Geotechnical Engineering Report

John Jay Homestead Site and Building Enhancements

Katonah, NY

Prepared for:

Beyer Blinder Belle Architects & Planners LLP

120 Broadway, 20th Floor
New York, NY 10271

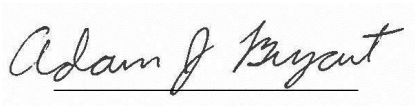
March 2024, Revised May 2024

CHA Project No.: 80675

CHA
III Winners Circle,
Albany, NY 12205

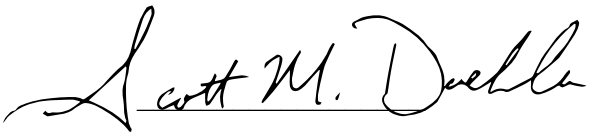
This report has been prepared and reviewed by the following qualified engineers employed by CHA.

Report Prepared By:



Adam J. Bryant, P.E.
Geotechnical Engineer

Report Reviewed By:



Scott M. Doehla, P.E.
Senior Geotechnical Engineer

TABLE OF CONTENTS

SECTION **PAGE NUMBER**

TABLES

APPENDICES

1.0 INTRODUCTION

CHA was retained by Beyer, Blinder, Belle Architects & Planners, LLP to complete a geotechnical exploration and evaluation for the design of the brick cottage reconstruction at John Jay Homestead State Historic Site located at 400 Jay Street in Katonah, New York. The project site is shown on *Figure 1 - Site Location Map*, included in Appendix A.

The primary objectives of the exploration were to evaluate the subsurface conditions at the site and to provide geotechnical recommendations for the design of the proposed brick cottage reconstruction and paving of the existing access road.

2.0 SITE AND PROJECT DESCRIPTION

The project site is located in the John Jay Homestead State Historic Site in Katonah, New York. The John Jay Homestead State Historic Site is an approximately 62-acre site comprised of 10 buildings, including the original 1787 John Jay House, with access roads, stone walls, and wooded areas throughout the site. The project site consists of the brick cottage located east of the John Jay House, and an access road and open fields located to the north, east and south of the John Jay House. Wetland areas and a small pond are located to the south and east of the project site. Standing water was observed in the wetland area approximately 100 feet east of the existing access road in April 2024. NYS Route 22 is located to the south, and the Cross River Reservoir is located approximately 3,000 feet northeast of the project site. The ground surface at the project site slopes down from northwest to the southeast from about El. 470 feet to El. 440 feet based on a site survey. The ground surface at the brick cottage slopes down from the northwest to southeast between El. 470 feet to El. 467 feet. The brick cottage has a two-story section with a partially below grade basement of unknown height and a one-story area without a basement. The total approximate footprint of the brick cottage is 3,000 square feet. The brick cottage has a finished floor elevation (FFE) of El. 471.8 feet. An approximately 3-foot-tall stone wall is located to the north of the building. Photographs of the site are included in Appendix B.

The project involves the design of repairs to the existing brick cottage and an existing access road, a new access road, a parking area and stormwater improvements. The repairs to the brick cottage will include partial or full reconstruction of the foundations and basement walls. The existing main access road, proposed access road and parking lot will be paved with asphalt. The existing access road will not include cuts and will be constructed at grades similar to the existing grade. The new access road requires cuts of up to 2 feet and fills of up to 2 feet. The new parking area requires cuts of up to 3 feet and fills of up to 4 feet. The new parking area will have a retaining wall with a north to south orientation, dividing the parking lot in half. The retaining wall will have exposed heights ranging from 2 to 8 feet and a total length of approximately 200 feet. The parking lot area to the east of the retaining wall will have a ground surface elevation of approximately 449 feet and the area to the west will have a ground surface elevation of approximately 459 feet. Stormwater

areas will consist of three bioretention ponds located to the east of the proposed new access road and parking area. The bioretention ponds will have footprints of approximately 2,500 to 5,500 square feet. Foundation work was originally being considered at the maintenance garage but was removed from the project scope by the client. Additional park access roads will be paved, the design of which is outside the scope of this report. The existing and proposed site features are shown on *Figure 2 – Subsurface Exploration Plan*, included in Appendix A.

3.0 SUBSURFACE EXPLORATION

The subsurface explorations and laboratory testing performed for this project are described in the following sections.

3.1 Boring Program

CHA conducted a subsurface exploration program consisting of fourteen total borings designated as B-1 through B-6, B-6A, B-7 through B-10, and B-101 through B-103. Borings B-1 through B-6, B-6A and B-7 through B-10 were completed between January 16 and 19, 2024. Borings B-101 through B-103 were completed on April 15, 2024. CHA retained Underground Surveying, LLC to perform a non-destructive, non-intrusive subsurface utility survey prior to drilling. Borings B-1 and B-2 were performed adjacent to the brick cottage and extended to depths of 20.9 to 22 feet. Boring B-3 was performed adjacent to the maintenance garage and extended to a depth of 22 feet. Borings B-4 and B-5 were performed along the existing access road to depths of 10 feet. Borings B-6, B-6A and B-7 through B-10 were performed for roadway and preliminary stormwater design purposes in the eastern portion of the site to depths of 12 feet. Boring B-7 is located in the vicinity of the parking area site retaining wall, which was added after the completion of the subsurface exploration. Borings B-101 through B-103 were performed for final stormwater design purposes in the eastern portion of the site to depths of 10.5 to 12 feet.

Borings B-1 through B-3 were located onsite by measuring from existing site features. Borings B-4 through B-6, B-6A, B-7 through B-10 and B-101 through B-103 were located onsite using a backpack GPS unit accurate to 1 meter. Ground surface elevations at boring locations were estimated based on interpolation between contours on the site survey and are based on NAVD88. The locations and elevations should be considered accurate only to the degree implied by the method used to determine them. The approximate boring locations are shown on *Figure 2 – Subsurface Exploration Plan*, included in Appendix A.

New England Boring Contractors of Glastonbury, Connecticut was retained by CHA to advance the borings. The field exploration was performed under the observation of a CHA geotechnical engineer who confirmed proper drilling and sampling methods were utilized for the exploration, observed and described soil samples, prepared field logs documenting the subsurface conditions, and conducted infiltration testing.

The borings were advanced with a Mobile Drill B53 truck mounted drill rig and Mobile Drill B53 rubber track mounted drill rig using hollow stem augers (HSA) with an inside diameter of 4.25 inches or solid stem augers (SSA) with an inside diameter of 2.25 inches. Continuous split spoon sampling was generally performed to a depth of up to 12 feet below ground surface, and then at standard 5-foot intervals thereafter to the boring termination depths. Standard Penetration Testing (SPT) was utilized during split-spoon sampling in general accordance with ASTM International (ASTM) Standard D-1586 "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils." The split spoon samples were advanced using an automatic 140 (±) pound hammer falling 30 (±) inches. "Blow counts" recorded on the boring logs indicate the penetration resistance for a 6-inch advancement of the split soon. Initially, the spoon is driven 6 inches to seat the sampler in undisturbed material. The number of blows required to drive the sampler the next 12 inches is taken as the SPT resistance or N-value. This value is indicative of the soil's in-place density or consistency. The final 6-inch increment that the spoon is driven is not included in the determination of the N-value. Boreholes B-1 through B-6 were backfilled with soil cuttings upon completion.

Infiltration tests were planned adjacent to borings B-6A, B-7 through B-10 and B-101 through B-103. Infiltration tests were not performed adjacent to B-8 through B-10 and B-101 through B-103 due to shallow groundwater. The infiltration tests conducted adjacent to B-6A and B-7 were designated as IT-6 and IT-7, respectively. Infiltration testing was conducted according to Appendix D of the 2022 New York State Stormwater Management Design Manual. After a presoak was conducted, water was added to the infiltration casing to set it to 24 inches above the bottom of the casing. The distance that the water within the casing dropped in an hour was measured and recorded. Water was added to bring the level back to 24 inches above the bottom of casing for the

next testing interval. The test was terminated after five test intervals. Infiltration test holes were backfilled with soil cuttings upon completion. A New York City Department of Environmental Conservation (NYCDEP) representative was onsite to oversee the infiltration testing.

Water level observations were made during and upon completion of drilling. Observation wells were installed in borings B-6A and B-7 through B-10 to depths of 12 feet. Details of the observation well construction are shown on the boring logs included in Appendix C. The water levels within the wells were recorded during the subsurface exploration, and are included in *Section 4.3 – Groundwater* Conditions and on the boring logs in Appendix C.

3.2 Laboratory Analysis

Select soil samples were submitted for laboratory analysis to confirm visual descriptions. Testing included five tests for particle-size analysis (ASTM D422), one test for Atterberg Limits analysis (ASTM D4318) and one test for water content of soil (ASTM D2216). The results of the laboratory testing are included in Appendix D.

4.0 SUBSURFACE CONDITIONS

Subsurface conditions at the site were assessed based on a review of published geologic maps and the results of the subsurface exploration performed on-site and are summarized below.

4.1 Regional Geology

According to the Surficial *Geologic Map of New York – Lower Hudson Sheet*, (Cadwell, D.H. 1991), the surficial soil at the site consists of glacial till.

According to the *Geologic Map of New York – Lower Hudson Sheet*, (Fisher, D.W., Isachsen, Y.W., and Rickard, L.V., 1970), the bedrock underlying the site consists of Fordham Gneiss.

4.2 Subsurface Stratigraphy

Subsurface conditions encountered in individual borings are detailed and described on the boring logs included in Appendix C. Subsurface conditions can generally be described as follows, in order of increasing depth:

Topsoil – Topsoil was encountered at the ground surface in borings B-1 through B-3, B-6 through B-10 and B-101 through B-103 and extended to depths ranging from 0.1 to 0.2 feet.

Fill – A layer of existing fill was encountered below the topsoil in borings B-1 and B-2 and at the ground surface in borings B-4 and B-5 and extended to depths ranging from 2 to 4 feet. The layer consisted of varying amounts of fine to coarse sand, silt, fine to coarse gravel, wood and organics. The fill was brown or gray and visually classified as moist, and some near-surface samples appeared frozen. The SPT N-values ranged from 4 to 74, indicating a very loose to very compact density, however, the presence of frost likely affected N-values within the samples taken at shallow depths.

Silt/Clayey Silt/Silty Clay – A layer of silt, clayey silt or silty clay was encountered below the topsoil layer in boring B-3, B-6, B-7, and B-101 through B-103, and below the fill in borings B-1 and B-5 and extended to depths ranging from 2 to 6 feet. The layer consisted of silt, clayey silt, or silty clay with varying amounts of fine to coarse sand, fine gravel and organics. The soil was brown and visually classified as moist. The SPT N-values ranged from 2 to 8, indicating a medium stiff consistency for cohesive samples and a very loose to loose density for cohesionless samples.

Glacial Till – Glacial till was encountered below the topsoil layer in borings B-8 through B-10, below the fill in borings B-2 and B-4, below the silt, clayey silt and silty clay layer in borings B-1, B-3, B-5 through B-7 and B-101 through B-103. The glacial till layer extended to depths ranging from 10 to 22 feet. Borings B-2, B-4 through B-10 and B-101 through B-103 terminated within the glacial till layer. The layer generally consisted of various proportions of fine to coarse sand, fine to coarse gravel, silt, clay and organics. The soil was brown and visually classified as moist to wet. The SPT N-values ranged from 5 to split spoon refusal, indicating a very stiff to hard consistency for cohesive samples and a loose to very compact density for cohesionless samples.

Completely Weathered Rock – Completely weathered rock was encountered below the glacial till layer in borings B-1 and B-3 and extended to depths of 20.9 to 22 feet. Borings B-1 and B-3 terminated within the completely weathered rock. The layer consisted of fine to coarse sand with little silt and trace fine gravel. The soil was brown and visually classified as wet. The SPT N-values ranged from 85 to split spoon refusal, indicating a very compact density.

4.3 Groundwater Observations

Table 1 summarizes the observation well measurements.

Table 1: Groundwater Observation Well Measurements

Boring ID	Surface Elevation (Feet)	Screen Interval Elevation (Feet)	Date	Water Depth (Feet)	Water Elevation (Feet)
B-6A	459.5	447.5 to 452.5	1/17/2024	11.7	447.8
			1/18/2024	11.7	447.8
			1/19/2024	11.7	447.8
			4/15/2024	12.4	447.1
			4/16/2024	12.4	447.1
B-7	451.0	439.0 to 444.0	1/18/2024	7.0	444.0
			1/19/2024	7.3	443.7
			4/15/2024	8.2	442.8
			4/16/2024	7.9	443.1
B-8	451.0	439.0 to 444.0	1/18/2024	9.1	441.9
			1/19/2024	3.5	447.5
			4/15/2024	0.1	450.9
			4/16/2024	0.1	450.9
B-9	449.5	437.5 to 442.5	1/18/2024	1.1	448.4
			1/19/2024	0.8	448.7
			4/15/2024	0.7	448.8
			4/16/2024	0.7	448.8
B-10	448.5	436.5 to 441.5	1/18/2024	4.2	444.3
			1/19/2024	3.0	445.5
			4/15/2024	2.5	446
			4/16/2024	2.8	445.7

Groundwater levels were estimated based upon measurements or observed soil sample moisture content in the remaining boreholes during drilling operations and at the completion of drilling. These estimates are indicated on the boring logs included in Appendix C. Groundwater was estimated at depths ranging from 0.4 to 13.2 feet during drilling. Standing water was observed at the ground surface at boring B-101. The boreholes were only open for a short duration and seasonal factors such as temperature and precipitation affect groundwater levels. For these reasons, long-term groundwater levels may differ from those described in this report.

4.4 Infiltration Test Results

NYCDEP requires two phases of subsurface exploration and testing for stormwater management design. Borings for preliminary design consisted of B-6, B-6A and B-7 through B-10 and borings for final design consisted of B-101 through B-103. Infiltration testing was not performed at the B-8, B-9, B-10, B-101, B-102 and B-103 locations due to shallow groundwater. The results of the testing adjacent to borings B-6A and B-7 are outlined in Table 2.

Table 2: Infiltration Test Results

Boring Location	Depth Performed (ft)	Approx. Elevation Performed (ft)	Observed Infiltration Rate (in/hour)				
			Infiltration Test Run No.				
			1	2	3	4	5
IT-6A	2.0	457.5	0.0	0.0	0.0	0.0	0.0
IT-7	2.0	449.0	0.0	0.0	0.0	0.0	0.0

5.0 GEOTECHNICAL RECOMMENDATIONS

The following sections provide geotechnical recommendations for design of the project. These recommendations are based on our review of the results of the subsurface exploration.

5.1 Shallow Foundations

Shallow foundations are recommended for support of the reconstruction of the existing brick cottage and the parking area site retaining wall. The foundations should bear on the natural clayey silt or glacial till soil. Spread footings should be designed based on a maximum net allowable bearing capacity of 3 kips per square foot (ksf). Foundations should be founded at a minimum depth of 4.0 feet below finished grade to provide frost protection. We recommend that isolated footings be a minimum of 3.0 feet wide and continuous strip footings be a minimum of 18 inches wide.

Foundations should be constructed as soon as possible after excavation to minimize the risk of disturbance to the bearing surface by exposure to precipitation or other adverse conditions. Foundation excavations should be backfilled with structural fill in accordance with the placement and compaction procedures included in *Section 5.6 - Structural Fill*.

Footing subgrade shall be protected from freezing during construction. Any disturbed, frozen or softened subgrade should be removed and replaced with structural fill as required to minimize detrimental impacts to foundation performance.

The natural soil is moisture sensitive and prone to disturbance when wet or when exposed to excessive foot traffic. Foundations should be constructed as soon as possible after excavation to minimize the risk of disturbance to the bearing surface by exposure to precipitation or other adverse conditions. To protect the footing subgrade and to provide a stable working surface a minimum of 6-inches of crushed stone over separation geotextile fabric or a 2-inch to 3-inch concrete mud mat should be placed below the footing subgrade. The separation geotextile shall be

a non-woven geotextile with an apparent opening size (AOS) equal to or smaller than the U.S. Standard sieve size of 70, such as Mirafi 160N. Crushed stone should consist of a 50:50 mix of NYSDOT size designation No. 1 and No. 2 crushed stone.

A detailed settlement analysis was beyond the scope of this report. However, based on the information obtained during the subsurface exploration and the recommendations outlined in this report, we anticipate that total foundation settlement will be less than 1 inch, with differential settlement of about 1/2 inch across a distance of 20 feet. These estimates are based on the assumption that foundations are constructed as recommended herein and that proper site preparation and construction monitoring is performed.

5.2 Lateral Earth Pressures

The new basement walls and the parking area site retaining wall should be designed to resist lateral soil pressure as well as surcharges from adjacent loads. Basement walls restrained against lateral movement should be designed to resist at-rest earth pressures.

New basement walls and the parking area site retaining wall should be backfilled with structural fill meeting the requirements of *Section 5.6 – Structural Fill* for a lateral distance equal to at least one-half of the wall height. Walls backfilled with structural fill should be designed to resist lateral earth pressures based on the following soil properties:

- Total Unit Weight 125 pcf
- Angle of Internal Friction 32 Degrees
- Coefficient of At-Rest Earth Pressure[1] 0.47
- Coefficient of Active Earth Pressure[1] 0.31
- Coefficient of Sliding (Mass concrete on Natural Soil) 0.3

Notes:
1. Earth pressure coefficients assume level backfill behind walls and should be adjusted if non-level backfill is proposed.

Design for new basement walls should incorporate drainage measures to prevent hydrostatic build-up and to provide positive drainage. Drainage measures should include a minimum 1-foot-thick horizontal layer of drainage stone from the surrounding soil by a separation geotextile having an AOS equal to or smaller than the U.S. Standard sieve size of 70, such as Mirafi 160N. A prefabricated drainage board may be utilized in lieu of the crushed stone layer. New basement walls that do not include drainage features should be designed for full hydrostatic pressure.

5.3 Pavement

The existing fill, natural clayey silt and silt and glacial till soils anticipated at pavement subgrade elevation are suitable for support of the proposed paved main access road, additional new access road and proposed parking area. The flexible pavement section should be designed using a California Bearing Ratio (CBR) of 5. The anticipated subgrade soils contain a significant amount of fine-grained soil and are poor draining. This soil is considered susceptible to frost heave, particularly if water is available for formation of ice lenses. Subbase course drainage is essential for successful pavement performance and longevity. The subbase course should be maintained in a drained condition at all times. Underdrains should be constructed along portions of the proposed new access road and consist of 4-inch diameter drain, spaced at 15 feet and drained to positive outlet. The underdrains should be a minimum of two feet below the proposed final grade and should be located in the access road areas that have a finished grade of less than or equal to El. 250 feet. Along the existing main access road, drainage may consist of either installing underdrains or sloping the subgrades to planned draining systems or otherwise.

The subgrade should be prepared in accordance with *Section 5.5 – Site and Subgrade Preparation*. The pavement section should include an aggregate subbase course such as NYSDOT Type 2 Subbase. The subbase along the existing access road should be underlain by a woven separation

and stabilization geotextile. The geotextile should have an AOS equal to or smaller than the U.S. Standard sieve size of 40, such as Mirafi 600X.

5.4 Seismic Site Classification and Design Parameters

Based on the site location, and in accordance with the 2020 Building Code of New York State (NYSBC) Section 1613, the following spectral response accelerations should be used for seismic design:

- Mapped Spectral Response Acceleration at Short Periods (S_s) 0.27g
- Mapped Spectral Response Acceleration at 1 Second Period (S_1) 0.06g

The location based spectral response accelerations are based on seismic Site Class B and must be adjusted for the project site class based on subsurface conditions. Site class D is recommended based on the subsurface conditions. In accordance with section 1613 of the NYSBC the following seismic design coefficients shall be used:

- Site Coefficient F_a.....1.6
- Site Coefficient F_v.....2.4

The potential for earthquake induced soil liquefaction was not required based on the subsurface conditions encountered and seismic design category of B for the project site.

5.5 Site and Subgrade Preparation

The areas within the improvements shall be stripped of any vegetation, topsoil and other deleterious materials. Subsequent to excavating to proposed grades, the exposed subgrade should be proofrolled with a smooth drum roller with a minimum static weight of 10 tons. The roller should operate in its vibratory mode, and complete at least six passes over the subgrade at a speed not exceeding 3 feet per second (fps). Areas which pump or weave during proof rolling shall be

undercut by a minimum of 12 inches and stabilized with structural fill meeting the requirements of *Section 5.6 - Structural Fill*. If the vibration roller tends to "bring up" moisture, the subgrade should be proof rolled with the roller operating in the static mode.

5.6 Structural Fill

Structural fill should be used for backfilling foundation excavations, for raising grade behind he site retaining wall, and overexcavations. Structural fill shall consist of sound, durable, non-plastic sand and gravel, free of stumps, roots, organics, and any frozen or deleterious materials.

Structural fill shall be placed in loose lifts not exceeding 8 inches in thickness and should be compacted to at least 95 percent of the maximum laboratory dry density as determined by the modified Proctor test (ASTM D-1557). Structural fill shall conform to the gradation requirements in Table 3.

Table 3: Gradation Requirements for Structural Fill

Sieve Size	Percent Passing by Weight
4 inch	100
No. 40	0 to 70
No. 200	0 to 10

The on-site soil generally does not meet the requirements for Structural Fill.

5.7 Groundwater and Control of Water

Groundwater may be encountered when excavating during foundation construction and when excavating to establish roadway subgrades. At the brick cottage, a design groundwater elevation of 465 feet is recommended. At the existing access road, a design groundwater elevation of 448 feet is recommended. At proposed parking area, design groundwater elevations of 448 feet for the western side and 444 feet for the eastern side and site retaining wall are recommended. At the new access road, a design groundwater elevation of 449 feet is recommended. Project specifications should require that groundwater be maintained at a minimum depth of 2.0 feet below the excavation bottom at all times. It is the responsibility of the contractor to determine the most appropriate dewatering methods and to maintain dry conditions so that foundation construction may be completed in the dry.

6.0 EXCAVATIONS

All excavations should be performed in accordance with the Occupational Safety and Health Administration (OSHA) standards, and applicable state and local codes. Where adequate sloping or benching is not possible, excavation support should be provided. The design of a temporary excavation system shall be performed by a registered Professional Engineer licensed in the State of New York.

7.0 OBSERVATION DURING CONSTRUCTION

A qualified geotechnical engineer should carefully inspect all excavations, backfilling, and final bearing surfaces for foundations to ascertain that subgrades have been properly prepared. The inspection of soil subgrades should include probing of select areas to confirm density. The materials used as fill should be tested by a qualified soils laboratory to verify they meet the specified gradations and to determine their optimum moisture content and maximum dry density for compaction. In-place density tests should be performed to verify that compaction methods and equipment achieve the required densities.

8.0 CLOSURE

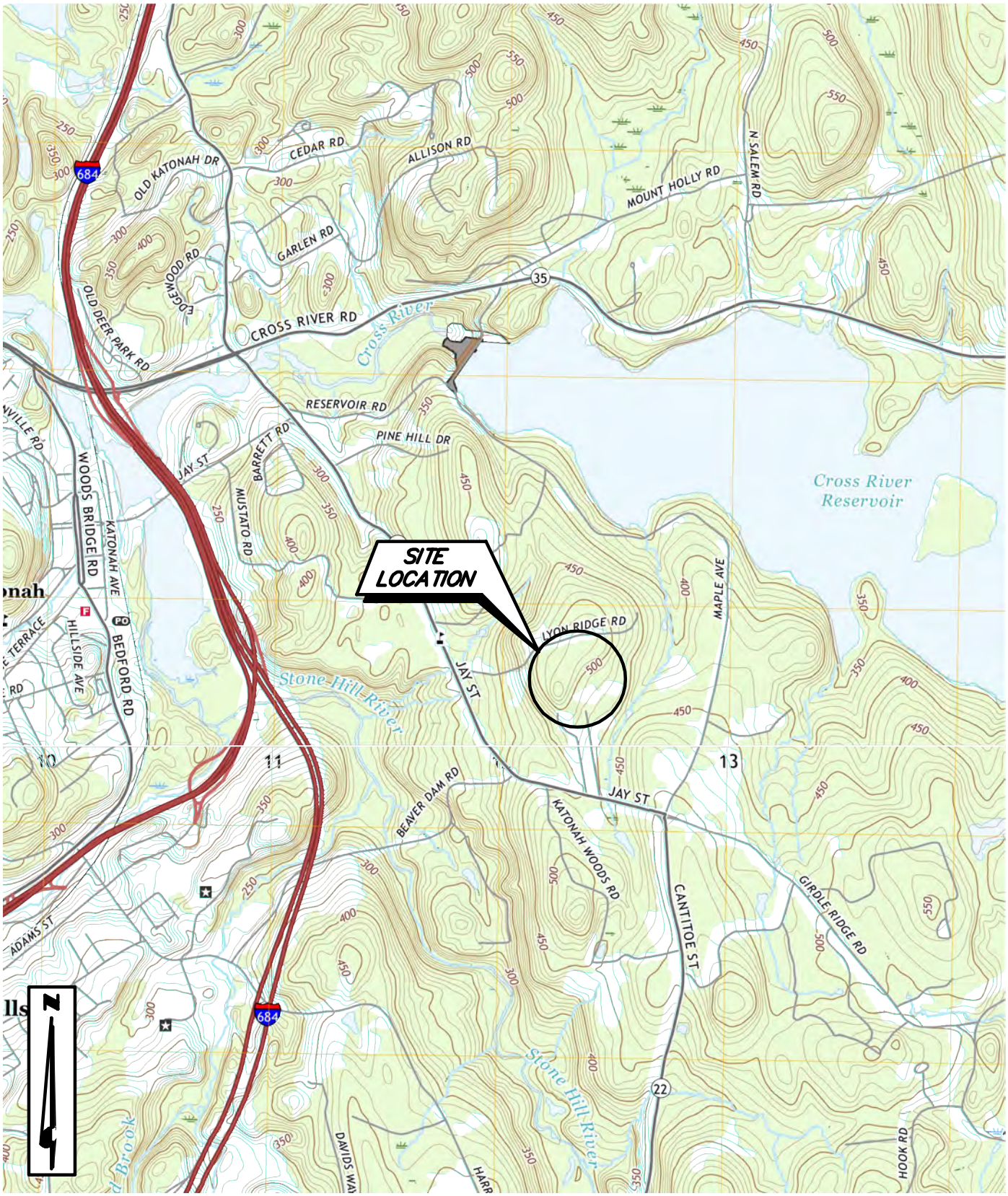
The geotechnical recommendations presented in this report are based, in part, on project and subsurface information available at the time this report was prepared and in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made. Some variation of subsurface conditions may occur between locations explored that may not become evident until construction. Depending on the nature and extent of the variations, it may be necessary to re-evaluate the data presented in this report.

This report has been prepared solely for design purposes and shall not be incorporated by reference of other means in the Contract Documents. If this report is included in the Contract Documents, it shall be for information only. Specifications shall take precedence.

CHA does not accept responsibility for designs based upon our recommendations unless we are engaged to review the final plans and specifications to determine whether any changes in the project affect the validity of our recommendations and whether our recommendations have been properly implemented in the design.

APPENDIX A

FIGURES



SOURCE: U.S.G.S. 7.5' Topographic
QUADRANGLES: CROTON FALLS AND MOUNT KISCO, NY

SCALE: 1"=2000'

CHA
III Winners Circle, PO Box 5269
Albany, NY 12205-0269
518.453.4500 · www.chacompanies.com

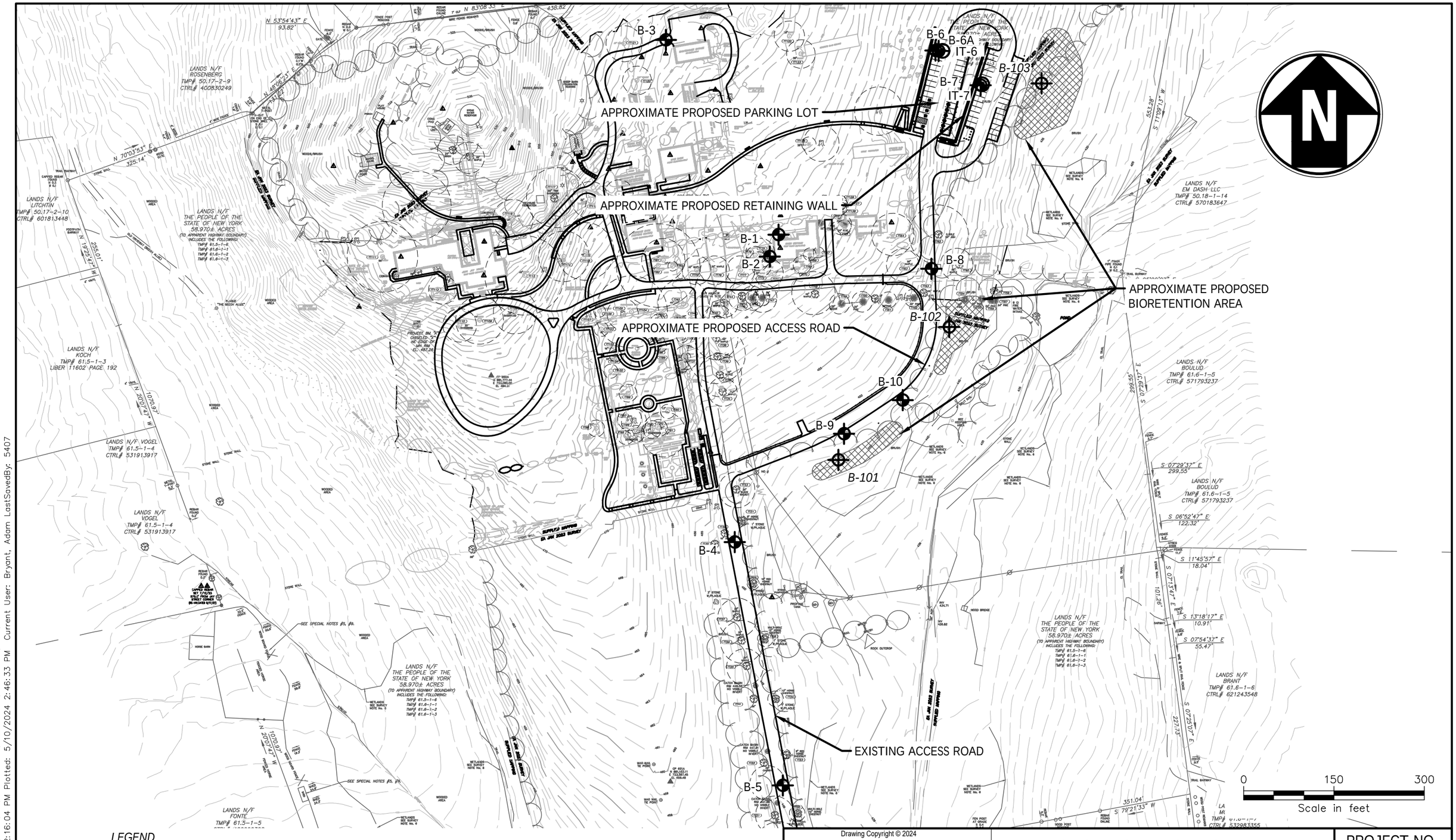
SITE LOCATION MAP

JOHN JAY HOMESTEAD STATE HISTORIC SITE
KATONAH, NEW YORK

PROJECT NO. 080675

DATE: 05/2024

FIGURE 1



LEGEND

B-1 — *APPROXIMATE JANUARY 2024 BORING LOCATION*

IT-6 — *APPROXIMATE JANUARY 2024 INFILTRATION TEST LOCATION*

B-101 — *APPROXIMATE APRIL 2024 BORING LOCATION*

CHA
III Winners Circle, PO Box 5269
Albany, NY 12205-0269
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SUBSURFACE EXPLORATION PLAN

JOHN JAY HOMESTEAD STATE HISTORIC SITE
KATONAH, NEW YORK

PROJECT NO. 080675

DATE: 05/2024

FIGURE 2

File: V:\PROJECTS\ANY\K6\080675.000\09_DESIGN\DRAWINGS\GEO\080675_BLP.DWG
Saved: 5/9/2024 2:16:04 PM Plotted: 5/10/2024 2:46:33 PM Current User: Bryant, Adam LastSavedBy: 5407

APPENDIX B

PHOTOGRAPHS

1

Drilling operations at boring B-1, looking south

2

Drilling operations at boring B-2, looking south

CHA	**John Jay Homestead Site and Building Enhancements** **Katonah, NY**
CHA # 80675	January 2024 – April 2024

3

Drilling operations at boring B-5, looking northwest

4

Groundwater observation well and infiltration casing installed at boring B-6A, looking west

5

Drilling operations at boring B-8, looking southeast

6

Groundwater observation well installed at boring B-10, looking southeast

7

Drilling operations at boring B-101, looking east

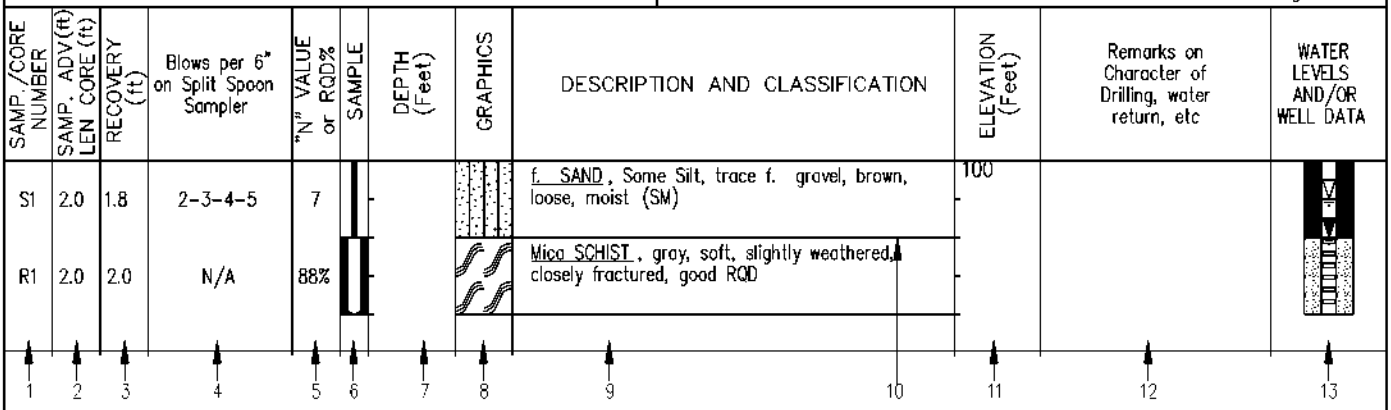
8

Drilling operations at boring B-103, looking east

APPENDIX C

BORING LOGS

LEGEND TO SUBSURFACE LOGS



Subsurface Logs present material classifications, test data, and observations from subsurface investigations at the subject site as reported by the inspecting geologist or engineer. In some cases, the classifications may be made based on laboratory test data when available. It should be noted that the investigation procedures only recover a small portion of the subsurface materials at the site. Therefore, actual conditions between borings and sampled intervals may differ from those presented on the Subsurface Logs. The information presented on the logs provide a basis for an evaluation of the subsurface conditions and may indicate the need for additional exploration. Any evaluation of the conditions reported on the logs must be performed by Professional Engineers or Geologists.

1. SAMP./CORE NUMBER – Samples are numbered for identification on containers, laboratory reports or in text reports.

2. SAMP.ADV/LEN.CORE – Length of sampler advance or length of coring run measured in feet.

3. RECOVERY – Amount of sample actually recovered after withdrawing sampler or core barrel from bore hole measured in feet.

4. SAMPLE BLOWS/6" – Unless otherwise noted, blow counts represent values obtained by driving a 2.0" (O.D.), 1-3/8" (I.D.) split spoon sampler into the subsurface strata with a 140 pound weight falling 30" as per ASTM International D1586. After an initial penetration of 6" to seat the sampler into undisturbed material, the sampler is then driven an additional 2 or 3 six inch increments. Refusal is defined as a resistance greater than 50 blows per 6" of penetration.

5. "N" Value or RQD % – "N" VALUE – The sum of the second and third sample blow increments is generally termed the Standard Penetration Test (SPT) "N" value. Refusal (R) is defined as a resistance greater than 50 blows for 6 inches of penetration. CORE ROD – Core Rock Quality Designation, RQD, is defined as the summed length of all pieces of core equal to or longer than 4 inches divided by the total length of the coring run. Fresh, irregular breaks distinguishable as being caused by drilling or recovery operations are ignored and the pieces are counted as intact lengths. RQD values are valid only for cores obtained with NX size core barrels.

6. SAMPLE – Graphical presentation of sample type and advance or core run length. See Table 1.

7. DEPTH – Depth as measured from the ground surface in feet.

8. GRAPHICS – Graphical presentation of subsurface materials. See Table 4. Dual soil classification and rock graphics may vary and are not shown on Table 4.

9. DESCRIPTION AND CLASSIFICATION – SOIL – Recovered samples are visually classified in the field by the supervising geologist or engineer unless otherwise noted. Particle size and plasticity classification is based on field observations, and using the Unified Soil Classification System (USCS). See Table 4. USCS symbols are presented in parentheses following the soil description. Where necessary, dual symbols may be used for combinations of soil types. Relative proportions, by weight and/or plasticity, are described in general accordance with "Suggested Methods of Test for Identification of Soils" by D.M. Burmister, ASTM Special Publication 479, 6-1970. See Table 2. Soil density or consistency description is based on the penetration resistance. See Table 3. Soil moisture description is based on the observed wetness of the soil recovered being moist or wet. Water introduced into the boring during drilling may affect the moisture content of the materials. Other geologic terms may also be used to further describe the subsurface materials. ROCK – Rock core descriptions are based on the inspector's observations and may be examined and described in greater detail by the project engineer or geologist. Terms used in the description of rock core are presented in Table 5.

10. DIVISION LINES – Division lines between deposits are based on field observations and changes in recovered material. Solid lines depict contacts between two deposits of different geologic depositional environment of known elevation. Dashed lines represent estimated elevation of contacts between two deposits of different geologic depositional environment. Dotted lines depict transitions of deposits within the same depositional environment, such as grain size or density.

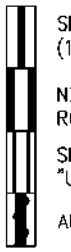
11. ELEVATION – Elevation of strata changes in feet.

12. REMARKS – Miscellaneous observations.

13. WATER LEVELS & WELL DATA – Hollow water level symbol, if present, represents level at which first saturated sample or water level was encountered. Solid water level symbol, if present, depicts the most probable static water elevation at the time of drilling or as measured in an installed observation well at a later date. Subsurface water conditions are influenced by factors such as precipitation, stratigraphic composition, and drilling/coring methods. Conditions at other times may differ from those described on the logs. For graphical presentation of observation/monitoring well construction, see Table 6. Elevations of changes in construction are noted at the bottom of each section.

LEGEND TO SUBSURFACE LOGS

TABLE 1
TYPICAL SAMPLE TYPES



SPLIT SPOON (1 3/8" I.D.)

NX SIZE ROCK CORE

SHELBY TUBE "UNDISTURBED"

AUGER SAMPLE

TABLE 2
SAMPLE MATERIAL PROPORTIONS

ADJECTIVE	PERCENTAGE OF SAMPLE
"and"	35% – 50%
"some"	20% – 35%
"little"	10% – 20%
"trace"	< 10%

Standard split spoon samples may not recover particles with any dimension larger than 1 3/8". Therefore, reported gravel percentages may not reflect actual conditions.

TABLE 3
DENSITY/CONSISTENCY

GRANULAR SOILS		COHESIVE SOILS	
Blows/ft.	Density	Blows/ft.	Consistency
< 5	Very Loose	< 2	Very Soft
5–10	Loose	2–4	Soft
11–30	Med. Compact	5–8	Med. Stiff
31–50	Compact	9–15	Stiff
> 50	Very Compact	16–30	Very Stiff
		> 30	Hard

TABLE 4
USCS CLASSIFICATION, PARTICLE SIZE, & GRAPHICS

	MAJOR PARTICLE SIZE DIVISION	USCS SYMBOL	GRAPHIC SYMBOL	GENERAL DESCRIPTION
COARSE GRAINED SOILS	GRAVEL Coarse: 3"–3/4" Fine: 3/4"–#4 Classification based on > 50% being gravel	GW		Well graded gravels, gravel & sand mix.
		GP		Poorly graded gravels, gravel & sand mix.
		GM		Gravel, sand and silt mix.
		GC		Gravel, sand and clay mix.
	SAND Coarse: #4–#10 Med.: #10–#40 Fine: #40–#200 Classification based on > 50% being sand	SW		Well graded sand, sand & gravel mix.
		SP		Poorly graded sand, sand & gravel mix.
		SM		Sand and silt mix.
		SC		Sand and clay mix.
FINE GRAINED SOILS	SILT & CLAY Classification based on > 50% passing #200 sieve.	ML		Inorganic silt, low plasticity.
		CL		Inorganic clay, low plasticity.
		OL		Organic silt/clay, low plasticity.
		MH		Inorganic silt, high plasticity.
		CH		Inorganic clay, high plasticity.
		OH		Organic silt/clay, high plasticity.
ORGANIC SOILS		Pt		Peat and other highly organic soils.
FILL		Fill		Miscellaneous fill materials.

TABLE 5
ROCK CLASSIFICATION TERMS

HARDNESS:

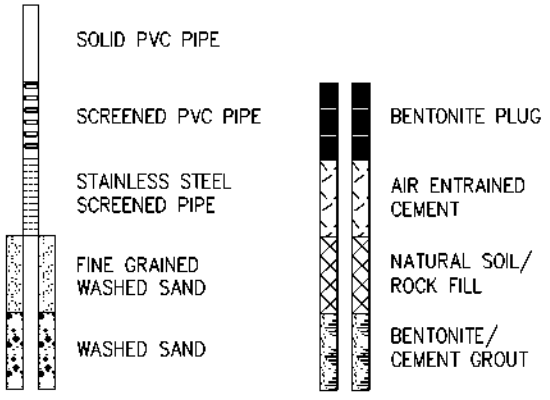
Very Soft	Carves
Soft	Grooves with knife
Med. Hard	Scratched easily with knife
Hard	Scatched with difficulty
Very Hard	Cannot be scratched with knife

WEATHERING:

Fresh	Slight or no staining of fractures, little or no discoloration, few fractures.
Slightly	Fractures stained, discoloration may extend into rock 1", some soil in fractures.
Moderately	Significant portions of rock stained and discolored, soil in fractures, loss of strength.
Highly	Entire rock discolored and dull except quartz grains, severe loss of strength.
Complete	Weathered to a residual soil.

BEDDING:		FRACTURE SPACING:		RQD:	
Massive	> 40"	Massive/V. Wide	> 6'	Excellent	> 90%
Thick	12' – 40"	Thick/Wide	2' – 6'	Good	76% – 90%
Medium	4" – 12"	Med./Med.	8" – 24"	Fair	51% – 75%
Thin	< 4"	Thin/Close	2 1/2" – 8"	Poor	25% – 50%
		V. Thin/V. Close	< 2 1/2"	V. Poor	< 25%

TABLE 6
WELL CONSTRUCTION



John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-1

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 882013.49 EASTING: 723564.52

SURFACE ELEV: 470.0 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 4.25" HSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/18/2024 11:05:00 AM | FINISH: 1/18/2024 12:10:00 PM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
1-18-24	12:10 PM	Completion	10.7	20	20.9
1-18-24	1:15 PM	Completion	7.9	20	20.9

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
								TOPSOIL			
S-1	2	0.8	10-5-3-2	8				**SILT**, Some f.m.c. Sand, trace organics, brown, loose, moist **(FILL)**			
S-2	2	1.2	2-2-3-3	5				**f.m.c. SAND**, Some Silt, brown, loose, moist **(FILL)**			
S-3	2	1.4	5-5-3-3	8		5		**Clayey SILT**, Some f.m.c. Sand, brown, medium stiff, moist **(ML)**	465		
S-4	2	1.5	8-16-13-9	29				**f.m.c. SAND**, Some Silt, brown, medium compact, moist **(SM-TILL)**			
S-5	2	1.3	15-34-25-19	59				**f.m.c. SAND**, Some Silt, trace f.c. gravel, brown, very compact, moist **(SM-TILL)**		Water level observations made during drilling may not represent static groundwater conditions.	▽
S-6	2	0.7	14-20-18-16	38		10		**f.m.c. SAND**, little silt, brown, compact, brown, moist **(SM-TILL)**	460		
S-7	2	1	6-9-10-14	19		15		**f.c. GRAVEL**, Some Silt, Some f.m.c. Sand, brown, medium compact, wet **(GM-TILL)**	455		
S-8	0.9	0.9	51-100/0.4'	R		20		**f.m.c. SAND**, little silt, brown, very compact, wet **(COMPLETELY WEATHERED ROCK)**	450		
								End of Boring at 20.9 ft			

John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-2

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 881975.48 EASTING: 723552.39

SURFACE ELEV: 469.5 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 4.25" HSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/18/2024 1:45:00 PM | FINISH: 1/18/2024 2:40:00 PM

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	1-18-24	2:15 PM	Estimated	10	8	12
	1-18-24	2:40 PM	Completion	12.3	20	22

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
								TOPSOIL			
S-1	2	1	2-2-2-3	4				**SILT**, Some f.m.c. Sand, trace f. gravel, trace organics, trace wood, brown, very loose, moist **(FILL)**			
S-2	2	1.2	2-2-3-7	5				**SILT**, little f.m.c. sand, trace organics, brown, loose, moist **(FILL)**			
S-3	2	1.2	10-10-15-13	25		5		**f.m.c. SAND**, Some Silt, little f.c. gravel, brown, medium compact, moist **(SM-TILL)**	465		
S-4	2	1.4	13-13-14-18	27				**Similar Soil (SM-TILL)**			
S-5	2	0.4	19-16-9-8	25				Grades to little silt **(SM-TILL)**	460		▽
S-6	2	1.7	5-11-12-12	23		10		**f.m.c. SAND**, And Silt, little f. gravel, brown, medium compact, wet **(SM-TILL)**		Water level estimated based on visual soil sample moisture content. Water level observations made during drilling may not represent static groundwater conditions.	
S-7	2	1.4	11-17-10-8	27		15		Grades to little silt, trace f. gravel **(SM-TILL)**	455		
S-8	2	0.4	18-17-68-47	85		20		**f.m.c. SAND**, Some Silt, trace f.c. gravel, brown, very compact, wet **(SM-TILL)**	450		
								End of Boring at 22 ft	445		

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-3

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 882335.02 EASTING: 723379.97

SURFACE ELEV: 487.0 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 4.25" HSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/19/2024 9:25:00 AM | FINISH: 1/19/2024 11:15:00 AM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
1-19-24	10:30 AM	Estimated	10	8	12
1-19-24	11:15 AM	Completion	13.2	20	22
1-19-24	12:30 PM	Completion	11.8	20	22

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
								TOPSOIL			
S-1	2	0.3	1-2-3-2	5				**SILT**, little f.m. sand, trace organics, brown, loose, moist **(ML)**			
									485		
S-2	2	0.8	6-5-4-8	9				**SILT**, Some f. Sand, trace f. gravel, brown, loose, moist **(ML-TILL)**			
S-3	2	1	12-19-24-24	43		5		**f.m.c. SAND**, Some Silt, Some f.c. gravel, brown, compact, moist **(SM-TILL)**			
								Becomes very compact **(SM-TILL)**			
S-4	2	1.5	34-31-26-57	57					480		
								Grades to Some f.c. Gravel **(SM-TILL)**			
S-5	2	0.5	23-35-36-82	71							▽
						10		**f.m.c. SAND**, little silt, trace f. gravel, brown, very compact, wet **(COMPLETELY WEATHERED ROCK)**		Water level estimated based on visual soil sample moisture content. Water level observations made during drilling may not represent static groundwater conditions.	
S-6	2	1	27-70-56-78	R					475		
						15		**Similar Soil (COMPLETELY WEATHERED ROCK)**			
S-7	2	1.5	76-45-40-37	85					470		
						20		Grades to no f. gravel **(COMPLETELY WEATHERED ROCK)**			
S-8	2	0.6	30-28-78-84	R					465		
								End of Boring at 22 ft			

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-4

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 881500.69 EASTING: 723494.50

SURFACE ELEV: 450.0 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/18/2024 10:00:00 AM | FINISH: 1/18/2024 10:35:00 AM

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	1-18-24	10:35 AM	Completion	4	N/A	10

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	DEPTH (Feet)	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
S-1	2	1	159-53-21-15	74		**f.m.c. SAND**, Some Silt, little f.c. gravel, gray, very compact, moist **(FILL)**			
S-2	2	0.6	12-9-9-7	18		**f.m.c. SAND**, Some Silt, brown, medium compact, moist **(SM-TILL)**			
S-3	2	2	2-6-10-16	16	5	**f.m.c. SAND**, Some Silt, brown, medium compact, wet **(SM-TILL)**	445	Water level observations made during drilling may not represent static groundwater conditions.	▽
S-4	2	1.5	14-16-16-16	32		Becomes compact **(SM-TILL)**			
S-5	2	2	20-14-15-11	29		Grades to trace f.c. gravel, becomes medium compact **(SM-TILL)**			
					10	End of Boring at 10 ft	440		
					15		435		
					20		430		

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-5

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 881096.64 EASTING: 723574.13

SURFACE ELEV: 450.0 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/17/2024 3:00:00 PM | FINISH: 1/17/2024 3:25:00 PM

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	1-17-24	3:25 PM	Completion	3.1	N/A	10

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
S-1	2	1	82-51-23-17	74				**f.m.c. SAND**, And f.c. Gravel, Some Silt, gray, very compact, moist **(FILL)**			
S-2	2	1.5	3-4-3-6	7				**Clayey SILT**, little f.m.c. sand, brown, medium stiff, moist **(ML)**		Water level observations made during drilling may not represent static groundwater conditions.	▽
S-3	2	1.1	17-22-20-20	42		5		**f.m.c. SAND**, little silt, brown, compact, wet **(SM-TILL)**	445		
S-4	2	1	18-24-23-24	47				Grades to trace f. gravel **(SM-TILL)**			
S-5	2	2	25-23-23-51	46				**Similar Soil (SM-TILL)**			
						10		End of Boring at 10 ft	440		
						15			435		
						20			430		

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-6

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 882317.48 EASTING: 723827.65

SURFACE ELEV: 459.5 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/16/2024 10:45:00 AM | FINISH: 1/16/2024 11:15:00 AM

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
								TOPSOIL			
S-1	2	0.3	1-2-1-2	3				**SILT**, little f.m.c. sand, trace organics, brown, very loose, moist **(ML)**			
S-2	2	1.4	5-8-9-8	17				**Clayey SILT**, little f.m.c. sand, trace organics, brown, medium compact, moist **(ML-TILL)**			
S-3	1	0.5	17-50/0.5'	R		5		**f.m.c. SAND**, Some Silt, trace f. gravel, brown, very compact, moist **(SM-TILL)**	455		
								End of Boring at 5.5 ft		SSA refusal at 5.5' due to possible boulder. Offset 4 feet east to B-6A.	
						10			450		
						15			445		
						20			440		
									435		

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-6A

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 882316.50 EASTING: 723832.82

SURFACE ELEV: 459.5 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

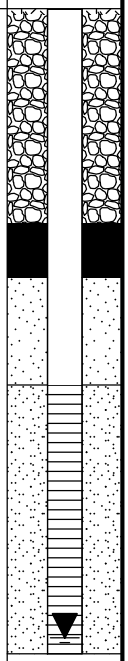
START: 1/16/2024 11:15:00 AM | FINISH: 1/16/2024 11:45:00 AM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
1-19-24	1:40 PM	Static	11.7	12	12
4-15-24	8:45 AM	Static	12	12	12
4-16-24	9:15 AM	Static	12	12	12

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.
						5			455	
S-1	2	1	10-10-13-15	23				**SILT**, And f.m.c. Sand, brown, medium compact, moist **(ML-TILL)**		Refer to B-6 for subsurface data to a depth of 5.5 feet.
								Becomes compact **(ML-TILL)**		
S-2	2	2	14-16-15-16	31		10			450	
								Becomes medium compact **(ML-TILL)**		Installed observation well to a depth of 12 feet upon completion. Infiltration test set adjacent to the borehole at a depth of 2 feet. Water level observations made during drilling may not represent static groundwater conditions.
S-3	2	2	10-12-13-16	25						
								End of Boring at 12 ft		
						15			445	
						20			440	
									435	

WATER LEVELS AND/OR WELL DATA



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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-7

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 882259.83 EASTING: 723902.72

SURFACE ELEV: 451.0 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/16/2024 1:35:00 PM | FINISH: 1/16/2024 2:10:00 PM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
1-19-24	1:45 PM	Static	7.3	12	12
4-15-24	8:40 AM	Static	8.2	12	12
4-16-24	9:10 AM	Static	7.9	12	12

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
S-1	2	1	2-1-1-1	2				**TOPSOIL**			
								SILT, little f.m.c. sand, trace organics, brown, very loose, moist **(ML)**	450		
S-2	2	1.5	8-12-12-16	24				**f.m.c. SAND**, Some Silt, trace organics, brown, medium compact, moist **(SM-TILL)**			
S-3	2	0.8	8-10-16-16	26		5		**f.m.c. SAND**, Some Silt, brown, medium compact, moist **(SM-TILL)**			
								Similar Soil (SM-TILL)	445		
S-4	2	1	10-16-14-16	30						Water level observations made during drilling may not represent static groundwater conditions.	
S-5	2	0.4	10-14-16-13	30				Grades to And Silt, becomes wet **(SM-TILL)**			
						10		**Similar Soil (SM-TILL)**		Installed observation well to a depth of 12 feet upon completion. Infiltration test set adjacent to the borehole at a depth of 2 feet.	
S-6	2	1	16-16-12-11	28					440		
								End of Boring at 12 ft			
						15			435		
						20			430		

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-8

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 881955.04 EASTING: 723820.85

SURFACE ELEV: 451.0 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/17/2024 9:30:00 AM | FINISH: 1/17/2024 10:20:00 AM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
1-19-24	1:45 PM	Static	3.5	12	12
4-15-24	8:50 AM	Static	0.1	12	12
4-16-24	9:20 AM	Static	0.1	12	12

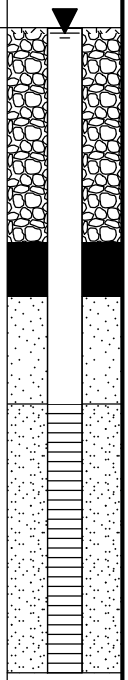
SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	DEPTH (Feet)	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)
S-1	2	1.1	2-2-3-8	5		**TOPSOIL**	
						SILT, Some f.m.c. Sand, trace organics, brown, loose, moist **(ML-TILL)**	450
						Grades to no organics, becomes medium compact **(ML-TILL)**	
S-2	2	1	8-10-10-13	20			
						f.m.c. SAND, Some Silt, brown, compact, moist **(SM-TILL)**	
S-3	2	1.2	22-14-22-16	36	5		
						SILT, And f.m.c. Sand, brown, very compact, moist **(ML-TILL)**	445
S-4	2	1.1	26-22-30-29	52			
						Grades to Some f.m.c. Sand **(ML-TILL)**	
S-5	2	0.7	25-41-31-29	72			
					10	Becomes wet **(ML-TILL)**	
S-6	2	2	28-32-40-44	72			440
						End of Boring at 12 ft	
					15		435
					20		430

REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.

Water level observations made during drilling may not represent static groundwater conditions.

Installed observation well to a depth of 12 feet upon completion. Infiltration test set adjacent to the borehole at a depth of 3 feet. Test was not completed due to groundwater level observations after installation.

WATER LEVELS AND/OR WELL DATA



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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-9

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 881680.96 EASTING: 723675.63

SURFACE ELEV: 449.5 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/17/2024 1:30:00 PM | FINISH: 1/17/2024 2:10:00 PM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
1-17-24	2:10 PM	Completion	2.7	N/A	12
1-18-24	9:20 AM	24 Hours	1.1	12	12
1-19-24	1:50 PM	Static	0.8	12	12
4-15-24	8:40 AM	Static	0.7	12	12
4-16-24	9:10 AM	Static	0.7	12	12

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
S-1	2	0.1	2-1-2-3	3				**TOPSOIL**		Water level observations made during drilling may not represent static groundwater conditions.	
S-2	2	1.5	3-7-18-26	25				**f.m.c. SAND**, Some Silt, brown, medium compact, moist **(SM-TILL)**			
S-3	2	0.7	20-15-10-9	25		5		**f.m.c. SAND**, Some Silt, trace f. gravel, brown, medium compact, wet **(SM-TILL)**	445		
S-4	2	0.7	12-14-17-16	31				Becomes compact **(SM-TILL)**			
S-5	1	0.4	8-50/0.5'	R				Becomes very compact **(SM-TILL)**	440		
S-6	2	0.8	16-19-19-40	38		10		Grades to little silt, becomes compact **(SM-TILL)**		Installed observation well to a depth of 12 feet upon completion.	
								End of Boring at 12 ft			
						15			435		
						20			430		
									425		

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-10

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: CWS

COORDS. NORTHING: 881736.79 EASTING: 723773.25

SURFACE ELEV: 448.5 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 1/17/2024 1:30:00 PM | FINISH: 1/17/2024 2:10:00 PM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
1-17-24	12:50 PM	Completion	2	N/A	12
1-18-24	9:15 AM	24 Hours	4.2	12	12
1-19-24	1:50 PM	Static	3	12	12
4-15-24	8:40 AM	Static	2.5	12	12
4-16-24	9:10 AM	Static	2.8	12	12

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
S-1	2	0.2	1-2-2-2	4				**TOPSOIL**			
S-2	2	0.9	2-19-10-8	29				**f.m.c. SAND**, little silt, brown, medium compact, moist **(SM-TILL)**	445	Water level observations made during drilling may not represent static groundwater conditions.	
S-3	2	1.4	8-10-11-14	21		5		**f.m.c. SAND**, Some Silt, trace f. gravel, brown, medium compact, wet **(SM-TILL)**			
S-4	2	0	23-15-19-16	34				No Recovery			
S-5	1	0.8	13-19-21-18	40				**SILT**, And f.m.c. Sand, brown, compact, wet **(ML-TILL)**	440		
S-6	2	2	17-20-22-17	42		10		Grades to Some f.m.c. Sand **(ML-TILL)**		Installed observation well to a depth of 12 feet upon completion.	
								End of Boring at 12 ft			
						15			435		
									430		
						20					
									425		

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-101

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: SMD

COORDS. NORTHING: 881637.41 EASTING: 723666.60

SURFACE ELEV: 445.5 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 4/15/2024 1:30:00 PM | FINISH: 4/15/2024 2:20:00 PM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
4-15-24	2:20 PM	Completion	5.8	None	12
4-15-24	2:55 PM	End of Day	1	None	12
4-16-24	9:30 AM	Start of Day	0.4	None	5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
								TOPSOIL	445	Standing water observed surrounding borehole. Water level observations made during drilling may not represent static groundwater conditions.	
S-1	2	1.7	WH-1-4-11	5				**Silty CLAY**, little f.m.c. sand, trace organics, brown, medium stiff, moist **(CL)**			
S-2	2	1.5	6-16-17-14	33				**f.m.c. SAND**, Some Silt, trace f. gravel, trace organics, brown, compact, wet **(SM-TILL)**			
S-3	2	1.3	15-18-18-14	36		5		grades to little f.c. gravel, no organics **(SM-TILL)**	440		
S-4	2	1	6-8-10-8	18				**Clayey SILT**, Some f.m.c. Sand, trace f. gravel, brown, very stiff, wet **(ML-TILL)**			
S-5	2	0.7	4-10-13-10	23				**f.m.c. SAND**, Some clayey Silt, trace f. gravel, brown, medium compact, wet **(SM-TILL)**			
S-6	0.1	0.1	100/0.1'	R		10		Insufficient recovery End of Boring at 10.5 ft	435	Solid Stem Auger refusal at 10.5 feet. The borehole was backfilled with soil cuttings upon completion.	
						15			430		
						20			425		

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-102

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: SMD

COORDS. NORTHING: 881858.22 EASTING: 723850.49

SURFACE ELEV: 445.2 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 4/15/2024 11:10:00 AM | FINISH: 4/15/2024 11:40:00 AM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
4-15-24	11:40 AM	Completion	2.1	None	12
4-15-24	2:50 PM	End of Day	1.8	None	12
4-16-24	9:25 AM	Start of Day	2.2	None	3.8

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
						0		**TOPSOIL**	445		
S-1	2	0.6	WH-WH-4-11	4				**Silty CLAY**, little f.m.c. sand, trace organics, brown, soft, moist **(CL)**			
S-2	2	0.6	9-8-12-14	20				**f.m.c. SAND**, Some Silt, Some f.c. Gravel, brown, medium compact, wet **(SM-TILL)**		Water level observations made during drilling may not represent static groundwater conditions.	
S-3	2	1.4	20-24-25-15	49		5		grades to little f.c. gravel, becomes compact **(SM-TILL)**	440		
S-4	2	1.8	11-10-9-11	19				**f.m.c. SAND**, Some Silt, trace f. gravel, trace organics, brown, medium compact, wet **(SM-TILL)**			
S-5	2	1.1	18-18-13-14	31				**f.m.c. SAND**, little silt, trace f.c. gravel, brown, compact, wet **(SM-TILL)**			
S-6	2	1.4	14-9-23-22	32		10		grades to little f.c. gravel **(SM-TILL)**	435		
								End of Boring at 12 ft		The borehole was backfilled with soil cuttings upon completion.	
						15			430		
						20			425		

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John Jay Homestead
SUBSURFACE LOG
HOLE NUMBER B-103

PROJECT NUMBER: 080675 4/26/2024

LOCATION: Katonah, New York

CLIENT: Beyer, Blinder, Belle Architects & Planners LLP

CONTRACTOR: New England Boring Contractors

DRILLER: D. DeAngelis INSPECTOR: C. Hourigan

CHECKED BY: SMD

COORDS. NORTHING: 882262.66 EASTING: 724003.70

SURFACE ELEV: 439.8 (ft; Estimated) DATUM: NAD83 / NAVD88

DRILL FLUID: None | DRILLING METHOD: 2.25" SSA | ROD SIZE: NW

HAMMER TYPE: Automatic | DRILL RIG: Rubber Track ATV

START: 4/15/2024 9:25:00 AM | FINISH: 4/15/2024 10:05:00 AM

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
4-15-24	10:05 AM	Completion	8.1	None	12
4-15-24	2:40 PM	End of Day	3.8	None	12
4-16-24	9:10 AM	Start of Day	3.6	None	7.8

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	BLOWS PER 6" ON SPLIT SPOON SAMPLER	"N" Value or RQD%	DEPTH (Feet)	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON CHARACTER OF DRILLING, WATER RETURN, ETC.	WATER LEVELS AND/OR WELL DATA
S-1	2	1.5	1-3-2-2	5		**TOPSOIL** **Clayey SILT**, little f.m.c. sand, trace f.c. gravel, trace organics, brown, loose, moist **(ML)**			
S-2	2	1.4	4-7-9-8	16		**f.m.c. SAND**, Some Silt, trace f. gravel, brown, compact, moist **(SM-TILL)**			
S-3	2	2	8-9-7-4	16	5	**f.m.c. SAND**, And clayey Silt, trace f. gravel, trace organics, brown, medium compact, moist **(SM-TILL)**	435	Water level observations made during drilling may not represent static groundwater conditions.	
S-4	2	2	8-11-13-20	24		**f.m.c. SAND**, Some clayey Silt, trace f. gravel, trace organics, brown, medium compact, wet **(SM-TILL)**			
S-5	2	0.9	26-16-16-14	32		**f.m.c. SAND**, little silt, little f.c. gravel, brown, compact, wet **(SM-TILL)**			
S-6	2	1.4	13-15-17-14	32	10	**Clayey SILT**, Some f.m.c. Sand, trace f.c. gravel, brown, hard, wet **(ML-TILL)**	430		
						End of Boring at 12 ft		The borehole was backfilled with soil cuttings upon completion.	
					15		425		
					20		420		
							415		

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APPENDIX D

LABORATORY TEST RESULTS

3348 Route 208, Campbell Hall, NY 10916
Phone: 845-496-1600 Fax: 845-496-1398
12960 Commerce Lake Drive, A14, Fort Myers, FL 33913
42 Day Farm Road, West Stockbridge, MA 01266
1813 State Route 7, Harpursville, NY 13787
877 US-4, Schuylerville, NY 12871

Client:	**CHA, Inc.**	**Project:**	John Jay Homestead Historic Site
Item:	B-4 S-1	**Project Number:**	240100
Source:	0-2'	**Lab Number:**	Q24-004E
Date Sampled:	1/29/2024	**Sampled By:**	Client
Date Tested:	1/30/2024	**Tested By:**	Michael Thomas

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE

Test Method(s): ASTM D422, C136, C117; AASHTO T88, T27, T11

Lab Number	Sample Type	Sampling Location	Specification
Q24-004E	B-4 S-1	In-Place	No Specification

Sieve Size		%	%	Spec. %
mm	Inches	Retained	Passing	Pass
100.0 mm	4"	0.0	100	
75.0 mm	3"	0.0	100	
63.0 mm	2 1/2"	0.0	100	
50.0 mm	2"	0.0	100	
37.5 mm	1 1/2"	0.0	100	
25.0 mm	1"	0.0	100	
19.0 mm	3/4"	0.0	100	
12.5 mm	1/2"	10.6	89	
6.3 mm	1/4"	15.1	74	
4.75 mm	#4	3.3	71	
2.00 mm	#10	10.7	60	
0.850 mm	#20	8.1	52	
0.600 mm	#30	2.1	50	
0.425 mm	#40	4.5	46	
0.150 mm	#100	13.4	32	
0.075 mm	#200	8.7	24	
Pan		23.5		

Comments:

Minus #200 by wash-sieve method.

Report Reviewed By: Emily J. Rodriguez

PDF

3348 Route 208, Campbell Hall, NY 10916
Phone: 845-496-1600 Fax: 845-496-1398
12960 Commerce Lake Drive, A14, Fort Myers, FL 33913
42 Day Farm Road, West Stockbridge, MA 01266
1813 State Route 7, Harpursville, NY 13787
877 US-4, Schuylerville, NY 12871

Client:	**CHA, Inc.**	**Project:**	John Jay Homestead Historic Site
Item:	B-5 S-1	**Project Number:**	240100
Source:	0-2'	**Lab Number:**	Q24-004F
Date Sampled:	1/29/2024	**Sampled By:**	Client
Date Tested:	1/30/2024	**Tested By:**	Michael Thomas

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE

Test Method(s): ASTM D422, C136, C117; AASHTO T88, T27, T11

Lab Number	Sample Type	Sampling Location	Specification
Q24-004F	B-5 S-1	In-Place	No Specification

Sieve Size		%	%	Spec. %
mm	Inches	Retained	Passing	Pass
100.0 mm	4"	0.0	100	
75.0 mm	3"	0.0	100	
63.0 mm	2 1/2"	0.0	100	
50.0 mm	2"	0.0	100	
37.5 mm	1 1/2"	0.0	100	
25.0 mm	1"	0.0	100	
19.0 mm	3/4"	0.0	100	
12.5 mm	1/2"	8.5	92	
6.3 mm	1/4"	20.4	71	
4.75 mm	#4	7.4	64	
2.00 mm	#10	13.0	51	
0.850 mm	#20	10.9	40	
0.600 mm	#30	2.2	38	
0.425 mm	#40	3.7	34	
0.150 mm	#100	6.6	27	
0.075 mm	#200	4.4	23	
Pan		22.9		

Comments:

Minus #200 by wash-sieve method.

Report Reviewed By: Emily J. Rodriguez

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3348 Route 208, Campbell Hall, NY 10916
Phone: 845-496-1600 Fax: 845-496-1398
12960 Commerce Lake Drive, A14, Fort Myers, FL 33913
42 Day Farm Road, West Stockbridge, MA 01266
1813 State Route 7, Harpursville, NY 13787

Client:	CHA, Inc.	**Project:**	John Jay Homestead Historic Site
Material:	B-1 S-3	**Project #:**	240100
Source:	4-6'	**Lab No.:**	Q24-004A
Location:	In-Place	**Item Number:**	No Specifications
Date Sampled:	1/29/2024	**Sampled By:**	Client
Date Tested:	1/30/24	**Tested By:**	Michael Thomas

REPORT OF ATTERBERG LIMITS TEST RESULTS

TEST METHOD: ASTM D4318; LL Method B

Lab Number:	Q24-004A	**Specification**
Liquid Limit:	21	
Plastic Limit:	17	
Plasticity Index:	4	

Notes: Values shown are percent moisture.
Customary procedure is to round results to the nearest whole number.

Comments:

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1813 State Route 7, Harpursville, NY 13787

Client:	CHA, Inc.	**Project:**	John Jay Homestead Historic Site
Material:	B-1 S-3	**Project Number:**	240100
Source:	4-6'	**Lab Number:**	Q24-004A
Location:	In-Place	**Item Number:**	No Specifications
Date Sampled:	1/29/2024	**Sampled By:**	Client
Date Tested:	1/29/2024	**Tested By:**	Michael Thomas

Report of Natural Moisture Content of Soil and Rock
Test Method: ASTM D2216

Wet Weight (g):	299.7
Dry Weight (g):	250.5
% Nat. Moisture:	**19.6**

Specification:

Comments:

No specifications available at time of testing.

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Client:	**CHA, Inc.**	**Project:**	John Jay Homestead Historic Site
Item:	B-1 S-7	**Project Number:**	240100
Source:	15-17'	**Lab Number:**	Q24-004B
Date Sampled:	1/29/2024	**Sampled By:**	Client
Date Tested:	1/30/2024	**Tested By:**	Michael Thomas

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE

Test Method(s): ASTM D422, C136, C117; AASHTO T88, T27, T11

Lab Number	Sample Type	Sampling Location	Specification
Q24-004B	B-1 S-7	In-Place	No Specification

Sieve Size		%	%	Spec. %
mm	Inches	Retained	Passing	Pass
100.0 mm	4"	0.0	100	
75.0 mm	3"	0.0	100	
63.0 mm	2 1/2"	0.0	100	
50.0 mm	2"	0.0	100	
37.5 mm	1 1/2"	0.0	100	
25.0 mm	1"	0.0	100	
19.0 mm	3/4"	13.6	86	
12.5 mm	1/2"	11.1	75	
6.3 mm	1/4"	12.4	63	
4.75 mm	#4	1.0	62	
2.00 mm	#10	2.9	59	
0.850 mm	#20	3.5	56	
0.600 mm	#30	1.0	55	
0.425 mm	#40	3.4	51	
0.150 mm	#100	12.2	39	
0.075 mm	#200	9.7	29	
Pan		29.2		

Comments:

Minus #200 by wash-sieve method.

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Client:	**CHA, Inc.**	**Project:**	John Jay Homestead Historic Site
Item:	B-2 S-6	**Project Number:**	240100
Source:	10-12'	**Lab Number:**	Q24-004C
Date Sampled:	1/29/2024	**Sampled By:**	Client
Date Tested:	1/30/2024	**Tested By:**	Michael Thomas

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE

Test Method(s): ASTM D422, C136, C117; AASHTO T88, T27, T11

Lab Number	Sample Type	Sampling Location	Specification
Q24-004C	B-2 S-6	In-Place	No Specification

Sieve Size		%	%	Spec. %
mm	Inches	Retained	Passing	Pass
100.0 mm	4"	0.0	100	
75.0 mm	3"	0.0	100	
63.0 mm	2 1/2"	0.0	100	
50.0 mm	2"	0.0	100	
37.5 mm	1 1/2"	0.0	100	
25.0 mm	1"	0.0	100	
19.0 mm	3/4"	0.0	100	
12.5 mm	1/2"	4.5	96	
6.3 mm	1/4"	5.4	90	
4.75 mm	#4	0.1	90	
2.00 mm	#10	3.3	87	
0.850 mm	#20	5.9	81	
0.600 mm	#30	2.3	79	
0.425 mm	#40	6.2	72	
0.150 mm	#100	19.9	52	
0.075 mm	#200	12.4	40	
Pan		40.0		

Comments:

Minus #200 by wash-sieve method.

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Client:	**CHA, Inc.**	**Project:**	John Jay Homestead Historic Site
Item:	B-3 S-4	**Project Number:**	240100
Source:	6-8'	**Lab Number:**	Q24-004D
Date Sampled:	1/29/2024	**Sampled By:**	Client
Date Tested:	1/30/2024	**Tested By:**	Michael Thomas

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE

Test Method(s): ASTM D422, C136, C117; AASHTO T88, T27, T11

Lab Number	Sample Type	Sampling Location	Specification
Q24-004D	B-3 S-4	In-Place	No Specification

Sieve Size		%	%	Spec. %
mm	Inches	Retained	Passing	Pass
100.0 mm	4"	0.0	100	
75.0 mm	3"	0.0	100	
63.0 mm	2 1/2"	0.0	100	
50.0 mm	2"	0.0	100	
37.5 mm	1 1/2"	0.0	100	
25.0 mm	1"	0.0	100	
19.0 mm	3/4"	9.4	91	
12.5 mm	1/2"	4.5	86	
6.3 mm	1/4"	4.2	82	
4.75 mm	#4	1.6	80	
2.00 mm	#10	3.2	77	
0.850 mm	#20	5.1	72	
0.600 mm	#30	1.5	71	
0.425 mm	#40	5.3	65	
0.150 mm	#100	17.6	48	
0.075 mm	#200	14.0	34	
Pan		33.6		

Comments:

Minus #200 by wash-sieve method.

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