REPORT OF GEOTECHNICAL EXPLORATION

2740 Webster Avenue

Borough of The Bronx, New York

February 2022

Prepared For:

Longhouse Properties
63 East Field Drive
Bedford, NY 10506

Attn: Mr. Clint Olsen

Prepared By:

GTA Engineering Services of New York, P.C.
Geotechnical and Environmental Consultants
211Gates Road, Suite K
Little Ferry, New Jersey 07643
(201) 641-1850

GTA Job No: 34211441

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GTA Engineering Services of New York, P.C.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

An affiliate of Geo-Technology Associates, Inc.

February 10, 2022

Longhouse Properties
63 East Field Drive
Bedford, NY 10506

Attn: Mr. Clint Olsen

Re: Report of Geotechnical Exploration
2740 Webster Avenue
Borough of The Bronx, New York

Dear Mr. Olsen:

In accordance with our agreement dated June 29, 2021, GTA Engineering Services of New York, P.C. (GTA) has performed a geotechnical engineering exploration for the proposed construction of a new 11-story building to be located at 2740 Webster Avenue in the Borough of The Bronx, New York. The exploration consisted of performing 12 Standard Penetration Test borings throughout the project site, visually classifying the encountered soils, and performing limited laboratory testing. This report presents the results of our findings and conclusions regarding subsurface conditions with respect to foundation support and other geotechnical considerations.

Should you have any questions or require additional information, please do not hesitate to contact our office.

Very truly yours,
GTA Engineering Services of New York, P.C.

Douglas Fernandez
Project Manager

Robert Dykstra, P.E.
Vice President

DF/rd/rd
Job No. 34211441

REPORT OF GEOTECHNICAL EXPLORATION
2740 WEBSTER AVENUE
BOROUGH OF THE BRONX, NEW YORK
FEBRAURY 2022

INTRODUCTION

GTA Engineering Services of New York, P.C. (GTA) has performed a geotechnical engineering exploration for the proposed construction of a new 11-story building to be located at 2740 Webster Avenue in the Borough of The Bronx, New York. The site location is shown on the Site Location Map, Figure 1 in Appendix A, and identified as Block 3273, Lot 85 on New York City tax maps.

The scope of this study included a field exploration, laboratory testing, and engineering analyses. The field exploration consisted of 12 Standard Penetration Test (SPT) borings. Samples were obtained from the borings and were visually examined and subjected to limited laboratory testing to further characterize general subsurface conditions. Conclusions and recommendations were derived from engineering analyses of field and laboratory data.

SITE AND PROJECT DESCRIPTION

The project site is located on the south side of Webster Avenue between East 195th and 197th Streets. The site is currently occupied by an active parking lot. The site is neighbored to the east by an Metro North easement, and to the south by an Metro North railway running parallel with the site.

We understand that the proposed building will be an 11-story mixed-use structure with a partial cellar level established approximately 11 feet below the existing sidewalk level. The building will occupy a base footprint of approximately 22,669 square feet. The tower portion of the structure will occupy a base footprint of 19,486 square feet. After discussions with the client, we understand the building may be redesigned to have a full cellar level.

SUBSURFACE EXPLORATION

The subsurface exploration program performed for this study consisted of drilling 12 Standard Penetration Test (SPT) borings. The test borings were performed by DK Drilling of New York, Inc. between December 7th and 16th, 2022. The borings were advanced to completion depths ranging from approximately 27 to 100 feet below the existing ground surface using truck-mounted drilling equipment. A combination of Hollow Stem Auger (HSA) and mud-rotary drilling techniques were used to advance the borings.

GTA located the explorations in the field, documented drilling procedures, maintained continuous logs of the explorations, and obtained soil and rock samples. The approximate locations of the explorations are shown on the Boring Location Plan, which is included as Figure 2 in Appendix A. Detailed descriptions of the encountered subsurface conditions are indicated on the Logs of Borings which are presented in Appendix B.

Standard Penetration Testing (SPT) was performed using an automatic hammer in general accordance with procedures of ASTM D1586. Soil samples were obtained in two- to five foot increments within the boreholes. The SPT involves driving a 2-inch O.D., 1⅜-inch I.D. split-spoon sampler with a 140-pound hammer free-falling from a height of 30-inches. The number of blows required to drive the sampler was recorded in six-inch intervals. The SPT N-value, given as blows per foot, is defined as the total number of blows required to drive the sampler from the 6- to 18-inch interval.

Soil and rock samples obtained from the explorations were brought to GTA's laboratory for visual classification by a geotechnical engineer and limited laboratory testing. The soils were classified in accordance with the Unified Classification System (USCS) and New York City Building Code (NYCBC). The descriptions provided on the logs are therefore based on visual observations of the samples as summarized in the Notes for Exploration Logs and Notes for Rock Descriptions included in Appendix B, and supplemented by the laboratory test results.

SITE GEOLOGY

According to the Bedrock Geology Map of New York (1995), the site is at a contact point between the Fordham gneiss and Inwood marble geological units. The contact point between these two units is typically associated with both fractured and brecciated bedrock faults that act as conduits for ground water to chemically weather the bedrock. This process creates a thick layer of Saprolite (chemically weathered bedrock) near the contact that overlies the bedrock, resulting in large drop offs in the elevation of competent bedrock.

SUBSURFACE CONDITIONS

The subsurface conditions encountered in the borings generally consisted of a layer of fill material overlying natural soils of glacial origin, which were underlain by residual soils or soft rock derived from the in-place weathering of the parent bedrock and generally reflects the geological mapping. Generalized descriptions of these strata are presented below in order of increasing depth. Individual boring logs are presented in Appendix B.

Surface Materials: An approximately 3-inch-thick layer of asphalt or gravel was present at the ground surface in the borings.

Fill: A layer of fill material, approximately 6 to 13 feet thick was encountered below the surface materials in the borings. The fill material consisted of silty sand with gravel and construction debris. Boulders and obstructions were also encountered within the fill, and remnant foundation elements may also be present. The fill was loose to very dense in relative density based on the SPT N-values and was classified as "uncontrolled fill," Class 7 material in accordance with the NYCBC.

Glacial Soils: Natural glacial soils were encountered beneath the fill and surface materials in the borings and extended to depths ranging from approximately 25 to 55 feet below the existing site grade. The natural soils typically consisted of poorly-graded sands and silty sands with varying amounts of gravel, with occasional clay layers encountered in several borings. The soils were medium dense to very dense in relative density, and classified as SM or SP-SM, Classes 3a and 3b in accordance with the USCS and NYCBC, respectively. The clay layers were medium stiff to

hard in terms of relative density, and classified as CL. Classes 4c, 4b, and 4a in accordance with the USCS and NYCBC, respectively.

Residual Soil and Soft Rock: Residual soil and soft rock was encountered beneath the glacial material in the deep borings at depths ranging from approximately 25 to 55 feet and extended to the completion depths of the borings. The residual soil maintained the fabric of the parent bedrock but was completely weathered to a stiff to hard sandy clay (CL), Class 4a and 4b. Below the residual soil, the material encountered was very hard, with SPT "N" values above 50, and was classified as Soft Rock, Class 1d. The weathered bedrock was not competent enough to perform any rock coring.

Groundwater: Based on the moisture conditions of the recovered soil samples, groundwater was encountered about 20 to 24 feet below existing site grades. Note that groundwater levels can fluctuate due to seasonal variations in precipitation, and additional shallow perched groundwater may be encountered following periods of inclement weather.

LABORATORY TESTING

Laboratory testing performed for this study included gradation analyses for classification of the soils in accordance with the Unified Soil Classification System (USCS), and natural moisture content determinations. Classification of soils in accordance with the USCS provides information regarding the engineering properties of the on-site materials that will likely support foundations, slabs, and pavements, or be used as controlled compacted fill, and backfill. The results of the gradation testing performed for this study are summarized in the table below. Detailed results of the gradation testing performed for this study are included in Appendix C.

SUMMARY OF GRADATION TESTING

BORING LOCATION	DEPTH (FT)	NATURAL MOISTURE CONTENT (%)	USCS CLASSIFICATION
B-1	65	26.8	Silty SAND (SM)
B-2	35	10.2	Clayey SAND with Gravel (SC)
B-5	25	10.5	Silty SAND with Gravel (SM)

BORING LOCATION	DEPTH (FT)	NATURAL MOISTURE CONTENT (%)	USCS CLASSIFICATION
B-9	55	18.3	Silty SAND (SM)
B-11	15	4.7	Poorly-graded SAND with Silt (SP-SM)
B-12	35	23.9	Silty SAND (SM)

CONCLUSIONS AND RECOMMENDATIONS

It is GTA's opinion that the proposed development of the site is feasible provided that the geotechnical recommendations are followed, and that the standard level of care is maintained during construction. Geotechnical issues that may impact site development include the presence of deep fill, the possible need for Support of Excavation (SOE) Walls, variable subsurface conditions, and the presence of the Metro North railway to the southeast. The following sections of the report provide the relevant geotechnical design parameters for the design and construction of the proposed building.

Metro North Railroad

A Metro North rail line is present to the southeast of the project site, with an easement located to the north of the proposed building. Proposed foundations located along the property line may be considered to have an impact on the Metro North structures. It may be necessary to submit a Support of Excavation (SOE) design and the design for subsurface structural elements to the Metro North for review prior to the start of work. Survey and vibration monitoring of its structures may be required during construction.

Shallow Foundations – Mat Slab and Spread Footings

The proposed structure may be supported by conventional shallow spread foundations bearing in the natural glacial soils, Class 3b or 3a, at a depth of at least 13 feet below the existing site grade. Spread footings bearing in the glacial soils at this depth can be designed using an allowable bearing pressure of 5,000 pounds per square foot (psf). Settlement of footings bearing in the natural soils is anticipated to be less than 1-inch. The at grade portion of the building will have to supported at this depth due to deep fill and soft soils encountered in the upper 13 feet. It

may be cost effective to redesign the building to have a full cellar to make use of the deep excavations required.

If the structure is redesigned to have a full basement level, and the allowable bearing pressures result in spread footings that are becoming too large, we believe the structure can be supported by a mat foundation bearing in the natural soil about 15 feet below the existing site grade. Settlements on the order of ¾-inch to 1-inch are estimated for a mat foundation bearing at this depth assuming an allowable bearing pressure of 3,500 pounds per square foot (psf). A modulus of subgrade reaction of 150 pounds per cubic inch may be used for the design of the mat. If a mat design is used, GTA should be allowed the opportunity to review the bearing pressure diagram to confirm if has been designed with the recommendations of this report.

Where soft/loose natural soils, clay, or existing fill materials are encountered at the footing subgrade or within the zone of foundation stress influence, the foundation excavations should extend to stable natural materials. Footing subgrades requiring over-excavation may be backfilled to the design bearing grade with lean concrete or crushed stone meeting the gradational requirements of AASHTO Size No. 57. The decision to undercut footings or perform other foundation remedial measures should be made in the field by the geotechnical engineer during footing construction. If a mat foundation is used, we recommend excavating the soil subgrade and placing a 6-inch layer of crushed aggregate over the exposed support to help maintain the stability of the subgrade and facilitate dewatering during periods of inclement weather.

Footing subgrades should be thoroughly cleaned of all mud, debris, and loose material prior to the placement of concrete. The subgrade must be evaluated to verify the bearing capacity of the soil and documented by an engineering technician working under the supervision of a professional engineer licensed in the State of New York. Detailed foundation subgrade evaluations should be performed as sections are prepared prior to the placement of reinforcing steel or concrete to confirm that the design allowable soil bearing capacity is available. The subgrade evaluations should be performed using a combination of visual observation, hand-rod probing, Dynamic Cone Penetrometer testing, and comparisons with the test borings.

Seismic Information

The proposed structure must be designed in accordance with all applicable New York City Building Code seismic design criteria. The site classes are based on the average soil properties in the upper 100 feet. It is GTA's opinion that the soils encountered in the borings most closely resemble a "Stiff Soil Profile," Site Class D. The soil profile is based on Table 1613.5.2 of the NYCBC, and the peak accelerations may be estimated using Tables 1613.5.3(1) and 1613.5.3(2). It is our assessment that liquefaction is unlikely based on the subsurface conditions encountered in the borings.

Excavation and Support of Excavation Walls

All construction excavations should be sloped and shored per OSHA excavation regulations or stricter local governing safety codes. It is GTA's opinion that the existing fill, undisturbed natural soils, or controlled compacted fill composed of similarly-graded materials would generally be classified as "Type C" soils under the OSHA excavation regulations. Flatter excavation sideslopes will be required where water seepage occurs. Positive drainage should be maintained during construction to prevent inundation of subgrade soils by surface water runoff.

We anticipate that Support of excavation (SOE) walls may be required along portions of the property line where proper sideslopes cannot be maintained in order to prevent ground loss and undermining of adjacent structures, sidewalks, utilities and roadways. The SOE walls will need to be designed for the appropriate surcharge loads, hydrostatic and lateral earth pressures. We believe drilled soldier piles and timber lagging would be an appropriate SOE system for this project. Depending on the depth of the excavation and type of soldier piles used, one or more levels of bracing may be required to resist lateral earth pressures. The SOE maybe designed using the parameters presented in the *Lateral Earth Pressure and Damp/Waterproofing* section of this report. Survey monitoring should be performed on the SOE walls to measure structural deflections and potential ground movements.

Lateral Earth Pressure and Damp/Waterproofing

Below-grade foundation walls, and temporary SOE walls (if required) will have to be designed to resist the lateral earth pressure. These elements should also be designed for appropriate hydrostatic and surcharge pressures. The foundation walls for this project are expected to be braced by the cellar and first floor slabs and thus restrained from movement at the top, creating an "at-rest" earth pressure condition. Surcharge loads from adjacent floor slabs, roadways, elevated rail structures etc. must also be considered. The following soil properties can be used for design of below grade structural elements, assuming horizontal backfill:

- Soil Unit Weight (γ) = 125 pcf
- Internal Friction Angle (φ) = 30°
- Active Earth Pressure Coefficient (K_A) = 0.3
- Passive Earth Pressure Coefficient (K_P) = 3.0
- At-Rest Earth Pressure Coefficient (K_0) = 0.5

To reduce dampness within below grade areas, GTA recommends that the foundation walls be damp proofed or waterproofed in accordance with requirements of Section 1807 of the NYCBC. Damp proofing/waterproofing can be accomplished through the use of mastics, bituthene membranes, or pre-applied membranes. A drainage composite should be placed over the damp proofing/waterproofing material for protection during backfilling. Seepage water may become trapped against foundation walls, elevator pits and utility pits at locations where the foundation elements extend into the bedrock stratum. A perimeter drain or underslab should be considered to protect against stormwater infiltration and may discharge into an approved drainage system that complies with the *New York City Plumbing Code*. The perimeter drain should consist of a minimum 4-inch diameter perforated pipe encased by No. 57 crushed aggregate and wrapped in a non-woven filter fabric.

Utilities

GTA has not been provided with information regarding proposed underground utilities; however, it is our opinion that the natural soils or controlled compacted fill are considered suitable for support of subsurface utilities, which will likely include water, storm, and sanitary sewer lines. GTA recommends that a six-inch thick granular bedding consisting of AASHTO No. 57 stone

aggregate be placed where loose or soft soil is encountered to provide uniform support as dictated by site conditions. Utilities installed below pavements, sidewalks, and other structural areas should be backfilled using controlled fill, compacted in accordance with the *Backfill and Compaction* section of this report.

Contractors should provide adequate earth support and dewatering systems in utility trench excavations as required. Problems associated with water seepage include partial loss of stability, sloughing of soils, and running sands. These problems can be reduced at the time of construction through the use of "sump and pump" dewatering techniques.

Backfill and Compaction

All fill placed beneath sidewalks, slabs-on-grade, pavements, and used for backfilling foundation walls should consist of controlled compacted fill. Backfill should be spread in layers on the order of 8 to 12 inches in loose thickness and each layer should be compacted to at least 95 percent of the maximum dry density at moisture contents required to achieve the required densities per the ASTM D-1557 (modified Proctor) test procedure. All compactive effort should be verified by in-place density testing by an engineering technician working under the supervision of a professional engineer licensed in the State of New York. The New York City Building Code requires that fill subgrades and each lift of fill be observed and tested on a full-time basis.

The natural site soils are considered suitable for use as controlled fill with some limitations. Moisture conditioning of the on-site soils may be necessary to attain the recommended degree of compaction, depending on the prevailing weather conditions at the time the earthwork is performed. Off-site borrow, if required, should meet USCS designation SM, SP, SW, GP, GM, or GW and be approved by the geotechnical engineer before use.

Pre-construction Survey and Monitoring

A pre-construction survey should be conducted for each of the neighboring buildings, structures, and properties to document existing conditions. Each building and/or structure should be inspected and photographed, inside and out, to record existing conditions. The pre-condition

survey will provide the owner and foundation contractor with a baseline to assess potential future damage claims. The survey should be prepared prior to the start of construction.

A survey-monitoring program should be implemented for the neighboring buildings, particularly in areas adjacent to foundation work. A minimum of three benchmark locations should be established on the exterior of each of the adjacent buildings prior to the start of new construction. The benchmarks should be read a minimum of two times per week throughout the duration of the foundation construction. Any observable movement, horizontal or vertical displacement, should be immediately brought to the attention of the construction manager and excavation should be suspended until the issue is addressed by the Owner and his appropriate professionals. Vibration monitoring should also be performed during pile driving or drilling operations, if required for SOE walls. Monitoring of the MTA structures will need to be performed as required in accordance with MTA standards.

LIMITATIONS

This report, including all supporting exploration logs, field data, field notes, laboratory testing, calculations, estimates and other documents prepared by GTA in connection with this Project have been prepared for the exclusive use of Longhouse Properties (Client) pursuant to the June 29, 2021 agreement between GTA and the Client, and in accordance with generally accepted engineering practice. All terms and conditions set forth in the Agreement and the General Provisions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein. Use and reproduction of this report by any other person without the expressed written permission of GTA and Longhouse Properties is unauthorized and such use is at the sole risk of the user.

The analysis and recommendations contained in this report are based on the data obtained from limited observation of the encountered materials. The test borings indicate soil conditions only at the test boring locations and times and only at the depth penetrated. It does not necessarily reflect strata or variations that may exist between or beyond the exploration locations. Consequently, the analysis and recommendations must be considered preliminary

until the subsurface conditions can be further evaluated by additional explorations and verified by direct observation at the time of construction. If variations of subsurface conditions from those described in this preliminary report are noted during construction, recommendations in this report may need to be re-evaluated.

In the event that any changes in the nature, design, or location of the improvements are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report are verified in writing. GTA is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of GTA.

The scope of our services for this geotechnical exploration did not include any environmental assessment or investigation for the presence or absence of wetlands, or hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around this site. Any statements in this report or on the logs regarding odors or unusual or suspicious items or conditions observed are strictly for the information of our Client.

This report and the attached log are instruments of service. The subject matter of this report is limited to the facts and matters stated herein. Absence of a reference to any other conditions or subject matter shall not be construed by the reader to imply approval by the writer. We appreciate the opportunity to provide assistance to you for this project. Please contact us at (201) 641-1850 if you have questions regarding this report.

34211441 **GTA Engineering Services of New York, P.C.**

Important Information about Your

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you —* should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical-Engineering Report Is Based on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical-engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical-engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold-prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical-engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold-prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your GBA-Member Geotechncial Engineer for Additional Assistance

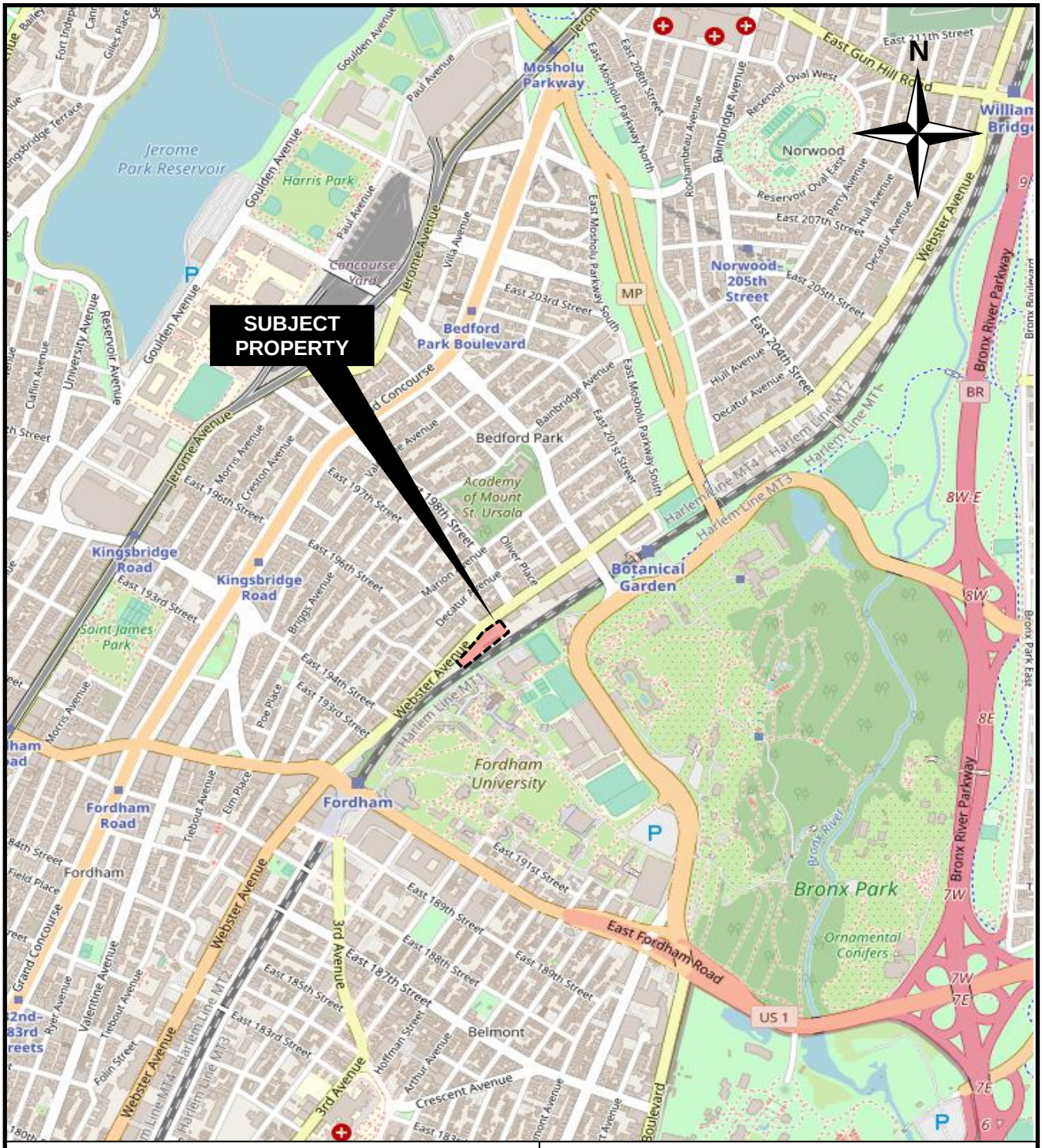
Membership in the GEOPROFESSIONAL BUSINESS ASSOCIATION exposes geotechnical engineers to a wide array of risk confrontaton techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your GBA-member geotechnical engineer for more information.

GEOPROFESSIONAL BUSINESS ASSOCIATION

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

APPENDIX A

Figures



SITE LOCATION MAP

211-K Gates Road
Little Ferry, New Jersey 07643
(201) 641-1850
fax (201) 641-1655

GTA ENGINEERING SERVICES OF NEW YORK, P.C.

2740 Webster Avenue

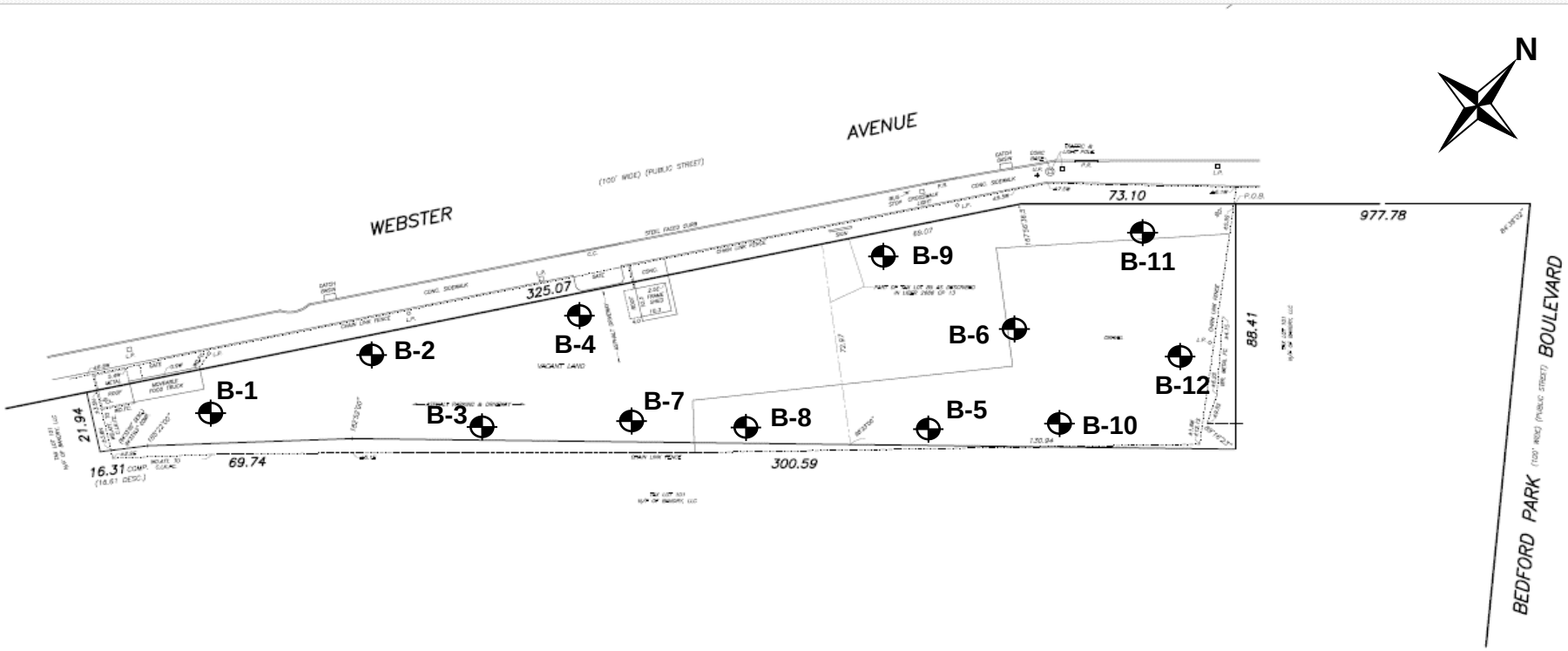
Borough of The Bronx, New York

Prepared For: Longhouse Properties

SOURCE: Open Street Maps, 2021

SCALE: NTS	DATE: JAN 2022	PROJECT #: 34211441

Figure 1



BORING LOCATION PLAN

211-K Gates Road
Little Ferry, New Jersey 07643
(201) 641-1850
fax (201) 641-1655

GTA ENGINEERING SERVICES OF NEW YORK, P.C.

LEGEND:

B-X Approximate location of test boring preformed

2740 Webster Avenue

Borough of The Bronx, New York

Prepared For: Longhouse Properties LLC

DESIGN BY: *	DRAWN BY: BG	REVIEWED BY: RD
SCALE: NTS	DATE: JAN 2022	PROJECT #: 34211441

APPENDIX B

Exploration Logs

NOTES FOR EXPLORATION LOGS

KEY TO USCS TERMINOLOGY AND GRAPHIC SYMBOLS

MAJOR DIVISIONS (BASED UPON ASTM D 2488)				SYMBOLS GRAPHIC	SYMBOLS LETTER
COARSE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 15% PASSING THE NO. 200 SIEVE)			GW
					GP
		GRAVELS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			GM
					GC
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LESS THAN 15% PASSING THE NO. 200 SIEVE)			SW
					SP
		SANDS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			SM
					SC
FINE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILT OR CLAY (<15% RETAINED ON THE NO. 200 SIEVE) SILT OR CLAY WITH SAND OR GRAVEL (15% TO 30% RETAINED ON THE NO. 200 SIEVE) SANDY OR GRAVELLY SILT OR CLAY (>30% RETAINED ON THE NO. 200 SIEVE)	SILTS AND LEAN CLAYS LIQUID LIMIT LESS THAN 50			ML
					CL
					OL
		ELASTIC SILTS AND FAT CLAYS LIQUID LIMIT GREATER THAN 50			MH
					CH
					OH
HIGHLY ORGANIC SOILS					PT

NOTE: DUAL SYMBOLS ARE USED TO INDICATE COARSE-GRAINED SOILS WHICH CONTAIN AN ESTIMATED 5 TO 15% FINES BASED ON VISUAL CLASSIFICATION OR BETWEEN 5 AND 12% FINES BASED ON LABORATORY TESTING; AND FINE-GRAINED SOILS WHEN THE PLOT OF LIQUID LIMIT & PLASTICITY INDEX VALUES FALLS IN THE PLASTICITY CHART'S CROSS-HATCHED AREA. FINE-GRAINED SOILS ARE CLASSIFIED AS ORGANIC (OL OR OH) WHEN ENOUGH ORGANIC PARTICLES ARE PRESENT TO INFLUENCE ITS PROPERTIES. LABORATORY TEST RESULTS ARE USED TO SUPPLEMENT SOIL CLASSIFICATION BY THE VISUAL-MANUAL PROCEDURES OF ASTM D 2488.

ADDITIONAL TERMINOLOGY AND GRAPHIC SYMBOLS

	DESCRIPTION		GRAPHIC SYMBOLS
ADDITIONAL DESIGNATIONS	TOPSOIL		
	MAN MADE FILL		
	GLACIAL TILL		
	COBBLES AND BOULDERS		
RESIDUAL SOIL DESIGNATIONS	DESCRIPTION	"N" VALUE	
	HIGHLY WEATHERED ROCK	50 TO 50/1"	
	PARTIALLY WEATHERED ROCK	MORE THAN 50 BLOWS FOR 1" OF PENETRATION OR LESS, AUGER PENETRABLE	

COARSE-GRAINED SOILS
(GRAVEL AND SAND)

DESIGNATION	BLOWS PER FOOT (BPF) "N"
VERY LOOSE	0 - 4
LOOSE	5 - 10
MEDIUM DENSE	11 - 30
DENSE	31 - 50
VERY DENSE	>50

NOTE: "N" VALUE DETERMINED AS PER ASTM D 1586

FINE-GRAINED SOILS
(SILT AND CLAY)

CONSISTENCY	BPF "N"
VERY SOFT	<2
SOFT	2 - 4
MEDIUM STIFF	5 - 8
STIFF	9 - 15
VERY STIFF	16 - 30
HARD	>30

NOTE: ADDITIONAL DESIGNATIONS TO ADVANCE SAMPLER INDICATED IN BLOW COUNT COLUMN:
WOH = WEIGHT OF HAMMER
WOR = WEIGHT OF ROD(S)

SAMPLE TYPE

DESIGNATION	SYMBOL
SOIL SAMPLE	S-
SHELBY TUBE	U-
ROCK CORE	R-

WATER DESIGNATION

DESCRIPTION	SYMBOL
ENCOUNTERED DURING DRILLING	▽
UPON COMPLETION OF DRILLING	▼
24 HOURS AFTER COMPLETION	▼

NOTE: WATER OBSERVATIONS WERE MADE AT THE TIME INDICATED. POROSITY OF SOIL STRATA, WEATHER CONDITIONS, SITE TOPOGRAPHY, ETC. MAY CAUSE WATER LEVEL CHANGES.

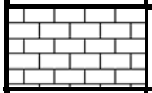
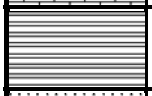
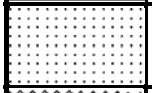
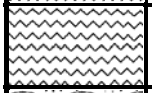
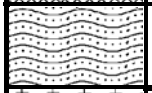
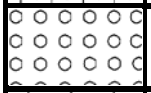
NOTES FOR ROCK DESCRIPTION

WEATHERING TERM	DESCRIPTION
FRESH	ROCK CRYSTALS BRIGHT. COLOR OF CORE IS CONSISTENT. JOINTS SHOW LITTLE STAINING.
SLIGHTLY WEATHERED	ROCK GENERALLY FRESH. JOINTS STAINED AND DISCOLORATION AROUND JOINTS MAY EXTEND UP TO 0.5 INCHES INTO ROCK. SOME CRYSTALS MAY APPEAR DULL OR DISCOLORED.
MODERATELY WEATHERED	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION. MANY VISIBLE MINERALS ARE DULL AND DISCOLORED. ROCK HAS DULL SOUND WHEN HIT BY HAMMER AND HAS SIGNIFICANT STRENGTH LOSS.
HIGHLY WEATHERED	ALL ROCK IS DISCOLORED AND STAINED. ROCK FABRIC IS EVIDENT BUT ZONES OF ROCK HAVE BEEN REDUCED TO SOFT STRENGTH. SOME HARD PIECES OF ROCK ARE USUALLY PRESENT BETWEEN SOFT ZONES.

HARDNESS DESCRIPTION	STRENGTH RANGE (PSI)	FIELD HARDNESS TEST
VERY HARD	>10,000	CANNOT BE SCRATCHED WITH KNIFE. CORE RINGS UNDER HARD BLOWS OF A HAMMER.
HARD	3,500 to 10,000	DIFFICULT TO SCRATCH WITH KNIFE. HARD BLOW OF HAMMER REQUIRED TO BREAK.
MODERATELY HARD	1,500 to 3,500	CAN BE SCRATCHED WITH KNIFE. MODERATE BLOW OF HAMMER BREAKS CORE.
SOFT	500 to 1,500	CAN BE GOUGED OR GROOVED WITH KNIFE. SMALL PIECES CAN BE BROKEN BY HAND.

FRACTURING CLASSIFICATION	DESCRIPTION
HIGHLY FRACTURED	LESS THAN 2 INCHES
MODERATELY FRACTURED	2 INCHES TO 12 INCHES
SLIGHTLY FRACTURED	12 INCHES TO 36 INCHES
MASSIVE	GREATER THAN 36 INCHES

BEDDING DESCRIPTION	SEPARATION
VERY THIN	LESS THAN 2 INCHES
THIN	2 INCHES TO 1 FOOT
MEDIUM	1 FOOT TO 3 FEET
THICK	3 FEET TO 10 FEET
VERY THICK	MORE THAN 10 FEET

GRAPHIC SYMBOL	ROCK DESCRIPTION
	LIMESTONE/DOLOMITE/MARBLE (CARBONATE ROCK)
	SHALE/MUDSTONE/SILTSTONE (FINE-GRAINED SEDIMENTARY ROCKS)
	SANDSTONE
	SLATE/PHYLLITE (FINE-GRAINED METAMORPHIC ROCKS)
	GNEISS/SCHIST (COARSE-GRAINED METAMORPHIC ROCKS)
	BASALT/DIABASE/GABBRO (IGNEOUS ROCKS)
	CONGLOMERATE
	GYPSUM

DESCRIPTION SYNTAX: COLOR, WEATHERING, HARDNESS, FRACTURING, ROCK TYPE, "WITH" BEDDING (IF SEDIMENTARY).

$$\text{ROCK QUALITY DESIGNATION (RQD)} = \left[\frac{\text{TOTAL LENGTH OF CORE PIECES THAT ARE 4-INCHES OR LONGER (IN.)}}{\text{TOTAL LENGTH OF CORE RUN (IN.)}} \right] \text{X } 100\%$$

LOG OF BORING NO. B-1

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	24 ft.	----	BOC
DATE:	12-13-21	----	12-14-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-13-2021**
DATE COMPLETED: **12-14-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	8	11-9-6-15	15	0.0	0	FILL		2" Asphalt	
					-0.2	2			FILL: Brown, moist, medium dense, silty sand with gravel and concrete fragments and debris (Class 7)	
S-2	5.0	12	3-27-14-10	41		4			-same	
						6				
S-3	10.0	14	3-2-1-3	3		8				
						10			F2: Black to brown, moist, dense, sandy clay with gravel (Class 7)	
S-4	15.0	20	27-37-32-28	69	-13.0	12	SM		Brown, moist, very dense, Silty SAND with Gravel (Class 3a)	
						14			-same	
S-5	20.0	15	17-33-50-46	83		16				
						18			-same	
S-6	25.0	10	22-17-13-12	30		20				
						22				
S-7	30.0	20	3-4-6-10	10		24			-same, wet, dense, less Gravel	▼
					-30.0	26				
S-8	35.0	16	12-13-15-15	28		28				
						30	CL		Orange brown, wet, stiff Sandy CLAY, with Gravel (Class 4b)	-residual soil
S-9	40.0	10	21-24-50/3"	74+		32				
						34			-same, brown, very stiff	
S-10	45.0	14	26-34-44-56	78		36				
						38				
S-11	50.0	12	38-47-52-50/3"	99	-40.0	40	HW		Brown, Highly weathered ROCK (Class 1d)	
						42				
S-12	55.0	10	47-50/5"	50+		44			-same	
						46				
						48				
						50			-same	
						52				
						54				
						56			-same	
						58				
						60				

NOTES: **BOC = Backfilled on competition**

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Service of NY, P.C.
211-K Gates Road
Little Ferry, NJ 07643

LOG OF BORING NO. B-1

LOG OF BORING NO. B-1

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	24 ft.	----	BOC
DATE:	12-13-21	----	12-14-21
CAVED (ft):	----	----	BOC

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-13	61.0	4	50/4"	50+		62	HW		Brown, Highly weathered ROCK (Class 1d)	
						64				
S-14	65.0	16	14-26-28-39	54		66			-same	
						68				
S-15	70.0	20	29-27-31-52	58		70			-same	
						72				
						74				
S-16	75.0	10	21-25-27-35	52		76			-same	
						78				
S-17	80.0	1	50/2"	50+		80			-same	
						82				
						84				
						86				
						88				
S-18	90.0	2	50/2"	50+		90			-same	
						92				
						94				
						96				
						98				
S-19	100.0	1	50/1"	50+	-100.1	100			-same	
									Boring complete at 100.1ft.	

LOG OF BORING NO. B-2

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-10-21	----	12-10-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-10-2021**
DATE COMPLETED: **12-10-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	8-5-6-6	11	0.0	0	FILL		2" Asphalt	
S-2	2.0	2	11-7-4-3	11	-0.2	2			FILL: Brown, moist, medium dense, silty sand with gravel, brick fragments, and debris (Class 7)	
						4			-same	
S-3	5.0	2	7-4-5-7	9		6			-same, with wood	
						8				
S-4	10.0	15	3-3-2-4	5	-10.0	10	SM		Brown, moist, loose, Silty SAND with Gravel (Class 6)	
						12				
S-5	15.0	12	8-10-8-6	18		14			-same, medium dense (Class 3b)	
						16				
S-6	20.0	20	9-6-6-7	12		18				
						20			-same, wet	▼
S-7	25.0	10	9-15-21-13	36		22				
						24			-same, dense, more Gravel (Class 3a)	
						26				
						28				-boulder encountered at 28 ft.
S-8	30.0	15	15-11-12-14	23	-30.0	30	SC/ CL		Orange brown, wet, very stiff, Sandy CLAY with Gravel (Class 4b)	
						32				
						34				
S-9	35.0	18	20-22-18-26	40		36			-same, hard (Class 4a)	
					-37.0				Boring complete at 37 ft.	

NOTES: **BOC = Backfilled on completion**

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LOG OF BORING NO. B-2

LOG OF BORING NO. B-3

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-10-21	----	12-10-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-10-2021**
DATE COMPLETED: **12-10-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	15	10-8-15-37	23	0.0	0	FILL		2" Asphalt	
					-0.2	2			FILL: Brown, moist, medium dense, silty sand with gravel and debris (Class 7)	
S-2	2.0	20	14-27-25-18	52		4			-same, dense, with brick fragments	
S-3	5.0	5	8-5-6-9	11		6			-same, medium dense, no brick, with wood fragments	
						8				
S-4	10.0	10	5-4-3-2	7	-10.0	10	CL		Dark gray, moist, medium stiff, Sandy CLAY (Class 4c)	
						12				
S-5	15.0	1	50/1"		-15.0	14	SM		Gray, moist, medium dense, Silty SAND with Gravel (Class 3b)	-boulder encountered at 15 ft.
						16				
						18				
S-6	20.0	8	4-7-7-9	14		20			-same, brown, wet	▽
						22				
						24				
S-7	25.0	14	10-11-14-19	25		26			-same	
					-27.0				Boring complete at 27 ft.	

NOTES: **BOC = Backfilled on completion**

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Little Ferry, NJ 07643

LOG OF BORING NO. B-3

LOG OF BORING NO. B-4

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-10-21	----	12-10-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-10-2021**
DATE COMPLETED: **12-10-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	18	8-8-6-12	14	0.0	0	FILL		2" Asphalt	
S-2	2.0	8	18-8-5-5	13	-0.2	2			FILL: Brown, moist, medium dense, silty sand with gravel, asphalt fragments, and debris (Class 7)	
						4			-same	
S-3	5.0	12	2-3-4-13	7		6			-same	
						8				2' obstruction at 7 ft. (concrete or boulder)
S-4	10.0	5	5-5-4	9		10			-same	
					-13.0	12				
						14	SM		Brown, moist, medium dense, Silty SAND with Gravel (Class 3b)	
S-5	15.0	15	8-21-24-34	45		16			-same, dense (Class 3a)	
						18				
S-6	20.0	22	8-9-9-14	18		20			-same, wet, medium dense (Class 3b)	▼
						22				
						24				
S-7	25.0	20	20-20-18-18	38		26			-same, dense (Class 3a)	
						28				
					-30.0	30	CL		White, wet, very stiff, Sandy CLAY with trace Gravel (Class 4b)	-residual soil
S-8	30.0	24	12-15-14-21	29		32				
						34				
S-9	35.0	15	22-21-33-30	54		36			-same, brown, hard (Class 4a)	
					-37.0				Boring complete at 47 ft.	

NOTES: **BOC = Backfilled on completion**

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LOG OF BORING NO. B-4

LOG OF BORING NO. B-5

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-9-21	----	12-9-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-9-2021**
DATE COMPLETED: **12-9-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					0.0	0	FILL		2" Gravel FILL: Brown, moist, medium dense, Silty SAND with Gravel (Class 7) -same, with brick fragments F2: Gray, decomposed concrete	
S-1	0.0	10	9-9-10-10	19		2				
S-2	2.0	14	10-10-8-7	18		4				
						6				
S-3	5.0	10	6-5-6-50/0"	11		8				-2' of decomposed concrete encountered at 6.5 ft.
					-10.0	10	CL		Dark Gary, moist, medium stiff, Sandy CLAY (Class 4c)	
S-4	10.0	20	5-3-4-4	7		12				
						14				
					-15.0	16	SP-SM		Brown, moist, medium dense, Poorly-graded SAND with Gravel and Silt (Class 3b)	
S-5	15.0	12	15-13-16-14	29		18				
						20			-same, wet	▼
S-6	20.0	16	5-6-6-7	12		22				
						24				
S-7	25.0	22	7-15-15-21	30		26			-same, dense (Class 3a)	
					-27.0				Boring complete at 27 ft.	

NOTES: **BOC = Backfilled on completion**

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LOG OF BORING NO. B-5

LOG OF BORING NO. B-6

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-9-21	----	12-9-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-9-2021**
DATE COMPLETED: **12-9-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	20	8-13-27-22	40	0.0	0	FILL		2' Gravel FILL: Brown, moist, dense, silty sand with gravel and debris (Class 7)	
						2				
						4			-same, with concrete	-concrete encountered from 5.5 ft. to 8.5 ft.
S-2	5.0	4	50/4"	50+		6				
						8				
S-3	10.0	1	6-12-11-8	23		10			-black with wood	
						12				
					-13.0	14	SP-SM		Brown, moist, medium dense, Poorly-grade SAND with Silt and Gravel (Class 3b)	
S-4	15.0	15	14-12-14-16	26		16			-same	
						18				
S-5	20.0	16	6-8-8-9	16		20			-same, wet	▽
						22				
						24				
S-6	25.0	12	14-18-19-18	37		26			-same, dense (Class 3a)	
					-27.0				Boring complete at 27 ft.	

NOTES: **BOC = Backfilled on completion**

GTA Engineering
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211-K Gates Road
Little Ferry, NJ 07643

LOG OF BORING NO. B-6

LOG OF BORING NO. B-7

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-15-21	----	12-16-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-15-2021**
DATE COMPLETED: **12-16-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	14	9-6-7-7	13	0.0 -0.2	0 2	FILL		2" Asphalt FILL: Dark brown, moist, medium dense, silty sand with gravel, brick fragments and debris (Class 7)	
S-2	5.0	10	41-22-10-4	32		4 6			-same, Black with wood	-6" of concrete from 4.5 to 5 ft.
S-3	10.0	<1	8-5-3-4	8		8 10			-same	
					-13.0	12 14	SM		Gray, moist, medium dense, Silty SAND with Gravel (Class 3b)	
S-4	15.0	12	21-14-12-13	26		16 18			-same	
S-5	20.0	10	32-50/4"	50+		20 22			-same, dense	▼
S-6	25.0	1	50/3"	50+	-25.0	24 26	HW		White, Highly weathered ROCK (Class 1d)	
S-7	30.0	1	50/3"	50+		28 30			-same	
S-8	35.0	0	50/1"	50+		32 34 36			-same	
S-9	40.0	2	50/2"	50+		38 40			-same	
S-10	45.0	2	50/3"	50+		42 44 46			-same, white to brown	
S-11	50.0	3	50/3"	50+		48 50			-same, brown	
S-12	55.0	1	50/1"	50+		52 54 56			-same	
						58 60				

NOTES: **BOC = Backfilled on completion**

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LOG OF BORING NO. B-7

LOG OF BORING NO. B-7

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-15-21	----	12-16-21
CAVED (ft):	----	----	BOC

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-13	61.0	2	50/2"	50+		62	HW		White, Highly weathered ROCK (Class 1d)	
S-14	65.0	3	50/4"	50+		64, 66			-same, brown	
S-15	70.0	3	50/3"	50+		68, 70			-same	
S-16	75.0	6	36-55-50/4"	105+		72, 74, 76			-same	
S-17	80.0	5	58-50/4"	50+		78, 80			-same	
S-18	90.0	6	56-50/5"	50+		82, 84, 86, 88, 90			-same	
S-19	100.0	4	50/4"	50+	-100.4	92, 94, 96, 98, 100			-same Broing complete at 100.4 ft.	

LOG OF BORING NO. B-8

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-09-21	----	12-09-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-09-2021**
DATE COMPLETED: **12-09-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	18	6-7-6-15	13	0.0	0	FILL		2" Gravel FILL: Brown to gray, moist, medium dense, silty sand with gravel, debris, and asphalt fragments (Class 7)	
S-2	2.0	16	10-16-15-15	31		2				
						4			-same, dense, with brick fragments	
S-3	5.0	12	4-4-3-5	7		6			-same, loose	
						8				
S-4	10.0	20	4-4-4-5	8		10			F2: Dark gray, moist, medium stiff, sandy clay (Class 7)	
						12				
					-13.0	14	SP-SM		Gray, moist, medium dense, Poorly-graded SAND with Silt and Gravel (Class 3b)	
S-5	15.0	18	15-12-14-21	26		16			-same	
						18				
S-6	20.0	NR	36-22-50/3"	72		20			-same, very dense (Class 3a)	▼ =Spoon pushing boulder
						22				
						24				
S-7	25.0	15	22-24-31-28	55		26			-same	
					-27.0				Broing complete at 27 ft.	

NOTES: **BOC = Backfilled on completion**

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LOG OF BORING NO. B-8

LOG OF BORING NO. B-9

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-08-21	----	12-08-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-08-2021**
DATE COMPLETED: **12-08-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **Mud Rotary**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	7-6-6-6	12	0.0	0	FILL		2" Asphalt	
S-2	2.0	20	8-8-8-10	16	-0.2	2			FILL: Brown to black, moist, medium dense, silty sand with gravel and debris (Class 7)	
S-3	5.0	8	8-3-3-50/1"	6		4			-same, brown	
						6				
						8				
S-4	10.0	15	6-6-15-19	21	-10.0	10	SM		Brown, moist, medium dense, Silty SAND with Gravel (Class 3b)	
						12				
						14				
S-5	15.0	22	11-8-8-11	16	-15.0	16	SP-SM		Brown, moist, medium dense, Poorly-graded SAND with Silt (Class 3b)	
						18				
S-6	20.0	24	7-5-6-8	11		20			-same, wet	▽
						22				
						24				
S-7	25.0	16	7-6-7-12	13		26			-same, with 2" lenses of SILT	
						28				
S-8	30.0	15	17-17-18-24	35	-30.0	30	SM		Gray, wet, dense, Silty SAND with Gravel (Class 3a)	
						32				
						34				
S-9	35.0	14	22-21-20-26	41		36			-same	-residual soil
						38				
S-10	40.0	22	18-12-8-21	20	-40.0	40	CL/SC		White to orange, wet, very stiff, CLAY with Sand and Gravel (Class 4b)	
						42				
						44				
S-11	45.0	20	9-18-15-23	33		46			-same, hard (Class 4a)	
						48				
S-12	50.0	15	22-31-35-41	66		50			-same, brown	
						52				
						54				
S-13	55.0	14	37-32-34-58	66	-55.0	56	HW		Highly weathered ROCK (Class 1d)	
						58				
						60				

NOTES: **BOC = Backfilled on completion**

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LOG OF BORING NO. B-9

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-08-21	----	12-08-21
CAVED (ft):	----	----	BOC

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-14	60.0	20	39-41-38-52	79	-62.0	62			-same Boring complete at 62 ft.	

LOG OF BORING NO. B-10

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-09-21	----	12-09-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-09-2021**
DATE COMPLETED: **12-09-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Kostas**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 75**
LOGGED BY: **BG**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	15	7-7-7-6	14	0.0	0	FILL		2" Gravel FILL: Brown, moist, medium dense, silty sand with gravel (Class 7)	
S-2	2.0	18	8-9-10-8	19		2			-same, with brick fragments	
						4				
S-3	5.0	10	3-4-15-25	19		6			F2: Gray, decomposed concrete	
						8				
S-4	10.0	20	5-5-6-5	11	-10.0	10	SP-SM		Brown, moist, medium dense, Poorly-graded SAND with Silt (Class 3b)	
					-12.0	12	CL		Dark-gray, moist, medium stiff, CLAY	
S-5	15.0	14	30-12-15-19	27	-15.0	14	SP-SM		Brown, moist, medium dense, Poorly-graded SAND with Silt and Gravel (Class 3b)	
						16				
S-6	20.0	12	15-13-10-12	23		18			-same, wet	▼
						20				
S-7	25.0	14	5-6-7-11	13	-25.0	22	SM		Gray-brown, moist, medium dense, Silty SAND with Gravel	
					-27.0	24			Broing complete at 27 ft.	
						26				

NOTES: **BOC = Backfilled on completion**

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LOG OF BORING NO. B-10

LOG OF BORING NO. B-11

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-07-21	----	12-07-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-07-2021**
DATE COMPLETED: **12-07-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Dorbal**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 55**
LOGGED BY: **BG/NV**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	16	7-6-10-15	16	0.0	0	FILL		2" Asphalt	
S-2	2.0	6	10-12-10-7	22	-0.2	2			FILL: Brown to gray, moist, medium dense, Silty SAND with Gravel, brick and asphalt fragments (Class 7)	
						4			-same	
S-3	5.0	<1	8-10-5-9	15		6			-same	
						8				
S-4	10.0	12	7-8-8-11	16	-10.0	10	SP-SM		Brown, moist, medium dense, Poorly-graded SAND with Silt (Class 3b)	
						12				
						14			-same	
S-5	15.0	12	5-5-5-7	10		16				
						18				
S-6	20.0	20	2-3-4-3	7		20			-same, loose, wet (Class 6)	▽
						22				
						24				
S-7	25.0	24	5-6-7-10	13		26			-same, medium dense (Class 3b)	
						28				
						30				
S-8	30.0	24	7-8-9-7	17		32			-same	
					-32.0				Broing complete at 32 ft.	

NOTES: **BOC = Backfilled on completion**

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LOG OF BORING NO. B-11

LOG OF BORING NO. B-12

PROJECT: **2740-2768 Webster Avenue**
PROJECT NO.: **34211441**
PROJECT LOCATION: **Bronx, New York**

WATER LEVEL (ft):	20 ft.	----	BOC
DATE:	12-07-21	----	12-07-21
NORTHING:	----	EASTING:	----

DATE STARTED: **12-07-2021**
DATE COMPLETED: **12-07-2021**
DRILLING CONTRACTOR: **D.K. Drilling of New York, Inc.**
DRILLER: **Dorbal**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **SPT**

HAMMER TYPE: **Automatic**
GROUND SURFACE ELEVATION: **0.0 +/-**
DATUM: **Sidewalk**
EQUIPMENT: **CME 55**
LOGGED BY: **BG/NV**
CHECKED BY: **RD**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	SPT-N VALUE	ELEVATION (ft.)	DEPTH (ft.)	STRATA	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	7-9-8-11	17	0.0	0	FILL		2" Gravel FILL: Brown to gray, moist, medium dense, silty sand with gravel and concrete fragments (Class 7)	
S-2	2.0	16	8-9-13-14	22		2				
						4			-same, with brick fragments	
S-3	5.0	19	10-40-20-10	60	-6.0	6	SM		Brown, moist, very dense, Silty SAND with Gravel (Class 3a)	
						8				
S-4	10.0	18	4-6-4-3	10		10			-same, medium dense (Class 3b)	
						12				
						14				
S-4	15.0	21	10-10-15-17	25	-15.0	16	SP-SM		Brown, moist, medium dense, Poorly-graded SAND with Silt (Class 3b)	
						18				
S-5	20.0	22	6-4-4-4	8		20			-same, wet, loose (Class 6)	▼
						22				
						24				
S-6	25.0	24	5-4-4-5	8		26			-same	
						28				
						30				
S-7	30.0	24	3-6-9-19	15		32			-same, medium dense, with 2" lenses of SILT (Class 3b)	
						34				
S-8	35.0	24	15-17-20-21	37		36			-same, dense (Class 3a)	-residual soil
					-37.0				Broing complete at 37 ft.	

NOTES: **BOC = Backfilled on completion**

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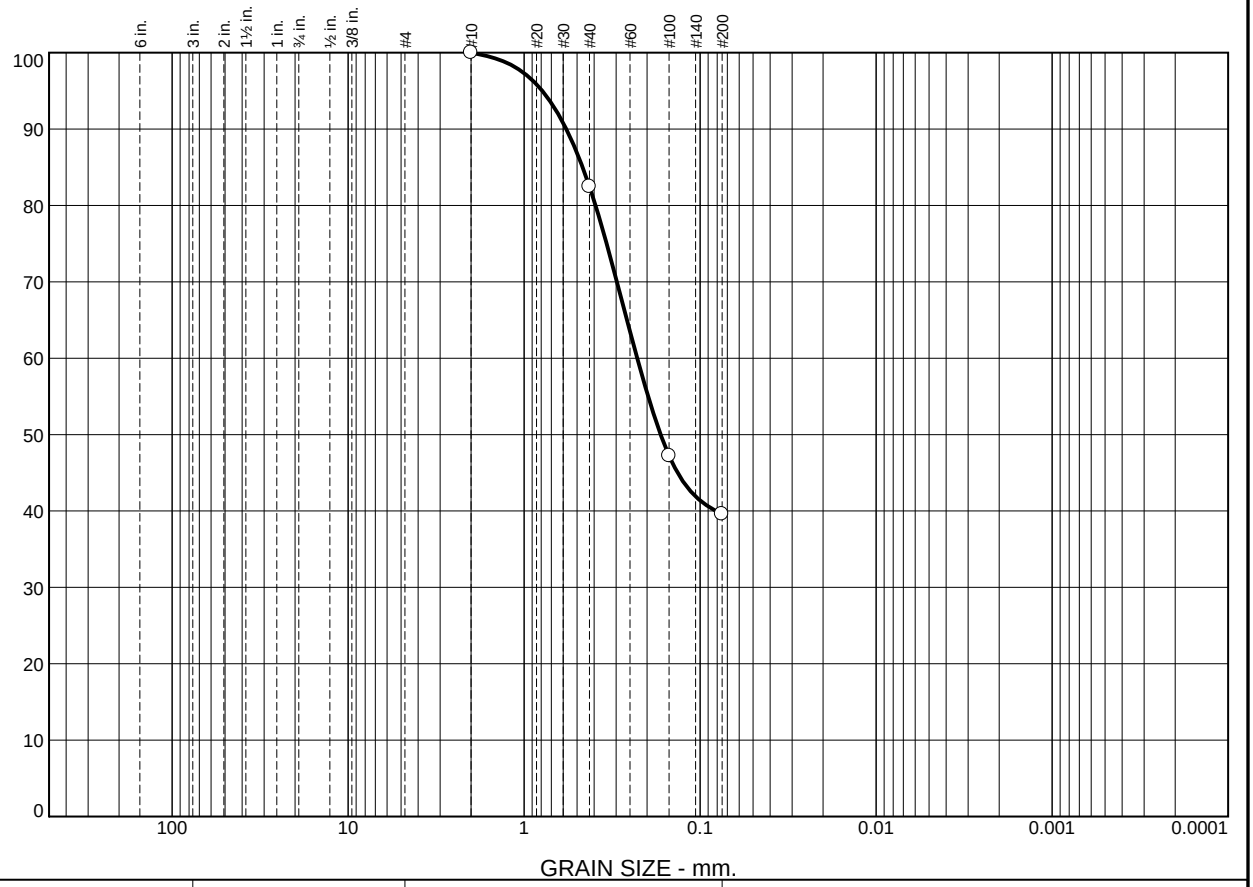
LOG OF BORING NO. B-12

APPENDIX C

Laboratory Data

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	17.5	42.9	39.6	

	Colloids	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.4648	0.2274	0.1675					

Material Description	USCS	AASHTO
○ Gray Highly Weathered ROCK	HW	

Project No. 34211441 **Client:** Longhouse Properties

Project: 2740-2768 Webster Avenue

○ **Source of Sample:** B-1 **Depth:** 65 **Sample Number:** S-14

Date: ○ 12/17/2021

Remarks:

○NMC = 26.8%

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Figure

ASTM Specifications performed may include: D421, D422, D2216, D2217, and D4318.

Tested By: BG **Checked By:** RD

Particle Size Distribution Report

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	20.3	15.0	27.1	17.5	20.1	

	Colloids	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				7.2850	1.5604	0.8993	0.2474				

Material Description	USCS	AASHTO
○ Orange-Brown, Clayey SAND with Gravel	SC	

Project No. 34211441 **Client:** Longhouse Properties

Project: 2740-2768 Webster Avenue

○ **Source of Sample:** B-2 **Depth:** 35 **Sample Number:** S-9

Date: ○ 12/17/2021

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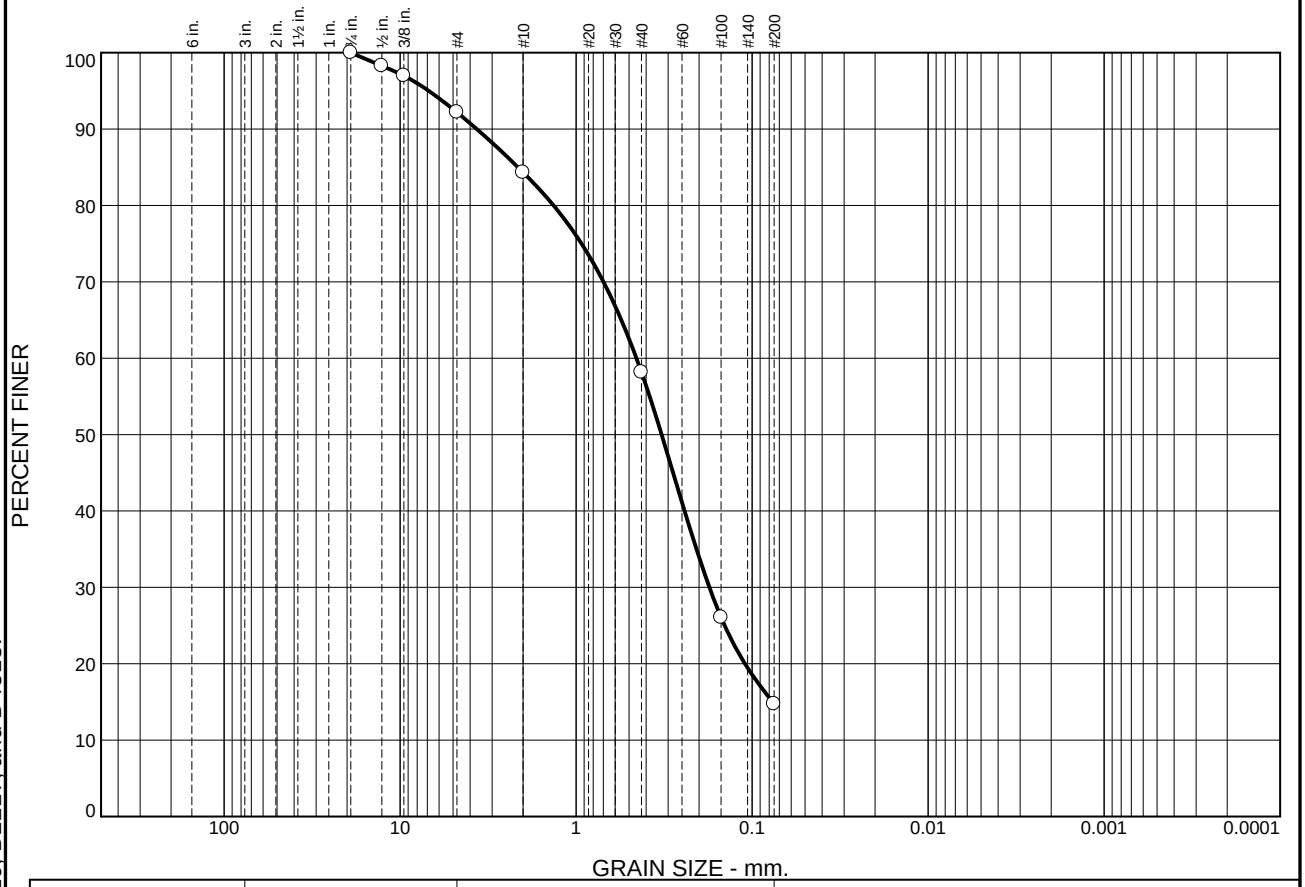
Remarks:
○NMC = 10.2%

Figure

ASTM Specifications performed may include: D421, D422, D2216, D2217, and D4318.

Tested By: BG **Checked By:** RD

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	7.8	7.9	26.1	43.5	14.7	

	Colloids	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.1404	0.4538	0.3267	0.1747	0.0766			

Material Description	USCS	AASHTO
○ Brown, Poorly-graded SAND with Silt and Gravel	SP-SM	

Project No. 34211441 **Client:** Longhouse Properties

Project: 2740-2768 Webster Avenue

○ **Source of Sample:** B-5 **Depth:** 25 **Sample Number:** S-7

Date: ○ 12/17/2021

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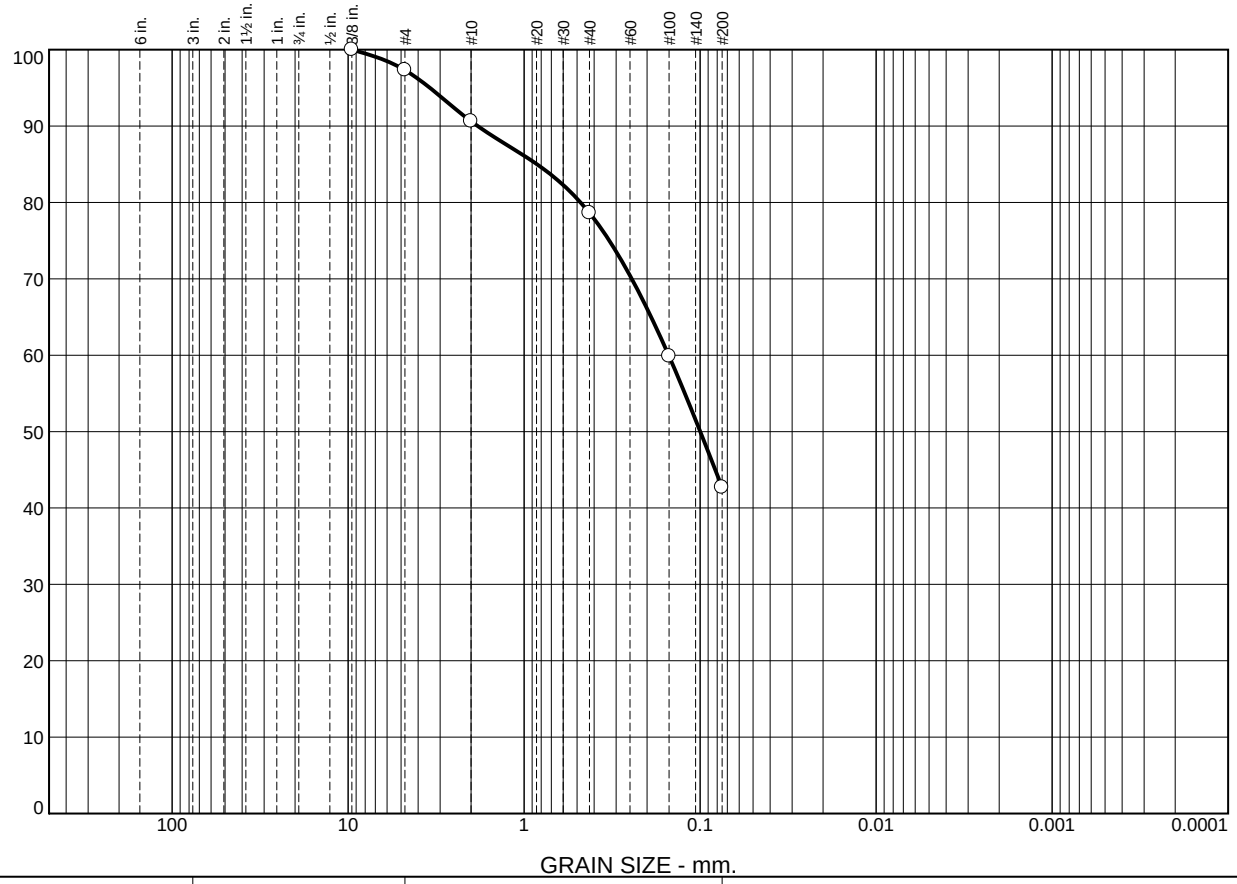
Remarks:
○NMV = 10.5%

Figure

ASTM Specifications performed may include: D421, D422, D2216, D2217, and D4318.

Tested By: BG **Checked By:** RD

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	2.7	6.7	12.0	35.9	42.7	

	Colloids	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.8451	0.1509	0.0998					

Material Description	USCS	AASHTO
○ Highly weathered ROCK	HW	

Project No. 34211441 **Client:** Longhouse Properties

Project: 2740-2768 Webster Avenue

○ **Source of Sample:** B-9 **Depth:** 55 **Sample Number:** S-13

Date: ○ 12/17/2021

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Remarks:
○NMC = 18.3

Figure

ASTM Specifications performed may include: D421, D422, D2216, D2217, and D4318.

Tested By: BG **Checked By:** RD

Particle Size Distribution Report

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	10.9	78.8	10.3	

	Colloids	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.3941	0.2703	0.2347	0.1716	0.1134			

Material Description	USCS	AASHTO
○ Brown, Poorly-graded SAND with Silt	SP-SM	

Project No. 34211441 **Client:** Longhouse Properties

Project: 2740-2768 Webster Avenue

○ **Source of Sample:** B-11 **Depth:** 15 **Sample Number:** S-5

Date: ○ 12/17/2021

Remarks:

○NMC = 4.7%

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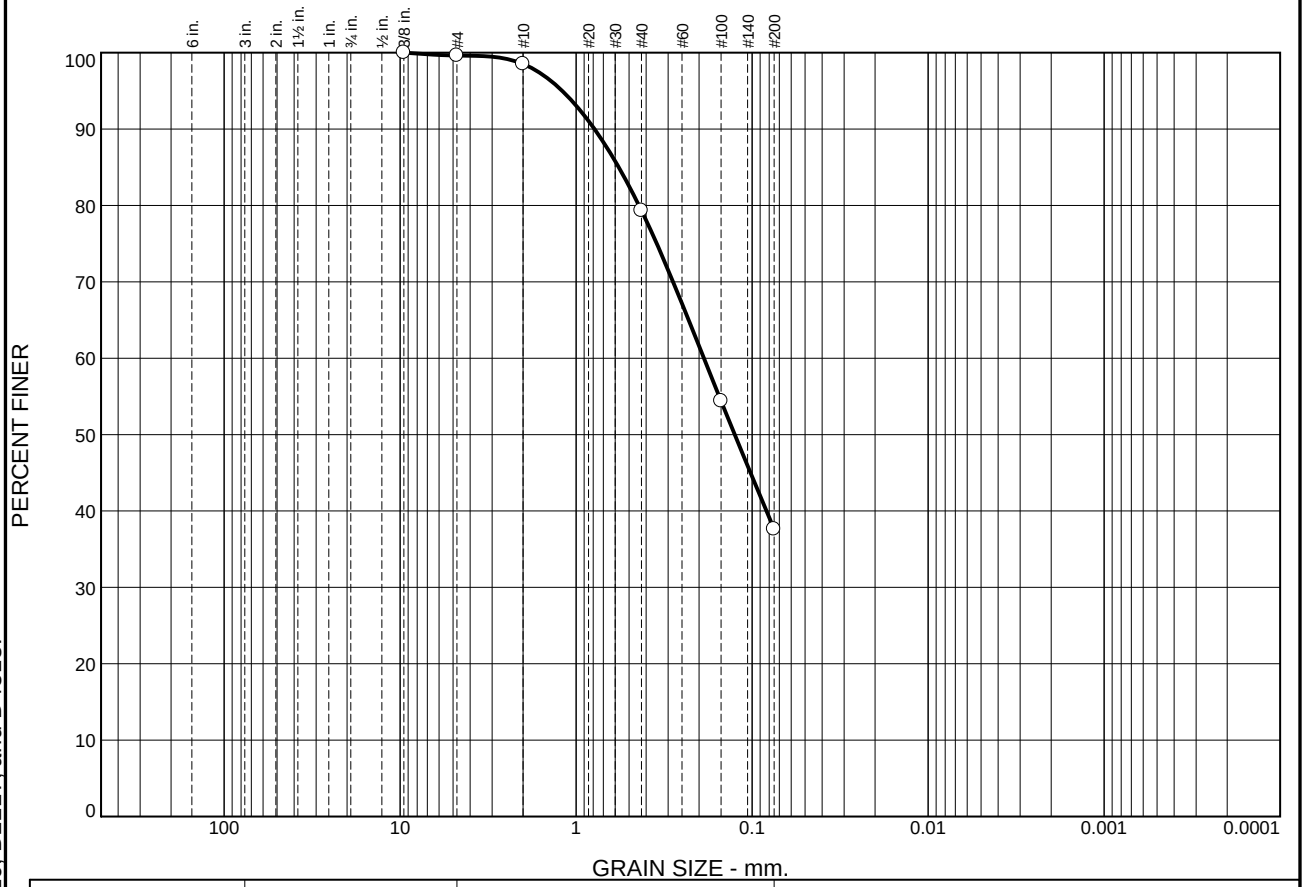
Figure

ASTM Specifications performed may include: D421, D422, D2216, D2217, and D4318.

Tested By: BG **Checked By:** RD

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.4	1.1	19.2	41.7	37.6	

	Colloids	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.5724	0.1877	0.1255					

Material Description	USCS	AASHTO
○ Brown, Silty SAND	SM	

Project No. 34211441 **Client:** Longhouse Properties

Project: 2740-2768 Webster Avenue

○ **Source of Sample:** B-12 **Depth:** 35 **Sample Number:** S-8

Date: ○ 12/17/2021

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Remarks:
○NMC = 23.9%

Figure

ASTM Specifications performed may include: D421, D422, D2216, D2217, and D4318.

Tested By: BG **Checked By:** RD