weathered Sound	Judged from the relative amounts of disintegration, iron staining, core recovery, clay seams, etc.
Bedding (Natural Breaks in Rock Layers)	Laminated Thinly bedded Bedded Thickly bedded Massive	less than 1 inch 1 inch to 4 inches 4 inches to 12 inches 12 inches to 36 inches greater than 36 inches

TABLE 4 **Relation OF Rock Quality Designation (RQD) and in-situ Rock Quality**	
RQD %	**Rock Quality Term Used**
90 to 100	Excellent
75 to 90	Good
50 to 75	Fair
25 to 50	Poor
0 to 25	Very Poor

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: **Report No.:**
Client: **Date Started:** **Finished:**
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:**

METHODS OF INVESTIGATION			
Casing: 3-1/4" ID H. Stem Auger	**Driller:**		
Casing Hammer:	**Driller:**		
Other:	**Inspector:**		
Soil Sampler: 2" OD Split Barrel	**Rod Size:** AWJ		
Sampler Hammer: Wt. 140 lbs.	**Fall:** 30 in.		
Make & Model of Drill Rig:			

GROUND WATER OBSERVATIONS			
Date	Time	Depth	Casing At
	While drilling		
	Before casing removed		
	After casing removed		
	After casing removed		

LOG OF BORING SAMPLES							CLASSIFICATION OF MATERIAL		
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
1	**2**	**3**	**4**	**4**	**5**	**6**	**7**	**8**	**9**
5									
10									
15									
20									

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

Subsurface Exploration and Foundation Report

Maine-Endwell CSD – 2019 Capital Improvements Project
Gymnasium and Classroom Additions at Homer Brink Elementary School
Endwell, New York

Prepared For: (Client)

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CME Report No.: 27540B-02-0919
September 6, 2019

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Attachments:

Expanded Grading and Erosion Control Plans (2 of 2)
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Foundation Plan & Second Floor Framing Plan Area B, HB-S104 (1 of 1)
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Subsurface Exploration and Foundation Report
Maine-Endwell CSD – 2019 Capital Improvements Project
Gymnasium and Classroom Additions at Homer Brink Elementary School
Endwell, New York

1.0 INTRODUCTION

CME Associates, Inc. (CME) is pleased to provide this report of subsurface exploration and foundation recommendations for the proposed gymnasium and classroom additions at the Homer Brink Elementary School, in Endwell, New York, planned as part of the subject project. The Scope of Basic Services and this report have been provided pursuant to the written authorization of CME Proposal/Agreement No.: 05.5804, dated 06/28/19, by IBI Group (Client).

CME conducted subsurface explorations at the Bus Garage, High School, Middle School and Elementary School sites in August 2019 and issued a Geotechnical Data Report (GDR), labeled CME Report Number: 27540B-01-0819, dated 07/29/19, which is included herein by reference. All Exploration Logs, Exploration Location Plans, GPS Coordinates and Elevations Tables, Infiltration Test Reports, Asphalt Core Summary Table, Asphalt Core Photographs and a Laboratory Test Summary Report are attached to the GDR. Selected Test Boring Logs and the Laboratory Test Report from the GDR, applicable to the proposed gymnasium addition and classroom addition, are attached to this report.

Please note, providing geotechnical recommendations for all other improvements (future building additions, interior building renovations, sitework features, etc.) are outside of CME's Basic Scope of Services contracted in the agreement, and are expressly excluded from this report.

2.0 PROPOSED DEVELOPMENT

The proposed development will include two additions (a gymnasium addition and a classroom addition). Please refer to the attached Expanded Grading and Erosion Control Plans, extracted from Drawing HB-C131, dated 08/05/19, provided by Client, for location of proposed additions, with approximate location of applicable Test Borings overlaid.

Gymnasium Addition: The existing gymnasium portion of the building is single story with a partial walkout basement near the north entrance facing Pruyne Street. The proposed gymnasium addition will be single story with a partial basement within the western half of the addition footprint. The proposed basement finish floor and the first floor are planned to match existing at elevation 902.61 and elevation 915.94, respectively. The addition framing will consist of structural steel members and load-bearing walls with a concrete slab-on-grade floor. Maximum column and wall loads are 150 kips and 15 kips per lineal foot respectively, according to Delta Engineers, Architects & Land Surveyors, DPC (Delta).

Classroom Addition: The classroom addition will be two story with no basement. The east end of this addition will encroach into the existing site retaining walls and the uphill slope behind it. An exterior staircase is planned around the east end of this addition, with cantilevered site retaining walls between the staircase and the uphill slope to the east. The addition framing will consist of structural steel members and load-bearing walls with a concrete slab-on-grade floor. Maximum column and wall loading will be 60 kips and 4 kips per lineal foot, respectively, according to Delta.

If any of the above information is incorrect, please let CME know in writing, so that we can revisit our recommendations, and determine if additional geotechnical evaluation is warranted.

3.0 SUBSURFACE CONDITIONS

The subsurface conditions presented herein have been generalized for simplicity and brevity by CME from the actual data presented on the attached Test Boring logs, advanced for the proposed additions. Please refer to boring logs for actual conditions encountered at the time, location and elevation of each sample obtained. It is possible for the subsurface conditions between sampling intervals and between exploration locations to vary from those expressed in this section or on the Test Boring Logs.

3.1 Surfacings and Subsurface Profile

The Test Borings identified Asphalt or Topsoil and Organic Matter at grade, underlain by a subsurface profile consisting of Existing Fill, underlain by Silt, underlain by Gravel. A brief description of each stratum is given below in the order of encounter in the explorations.

Surfacings: Borings HB-2 and HB-5 identified about 6 to 12 inches of Topsoil and/or Organic-rich soils at grade. Borings HB-1, HB-3 and HB-4 penetrated about 6 to 8 inches of Asphalt at grade.

Existing Fill: Below asphalt pavement in Borings HB-1, HB-3 and HB-4, subbase course, consisting of Silty Sandy Gravel or Silty Sandy Gravel mixed with slag and asphalt, was penetrated to about 2 feet below grade, where geotextile fabric was sampled. Below subbase course in Boring HB-4, the auger encountered obstructions from about 2 to 4 feet below grade which could be a layer of possible Cobble/Rock Fill. Below the possible Cobble/Rock Fill in Boring HB-4, Possible Fill consisting of a mixture of Silt, Sand, Gravel and Clay was penetrated to about 8 feet below grade. Also, below Topsoil and Organic Material in Boring HB-5, similar Possible Fill was penetrated to about 4 feet below grade.

Silt: Below surfacing and Existing Fill, all Borings identified a Silt stratum to a depth of approximately 8 feet below grade in Borings HB-1 and HB-2 and to Boring termination depth (15 to 36.5 feet below grade) in Borings HB-3 to HB-5. This stratum consists predominately of Silt mixed with lesser Gravel, Sand and Clay content. Based on the SPT Blow Counts the consistency of the Silt stratum varies from stiff to hard.

Gravel: Below the Silt stratum, Borings HB-1 and HB-2, penetrated a stratum consisting predominately of Gravel and Sand with lesser Silt content. This stratum extended to Boring termination depths of 20 and 10 feet below grade in Borings HB-1 and HB-2, respectively. Based on SPT Blow Counts, the Gravel stratum has a relative density ranging from medium compact to compact.

3.2 Groundwater Observations

Groundwater level observations and measurements are made by the CME field crew when groundwater accumulates in the Borehole. CME notes water level inside the borehole during advancement and following casing (auger) removal. CME also notes the visual appearance of the moisture condition of the samples as retrieved. The condition and time of groundwater level observations are unique to each boring, time and date, and are recorded on the individual Test Boring Logs.

Groundwater was not observed in the Borings within the exploration depths, during the short exploration period. It should be noted that the Silt stratum at this site is tight (exhibits low permeability) and groundwater movement through this stratum is slow. Groundwater may not have collected, accumulated and stabilized in the borehole during the short time it takes to drill the hole.

Groundwater fluctuations on this site will occur depending on several factors, such as rainfall, seasonal changes, prevailing climate, and adjacent construction operations, among other factors.

3.3 Expansive Soils

Based on CME's visual naked-eye classification of the soil samples retrieved from the explorations and the definition of "Expansive Soil" given in Section 1803.5.3 of the Building Code, soils exhibiting potentially expansive character were not sampled by this exploration program.

4.0 FOUNDATION RECOMMENDATIONS

4.1 Foundation Considerations

The proposed gymnasium and classroom additions may be supported utilizing conventional shallow footing foundation and slab-on-grade systems. Earthwork for the construction of both additions will involve significant excavation (cuts) into the existing slopes. The contractor shall provide satisfactory Excavation Protection Systems for worker safety and to protect existing foundations, utilities and other structures from any vertical and horizontal movement. Please see Report Section 4.6 for more details.

Onsite borrow resulting from cuts will consist chiefly of Silty soils. Re-use of on-site Silty soils within the building pad and other structural areas is not recommended. Achieving satisfactory compaction on Silty soils will be difficult, especially during wet seasons.

Two existing catch basins were noted within the classroom addition footprint. Also, this addition footprint overlaps a portion of the existing site retaining wall and stairs and the existing slope. CME understands that the existing catch basins and the connecting drains will be removed and re-routed. Also, the retaining walls and stairs present within the addition footprint will be removed with the foundations. All excavations resulting from these removals shall be satisfactorily backfilled using Select Granular Fill installed in a quality controlled manner, as outlined in Report Sections 6.1 and 6.2.

Please note, Possible Fill is anticipated at and below footing bearing elevation near Boring HB-4. CME recommends that a backhoe excavated Test Pit be excavated near this Boring during or prior to construction to evaluate the condition of this Fill to determine footing bearing grade undercut depths, if necessary.

4.2 Building Pad Preparation

Building Pad is defined as the addition footprint and adjacent slabs and sidewalks, plus a 5-foot nominal buffer, where practical.

Following removal of surfacings, existing catch basins and other utilities, existing retaining wall foundations and excavation to plan subgrade elevation, the exposed grade within the entire building pad shall be proofrolled and/or probed and examined in the presence of the Inspecting Professional Geotechnical Engineer (IPGE). CME recommends that the proofroll occur on a dry day, free of rain, and using a 5-ton smooth drum roller making at least 5 overlapping passes in each of two perpendicular directions, on static mode, over the entire building pad. The IPGE shall delineate any unstable/non-uniform yielding areas and direct remediation procedures, if required.

Following grade approval by the IPGE, Structural Fill (Select Granular Fill) placement may commence to achieve plan slab-on-grade subgrade elevation. Please refer to Report Sections 6.1 and 6.2 for recommendations on building pad Structural Fill material, placement and quality control testing.

4.3 Footing Foundations

The proposed gymnasium and classroom additions may be supported utilizing conventional shallow footing foundations. All footings shall bear on firm, inorganic virgin Silt, examined and approved by the IPGE or on satisfactorily installed Select Granular Fill placed over inorganic virgin Silt, approved by the IPGE.

All bearing grades exposing unsuitable bearing materials (such as, but not limited to, Existing Fill, unstable soil, organic matter, deleterious materials, etc.), as determined by the IPGE, shall be undercut to achieve firm, inorganic virgin soil. If undercuts are required by the IPGE, the undercut and backfill shall occur as outlined below.

Undercut unsatisfactory bearing grades as determined by the IPGE, to achieve firm, inorganic virgin Silt. The undercut grade shall be examined, tested and approved by the IPGE prior to placing any backfill material. The undercut shall be at least 6 inches wider than the footing on all sides, for every one foot of undercut. The undercut shall be backfilled using Select Granular Fill, placed in 8 to 10 inch thick lifts with each lift compacted to a minimum of 95% of Maximum Dry Density (MDD), as determined by ASTM D1557.

Footing foundations bearing on firm, inorganic virgin Silt, approved by the IPGE, or on satisfactorily placed, compacted and tested Select Granular Fill, placed over grade approved by the IPGE, may be proportioned using a Presumptive Soil Bearing Pressure of 3,000 psf.

A minimum frost cover of 4'-0", measured from bottom of footing to adjacent exterior finish grade, is recommended for all exterior footings for heated space. Interior footings for heated space may bear as high as practical, below the slab-on-grade. For all footings for unheated space, a minimum frost cover of 4'-6" is recommended.

Footing foundations designed and installed in accordance with this report's recommendations are estimated to settle less than about one inch, with differential settlement between adjacent footings estimated to be less than about three quarters of an inch.

4.4 Slab-on-Grade

Design of concrete slab-on-grade should be consistent with recognized standards such as ACI 360R *"Design of Slabs-on-Grade"*. Construction should be consistent with good industry practice using ACI Qualified Flatwork Finishers and recognized standards such as ACI 302.1R *"Guide for Concrete Floor and Slab Construction"*.

The slab-on-grade subgrade shall be proofrolled as outlined in Report Section 4.2, just prior to placement of Subbase Course. Subbase Course, consisting of a minimum of 12 inches of NYSDOT Type 2 or Type 4 Subbase Course Material is recommended. Slab-on-grade subgrade consisting of Silt soil proofrolled and approved by the IPGE, is expected to exhibit a Modulus of Subgrade Reaction, ks, of 150 pci. Please note, subbase course thickness may be more than 12 inches, depending on the slab design by the Project Structural Engineer.

4.5 Lateral Earth Pressure

It is CME's understanding that the below-grade walls for the gymnasium and classroom additions will be designed as diaphragm walls, restrained at the top and bottom.

Also, a cantilevered site retaining wall is planned on the east side of the classroom addition between the staircase and existing slope. The attached Drawing HB-C131 shows that finish grades behind this wall is planned to be at approximately elevation 928 and ascending at a slope of approximately 2.0H : 1.0V (27 degrees).

Lateral earth pressure recommendations given below assume that the walls will be backfilled with Select Granular Fill, backfill material and placement will conform to recommendations given in Sections 6.1 and 6.2 of this report, and that a footing drain will be installed behind the walls to prevent hydrostatic pressure build up.

For design purposes, the Table 1 soil parameters are recommended for controlled backfill consisting of Select Granular Fill placed in accordance with Report Sections 6.1 and 6.2, for static lateral earth pressure calculations for the above referenced walls.

Table 1: Controlled Backfill Lateral Earth Pressure-Recommended Parameters

Wall	Material	Effective Friction Angle (deg.)	Cohesion (psf)	Wet Unit Weight (pcf)	Submerged Unit Weight (pcf)	**k_o**	**K_a**	**K_p**
Gymnasium Addition Diaphragm wall	Select Granular Fill	30	0	135	75	0.50	-	-
Classroom Addition Diaphragm wall	Select Granular Fill	30	0	135	75	0.75	-	-
Staircase cantilevered site retaining wall	Select Granular Fill	30	0	135	75	-	0.55	2.5

k_o - At Rest Earth Pressure Coefficient; K_a – Active Earth Pressure Coefficient; K_p - Passive Earth Pressure Coefficient

Permanent vertical surface surcharge loads shall also be considered in the lateral earth pressure analysis. For the classroom diaphragm walls and the staircase cantilevered walls, the surface surcharge pressure may be translated to horizontal pressure by using a 0.50 (50%) factor with the resultant rectangular distribution applied to a depth equal to the width of the surcharge. For the gymnasium diaphragm wall, the surface surcharge pressure may be translated to horizontal pressure by using a 0.25 (25%) factor with the resultant rectangular distribution applied to a depth equal to the width of the surcharge.

A Friction Factor of 0.35 (no factor of safety applied) may be used to calculate sliding resistance between concrete footing and bearing surface.

4.6 Temporary Excavation Protection

Excavation for the proposed addition is planned to be in excess of 4-feet deep, in areas. All temporary excavations in excess of 4-feet deep shall be laid back to safe slopes per OSHA requirements. If site conditions do not allow for laying back excavations, then the contractor shall provide satisfactory Support of Excavation (SOE) and temporary excavation protection systems, to provide worker safety in accordance with OSHA and NYCRR regulations and law and to protect nearby structures and utilities. CME recommends that SOE, and temporary excavation protection systems be designed by a NYS Licensed Engineer (hired and paid for by the Contractor), who has at least 5 years of practical experience in design and installation of such systems.

All SOE and temporary excavation protection system designs must include the provisions for monitoring the movement of existing structures during installation, in-service, and after extraction/removal of the SOE, if applicable. Such monitoring provisions shall include maximum limits for movement, location, type and details of the geotechnical instruments/monitor points; and shall address maximum fugitive vibration limits so that existing or new construction is not damaged.

4.7 Dampproofing

CME recommends that all below-grade walls and slabs-on-grade be dampproofed. Minimum dampproofing shall conform to the 2015 IBC Section 1805 – DAMPPROOFING AND WATERPROOFING. This site is not located in a well-drained gravel or sand/gravel mixture soils.

A perimeter footing drain is required for both additions, behind the below-grade walls. The drain should consist of a 4" diameter perforated pipe placed in a 12" x 12" cross-section of Porous Fill, enveloped in a non-woven soil separator fabric (such as Mirafi 140 NL, or similar performance product). The drain shall be run to daylight or to a storm water collection structure.

5.0 SITE CLASS

Based on a computational analysis using CME Test Borings and the Building Code Section 1613, which references Chapter 20 of ASCE 7, the subject site is defined as a "Very Dense Soil and Soft Rock Profile" representative of a Seismic Site Class "C". The Test Borings did not sample soils vulnerable to liquefaction, sudden collapse or failure under seismic loading conditions. Please refer to the attached ASCE 7 Hazards Reports for Design Spectral Response Curves for Risk Category IV, Non-essential Structures.

6.0 FILL & BACKFILL

6.1 Fill & Backfill Material

Imported Structural Fill Material consisting of **Select Granular Fill** is recommended for all building pad fill and backfill. Select Granular Fill shall be approved by the Registered Design Professional (RDP) after review of all prequalification test submittals.

The minimum requirements for a prequalification submittal shall include the following test results which are not more than 2 months old:

- ✓ Sieve Analysis – ASTM D422
- ✓ Moisture-Density Relationship – ASTM D1557
- ✓ Plasticity Index – ASTM D4318
- ✓ Soundness Test – ASTM C88

Select Granular Fill material shall be well-graded sand and gravel, approved recycled product or crushed rock product which is capable of being compacted to the required density at the proper moisture content and which is free of deleterious materials, trash, roots, debris, frozen material and organic or other foreign matter. Select Granular Fill to be used within the building pad shall be free of Recycled Asphalt Pavement (RAP) products.

Select Granular Fill material shall be accepted based on gradation, soundness, plasticity index and a well-defined Moisture-Density Relationship Curve. Imported Granular Fill to be placed within 2'-0" of final exterior grade shall be subjected to Soundness requirements. Soundness shall be less than 30% loss based on a four-cycle magnesium sulfate soundness test. Plasticity Index of that portion of fill material passing the No. 40 mesh sieve shall not exceed 5.0. Gradation requirements are as provided in Table 2 below.

Table 2: Select Granular Fill – Recommended Gradation	
Standard Sieve Size	**% Passing by Dry Weight**
2-inch	100
1/4-inch	25 to 60
No. 40	5 to 40
No. 200	0 to 10

6.2 Filling & Backfilling Execution

CME recommends that all filling and backfilling to occur on this project be accomplished in a workmanlike manner according to good industry practice. All filling and backfilling shall be installed in a quality-controlled manner with prequalified materials, with quality assurance structural tests and inspections conducted at regular intervals according to the Building Code Chapters 17 and 18, and consistent with the following methodology.

1. The grade to receive fill shall be dry, free of mud, water and loose or frozen material. The grade shall be proofrolled, inspected and deemed satisfactory by the IPGE prior to placement of fill.
2. Fill material shall be placed on satisfactory grade, in a manner to minimize segregation. The fill shall be placed in nearly horizontal lifts commencing at the lowest fill area elevation and proceeding with each lift upward and outward from the lower lift.
3. The moisture content of the material shall be adjusted prior to application of compaction such that it is within 3% of the Optimum Moisture Content. This procedure may involve adding water when the fill material is too dry or discing and aerating to reduce moisture when the fill material is too wet.
4. The compacted lift thickness and minimum in-place field density shall conform to the recommendations provided in Table 3.

Table 3: Select Granular Fill Compaction and Lift Thickness Recommendations		
Minimum In-Place Density[1]	**Maximum Compacted Lift Thickness[2] (inch)**	**Fill Area Description**
95%	12	Mass Fill areas and Slab Subbase Course
95%	8	Confined areas such as utility trenches, and foundation backfill
1. As determined using ASTM D1557, Modified Effort Proctor. 2. Or compactor manufacturer's recommended thickness, whichever is less.		

5. When the test results indicate that insufficient compaction has been obtained in any layer, the Contractor shall take action to modify or alter the moisture content of the soil, provide additional compaction or make other adjustments to increase the in-place soil density. If the Contractor cannot obtain satisfactory compaction due to material properties, the Contractor shall remove the unsatisfactory material and replace with new material.
6. Materials which are frozen, or which include mud, debris, organics or other deleterious materials shall be removed and replaced with clean specified material.
7. No fill shall be placed over an area or lift of fill that has not been tested and achieved satisfactory results.

7.0 SOIL SPECIAL INSPECTION

In addition to the Geotechnical Engineering Observation and Inspection specified previously in this Report, the Building Code requires special inspection and tests for all structural fill, backfill, concrete and reinforcement of the geotechnical constructions proposed for this project.

7.1 Accredited Testing Agency Required

CME recommends that the Testing Agency providing special inspections and structural tests be Accredited by a Nationally Recognized Authority (such as: AASHTO Re:source, A2LA or NVLAP) to demonstrate compliance with ASTM E329-14a to conduct soil, aggregate and concrete materials testing. All testing and inspection staff must possess current credentials and nationally recognized certification or licensure which is applicable to the specific material and construction element that they are inspecting and/or testing.

7.2 Required Inspections & Tests of Soils

CME recommends that the Soil Special Inspection be accomplished in full conformance with the Building Code requirements and Table 4 given herein:

Table 4: Statement of Required Soil Special Inspections
Proposed Gymnasium and Classroom Additions at the Homer Brink Elementary School

Type	Frequency of Special Inspections & Tests
1. Verify excavations are extended to proper depth and have reached proper subgrade material.	Continuously during excavation.
2. Prior to placement of compacted fill, inspect subgrade, verify that site has been prepared properly and witness a proofroll and/or probe and examine.	Continuously prior to placement of compacted fill.
3. Perform classification and testing of compacted fill materials.	Periodically per the Earthwork Specifications.
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	Continuously during fill installation and per Earthwork Specifications. Perform 1 In-Place Field Density (IPFD) test per 2000 square feet per lift and 1 IPFD per 30 lineal feet of trench or wall per lift per side.
5. Direct undercut, examine undercut grade, examine footing bearing grade, test backfill in undercuts for in-place density, and approve bearing grade.	Continuously during foundation excavation, by IPGE.

8.0 OTHER IMPORTANT CONSIDERATIONS

CME provides the information in this section for those using our reports, so they may acquire a better understanding of geotechnical engineering professional practice and the limitations associated with its application to this and other projects.

8.1 Changes to the Project

CME has described in Report Section 2.0 our understanding of the proposed development at the time this report is published. It is anticipated that the preliminary plans may change during design phase. Substantial changes consist of many items such as, but not limited to; bearing elevation, floor elevation, planned depth of cuts or fills, decrease or increase in design loads, structure footprint growth or shrinkage, structure location movement, time period of construction (compression or relaxation), and addition or deletion of sublevel (basement or crawlspace) area, among others.

Please advise CME of substantial changes so CME can evaluate the continued applicability of the analyses and recommendations given in this Report. It will help reduce project risks, could save you time and money, and result in a higher quality construction project.

8.2 Review of Plans & Specs

CME recommends that it be afforded the opportunity to review the Plans and Specifications, prepared pursuant to this Report, prior to Bidding. This review will help to verify that a correct interpretation of CME's recommendations and design intent given in this Report are implemented and incorporated into the Construction Documents. Since CME is not aware of the project schedule, it is the responsibility of the Client to forward the applicable construction contract documents to CME for review. Please allow at least 5 business days for CME to complete the review and issue a report of comments and findings.

8.3 Construction Phase Geotechnical Services

The analysis and recommendations contained in this report are preliminary and are based on the specific data obtained from the limited subsurface explorations referenced in this report. The explorations indicate subsurface conditions only at the specific locations and times, and only to the depths penetrated. The validity of the recommendations is based in part on CME's assumptions about the stratigraphy, as well as, information about the proposed development provided by others. CME's assumptions may be confirmed only during earthwork and foundation construction operations.

The recommendations made in this report are based on the "Observational Method". The Observational Method ensures continuity from the design to the construction and has been at the heart of many successful construction projects. It relies upon extensive use of monitoring and observational procedures during the construction. Construction monitoring allows CME to take advantage of conditions more favorable than those anticipated based on the subsurface exploration program. It often provides for timely warning when conditions are less favorable, allowing for changes or alterations to be made before a problem shows itself in newly completed construction. Therefore, it is recommended that CME be retained to provide Construction Phase Observation and the Soil and Foundation Special Inspections.

It is very important to point out that CME's engineering recommendations given in this Report are premised upon CME being retained to provide Construction Phase Geotechnical Engineering Observation as they relate to earthwork, filling and backfilling, and foundation installations. If others are retained to provide construction phase observation, a complete understanding, interpretation or execution of CME's reported recommendations may not occur. CME will not assume responsibility for the performance of the structures, slabs and pavements when CME is not providing the construction phase observation.

9.0 STANDARD OF CARE AND WARRANTY

CME has endeavored to conduct the services identified herein in a manner consistent with that level of care and skill ordinarily exercised by members of the geotechnical engineering profession currently practicing in the same locality and under similar conditions as this project. No warranty, either express or implied, is made or intended by CME's proposal, contract, and written and oral reports, all of which warranties are hereby expressly disclaimed. CME shall not be responsible for the acts or omissions of Client, its contractors, agents and consultants. CME has relied upon information supplied by Client, its contractors, agents and consultants, or information available from generally accepted reputable sources, without independent verification, and CME assumes no responsibility for the accuracy thereof.

10.0 CLOSING COMMENTS

In accordance with CME's Subcontract for Geotechnical Services, CME will dispose of all unconsumed samples sixty (60) days after submission of this report. All consumed samples were disposed of immediately after test completion. If you would like to keep the unconsumed samples for a longer time period, please email a request to do so, within five (5) business days from the date of this report to Cristina White, cwhite@cmeassociates.com.

Please do not hesitate to contact our office if you have any questions regarding this report, its conclusions, its recommendations, or its application to actual field conditions revealed during construction.

Respectfully Submitted,
CME Associates, Inc.

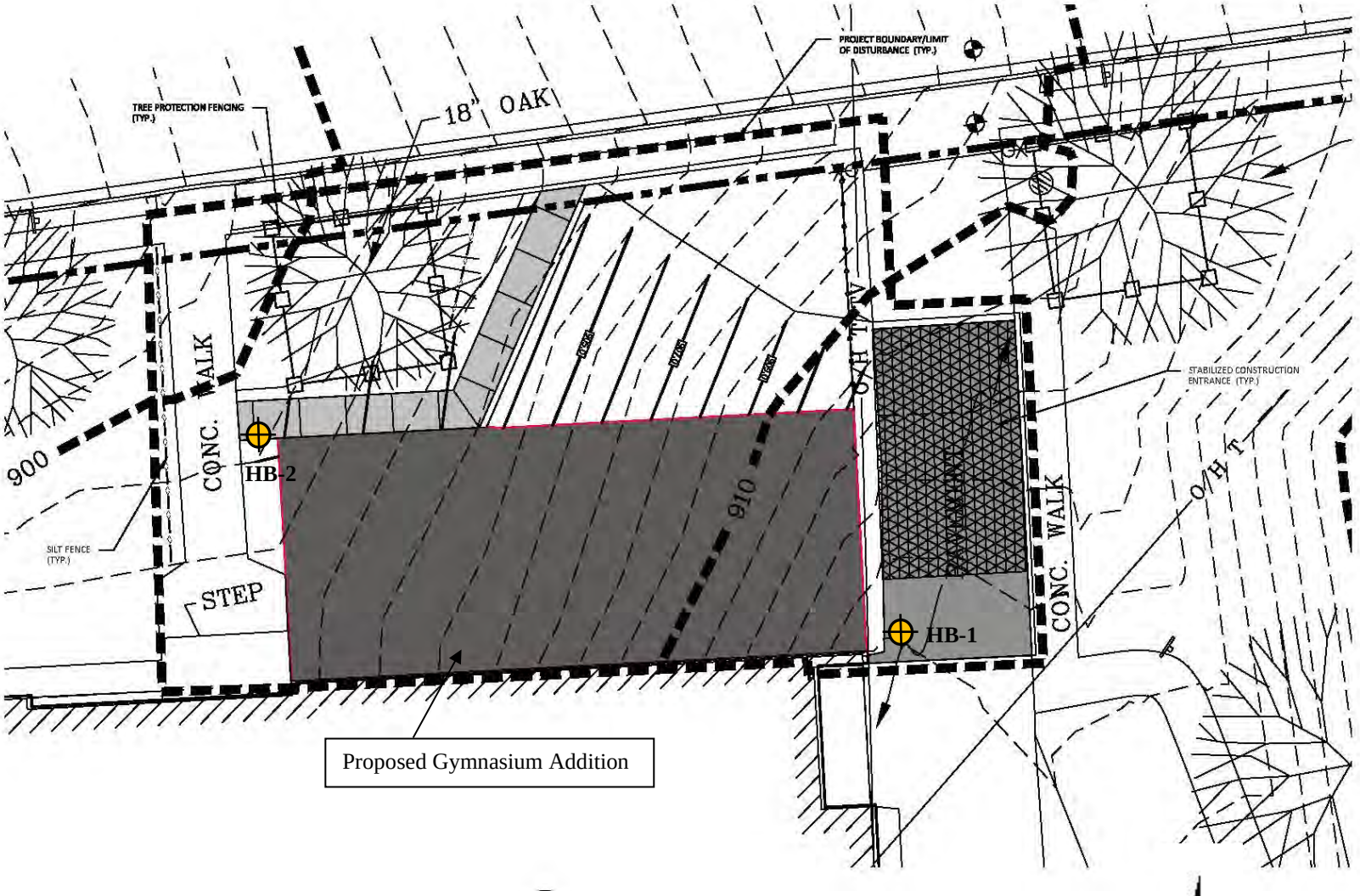
Roonak Ghaderi

Roonak Ghaderi, Ph.D.
Staff Geotechnical Engineer

Reviewed By,
CME Associates, Inc.

Anas N. Anasthas, P.E.
Geotechnical Engineer

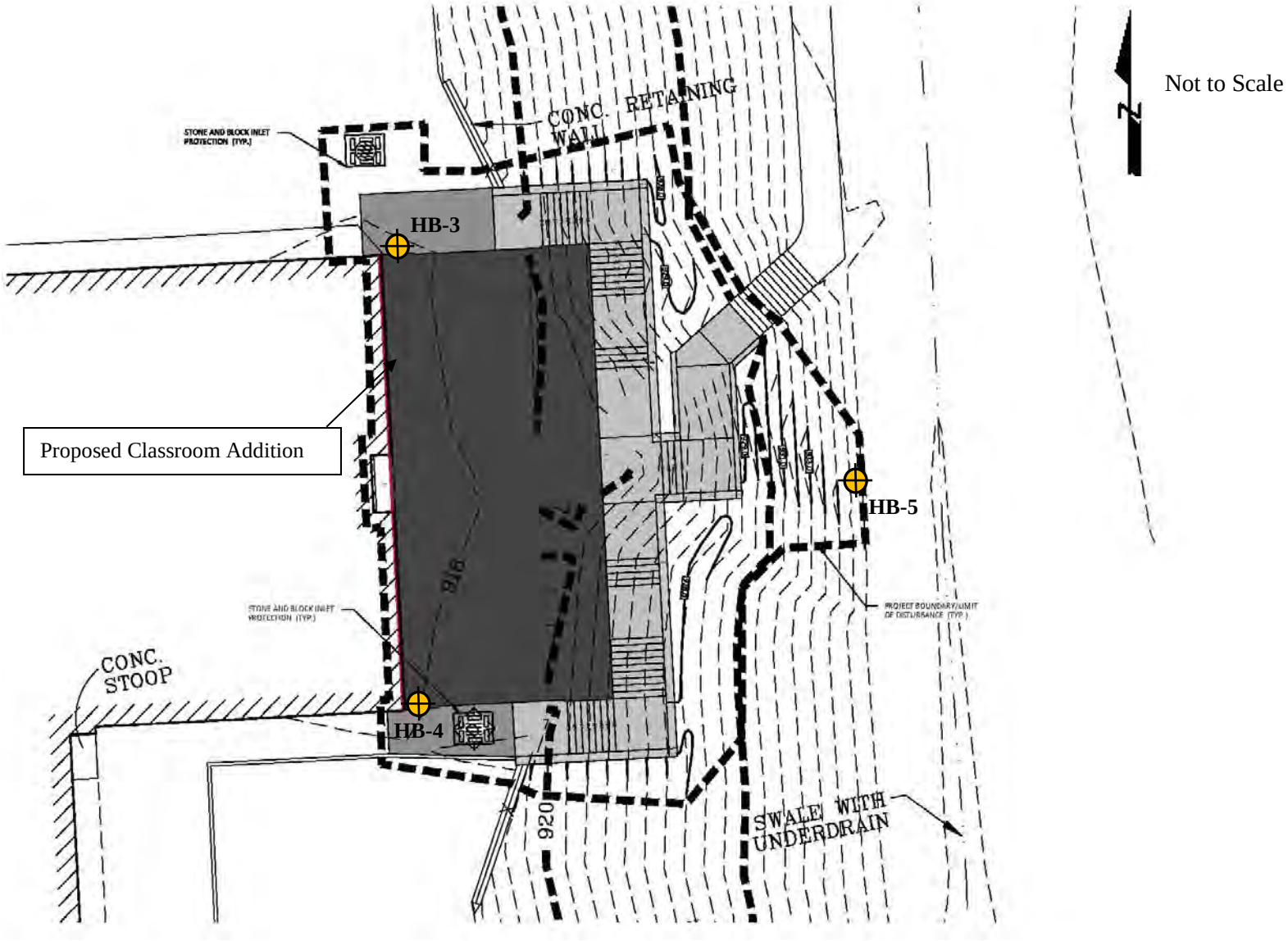
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Expanded Grading and Erosion Control Plan 1, From HB-C131, Dated 08/05/19

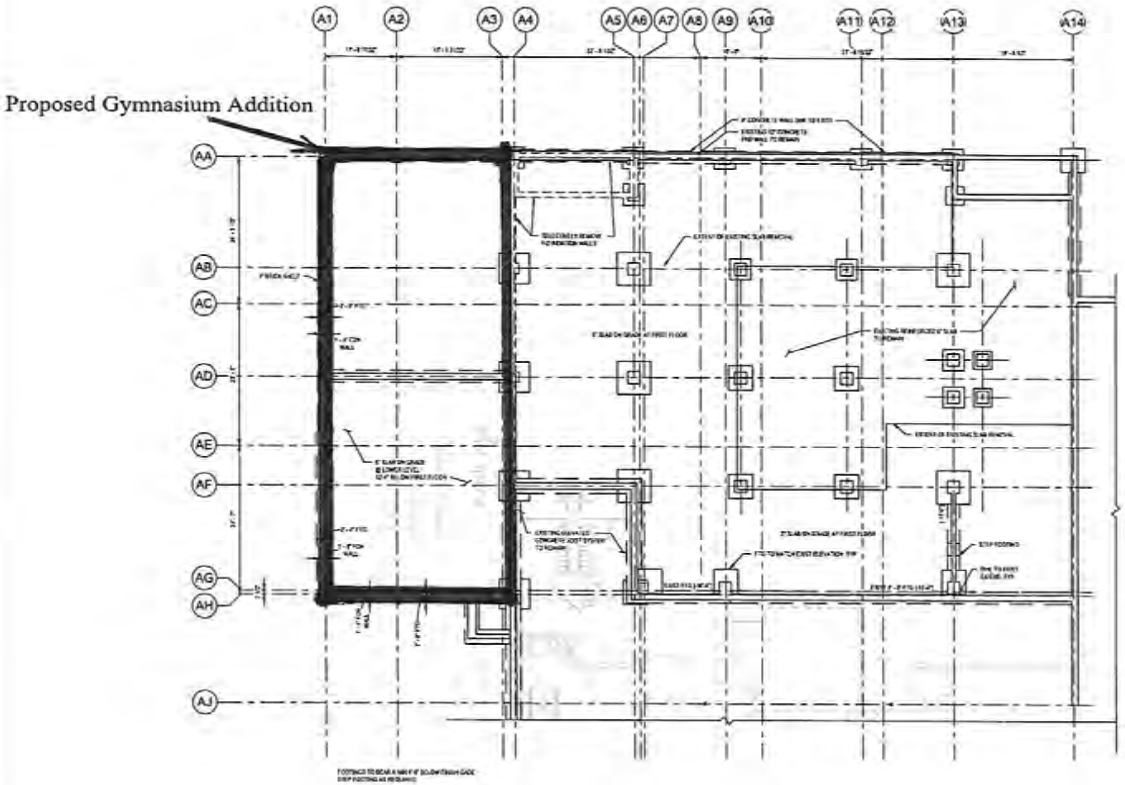
Approximate Test Boring Location

Not to Scale



Expanded Grading and Erosion Control Plan 2, From HB-C131, Dated 08/05/19

⊕ Approximate Test Boring Location



1 HB-S101 AREA A LOWER LEVEL FDN PLAN

MAINE ENDWELL CENTRAL SCHOOL DISTRICT

712 FARM TO MARKET RD., ENDWELL, NY 13760

NOT FOR CONSTRUCTION

IBI

2019 CAPITAL IMPROVEMENTS

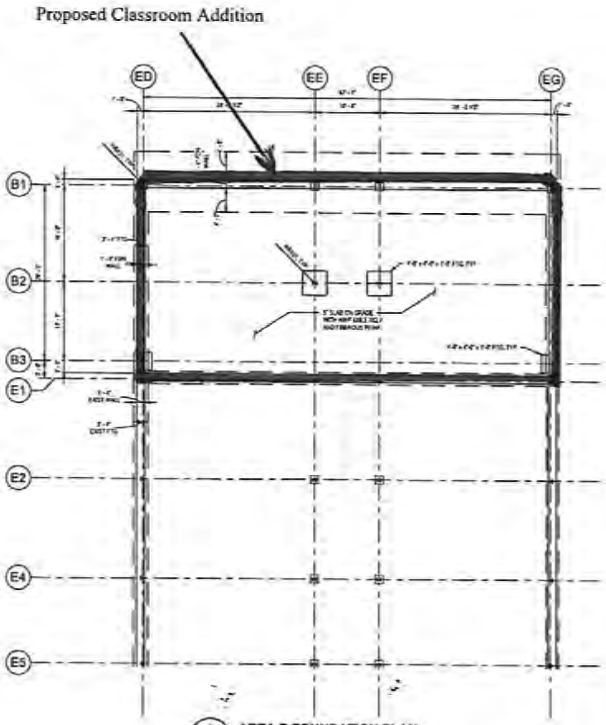
HOMER BRINK ELEMENTARY SCHOOL

IBI PROJECT NO. 121541	CLIENT PROJECT NO. 03-01-01-06-0-001-018
DRAWN BY Author	CHECKED BY Checker
PROJECT MGR. Manager	APPROVED BY Approver
SCALE 1/8" = 1'-0"	DATE 9/27/2019

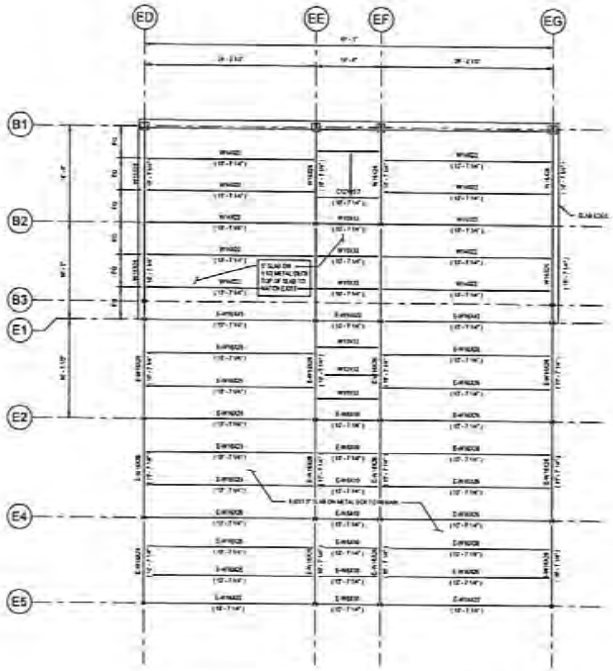
SHEET TITLE
FOUNDATION PLAN AREA A

SHEET NUMBER HB-S101

8/4/2019 9:51:16 PM



1 HB-S104 AREA B FOUNDATION PLAN



2 HB-S104 AREA B SECOND FLOOR FRAMING PLAN

MAINE ENDWELL CENTRAL SCHOOL DISTRICT

712 FARM TO MARKET RD., ENDWELL, NY 13760

NOT FOR CONSTRUCTION

IBI

2019 CAPITAL IMPROVEMENTS

HOMER BROWE ELEMENTARY SCHOOL

121347	

FOUNDATION PLAN & SECOND FLOOR FRAMING PLAN AREA B

HB-S104

8/4/2019 9:51:24 PM

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-02-0919

Client: IBI Group
Date Started: 08/08/19 **Finished:** 08/08/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 914.1'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/08/19	While drilling	None Noted	18.5'
08/08/19	Before casing removed	None Noted	18.5'
08/08/19	After casing removed	None Noted	out
08/08/19	After casing removed	caved @ 9.7'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX		0.0	0.5			0.5	Asphalt	
	H	1	0.5	2.0	SS/12	3-4-5		FILL; Brown cmf gravel, cmf sand, silt (moist)	9
	O	2	2.0	4.0	SS/14	4-10-10-9		Brown SILT, little cmf GRAVEL, trace cmf SAND (moist, very stiff) *Geotechnical fabric at top of sample*	20
	L	3	4.0	6.0	SS/17	5-6-6-7		Brown SILT, little cmf SAND, trace mf GRAVEL (moist, stiff)	12
5	O	4	6.0	8.0	SS/20	5-5-3-4		Brown SILT, trace cmf SAND (moist, stiff)	8
	S	5	8.0	10.0	SS/22	5-12-22-18		Brown cmf GRAVEL, some cmf SAND, some SILT (moist, compact)	34
10	T								
	E								
	M								
	A	6	13.5	15.0	SS/16	4-5-6		Brown cmf SAND, some mf GRAVEL, some SILT (moist, medium compact)	11
15	U								
	G								
	E								
	R								
		7	18.5	20.0	SS/17	14-20-17		Brown cmf GRAVEL, some cmf SAND, some SILT (moist, compact)	37
20	XXX							Bottom of Boring @ 20.0'	

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-02-0919

Client: IBI Group
Date Started: 08/09/19 **Finished:** 08/09/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 901.0'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/09/19	While drilling	None Noted	8.0'
08/09/19	Before casing removed	None Noted	8.0'
08/09/19	After casing removed	None Noted	out
08/09/19	After casing removed	caved @ 2.0'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	Classification of Material (**c** – **c**oarse, **m** – **m**edium, **f** – **f**ine; **and** – 35 to 50 %, **some** – 20 to 35 %, **little** – 10 to 20 %, **trace** – 0 to 10 %)	SPT "N" or RQD
0	XXX	1A	0.0	0.5	SS/17	2-9-11-10	0.5	Topsoil and Organic Material (moist)	20
		1B	0.5	2.0				Brown SILT, little cmf SAND, trace mf GRAVEL, trace ROOTS (moist, very stiff)	
	H								
		2	2.0	4.0	SS/15	13-12-10-14		Brown SILT, some cmf GRAVEL, some cmf SAND (moist, very stiff)	22
		3	4.0	6.0	SS/19	14-12-10-8		Brown SILT, trace cmf SAND (moist, very stiff)	22
5	S								
		4	6.0	8.0	SS/18	9-10-14-18		Brown SILT, trace fine GRAVEL, trace cmf SAND, trace ROOTS (moist, very stiff)	24
		5	8.0	10.0	SS/20	24-19-17-17		Brown/Grey cmf GRAVEL, some cmf SAND, some SILT (moist, compact)	36
10	A								
	XXX							Bottom of Boring @ 10.0'	
15									
20									

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-02-0919

Client: IBI Group
Date Started: 08/08/19 **Finished:** 08/08/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 915.5'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:** M. Schumacher, PG
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/08/19	While drilling	None Noted	13.5'
08/08/19	Before casing removed	None Noted	13.5'
08/08/19	After casing removed	None Noted	out
08/08/19	After casing removed	caved @ 6.3'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX		0.0	0.7			0.7	Asphalt	
	H	1	0.7	2.0	SS/9	4-7-6		Miscellaneous FILL; Brown cmf sand, mf gravel, silt, slag, asphalt (moist) *Geotextile fabric at tip of spoon*	13
		2	2.0	4.0	SS/18	7-8-9-10		Brown SILT, little cmf GRAVEL, little cmf SAND, trace CLAY (moist, very stiff)	17
5	S	3	4.0	6.0	SS/18	11-10-14-15		Brown CLAY, some SILT, some cmf SAND, little mf GRAVEL (moist, very stiff)	24
		4	6.0	8.0	SS/21	21-26-25-31		Brown SILT, little mf GRAVEL, trace cmf SAND, trace CLAY (moist, hard)	51
10	A	5	8.0	10.0	SS/17	13-14-29-30		Similar as above (moist, hard)	43
15		6	13.5	15.0	SS/16	13-21-30		Brown SILT, little cmf SAND, trace mf GRAVEL (moist, hard)	51
20	XXX							Bottom of Boring @ 15.0'	

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod
Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-02-0919

Client: IBI Group
Date Started: 08/08/19 **Finished:** 08/08/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 915.5'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:** M. Schumacher, PG
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/08/19	While drilling	None Noted	30.0'
08/08/19	Before casing removed	None Noted	36.5'
08/08/19	After casing removed	None Noted	out
08/08/19	After casing removed	caved @ 19.8'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX		0.0	0.5			0.5	Asphalt	
		1	0.5	2.0	SS/9	4-6-100@3"		FILL; Brown silt, mf gravel, cmf sand (moist) *Geotextile fabric at tip of spoon*	100+
	H							*Augers grinding @ 1.8' on obstruction*	
	O	2	2.0	4.0	SS/0	100@0"		FILL; Rock fragments in spoon *Cobble @1.8 to 2.5'*	100+
	L								
	L	3	4.0	6.0	SS/12	31-27-25-21		Brown SILT, little mf GRAVEL, little cmf SAND (moist, hard) *Possible Fill*	52
5	O								
	W	4	6.0	8.0	SS/18	31-30-26-27		Brown cmf GRAVEL, some cmf SAND, some SILT, some CLAY (moist, hard) *Possible Fill*	56
		5	8.0	10.0	SS/13	17-18-18-28		Brown SILT, little mf GRAVEL, little cmf SAND (moist, hard)	36
	S								
10	T								
	E								
	M								
		6	13.5	15.0	SS/19	12-16-16		Brown SILT, little cmf GRAVEL, little cmf SAND (moist, hard)	32
	A								
15									
	U								
	G								
	E								
	R								
		7	18.5	20.0	SS/14	29-30-35		Grey SILT, trace CLAY (moist, hard)	65
20								Continued on page 2	

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod
Remarks:

LOG OF BORING SAMPLES								CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
20								Continued from page 1	
	H O L L O W S T E M A U G E R	8	23.5	25.0	SS/18	16-23-36		Similar as above	59
25								*Drills harder @ 25.0 to 25.7*	
		9	28.5	30.0	SS/19	14-20-20		Grey/Brown SILT, little mf GRAVEL, trace cmf SAND (moist, hard)	40
30								*Drills hard @ 31.0 to 32.0*	
		10	33.5	35.0	SS/8	50-100@3"		Grey SILT and ROCK fragments (moist, hard) *Split spoon refusal @ 34.3'*	100+
35								*Auger refusal @ 36.5'*	
	XXX							Bottom of Boring @36.5'	
40									

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Maine-Endwell CSD – 2019 Capital Improvement Project
Maine and Endwell, New York
Report No.: 27540B-02-0919

Client: IBI Group
Date Started: 08/09/19 **Finished:** 08/09/19

Location of Boring: See Exploration Location Plan ELP-1
Elevation of Surface of Boring: 937.0'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Beau Fletcher
Casing Hammer: **Driller:** Ryan Casatelli
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.
Make & Model of Drill Rig: CME 550X ATV Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
08/09/19	While drilling	None Noted	23.5'
08/09/19	Before casing removed	None Noted	23.5'
08/09/19	After casing removed	None Noted	out
08/09/19	After casing removed	caved @ 13.7'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX	1A	0.0	1.0	SS/16	1-4-11-9	1.0	Topsoil and Organic Material (moist)	15
	H	1B	1.0	2.0				Brown cmf GRAVEL, some SILT, some cmf SAND (moist, medium compact)	
	O	2	2.0	4.0	SS/15	15-16-20-32		Similar as above (moist, compact) ~Possible Fill~	36
	L								
	L	3	4.0	6.0	SS/14	15-10-11-12		Brown SILT and CLAY, little mf GRAVEL, trace cmf SAND (moist, very stiff)	21
5	O								
	W	4	6.0	8.0	SS/13	17-25-23-29		Brown SILT, some cmf GRAVEL, little cmf SAND, trace CLAY (moist, hard)	48
		5	8.0	10.0	SS/22	21-19-20-26		Brown SILT, little fine GRAVEL, little cmf SAND (moist, hard)	39
	S								
10	T								
	E								
	M								
		6	13.5	15.0	SS/16	6-19-23		Brown/Grey SILT, little cmf SAND, trace fine GRAVEL (moist, hard)	42
	A								
15	U								
	G								
	E								
	R								
		7	18.5	20.0	SS/9	19-100@3"		Grey/Brown SILT and cmf GRAVEL, little cmf SAND (moist)	100+
20								*Possible boulder or cobble 19.3' to 20.5'*	
								Continued on page 2	

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

LOG OF BORING SAMPLES								CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
20	H							Continued from page 1	
	S								
	A	8	23.5	25.0	SS/13	13-18-40		Grey/Brown SILT, some cmf GRAVEL, little cmf SAND (moist, hard) *Rock fragments in bottom of spoon shoe*	58
25	XXX							Bottom of Boring @ 25.0'	
30									
35									
40									

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks:

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	932.4 ft (NAVD 88)
Risk Category:	IV	**Latitude:**	42.118267
Soil Class:	C - Very Dense Soil and Soft Rock	**Longitude:**	-76.01584





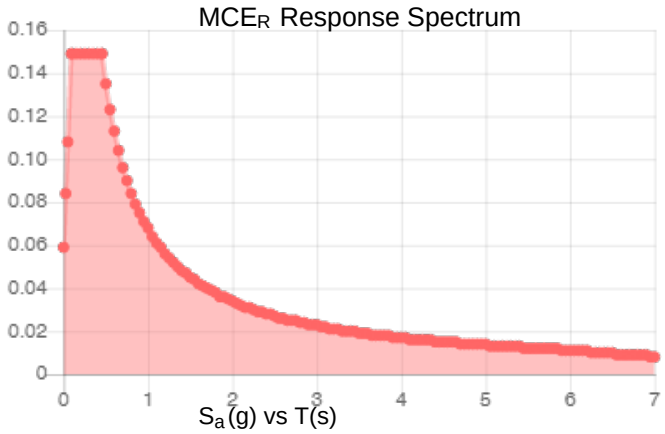
Seismic

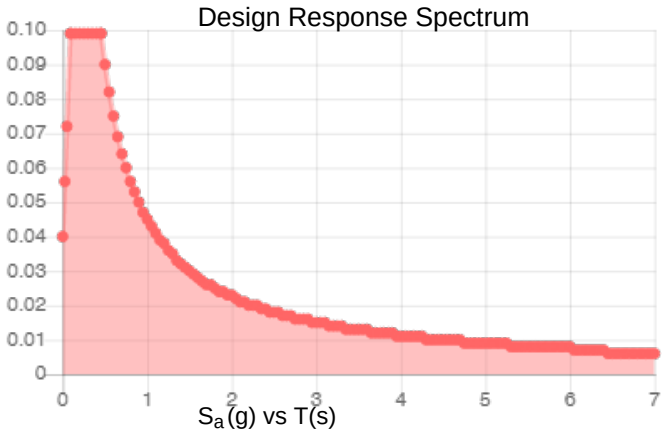
Site Soil Class: C - Very Dense Soil and Soft Rock

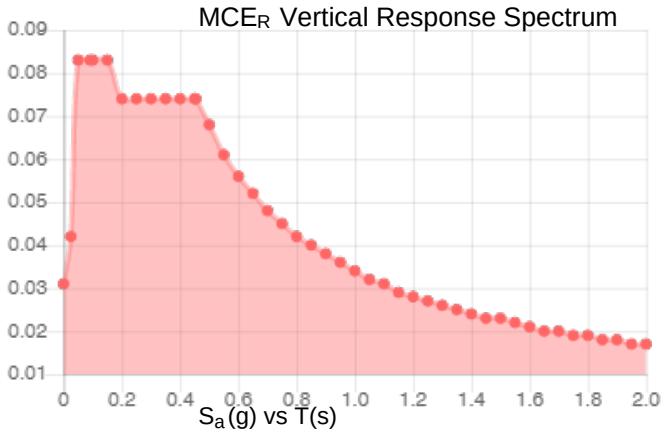
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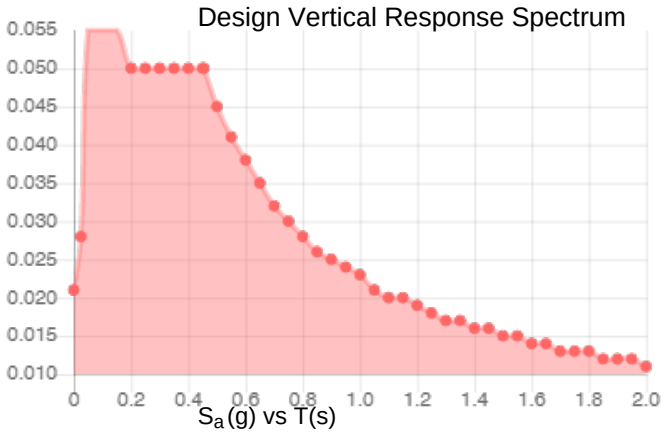
S_S :	0.114	S_{D1} :	0.045
S_1 :	0.045	T_L :	6
F_a :	1.3	PGA :	0.055
F_v :	1.5	PGA_M :	0.071
S_{MS} :	0.149	F_{PGA} :	1.3
S_{M1} :	0.068	I_e :	1.5
S_{DS} :	0.099	C_v :	0.7

Seismic Design Category A









Data Accessed: Fri Aug 30 2019

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

LABORATORY TEST SUMMARY
Maine-Endwell CSD – 2019 Capital Improvements Project, Maine and Endwell, New York
CME Report No.: 27540L-02-0919
August 28, 2019

CME Representatives obtained soil samples from Test Borings advanced as part of the Subsurface Exploration Program conducted for the subject project. Selected samples were delivered to CME's East Syracuse facility, an AASHTO re:source[1] accredited laboratory for various laboratory testing. The results are presented below:

Sample ID Notations: B - Test Boring, S – Sample

I. Natural Moisture Content (ASTM D2216)

Sample ID	Natural Moisture (%)
HB-4, S-1	9.2
HB-4, S-2	0.6
HB-4, S-3	7.9
HB-4, S-4	6.7
HB-4, S-5	9.0
HB-4, S-6	8.7
HB-4, S-7	21.0
HB-4, S-8	20.2
HB-4, S-9	12.2
HB-4, S-10	4.3

[1]**AASHTO re:source** – American Association of State Highway & Transportation Officials (AASHTO) Materials Reference Laboratory, a Federal Agency having jurisdiction to assess laboratory competency according to the Standards of the United States of America. CME East Syracuse accreditation includes testing of Portland Cement Concrete, Aggregate and Soil Materials. www.AASHTOresource.org.

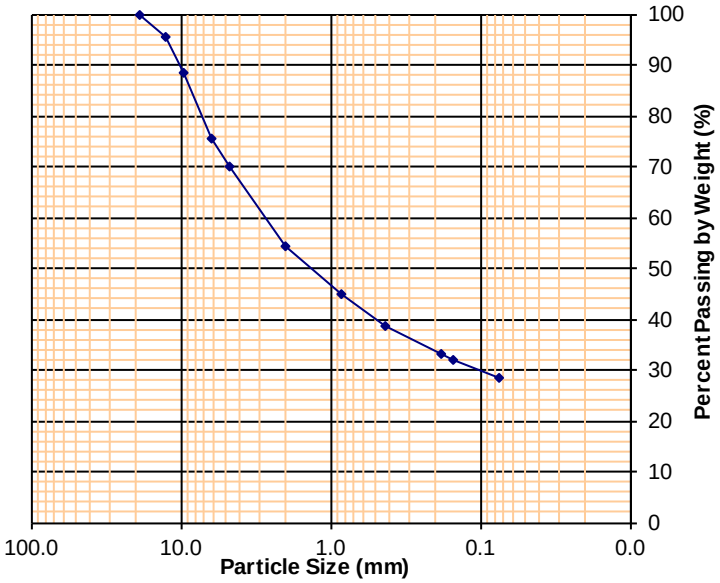
II. Particle Size Analysis (ASTM D422)

Sample #
HB-1, S-6

Classification
Brown cmf SAND, some mf GRAVEL, some SILT

Grain Size Distribution Curve

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
3/4"	19.0	100
1/2"	12.5	96
3/8"	9.5	88
1/4"	6.25	76
No.4	4.75	70
No.10	2.00	54
No.20	0.850	45
No.40	0.425	39
No.80	0.180	33
No.100	0.150	32
No.200	0.075	28

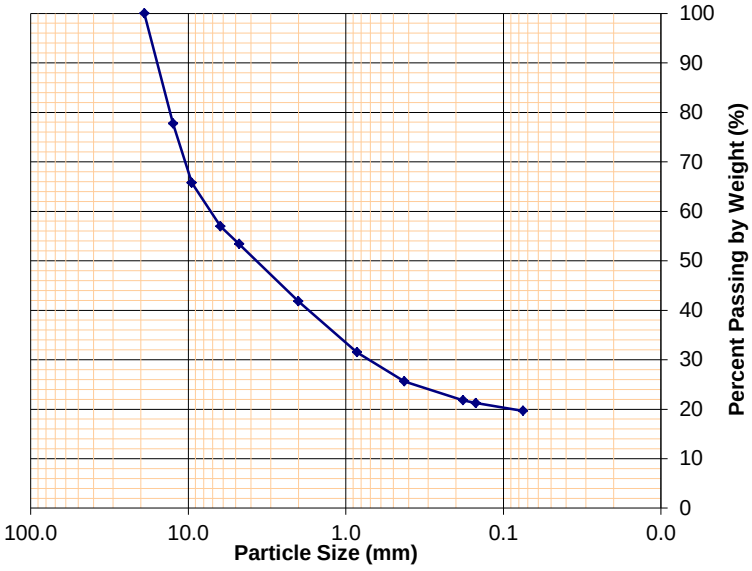


Sample #
HB-1, S-7

Classification
Brown mf GRAVEL, some cmf SAND, some SILT

Grain Size Distribution Curve

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
3/4"	19.0	100
1/2"	12.5	78
3/8"	9.5	66
1/4"	6.25	57
No.4	4.75	53
No.10	2.00	42
No.20	0.850	32
No.40	0.425	26
No.80	0.180	22
No.100	0.150	21
No.200	0.075	20

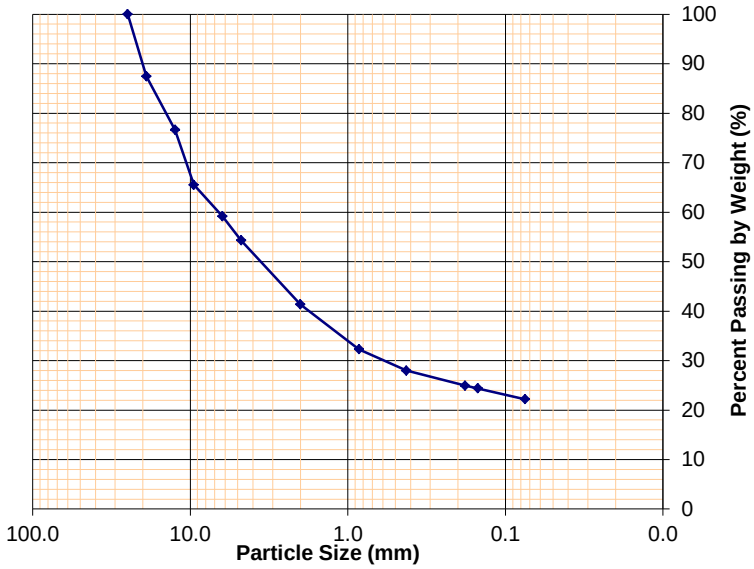


Sample #
HB-2, S-5

Classification
Brown/Grey mf GRAVEL, some cmf SAND, some SILT

Grain Size Distribution Curve

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
1"	25.0	100
3/4"	19.0	87
1/2"	12.5	77
3/8"	9.5	66
1/4"	6.25	59
No.4	4.75	54
No.10	2.00	41
No.20	0.850	32
No.40	0.425	28
No.80	0.180	25
No.100	0.150	24
No.200	0.075	22

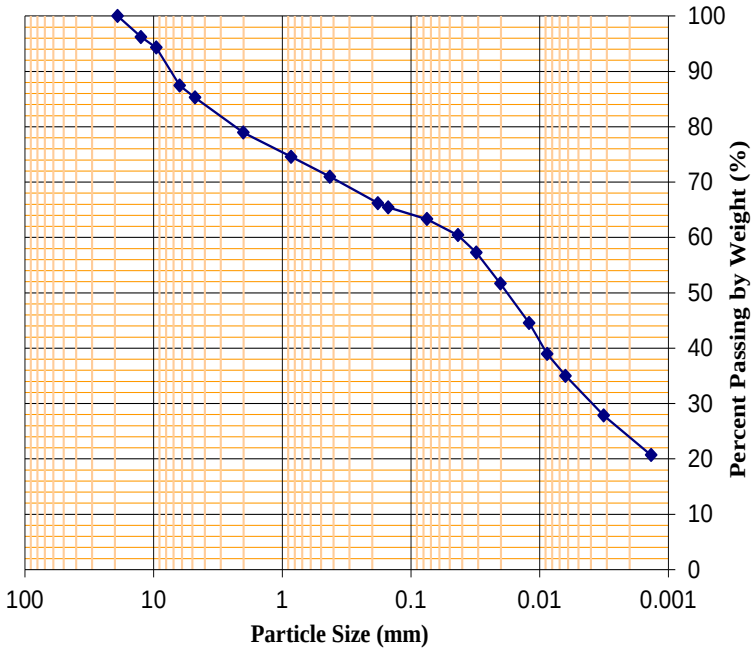


Sample #
HB-3, S-3

Classification
Brown CLAY, some SILT, some cmf SAND, little mf GRAVEL

Sieve Designation	Size (mm)	Percent Passing by Weight (%)
3/4"	19.0	100
1/2"	12.5	96
3/8"	9.50	94
1/4"	6.25	87
No.4	4.75	85
No.10	2.00	79
No.20	0.850	75
No.40	0.425	71
No.80	0.180	66
No.100	0.150	65
No.200	0.075	63
Hydrometer	0.043	60
	0.031	57
	0.020	52
	0.012	45
	0.009	39
	0.006	35
	0.003	28
	0.001	21

Grain Size Distribution Curve



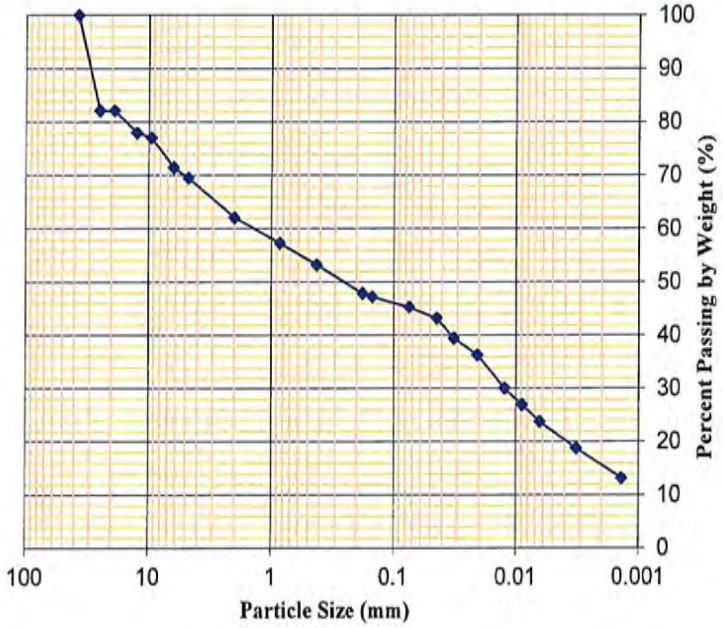
CME Associates, Inc.

Sample #
HB-4, S-4

Classification
Brown cmf GRAVEL, some cmf SAND, some SILT, some CLAY

Sieve Designation	Size (mm)	Percent Passing by Weight (%)
1 1/2"	37.5	100
1"	25.0	82
3/4"	19.0	82
1/2"	12.5	78
3/8"	9.50	77
1/4"	6.25	71
No.4	4.75	69
No.10	2.00	62
No.20	0.850	57
No.40	0.425	53
No.80	0.180	48
No.100	0.150	47
No.200	0.075	45
Hydrometer	0.044	43
	0.032	39
	0.021	36
	0.012	30
	0.009	27
	0.006	24
	0.003	19
	0.001	13

Grain Size Distribution Curve



If you have any questions regarding this report please contact our office.

Rounak Ghosh /For
Michael Curry
Laboratory Supervisor

GENERAL INFORMATION & KEY TO TEST BORING LOGS

The **Subsurface Exploration – Test Boring Logs produced by CME Associates, Inc**. present the observations and mechanical data collected by the driller while at the site, supplemented, at times, by classification of the materials removed from the borings determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Exploration Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the proposed construction. The evaluation must consider all the recorded details and their significance relative to each other. Often, analyses of standard boring data indicate the need for additional testing and sampling procedures to more accurately evaluate the subsurface conditions. Any evaluations of the contents of CME's report and the recovered samples must be performed by Licensed Professionals having experience in Soil Mechanics and Foundation Engineering. The information presented in this Key defines some of the procedures and terms used on the CME Exploration Logs to describe the conditions encountered. Refer to the Log on page 4 for key number.

Key No. **Description**

1. The figures in the **DEPTH SCALE** column define the vertical scale of the Boring Log.

2. **CASING BLOWS/FOOT** – shows the number of blows required to advance the casing a distance of 12 inches. The casing size, the hammer weight and the length of drop are noted under the **Methods of Investigation**. If the casing is advanced by means other than driving, the method of advancement will be indicated under **Methods of Investigation** at the top of the Log. If Hollow Stem Augers or Coring is used, it will be so noted in this column.

3. The **SAMPLE I.D.** is used for identification on the sample containers and in the Laboratory Test Report or Summary.

4. The **DEPTH OF SAMPLE** column gives the exact depth range from which a sample was recovered.

5. The **SAMPLE TYPE/RECOVERY** column is used to signify the various type of sample attempt. "SS is Split Spoon, "P" is Piston tube, "U" is Undisturbed tube. For soil samples, the recovered length of the sample is also indicated, in inches. If a rock core sample is taken, the core bit size designation is given here.

6. **BLOWS ON SAMPLER** – shows the results of the "Standard Penetration Test (SPT) ASTM D1586", recording the number of blows required to drive a split spoon sampler into the soil beneath the casing. The number of blows required for each six inches of penetration is recorded. The total number of blows required for the 6 inch to 18 inch interval is summarized in the **SPT "N"** column and represents the "Standard Penetration Number". The outside diameter of the sampler, the hammer weight and the length of drop are noted in the **Methods of Investigation** portion of the log. A "WH" or "WR" in this column indicates that the sample spoon advanced the 6 inch interval under **W**eight of **H**ammer or **W**eight of **R**ods, respectively.

7. The **DEPTH OF CHANGE** column designates the depth (in feet) that the driller noted a compactness or stratum change. In soft materials or soil strata exhibiting a consistent relative density, it is difficult for the driller to determine the exact change from one stratum to the next. In addition, a grading or gradual change may exist. In such cases the depth noted is approximate or estimated only and may be represented by a dashed line.

8. **CLASSIFICATION OF MATERIAL** – **Soil materials** encountered and sampled are described by the driller on the original log. Notes of the driller observations are also placed in this column. Recovered samples may also be visually classified by a Soil Technician upon receipt in the Laboratory. Visual sample classification is by Burmister System and strata may be classified additionally by the Unified System. The Burmister System is a type of visual-manual textural classification estimated by the Driller or Technician on the basis of weight-fraction of the recovered soil. See Table 1 **"Classification of Materials"**. The description of the relative soil compactness or consistency is based upon the standard penetration number as defined in Table 2. The description of the soil moisture condition is described as dry, moist, wet, or saturated. Water used to advance the boring may have affected the in-situ moisture content of the sample. Special terms are used as required to describe materials in greater detail, such terms are listed in ASTM D653. When sampling gravelly soils with a standard two-inch O.D. Split Spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders, cobbles, and large gravel is sometimes, but not necessarily, detected by an evaluation of the casing and sampler blows or through the "action" of the drill rig as reported by the driller.

   The Description of **Rock** is based upon the recovered rock core. Terms frequently used in the description are included in Table 3. The length of core run is defined as length of penetration between retrievals of the core barrel from the bore hole, expressed in inches. The core recovery expressed the length of core recovered from the core barrel per core run, in percent. The size core barrel used is noted in **Column 5**. The more commonly used sizes of core barrels are denoted "AX" and "NX". An "NX" core, being larger in diameter than "AX" core, often produces better recovery, and is frequently utilized where accurate information regarding the geologic conditions and engineering

properties is needed. A better estimate of in-situ rock quality is provided by a modified core recovery ratio known as the **"Rock Quality Designation" (RQD)**. This ratio is determined by considering only pieces of core that are at least 4 inches long and are hard and sound. Breaks obviously caused by drilling are ignored. The diameter of the core should preferably be not less than 2 inches (NX). The percentage ratio between the total length of such core recovered and the length of core drilled on a given run is the RQD. Table 4 gives the rock quality description as related to the **RQD**.

9. The **SPT "N"** or **RQD** is given in this column as applicable to the specific sample taken. In Very Compact coarse grained soils the N-value may be indicated as 50+, and in Hard fine-grained soils the N-value may be indicated as 30+. This typically means that the blow count was achieved prior to driving the sampler the entire 6 inch interval or the sampler refused further penetration. For the "NX" rock cores, the RQD is reported here, expressed in percent.

10. **GROUND WATER OBSERVATIONS** and timing noted by the driller are shown in this section. It is important to realize that the reliability of the water level observations depend upon the soil type (water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the borings may have influenced the observations. Ground water levels typically fluctuate seasonally so those noted on the log are only representative of that exhibited during the period of time noted on the log. One or more perched or trapped water levels may exist in the ground seasonally. All the available readings should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or ground water observation well installations.

TABLE 1 - VISUAL CLASSIFICATION OF MATERIALS (BURMISTER)	
GROUP	**TEXTURAL CLASSIFICATION SIZES**
BOULDERS	larger than 12" diameter
COBBLES	12" diameter to 3" sieve
GRAVEL	3" - coarse - 1" - medium - 1/2" - fine - #4 sieve
SAND	#4 - coarse - #10 - medium - #40 - fine - #200 sieve
SILT	#200 sieve (0.074mm) to 0.005mm size (see below *)
CLAY	0.005mm size to 0.001 mm size (see below *)

ABBREVIATIONS	**PERCENT OF TOTAL SAMPLE BY WEIGHT**	
f - fine	and	35 to 50%
m - medium	some	20 to 35%
c - coarse	little	10 to 20%
	trace	0 to 10%

***PLASTICITY DESCRIPTIONS**			
TERM	**PLASTICITY INDEX**	**DRY STRENGTH**	**FIELD TEST**
Non-plastic	0-3	Very low	falls apart easily
Slightly plastic	4 - 15	Slight	easily crushed by fingers
Plastic	15 - 30	Medium	difficult to crush
Highly plastic	31 or more	High	impossible to crush with fingers

*TABLE 2 - DESCRIPTION OF SOIL COMPACTNESS OR CONSISTENCY based on SPT "N"**		
Primary Soil Type	**Descriptive Term of Compactness**	**Range of Standard Penetration Resistance (N)**
COARSE GRAINED SOILS	Very loose	less than 4 blows per foot
(More than half of Material is larger than No. 200 sieve size.)	Loose	4 to 10
	Medium compact	10 to 30
	Compact	30 to 50
	Very compact	Greater than 50
FINE GRAINED SOILS	Descriptive Term of Consistency	Range of Standard Penetration Resistance (N)
(more than half of material is smaller that No. 200 sieve size)	Very soft	less than 2 blows per foot
	Soft	2 to 4
	Medium stiff	4 to 8
	Stiff	8 to 15
	Very Stiff	15 to 30
	Hard	Greater than 30
*The number of blows of 140 pound weight falling 30 inches to drive 2 inch O.D., 1-3/8 inch I.D. sampler 12 inches is defined as the Standard Penetration Resistance designated "N".		

TABLE 3 - ROCK CLASSIFICATION TERMS		
Rock Classification Terms		**Field Test or Meaning of Term**
Hardness	Soft	Scratched by fingernail
	Medium Hard	Scratched easily by penknife
	Hard	Scratched with difficulty by penknife
	Very Hard	Cannot be scratched by penknife
Weathering	Very Weathered Weathered Sound	Judged from the relative amounts of disintegration, iron staining, core recovery, clay seams, etc.
Bedding (Natural Breaks in Rock Layers)	Laminated Thinly bedded Bedded Thickly bedded Massive	less than 1 inch 1 inch to 4 inches 4 inches to 12 inches 12 inches to 36 inches greater than 36 inches

TABLE 4 **Relation OF Rock Quality Designation (RQD) and in-situ Rock Quality**	
RQD %	**Rock Quality Term Used**
90 to 100	Excellent
75 to 90	Good
50 to 75	Fair
25 to 50	Poor
0 to 25	Very Poor

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: **Report No.:**
Client: **Date Started:** **Finished:**
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:**

METHODS OF INVESTIGATION			
Casing: 3-1/4" ID H. Stem Auger	**Driller:**		
Casing Hammer:	**Driller:**		
Other:	**Inspector:**		
Soil Sampler: 2" OD Split Barrel	**Rod Size:** AWJ		
Sampler Hammer: Wt. 140 lbs.	**Fall:** 30 in.		
Make & Model of Drill Rig:			

GROUND WATER OBSERVATIONS			
Date	Time	Depth	Casing At
	While drilling		
	Before casing removed		
	After casing removed		
	After casing removed		

LOG OF BORING SAMPLES							CLASSIFICATION OF MATERIAL		
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
1	**2**	**3**	**4**	**4**	**5**	**6**	**7**	**8**	**9**
5									
10									
15									
20									

SS – Split Spoon, U – Undisturbed Tube, C – Core, WH – Weight of Hammer, WR – Weight of Rod

Remarks: