GEOTECHNICAL ENGINEERING REPORT

FOR

PROPOSED CONSTRUCTION OF A 20-STORY BUILDINGS AT 1140 RIVER AVENUE BLOCK 2487, LOT 38 BRONX, NY 10452

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INTRODUCTION

This report presents the results of our geotechnical engineering evaluation for the proposed construction of a New 20-story Building on Lot 38 of Block 2487 in Bronx, NY. This corner property is bound by McClellan Street on the north and River Avenue on the west. We have summarized and evaluated the subsurface exploration and soil laboratory test results and provided geotechnical engineering recommendations for the foundation design and construction of the proposed development.

This report has been prepared per the Site Plan by Newman Design dated August 19, 2024, and per our conversations with the project team. The ground-surface elevations provided in this report are interpreted from the Survey Drawing by Statewide Land Surveying PC dated August 31, 2024. Elevations from the survey are with respect to the North American Vertical Datum (NAVD88), and those reported herein should be considered approximate rather than precise.

SITE DESCRIPTION

The "Site" (Block 2487, Lot 38) is an existing at-grade parking lot bordered by Mc. Clellan Street is on the north, and River Avenue is on the west. The site has an approximate area of about 17,275 square feet with about 189 feet of frontage along River Avenue and about 60 feet along Mc. Clellan Street. The street grade along River Avenue slopes El 34 to 39 (from south to north) and El 39 to El 43 (from west to east). The at-grade parking lot surface grades vary from 34 to 41 (west to east).

To the west of the site above River Avenue is a New York City Transit (NYCT) elevated subway line that serves the "4" line. The tunnel column is about 15 feet from the western property line.

A site location map is presented in Figure No. 1, and a site survey is included in Appendix A.

Adjacent Properties

Two properties border the site on the east and the south. Limited information regarding the foundations and the lowest-level slab elevation of the adjacent buildings is available at the time of this study. We recommend that the presence of any below-grade levels should be verified in the field with test pits. The adjacent buildings are summarized as follows:

- 1111 Gerard Avenue (Block: 2487 Lot: 42) is occupied by a six-story building with an at-grade parking lot constructed circa 1991 and borders the site on the east. The building abuts the northern part of the east property line and is offset by 30 to 40 feet on the southern part of the east property line. A below-grade basement exists at this property and the actual extents and depths are to be confirmed with test pits.

- 1083 Gerard Avenue (Block: 2487 Lot: 32) is occupied by multiple three-story buildings with at-grade parking lots and borders the site on the south. The building abuts the eastern part of the

south property line, and the parking lot borders the western part of the south property line. Below-grade basement extents and depths are to be confirmed with test pits.

The number of stories in the adjacent buildings was obtained from Building Department records and the survey provided.

Flood Insurance Rate Map

We have reviewed the Preliminary Flood Insurance Rate Map (PFIRM) for New York City by the Federal Emergency Management Agency (FEMA), Community Panel No. 3604970083G, dated December 5, 2013. According to this map, the site falls outside Flood Zone X (a 500-year flood zone or areas subject to inundation by 0.2% annual chance of flood). The FEMA PFIRM map is shown in Figure No. 2.

PROPOSED DEVELOPMENT

According to the drawings provided by the project team, the proposed development consists of constructing a 20-story building with one below-grade level. At the time of this report, structural loads are unavailable.

SUBSURFACE EXPLORATION

Our subsurface investigation consisted of drilling nine borings and measuring groundwater readings in the existing monitoring well. The approximate boring locations are shown in Figure No. 3.

Test Boring Exploration

Borings, B-1 through B-9, were completed by Axciss Geotechnical Drilling using a track-mounted rig between September 30 and October 4, 2024, under the full-time inspection of Bilow Engineering.

Borings were drilled to depths of 20 to 37 feet below the site grade and were advanced using mud-rotary drilling techniques, a tri-cone roller bit with drilling fluid, and a steel casing to provide soil stabilization. Standard Penetration Tests (SPT)[1] were performed in the soil layers using an automatic hammer and standard split spoon sampler (ASTM D1586). Recovered soil samples were visually examined and classified in the field in accordance with the United Soil Classification System (USCS) and assigned classification numbers in accordance with ASTM D2487 and the Building Code. Rock exploration was performed when encountered and rock samples were visually examined.

[1] The Standard Penetration Test is a measure of soil density and consistency. The SPT N-value is defined as the number of blows required to drive a 2-inch-outer-diameter split-barrel sampler 12 inches using a 140-pound hammer falling freely for 30 inches.

Soil and rock classification, SPT N-values, and other field observations were recorded on the boring logs, and a copy of the boring log is included in Appendix B.

Laboratory Testing

Geotechnical laboratory tests were conducted on representative soil samples to define the index (physical and mechanical) properties. The laboratory test program consisted of:

- Six mechanical grain-size determinations (sieve analysis; ASTM D6913)
- Six natural-water content determinations (ASTM D2216)

The laboratory test results are included in Appendix C.

SUBSURFACE CONDITIONS

The general subsurface profile consists of a layer of uncontrolled fill, underlain by a sand layer (with varying amounts of silt and gravel), underlain by decomposed rock, and finally competent bedrock until boring termination depths. The subsurface profiles are included in Figures Nos. 4 through 7. Detailed descriptions of each subsurface stratum are given below in order of increasing depth.

Uncontrolled Fill [Class 7][2]

The uncontrolled fill layer was encountered at the site, extending to about 4 to 8 feet below the site grade. The fill consists of sand with varying amounts of silt, gravel, brick, and asphalt. SPT N-values in the fill layer ranged from 5 to 31 bpf, with an average of about 14 bpf. The fill is considered loose to dense and is classified as Building Code Class 7 material, Controlled and Uncontrolled Fills.

Sand [Class 3a, 3b, and 6]

In borings B-1 to B-5, about a 5-to 10-foot-thick sand layer was encountered directly below the fill layer to the top of the decomposed rock layer. The sand layer in boring B-8 is observed to be 15 feet thick. The sand generally was brown, medium-to fine-grained, with varying amounts of silt. SPT N-values in the sand ranged from 2 to 52 bpf, averaging about 21 bpf.

Laboratory tests of the seven samples in this soil stratum indicated that the moisture content ranged from 8% to 19%, with an average of 13%.

The sand is considered loose, medium-dense, and dense. It is classified as SP, SM, and SP-SM and designated as Building Code Class 3a, 3b, and 6 materials.

[2] Numbers in brackets indicate a classification of soil materials in accordance with the 2022 New York City Building Code.

Decomposed Rock [Class 1d]

A 5- to 15-foot-thick decomposed rock layer was encountered directly below the sand layer and continued to the top of the competent bedrock layer. The decomposed rock was generally gray and brown mica schist with varying amounts of sand and silt. SPT N-values were collected in this layer, and the N-values were above 100 bpf. Rock cores were collected where possible, and the REC values ranged from 27% to 97%, averaging 66%, and the RQD values ranged from 0% to 28%, averaging 19%.

The decomposed bedrock is designated as Building Code Class 1d material, “Decomposed Rock.”

Bedrock [Class 1b and 1c]

Bedrock was found below the decomposed rock and generally consisted of moderately to slightly weathered, gray mica schist. The top of the bedrock varied from el 7 to 36, which is about 3 to 30 feet below the site slab. Lenses of decomposed rock were observed within the bedrock layer. Rock-core recovery (REC) values were between 55 and 100 percent, averaging 84 percent. Rock-quality designations (RQD) were between 35 and 67 percent, averaging 50 percent.

The bedrock is designated as Building Code Class 1b and 1c, “Medium Hard Rock and Intermediate Rock.”

Groundwater

The groundwater was not encountered until the boring drilling depths in bedrock. Based on the experience in similar geological conditions, we interpret that groundwater would be perched on top of the bedrock during rainfall events – the borings were performed during drought season.

SEISMIC EVALUATION

This section provides the results of our seismic evaluation of the site in accordance with the general procedures outlined in the Building Code.

Based on the soil conditions encountered at the site with the proposed footings bearing on native soils (deeper than 10 feet), we recommend the site be designated Site Class C – Very Dense Soil and Soft Rock Profile, assuming that the proposed structure will be Structural Occupancy/Risk Category II (Building Code Table 1604.5).

The table below provides our recommended parameters for the proposed structure's seismic design. The architect and structural engineer must confirm the structural occupancy/risk and seismic design categories. We note that if the proposed building's depth is altered, the seismic design parameters could change and will need to be evaluated.

Table No. 1 - Building Code Seismic Design Parameters

Seismic Design Parameter	Recommended Value	2022 NYCBC Reference
Mapped Spectral Acceleration for short periods (S_s)	0.296 g	Section 1613.3.1
Mapped Spectral Acceleration for the 1-second period (S_1)	0.061 g	
Site Class	C	Table 1613.3.4.1
Site Coefficient for short periods (F_a)	1.30	Table 1613.3.3(1)
Site Coefficient for the 1-second period (F_v)	1.50	Table 1613.3.3 (1)
Design spectral response acceleration at short periods (S_{DS})	0.257 g	Section 1613.5.4
Design spectral response acceleration at 1-sec period (S_{D1})	0.061 g	
Seismic Design Category	B	Table 1613.3.5

Liquefaction Potential

The seismic provision of the Building Code requires an evaluation of the liquefaction potential of sand, silt, and non-cohesive materials below the groundwater table and up to 50 feet below the ground surface or to the top of the bedrock. As the groundwater is not observed within the borings, liquefaction need not be considered for the proposed foundation design.

FOUNDATION RECOMMENDATIONS

We understand that the proposed building will have a cellar level below the site grade, and the bearing stratum is assumed to be at el 28, which is about 10 feet below the site grade. For the proposed cellar excavation to el 28, the building will be bearing on the Building Code Class 3a and 3b or better material. We have not been provided with the structural foundation loads; however, considering the building height, we recommend that consideration be initially given to supporting the new building on a shallow foundation bearing on Class 3a or 3b or stratum. For Building Code Class 3a, the recommended allowable bearing capacity is 6 tons per square foot (tsf), and for Class 3b material, the bearing capacity is 3 tsf. Class 3b soils were encountered around borings B-5 and B-8, as shown in the bearing capacity map in Figure 8. We estimated an initial (during construction) total settlement of about 0.375 to 0.5 inches for this load.

The bottom of the proposed footings on the northeast should match the bottom of the adjacent building's footings.

The foundation stress and deformations are estimated by performing structural analyses, which require a modulus of subgrade reaction value. For a shallow footing bearing on the 3a soils, we recommend a modulus of subgrade reaction value between 50 and 100 PCI, and for 3b soils, the subgrade modulus is between 35 and 75 PCI. The structural engineer's plots of estimated footing stresses and settlements

should be provided to us for review. If the foundation stresses or settlements are greater than the recommended values, especially close to the adjacent buildings, settlement-reducing elements (e.g., piles) may be required at specific locations.

All the foundations should be below the frost line at a minimum of 4 feet below the site grade and be placed on the native soil stratum. If appropriate bearing material is not encountered at the foundation elevation, the unsuitable material should be removed until the appropriate bearing material is encountered.

Design Groundwater Level

The groundwater was not observed within the borings, but groundwater is typically observed on top of the bedrock, and the ongoing drought might have influenced the groundwater conditions on-site. For design purposes, we recommend a design groundwater level of about el 32 to account for periods of prolonged precipitation events, utility breaks, etc.

Floor Slab

We recommend placing a 6-inch-thick layer of clean crushed stone below the proposed slab-on-grade to allow for uniform bearing.

The contractor should take appropriate measures to protect the subgrade against the effects of adverse weather conditions. Any deleterious material or silt and clay encountered at the slab elevation shall be removed and replaced with structural fill or crushed stone before the placement of the slab.

Rock Anchors

Uplift forces can be resisted by tie-down anchors socketed into bedrock. Rock Anchors should be double-corrosion-protected, consisting of a PVC sheathing and grout encapsulation around the anchor bar to the top of the rock. An allowable tensile capacity of 100 tons can be achieved by using a 1-3/4-inch threaded bar (Grade 150) with 6,000 psi grout and a minimum bond length of 20 feet with a 6-inch socket diameter. A minimum free length of 10 feet should be provided. The contractor should be cautious with their drilling means and methods as lenses of decomposed rock were observed within the bedrock layer.

The free-stressing length of the anchor should be proportionated such that the dead weight of the engaged rock mass is greater than the individual anchor load or the sum of the group anchor loads. The engaged rock mass should be defined as the wedge formed by extending a plane 45 degrees vertically from the midpoint of the bond length. The rock-mass wedge should extend upwards from the outermost anchor, and the bottom of the wedge should be a level plane through the midpoint of the anchors.

The anchor bond length should be proportioned using an allowable peripheral shear resistance in the uplift of 100 psi multiplied by the nominal socket peripheral area. At least 10 percent of the anchors should

be performance-tested in accordance with the Post-Tensioning Institute (PTI), and the remaining anchors should all be proof-tested.

Permanent Below-Grade Walls

Permanent below-grade foundation walls should be designed to resist static lateral earth pressures and surcharge loads. In accordance with Section 1802.2 of the Building Code, dynamic earth pressures need not be considered in the design for structures assigned to Seismic Design Category B. Our recommended earth pressures acting against the wall vary in soil and with respect to the groundwater level. All perimeter walls should be designed for surcharge pressures as described below. The lateral earth pressure diagram is included in Figure No. 6.

For the areas where the wall is backfilled, or soil is present behind the wall, we recommend the wall be designed for static loading conditions that will consist of a triangular earth pressure distribution having an equivalent fluid weight of 60 pounds per square foot per foot of depth (at rest condition).

Lateral pressures from the sidewalk and any other surcharge loads should be added as a uniform soil pressure equal to 50 percent of the vertical pressure, applied over the height of the wall where the soil is present. We recommend that a vertical surcharge load of 600 pounds per square foot (psf) be considered for the north and west perimeter below-grade walls (fire-truck loading). A surcharge of 300 psf is to be considered for the east and south perimeter below-grade walls.

Waterproofing

We recommend that the below-grade slabs and walls be fully waterproofed with membrane-type waterproofing such as Preprufe (300R for horizontal applications and 160R for vertical applications) and Bituthene products by GCP Applied Technologies (GCP).

For all waterproofing applications, a diligent inspection of waterproofing materials is critical, especially during the placement of reinforcement for the slabs and foundation walls. The vertical waterproofing should be protected with a rigid barrier to prevent damage during backfilling. The substrate to receive horizontal waterproofing should be a 3-inch-thick lean concrete working surface (mud mat). Holes or rips in the waterproofing membranes should be repaired in accordance with the manufacturer's recommendations.

In addition to waterproofing, the foundation walls should have a drainage panel such as Hydroduct by GCP, or an approved equivalent. The drainage panel will provide protection for the waterproofing membrane and minimize water from accumulating against the foundation walls. The use of bentonite waterproofing or negative-side crystalline waterproofing is not recommended.

We recommend that a warranty be obtained from the manufacturer and installer to cover materials and workmanship. Only certified installers should be used to perform the waterproofing work. Diligent

protection and quality control are critical in producing a final product that limits the potential for seepage. Detailed daily inspections should be performed to document any damage resulting from the contractor's activities. Repairs should be made as soon as possible. Repairs should be made as soon as possible and should be made per the manufacturer's recommendations. A representative of the manufacturer should perform a final inspection and approve all work prior to concrete pours.

Under-Slab Drainage System

We recommend an under-slab drainage system below the slab-on-grade to mitigate hydrostatic loads and reduce the potential for water infiltration from seepage and intermittent rises in groundwater. The underslab drainage system should consist of a minimum 12-inch-thick layer of free-drainage gravel or crushed stone that conforms to the requirements of New York State Department of Transportation Item 605.0901, Underdrain Filter Type I or AASHTO No 57 stone. The use of recycled concrete aggregate (RAC) or blasted rock, locally known as "mole-rock," shall not be permitted in place of the recommended free-drainage gravel or crushed stone, as the fines can clog the drainage system.

We recommend installing drainage pipes consisting of a minimum 4-inch diameter, Schedule 40, perforated PVC conforming to ASTM D1785. The pipes should be integrally connected and should outlet into a suitable sump pit for discharge via a pump. The pipe network should be installed with a maximum spacing of 20 feet on the center. Clean-outs should be provided at the ends and at appropriate intermediate locations of pipe runs to allow maintenance of the system.

A mechanical engineer must design the sump and pumping system. The system should include a de-sander and sump to be used in conjunction with a duplex pumping arrangement. A duplex pump scheme is recommended to account for maintenance and emergency situations. An automatic float valve to actuate the pumps and a high-water alarm are common safety precautions and should be designed as part of the building's mechanical system. For the design of the sump and pumping system, the rate of seepage should be observed during excavation, and the actual daily inflow can be measured by the pumping required to keep the site dry. An under-slab drainage option requires permanent maintenance; power loss should be taken into account, and consideration should be given to installing emergency power generators. Cleanouts are recommended within the system to allow flushing of the drainage pipes.

The rules of the City of New York (Title 15, Chapter 19, Section 19-02) prohibit pumping groundwater into sewers under long-term conditions. As stated above, the system is intended to collect seepage, and intermittent rises in groundwater level and is not intended as a dewatering system. Groundwater discharge permits are required for discharge volumes greater than 10,000 gallons per day (7 gpm) and are effective for a term of only one year. Therefore, this portion of the DEP rules does not allow the long-term pumping of groundwater into the sewer system. We believe that the groundwater flow into the underslab drainage will be relatively small. If seepage measured during the excavation is greater than an average of 10,000 gallons per day, the under-slab drainage system will not be in accordance with the DEP regulations.

CONSTRUCTION RECOMMENDATIONS

Our recommendations for various construction-related activities are provided below.

Excavation and Rock Removal

Construction of the foundation elements will require excavation in soil, weathered rock, and bedrock. Soil strata can be excavated using conventional earth-moving equipment. Abandoned concrete and brick foundations are to be expected below grade. A pneumatic hammer may be required to break up existing foundations. Removal of existing structures adjacent to abutting buildings may require excavation using hand methods.

Local temporary soil excavations above the natural groundwater level can have soil slopes as steep as 1.5H:1V. The slopes of any excavation adjacent to the existing structures should be no steeper than 2H:1V. All excavations steeper than 2H:1V adjacent to the structures will require temporary support.

Cellar construction will also require rock removal. Common rock excavation methods include ripping, mechanical impactors (hoe rams), chemical splitting, and/or blasting. Hoe rams may be sufficient to remove the rock where joints are inclined. Blasting or chemical splitting is likely required to break harder rock, and pre-drilling will be necessary for individual footings. Blasting is not recommended, given the proximity of adjacent buildings and NYCT elevated structures. During rock excavation, special care should be taken to minimize foundation rock damage (overbreak) vibrations and damage to any existing neighboring structures and utilities. Excessive damage to rock in the rock-cut perimeter walls may result in excavation instability. All rock excavations adjacent to the existing buildings and along the excavation at River Avenue should be line drilling with holes spaced at close centers prior to peeling, chipping, or blasting to reduce overbreak beneath adjacent structures and provide a better surface for cellar wall construction.

A New York State licensed Professional Engineer should design the support of excavation drawings. Excavations must not undermine neighboring buildings and the right of way.

Subgrade Preparation and Protection

Foundation-bearing surfaces should be level and clear of debris, standing or frozen water, and other deleterious materials. Soils should be excavated with care to avoid disturbances below the bearing elevation. We recommend that the final 3 inches of excavation be performed with flat-bladed buckets in open areas and by hand in confined areas. The subgrade should be protected from the effects of frost, precipitation, groundwater, and surface water run-off and construction until the concrete is cast. As such, we recommend that the contractor limit the area of the exposed subgrade to prevent deterioration of bearing conditions; however, excavations should be made large enough to allow passage of the compactor.

Areas disturbed by excavation and other areas found to be unacceptable should be excavated and replaced with free-draining gravel or crushed stone. Structural fill, Controlled Low Strength Material (CLSM), or lean concrete may be used in lieu of gravel or crushed stone, subject to the approval of the Geotechnical Engineer based on a review of in-situ conditions at the time of excavation. The resulting subgrade following placement of fill and compaction should be firm and unyielding under the weight of heavy equipment without evidence of rutting, pumping, or heaving. Vibratory compaction should not be performed on soils within 2 feet of the groundwater table or that are not within 2 percent of optimum moisture content. Compaction should be discontinued in the event that soils are observed to "pump or heave" due to wet conditions.

Following compaction, slab and foundation subgrades should be capped with 3 inches of crushed stone fill. This material will help protect the subgrades from degradation and can be used to assist in the conveyance of water during dewatering activities. A mud slab should be cast to provide protection and may be required to provide a suitable substrate for waterproofing.

A New York state-licensed engineer must verify bearing material in accordance with the Building Code requirements prior to placement of fill or concrete.

Temporary Groundwater Control

Based on the measured groundwater levels, the general site excavation is not planned to encounter groundwater. The contractor should take appropriate measures to protect the site and open excavations from weather elements such as rain and snow. Controlling the surface water runoff (rainfall) during excavation and foundation construction will be critical for proper subgrade preparation. If any water is encountered, it can be removed with conventional sump wells.

All groundwater discharged from the site into city sewers will require temporary dewatering permits from the NYC Department of Environmental Protection. The temporary dewatering system should consider limiting the influence of the drawdown and the potential detrimental effects on the neighboring buildings.

Fill Material, Placement, and Compaction Criteria

Any material used for backfilling around foundations and walls should consist of structural fill as defined by the Building Code. Controlled fill should consist of sand, gravel, crushed stone, crushed gravel, or a mixture of these and must be free of organic, frozen, and other deleterious materials. The fill materials should have a maximum particle size not greater than 3 inches and have less than 10% by dry weight passing a No. 200 sieve. The fill should be compacted to at least 95% of the material's maximum dry density as determined by the Modified Proctor Compaction Test (ASTM D1557). The existing fill may be used as long as it meets the gradation requirements discussed above. The use of recycled concrete aggregate, or the byproduct of blasting/tunneling (commercially known as mole rock), is not recommended for backfill. The top layer of landscaping material should be in accordance with the City of

New York Parks & Recreation requirements.

Fill should be placed in uniform 3-inch-thick loose lifts. Lightweight compaction equipment should be used adjacent to subgrade walls. The appropriate water content at the time of compaction should be plus or minus two percentage points of optimum water content as determined by the laboratory compaction tests of the proposed fill. No fill should be placed on areas where standing water is observed or on frozen subsoil areas.

PRECONSTRUCTION CONDITIONS DOCUMENTATION AND MONITORING

Preconstruction Conditions Documentation

The preconstruction documentation of all structures and the elevated NYCT structure within 50 feet of the proposed work to provide the owner and foundation contractor, etc., with documentation of existing conditions in the event of a future damage claim. The purpose of these observations is to provide a photographic or video documentation representation of the existing general conditions and to identify obvious visual deficiencies. This documentation should also identify areas requiring specific monitoring during construction, including optical surveying and vibration monitoring. The structural integrity of the structure is not commonly addressed in such documentation.

Monitoring Program

During excavation, a precise optical survey and instrumentation program should be implemented by the foundation contractor to monitor for vertical and horizontal movements of all adjacent structures to evaluate construction procedures. A monitoring plan submission to NYCT should be made to determine the monitoring program within the adjacent elevated structure.

The survey should be performed weekly, with measurements taken to the nearest 0.005 of a foot. A licensed surveyor should perform the survey. Criteria for allowable movements of structures should be finalized after a building pre-construction survey is completed.

Ground vibrations may develop during construction and excavation. Ground vibrations in nearby structures should be monitored during construction using seismographs. The ground vibrations should be monitored using a threshold-type seismograph capable of measuring 0.02 of an inch.

In addition to survey points and seismographs, telltale crack reference gauges should be monitored within the adjacent structures. The crack gauges should be sensitive to 0.001 of an inch and should be read at least once daily.

We recommend completing a monitoring plan and project specifications before construction and excavation. The plan and specifications would detail the methods and equipment required for monitoring vibration and movement and would provide movement criteria and requirements for the frequency of

readings and reporting.

CONSTRUCTION DOCUMENTS AND QUALITY ASSURANCE

Technical specifications and design drawings should incorporate Bilow Engineering's recommendations. Bilow Engineering will assist the design team in preparing specification sections related to geotechnical issues such as earthwork, backfill, and excavation support when authorized. Bilow Engineering should also, when authorized, review foundation drawings prepared by the structural engineer and contractor submittals relating to materials and construction procedures for geotechnical work.

Bilow Engineering has investigated and interpreted the site subsurface conditions and developed general foundation design recommendations contained here and is, therefore, best suited to perform quality-assurance observation and testing of geotechnical-related work during construction. This work requiring quality-assurance confirmation includes but is not limited to, earthwork, backfill, deep foundations, and excavation support. Recognizing that construction is essentially the completion of design, Bilow Engineering's quality-assurance observation and testing during construction is necessary to maintain our continuity of responsibility on this project.

QUALITY CONTROL DURING CONSTRUCTION

The contractor is responsible for construction quality control, which includes satisfactorily constructing the foundation system and any associated temporary works to achieve the design intent while not adversely impacting or causing loss of support to the neighboring structures. Construction activities that can alter the existing ground conditions, such as excavation, fill placement, foundation construction, ground improvement, pile driving/drilling, dewatering, etc., can also potentially induce stresses, vibrations, and movements in nearby structures and utilities and disturb occupants of nearby structures. Contractors working at the site must ensure that their activities will not adversely affect the performance of the structures and utilities and will not disturb occupants of nearby structures. Contractors must also take all necessary measures to protect the existing structures during construction. By using this report, the owner agrees that Bilow Engineering will not be held responsible for any damage to adjacent structures.

The preparation and use of this report are based on the condition that the project construction contract between the owner and their contractors will include (1) Bilow Engineering being added to the project wrap and the contractor's general liability insurance as an additional insured, and (2) language specifically stating the foundation contractor will defend, indemnify, and hold harmless the owner and Bilow Engineering against all claims related to disturbance or damage to adjacent structures or properties.

DISCLAIMER AND LIMITATIONS

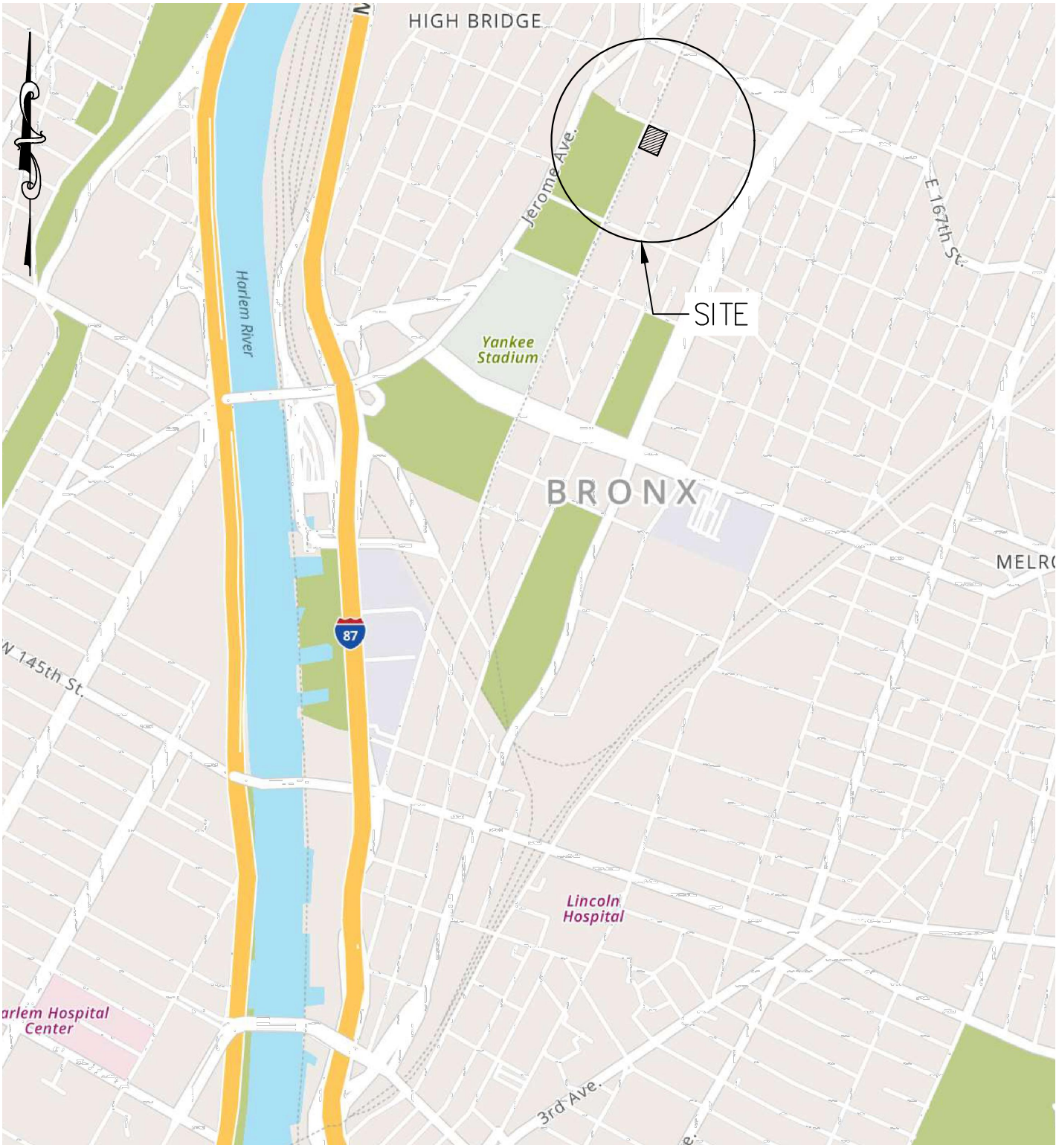
The conclusions and recommendations provided in this report result from our interpretation of the geotechnical conditions at the site inferred from a limited number of borings performed by others and information provided by the Ownership and Structural Engineer. Actual subsurface conditions may vary. Recommendations provided are dependent upon one another, and no recommendation should be followed independently of the others. This study has been conducted in accordance with the standard of care commonly used as state-of-the-practice in the profession. No warranties, expressed or implied, are made.

Any proposed changes in structures or their locations should be brought to Bilow Engineering's attention as soon as possible so that we can determine whether such changes affect our recommendations. Information on subsurface strata and groundwater levels interpreted from the boring logs represent conditions encountered only at the locations indicated and at the time of the investigation. Different conditions encountered during construction should immediately be brought to Bilow Engineering's attention for evaluation, as they may affect our recommendations.

This report has been prepared to assist the owner and structural engineer in the design process and is only applicable to the design of the specific project identified. The information in this report cannot be used or depended on by engineers or contractors involved in evaluations or designs of facilities (including underpinning, grouting, stabilization, etc.) on adjacent properties, which are beyond the limits of that which is the specific subject of this report.

Environmental issues (such as permitting or potentially contaminated soil and groundwater) are outside the scope of this study and should be addressed in a separate evaluation.

FIGURES



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PROJECT:	DRAWING TITLE:	DATE:	FIGURE NO:
1140 RIVER ROAD BLOCK#: 2487, LOT#: 38 BRONX, NY 10452	SITE LOCATION MAP	DEC 2, 2024 DRAWN BY: SB CHECKED BY: JB	1

1 FLOOD INSURANCE RATE MAP
SCALE: 1"=500'

0 250 500 1000 Feet

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Limit of Moderate Wave Action
- 513 — Base Flood Elevation line and value; elevation in feet*
- (El. 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- Culvert, Flume, Penstock or Aqueduct
- Road or Railroad Bridge
- Footbridge
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4278000m N — 1000-meter Universal Transverse Mercator grid values, zone 18
- 600000 FT — 5000-foot grid values: New York State Plane coordinate system, Long Island zone (FIPSZONE 3104), Lambert Conformal Conic projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

INITIAL NFIP MAP DATE
June 28, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS
June 11, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE
November 16, 1983

FLOOD INSURANCE RATE MAP REVISIONS

For descriptions of revisions see Notice to Users page in the Flood Insurance Study report.

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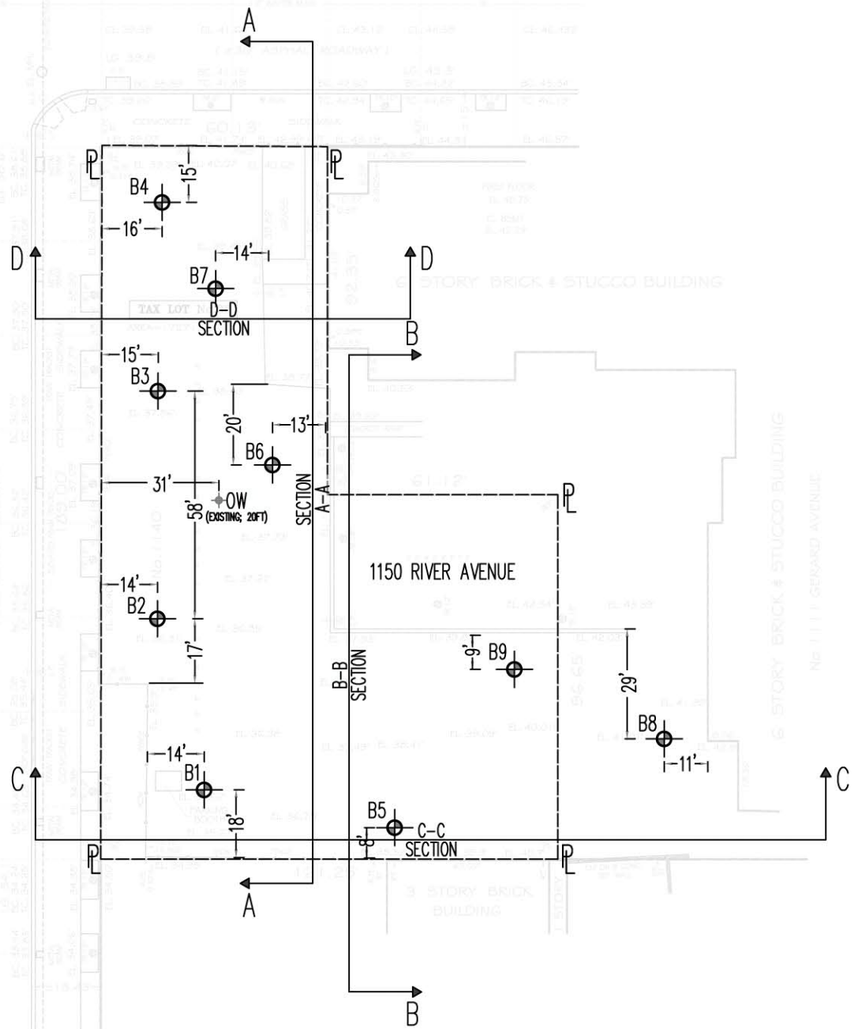
NEW JERSEY 07401

SOURCE:
FEMA FLOOD INSURANCE RATE MAP FOR THE CITY OF NEW YORK, BRONX
PANEL 83 OF 457 [3604970083G] PRELIMINARY MAP, DATED DECEMBER 5, 2013.

PROJECT: 1140 RIVER ROAD BLOCK#: 2487 LOT#: 38 BRONX, NY 10452	DRAWING TITLE: FEMA FLOOD INSURANCE RATE MAP	DATE: DEC 2, 2024 DRAWN BY: SB CHECKED BY: JB	FIGURE NO: 2



BORING LOCATION PLAN

SCALE: 1" =40'-0"

BORING LOCATION PLAN BASED UPON A SURVEY
PERFORMED BY STATEWIDE LAND SURVEYING P.C. ON 8/31/24.

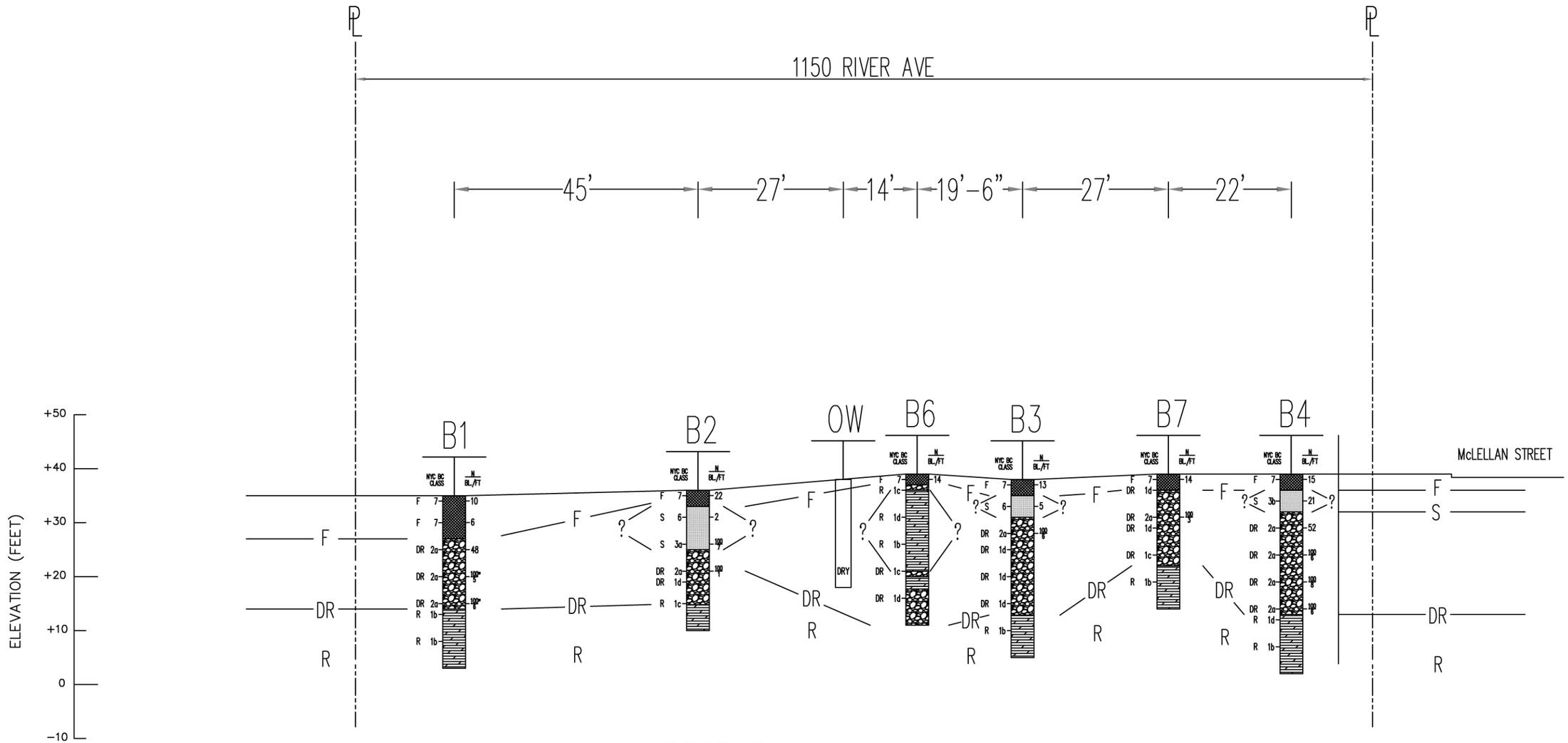
NOTES:

1. BORING LOCATIONS ARE APPROXIMATE.
2. BORINGS WERE DRILLED UNDER FULL ENGINEERING INSPECTION BY BILOW ENGINEERING, LLC. BETWEEN 9/30/24 AND 10/4/24.
3. A REPRESENTATIVE OF BILOW ENGINEERING WAS PRESENT AT THE TIME OF THE SITE VISITS TO COLLECT SOIL SAMPLES.

BILOW ENGINEERING L.L.C.
JONATHAN BILOW, P.E.
N.Y.P.E. LIC. NO. 077650-1
99 FRANKLIN TURNPIKE AVENUE ALLENDALE, NEW JERSEY
TEL. (973)868-8108

1150 RIVER AVE
BORING LOCATION PLAN
THE BRONX NEW YORK

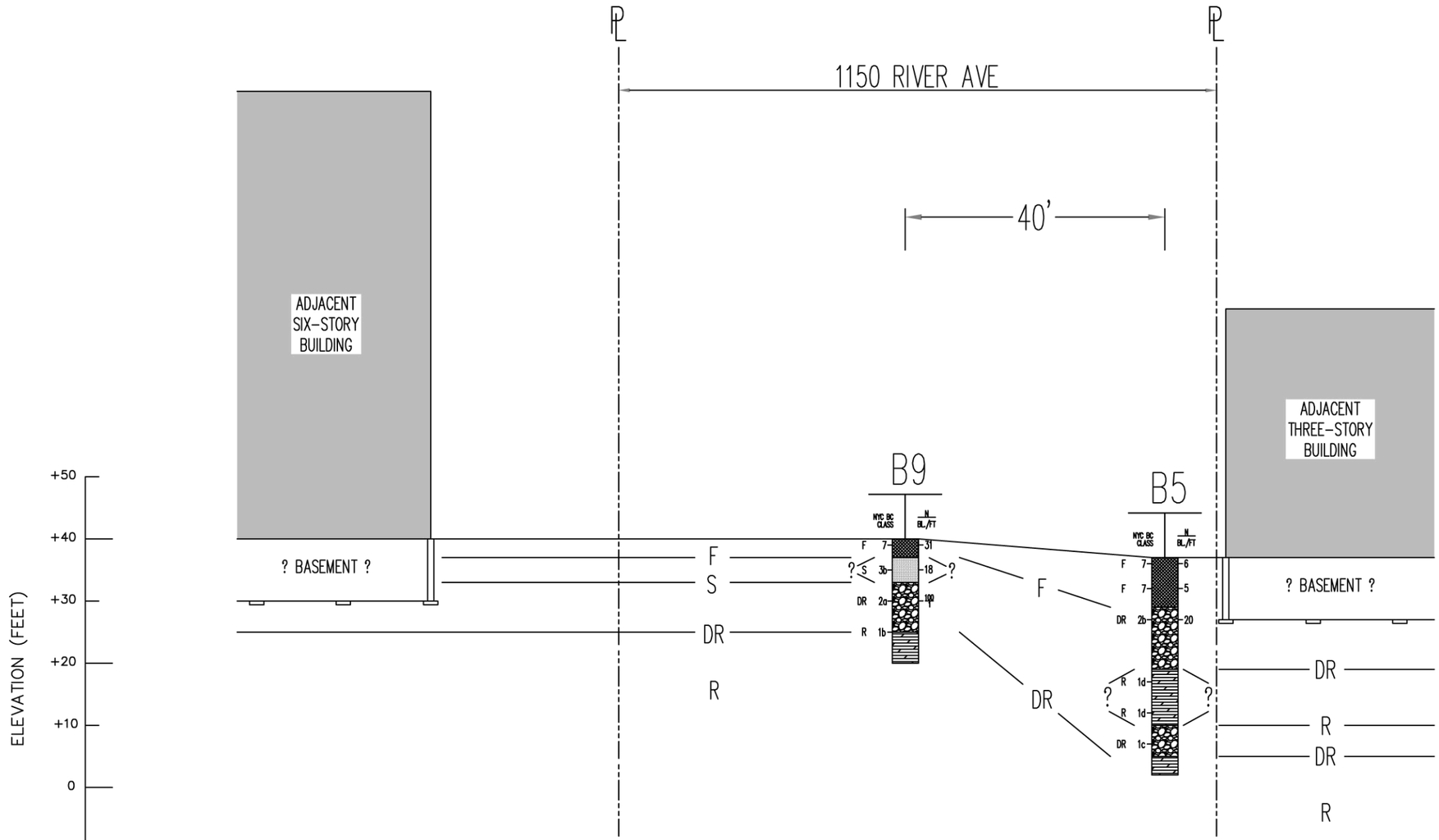
PROJECT 12032	SCALE: 1"=40'-0"	DATE: 11/1/24	FIGURE 3



PROFILE A-A

SCALE: 1" = 20"

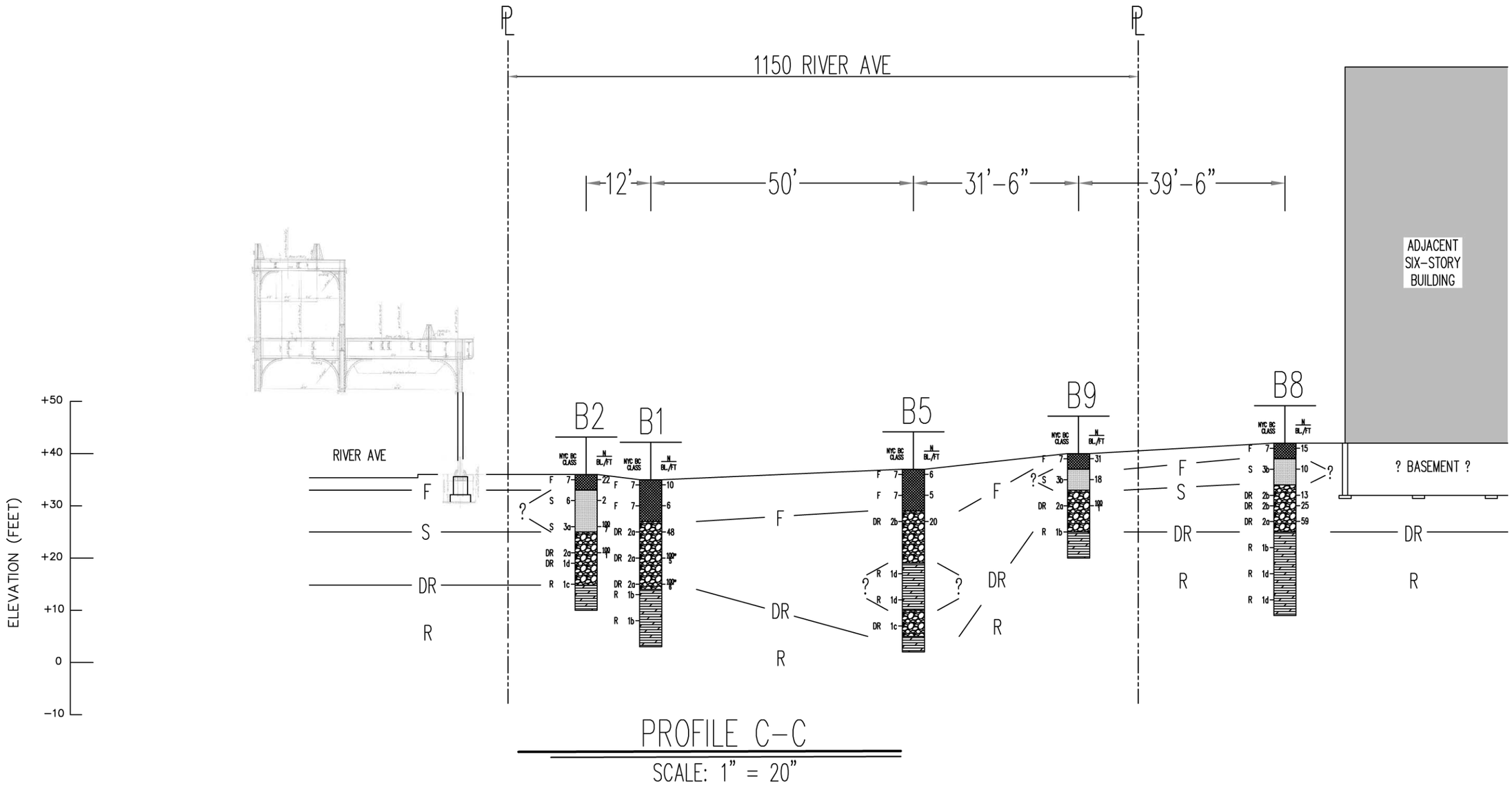
BILOW ENGINEERING L.L.C. JONATHAN BILOW, P.E. N.Y.P.E. LIC. NO. 077650-1 99 FRANKLIN TURNPIKE AVENUE ALLENDALE, NEW JERSEY TEL. (973)868-8108	1150 RIVER AVE BORING PROFILE A-A THE BRONX NEW YORK		
	PROJECT 12032	SCALE: 1"=20"	DATE: 11/1/24	FIGURE 4



PROFILE B-B

SCALE: 1" = 20"

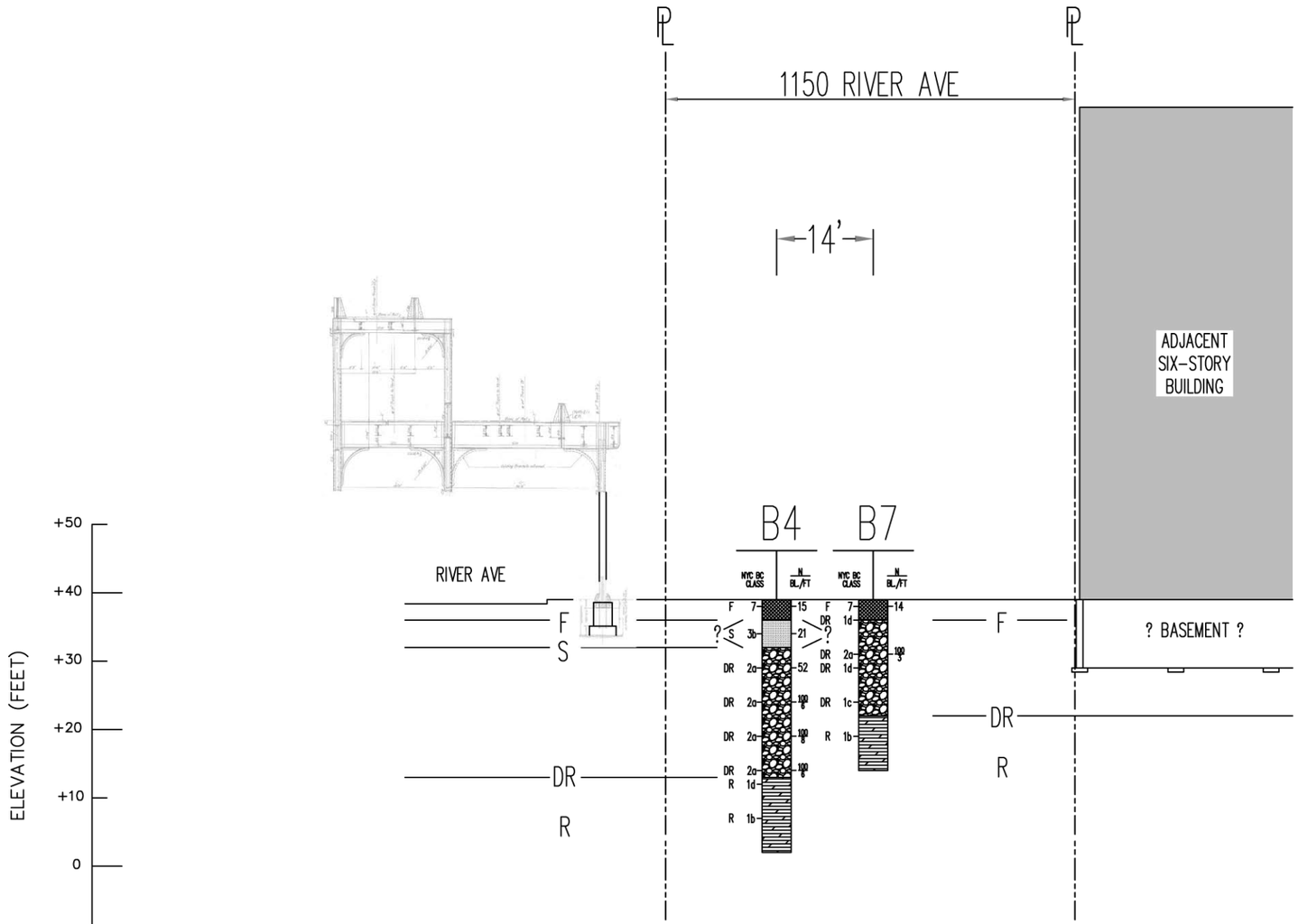
BILOW ENGINEERING L.L.C. JONATHAN BILOW, P.E. N.Y.P.E. LIC. NO. 077650-1 99 FRANKLIN TURNPIKE AVENUE ALLENDALE, NEW JERSEY TEL. (973)868-8108	1150 RIVER AVE BORING PROFILE B-B THE BRONX NEW YORK		
	PROJECT 12032	SCALE: 1"=20"	DATE: 11/1/24	FIGURE 5



PROFILE C-C

SCALE: 1" = 20"

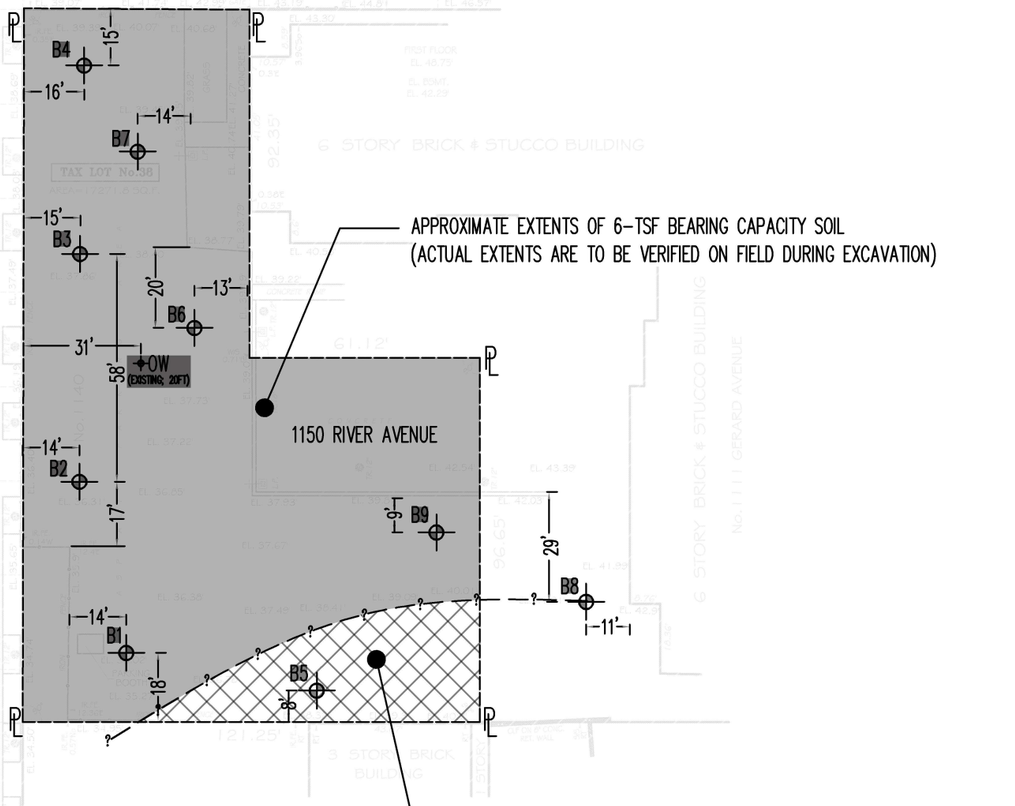
BILOW ENGINEERING L.L.C. JONATHAN BILOW, P.E. N.Y.P.E. LIC. NO. 077650-1 99 FRANKLIN TURNPIKE AVENUE ALLENDALE, NEW JERSEY TEL. (973)868-8108	1150 RIVER AVE BORING PROFILE C-C THE BRONX — NEW YORK		
	PROJECT 12032	SCALE: 1"=20"	DATE: 11/1/24	FIGURE 6



PROFILE D-D

SCALE: 1" = 20"

BILOW ENGINEERING L.L.C. JONATHAN BILOW, P.E. N.Y.P.E. LIC. NO. 077650-1 99 FRANKLIN TURNPIKE AVENUE ALLENDALE, NEW JERSEY TEL. (973)868-8108	1150 RIVER AVE BORING PROFILE D-D THE BRONX — NEW YORK		
	PROJECT 12032	SCALE: 1"=20"	DATE: 11/1/24	FIGURE 7



BORING CAPACITY PLAN

SCALE: 1" =40'-0"

NOTES:

1. BORING LOCATIONS ARE APPROXIMATE.

BILOW ENGINEERING L.L.C.
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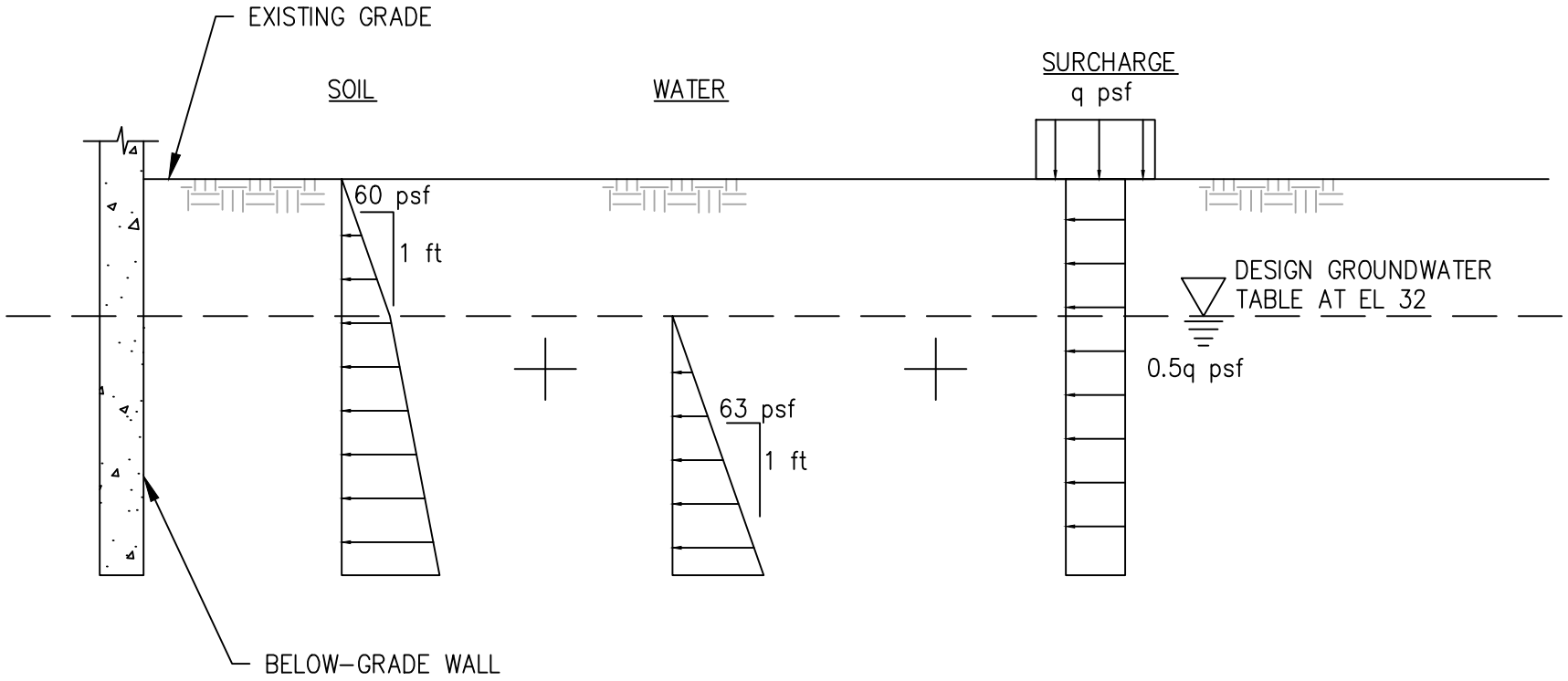
TEL. (973)868-8108

1150 RIVER AVE
BEARING CAPACITY PLAN
THE BRONX NEW YORK

PROJECT 12032	SCALE: 1"=40'-0"	DATE: 12/2/24	FIGURE 8



NOTE:
DESIGN GROUNDWATER IS AT EL 32, 4 FEET ABOVE THE ASSUMED GROUNDWATER LEVEL.
IF DIFFERENT GROUNDWATER CONDITIONS ARISE, BILOW ENGINEERING MUST BE NOTIFIED.

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NEW JERSEY 07401

PROJECT:	DRAWING TITLE:	DATE:	FIGURE NO:
1140 RIVER ROAD BLOCK#: 2487 LOT#: 38 BRONX, NY 10452	LATERAL EARTH PRESSURE DIAGRAM	DEC 2, 2024 DRAWN BY: SB CHECKED BY: JB	9

APPENDIX A

SITE SURVEY

(NOT FOR TITLE PURPOSES) — LEGEND —

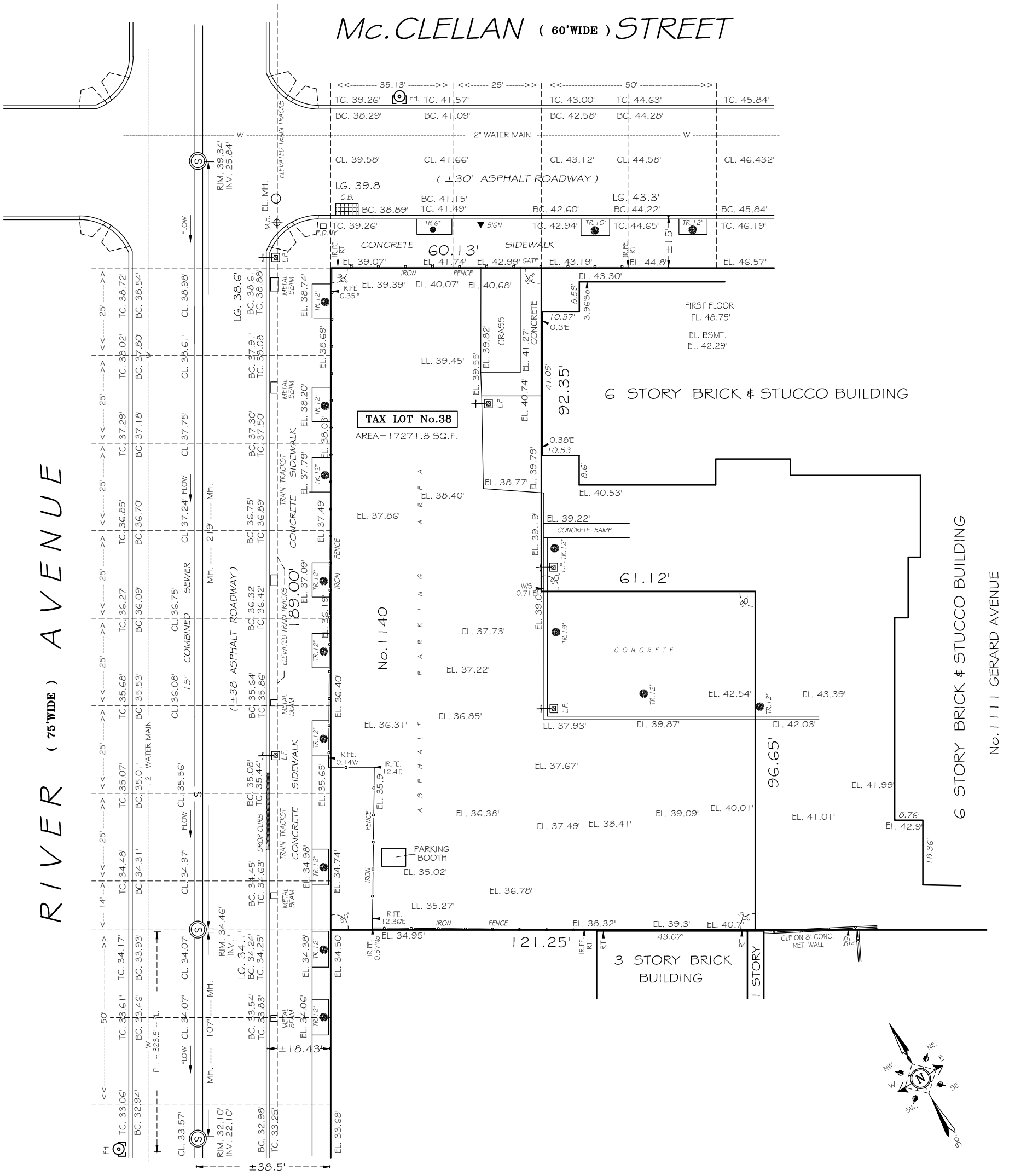
No. NORTH | So. SOUTH | E. EAST | F.E. FIRE ESCAPE | W.W. WINDOW WELL | C.D. CELLAR DOOR | ENT.UND. ENT. UNDER | ENT. ENTRANCE | L.A. LOW AREA | A. AREAWAY | CL. CLEAR | RT. RIGHT

LIGHT POST | UTILITY POLE | CATCH BASIN | WATER VALVE | GAS VALVE | PARKING METER | TRAFFIC SIGN | HYDRANT HYD. | E. ELECTRIC BOX | TREE PIT | SEWER MANHOLE | E ELECTRIC MANHOLE | T TELEPHONE MANHOLE | W D.W.S WATER

JOB # 25094-BX

Mc. CLELLAN (60'WIDE) STREET

RIVER (75'WIDE) AVENUE



SURVEYED

AUGUST 31, 2024

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW. COPIES OF THIS SURVEY MAP NOT BEARING THE LAND SURVEYOR'S INKED SEAL OR EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY. GUARANTEES OR CERTIFICATIONS INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. GUARANTEES OR CERTIFICATION ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

BLOCK:	2487
LOT (s):	38
SECTION:	9
COUNTY:	BRONX
DWG BY:	Srdjan B.
CHK'D BY:	

STATE OF NEW YORK · VINCENT TEUTONICO · 050307 · LICENSED LAND SURVEYOR

STATEWIDE LAND SURVEYING P.C.

VINCENT M. TEUTONICO

N.Y.S LIC. No.050307

OFF.(914)365-1847 ; FAX (914)365-1849

E-mail: BIGAPPLELS@YAHOO.COM

ARCHITECTURAL SURVEY

CAUTION: BEFORE PERFORMING ANY DIGGING OR DRILLING ON THIS SITE, IT IS REQUIRED THAT SUBSURFACE SERVICES, INCLUDING THE UNDERGROUND MAINS BE MARKED AND IDENTIFIED BY THE UTILITY INVOLVED IN COMPLIANCE WITH INDUSTRIAL CODE 53 OF NEW YORK STATE.

1) ALL ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) WHICH IS 1.508 FEET ABOVE THE BRONX TOPOGRAPHICAL DATUM

2) UNDERGROUND UTILITY INFORMATION SHOWN WAS OBTAINED FROM VARIOUS COMPANIES AND CITY AGENCIES AND IS NOT GUARANTEED FOR ACCURACY OR COMPLETENESS.

3) THIS IS TO CERTIFY THAT THERE ARE NO APPARENT STREAMS NOR NATURAL WATER COURSES IN THE PROPERTY AS SHOWN ON THIS SURVEY

SCALE: 1"=30'

APPENDIX B

BORING LOGS

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LOG OF BORING B1 SHEET 1 OF 3

PROJECT 1150 RIVER AVE		**PROJECT NO.** 12032	
LOCATION 1150 RIVER AVE, BRONX, NEW YORK		**ELEVATION AND DATUM** APPROX. EL. 35FT+/-	
DRILLING AGENCY AXCISS GEOTECHNICAL DRILLING, LLC.		**DATE STARTED** 10/2/24	**DATE FINISHED** 10/3/24
DRILLING EQUIPMENT TRACK MOUNTED DRILL RIG		**COMPLETION DEPTH** 32'-0"	**ROCK DEPTH** 21'-0"
SIZE AND TYPE OF BIT 2 7/8" TRICONE ROLLER BIT		**NO. SAMPLES** **DIST.** 5	**UNDIST.** N/A **CORE** 2
CASING 3" DIAMETER STEEL CASING & EZ DRILLING MUD		**WATER LEVEL** **FIRST** N/A	**COMPL.** N/A **24 HR** N/A
CASING HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"		**FOREMAN** DRILLER- ERIC, HELPER- TERRY	
SAMPLER 2" DIAMETER SPLIT SPOON (SS) SAMPLER; NX DOUBLE TUBE CORE BARREL		**INSPECTOR** ALEX CORMAN	
SAMPLER HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"			

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
MISC. FILL	SAND, SILT, ASPHALT, GRAVEL, BRICK [MISCELLANEOUS FILL] (NYC BC CLASS 7)	1	S1	SPLIT SPOON	REC = 7"	5 5 5 3	BEGIN DRILLING 12:45PM 10/2/24 DRIVE SPLIT SPOON S1 FROM 0-2FT
		2					DRIVE CASING TO 5FT ~75 BLOWS
		3					
		4					DRILL TO 5FT W/ EZ-MUD TO CLEAN OUT HOLE SLIGHT RIG CHATTER WASH LIGHT BROWN
	TRACE GRAVEL & BRICK [MISCELLANEOUS FILL] (NYC BC CLASS 7)	5	S2	SPLIT SPOON	REC = 0"	2 2 4 4	DRIVE SPLIT SPOON S2 FROM 5-7FT
		6					
		7					DRIVE CASING TO 10FT ~100 BLOWS
DECOMPOSED ROCK	WHITE COARSE SANDY DECOMPOSED MARBLE TO BROWN/GRAY SILTY SAND (NYC BC CLASS 2a)	8					DRILL TO 10FT W/ EZ-MUD TO CLEAN OUT HOLE HEAVY RIG CHATTER WASH LIGHT GRAY
		9					
		10	S3	SPLIT SPOON	REC = 15"	22 26 22 34	DRIVE SPLIT SPOON S3 FROM 10-12FT
		11					
		12					

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JOB NO. 12032
DATE 10/2/24 - 10/3/24

LOG OF BORING NO. B1

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
DECOMPOSED ROCK		12					DRILL TO 15FT W/ EZ-MUD TO CLEAN OUT HOLE SMOOTH DRILLING WASH LIGHT BROWN PEBBLES IN WASH
	WHITE COARSE SANDY DECOMPOSED ROCK (NYC BC CLASS 2a)	13					
		14					
		15	S4	SS	R=5"	100/5"	DRIVE SPLIT SPOON S4 FROM 15-17FT HIT REFUSAL AT 15'-5"
		16					
		17					DRILL TO 20FT W/ EZ-MUD TO CLEAN OUT HOLE HARD DRILLING SLIGHT RIG CHATTER WASH LIGHT BROWN
		18					
		19					
	REDDISH BROWN/GRAY DECOMPOSED ROCK (NYC BC CLASS 2a)	20	S5	SS	R=6"	100/6"	DRIVE SPLIT SPOON S5 FROM 20-22FT HIT REFUSAL AT 20'-6"
	?---?---?---?---?	21					DRILL TO 22FT TO CLEAN OUT HOLE
ROCK		22	CORE RUN 1	NX DOUBLE-TUBE CORE BARREL	REC = 44"/60" = 73%	RQD = 32"/60" = 53%	CORE ROCK STARTING AT 22' CORE RUN 1: 22'-27' (2PM 10/2/24)
	HARD MARBLE (NYC BC CLASS 1b)	23					22'-23': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN
		24					23'-24': LIGHT WASH SMOOTH DRILLING FOR ~3 MIN
		25					24'-25': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN
		26					25'-26': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN
		27					26'-27': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN TOTAL CORING TIME APPROX. 9.5 MIN REMOVE BARREL @ 7:45AM, 10/3/24

DRILL TIME MIN/FT.: 1 | 3 | 2 | 1.5 | 2

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JOB NO. 12032
DATE 10/2/24 - 10/3/24

LOG OF BORING NO. B1

SHEET 3 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
ROCK	SOFT SCHIST TO HARD MARBLE (NYC BC CLASS 1b)	1 3 2 1.5 2	27 28 29 30 31	CORE RUN 2	NX DOUBLE-TUBE CORE BARREL	REC = 56"/60" = 93%	RQD = 30"/60" = 50%	CORE RUN 2: 27'–32' (8AM 10/3/24) 27'–28': LIGHT WASH SMOOTH DRILLING FOR ~3.5 MIN 28'–29': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN 29'–30': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 30'–31': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN 31'–32': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN
	BORING COMPLETED @ 32 FT		32					TOTAL CORING TIME APPROX. 10.5 MIN
			33 34 35 36 37 38 39 40 41 42					BORING COMPLETED AT A DEPTH OF 32'–0" END OF BORING B1

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LOG OF BORING B2 SHEET 1 OF 2

PROJECT 1150 RIVER AVE		**PROJECT NO.** 12032	
LOCATION 1150 RIVER AVE, BRONX, NEW YORK		**ELEVATION AND DATUM** APPROX. EL. 36FT+/-	
DRILLING AGENCY AXCISS GEOTECHNICAL DRILLING, LLC.		**DATE STARTED** 10/1/24	**DATE FINISHED** 10/1/24
DRILLING EQUIPMENT TRACK MOUNTED DRILL RIG		**COMPLETION DEPTH** 26'-0"	**ROCK DEPTH** 15'-0"
SIZE AND TYPE OF BIT 2 7/8" TRICONE ROLLER BIT		**NO. SAMPLES**	**DIST.** 4 **UNDIST.** N/A **CORE** 2
CASING 3" DIAMETER STEEL CASING & EZ DRILLING MUD		**WATER LEVEL**	**FIRST** N/A **COMPL.** N/A **24 HR** N/A
CASING HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"		**FOREMAN** DRILLER- ERIC, HELPER- TERRY	
SAMPLER 2" DIAMETER SPLIT SPOON (SS) SAMPLER; NX DOUBLE TUBE CORE BARREL		**INSPECTOR** ALEX CORMAN	
SAMPLER HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"			

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
MISC. FILL	SAND, SILT, ASPHALT, GRAVEL, BRICK, CINDERS [MISCELLANEOUS FILL] (NYC BC CLASS 7)	1	S1	SPLIT SPOON	REC = 18"	20 11 11 16	BEGIN DRILLING 9:45AM DRIVE SPLIT SPOON S1 FROM 0-2FT
		2					DRIVE CASING TO 5FT ~150 BLOWS
		3					DRILL TO 5FT W/ EZ-MUD TO CLEAN OUT HOLE SLIGHT RIG CHATTER WASH LIGHT BROWN GRAVEL IN WASH
SAND	FINE SILTY SAND TRACE GRAVEL, SHINY MINERALS (NYC BC CLASS 6)	4					
		5	S2	SPLIT SPOON	REC = 17"	1 1 1 1	DRIVE SPLIT SPOON S2 FROM 5-7FT
		6					
		7					DRIVE CASING TO 10FT ~50 BLOWS
		8					DRILL TO 10FT W/ EZ-MUD TO CLEAN OUT HOLE SMOOTH DRILLING WASH LIGHT BROWN
		9					
		10					
DR	SAND, TRACE SILT AND GRAVEL DECOMPOSED ROCK AT TIP (NYC BC CLASS 3a)	11	S3	SPLIT SPOON	REC = 12"	20 70 100/1"	DRIVE SPLIT SPOON S3 FROM 10-12FT REFUSAL AT 11'-1"
		12					

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JOB NO. 12032
DATE 10/1/24

LOG OF BORING NO. B2

SHEET 2 OF 2

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	DRILL TIME MIN/FT.	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		12						DRILL TO 15FT TO CLEAN OUT HOLE SMOOTH DRILLING, WASH LIGHT BROWN
		13						
		14						DRIVE SPLIT SPOON S4 FROM 15–17FT REFUSAL AT 15'–1"
		15		S4	SS	NR	100/1"	DRILL TO 16FT TO CLEAN OUT HOLE
DECOMPOSED ROCK	SOFT MARBLE TO DECOMPOSED SCHIST (NYC BC CLASS 1c)	16	1.5	CORE RUN 1	NX DOUBLE–TUBE CORE BARREL	REC = 54"/60" = 90%	RQD = 17"/60" = 28%	CORE ROCK STARTING AT 16' CORE RUN 1 16'–17': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN
		17	2					17'–18': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN
		18	2					18'–19': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN
		19	2					19'–20': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN
		20	2					20'–21': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN
	?——?——?——?——?	21	2					TOTAL CORING TIME APPROX. 9.5 MIN CORE RUN 2
ROCK	HARD MARBLE SOME SOFT (NYC BC CLASS 1c)	22	2.5	CORE RUN 2	NX DOUBLE–TUBE CORE BARREL	REC = 58"/60" = 97%	RQD = 23"/60" = 38%	21'–22': LIGHT WASH SMOOTH DRILLING FOR ~2.5 MIN
		23	3					22'–23': LIGHT WASH SMOOTH DRILLING FOR ~3 MIN
		24	2					23'–24': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN
		25	2.5					24'–25': LIGHT WASH SMOOTH DRILLING FOR ~2.5 MIN
	BORING COMPLETED @ 26 FT	26	2.5					25'–26': LIGHT WASH SMOOTH DRILLING FOR ~2.5 MIN TOTAL CORING TIME APPROX 12.5 MIN BORING COMPLETED AT A DEPTH OF 26'–0" END OF BORING B2
		27						
		28						

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LOG OF BORING B3 SHEET 1 OF 3

PROJECT 1150 RIVER AVE		**PROJECT NO.** 12032	
LOCATION 1150 RIVER AVE, BRONX, NEW YORK		**ELEVATION AND DATUM** APPROX. EL. 38FT+/-	
DRILLING AGENCY AXCISS GEOTECHNICAL DRILLING, LLC.		**DATE STARTED** 9/30/24	**DATE FINISHED** 9/30/24
DRILLING EQUIPMENT TRACK MOUNTED DRILL RIG		**COMPLETION DEPTH** 33'-0"	**ROCK DEPTH** 23'-0"
SIZE AND TYPE OF BIT 2 7/8" TRICONE ROLLER BIT		**NO. SAMPLES** **DIST.** 3	**UNDIST.** N/A **CORE** 4
CASING 3" DIAMETER STEEL CASING & EZ DRILLING MUD		**WATER LEVEL** **FIRST** N/A	**COMPL.** N/A **24 HR** N/A
CASING HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"		**FOREMAN** DRILLER- ERIC, HELPER- TERRY	
SAMPLER 2" DIAMETER SPLIT SPOON (SS) SAMPLER; NX DOUBLE TUBE CORE BARREL		**INSPECTOR** ALEX CORMAN	
SAMPLER HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"			

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
MISC. FILL	SAND, SILT, ASPHALT, CINDERS, BRICK [MISCELLANEOUS FILL] (NYC BC CLASS 7)	1	S1	SPLIT SPOON	REC = 14"	7 5 8 8	BEGIN DRILLING 8:30AM DRIVE SPLIT SPOON S1 FROM 0-2FT
		2					DRIVE CASING TO 5FT ~100 BLOWS
SAND	SILTY COARSE SAND, TRACE DECOMPOSED ROCK WEATHERED ROCK AT TIP (NYC BC CLASS 6)	3					DRILL TO 5FT W/ EZ-MUD TO CLEAN OUT HOLE SLIGHT RIG CHATTER SMOOTH DRILLING WASH LIGHT BROWN
		4					
		5	S2	SPLIT SPOON	REC = 17"	7 3 2 7	DRIVE SPLIT SPOON S2 FROM 5-7FT
		6					
DECOMPOSED ROCK	DECOMPOSED ROCK (NYC BC CLASS 2a)	7					DRILL TO 10FT W/ EZ-MUD TO CLEAN OUT HOLE SMOOTH DRILLING, WASH BROWN
		8					
		9					
		10	S3	SS	R=6"	100/6"	DRIVE SPLIT SPOON S3 FROM 10-12FT REFUSAL AT 10'-6"
		11					DRIVE CASING TO 10FT, ~250 BLOWS DRILL TO 13FT TO CLEAN OUT HOLE SMOOTH DRILLING, WASH LIGHT BROWN
		12					

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JOB NO. 12032
DATE 9/30/24

LOG OF BORING NO. B3

SHEET 2 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
DECOMPOSED ROCK	SOFT, SANDY MARBLE & SCHIST DECOMPOSED ROCK (NYC BC CLASS 1d)	2.5	12–13					CORE ROCK STARTING AT 13'
		3.5	13–14	CORE RUN 1	NX DOUBLE-TUBE CORE BARREL	REC = 54"/60" = 90%	RQD = 11"/60" = 18%	CORE RUN 1 13'–14': LIGHT WASH SMOOTH DRILLING FOR ~2.5 MIN
		2	14–15					14'–15': LIGHT WASH SMOOTH DRILLING FOR ~3.5 MIN
		3	15–16					15'–16': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN
		3	16–17					16'–17': LIGHT WASH SMOOTH DRILLING FOR ~3 MIN
		3	17–18					17'–18': LIGHT WASH SMOOTH DRILLING FOR ~3 MIN TOTAL CORING TIME APPROX. 14 MIN
	SOFT, SANDY MARBLE & SCHIST DECOMPOSED ROCK (NYC BC CLASS 1d)	3	18–19	CORE RUN 2	NX DOUBLE-TUBE CORE BARREL	REC = 54"/60" = 90%	RQD = 14"/60" = 23%	CORE RUN 2 18'–19': WHITE WASH SMOOTH DRILLING FOR ~3 MIN
		1.5	19–20					19'–20': WHITE WASH SMOOTH DRILLING FOR ~3 MIN
		3	20–21					20'–21': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
		2	21–22					21'–22': WHITE WASH SMOOTH DRILLING FOR ~2 MIN
		3	22–23					22'–23': WHITE WASH SMOOTH DRILLING FOR ~3 MIN TOTAL CORING TIME APPROX. 12.5 MIN
		3	23–24	CORE RUN 3	NX DOUBLE-TUBE CORE BARREL	REC = 32"/60" = 53%	RQD = 16"/60" = 27%	CORE RUN 3 23'–24': WHITE WASH SMOOTH DRILLING FOR ~3 MIN
		1.5	24–25					24'–25': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
ROCK	MARBLE & SCHIST (NYC BC CLASS 1d)	1.5	25–26					25'–26': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
		1.5	26–27					26'–27': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
		1	27–28					27'–28': WHITE WASH SMOOTH DRILLING FOR ~1 MIN TOTAL CORING TIME APPROX. 8.5 MIN

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JOB NO. 12032
DATE 9/30/24

LOG OF BORING NO. B3

SHEET 3 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
	MARBLE (NYC BC CLASS 1b)	2	28	CORE RUN 4	NX DOUBLE-TUBE CORE BARREL	REC = 58"/60" = 97%	RQD = 40"/60" = 67%	CORE RUN 4
		1.5	29					28'–29': WHITE WASH SMOOTH DRILLING FOR ~2 MIN
		1.5	30					29'–30': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
		1.5	31					30'–31': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
		1.5	32					31'–32': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
	BORING COMPLETED @ 33 FT	1.5	33					32'–33': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
			34					TOTAL CORING TIME APPROX. 8 MIN
			35					BORING COMPLETED AT A DEPTH OF 33'–0"
			36					END OF BORING B3
			37					
			38					
			39					
			40					
			41					
			42					
			43					
			44					

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LOG OF BORING B4 SHEET 1 OF 3

PROJECT 1150 RIVER AVE		**PROJECT NO.** 12032	
LOCATION 1150 RIVER AVE, BRONX, NEW YORK		**ELEVATION AND DATUM** APPROX. EL. 39FT+/-	
DRILLING AGENCY AXCISS GEOTECHNICAL DRILLING, LLC.		**DATE STARTED** 9/30/24	**DATE FINISHED** 10/1/24
DRILLING EQUIPMENT TRACK MOUNTED DRILL RIG		**COMPLETION DEPTH** 37'-0"	**ROCK DEPTH** 27'-0"
SIZE AND TYPE OF BIT 2 7/8" TRICONE ROLLER BIT		**NO. SAMPLES** **DIST.** 6	**UNDIST.** N/A **CORE** 2
CASING 3" DIAMETER STEEL CASING & EZ DRILLING MUD		**WATER LEVEL** **FIRST** N/A	**COMPL.** N/A **24 HR** N/A
CASING HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"		**FOREMAN** DRILLER- ERIC, HELPER- TERRY	
SAMPLER 2" DIAMETER SPLIT SPOON (SS) SAMPLER; NX DOUBLE TUBE CORE BARREL		**INSPECTOR** ALEX CORMAN	
SAMPLER HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"			

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	TYPE	RECOV.FT.	PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
MISC. FILL	COARSE SAND, GRAVEL, ASPHALT [MISCELLANEOUS FILL] (NYC BC CLASS 7)	1	S1	SPLIT SPOON	REC = 8"	13 7 8 11	BEGIN DRILLING 12:15PM 9/30/24 DRIVE SPLIT SPOON S1 FROM 0-2FT
	?---?---?---?---?	2					
SAND		3					DRIVE CASING TO 5FT ~300 BLOWS DRILL TO 5FT W/ EZ-MUD TO CLEAN OUT HOLE HEAVY RIG CHATTER WASH LIGHT BROWN
		4					
		5					
	C-F SILTY SAND, TRACE GRAVEL, DECOMPOSED ROCK (NYC BC CLASS 3b)	6	S2	SPLIT SPOON	REC = 12"	7 5 16 15	DRIVE SPLIT SPOON S2 FROM 5-7FT
	?---?---?---?---?	7					
DECOMPOSED ROCK		8					DRILL TO 10FT W/ EZ-MUD TO CLEAN OUT HOLE SMOOTH DRILLING SLIGHT RIG CHATTER WASH LIGHT BROWN
		9					
		10					
	DECOMPOSED ROCK, TRACE SANDY SILT (NYC BC CLASS 2a)	11	S3	SPLIT SPOON	REC = 18"	20 26 26 40	DRIVE SPLIT SPOON S3 FROM 10-12FT
		12					

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JOB NO. 12032
DATE 9/30/24 - 10/1/24

LOG OF BORING NO. B4

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
DECOMPOSED ROCK		12					DRILL TO 15FT W/ EZ-MUD TO CLEAN OUT HOLE SMOOTH DRILLING SLIGHT RIG CHATTER WASH LIGHT BROWN
	M SILTY SAND, TRACE DECOMPOSED ROCK (NYC BC CLASS 2a)	15	S4	SS	R=6"	100/6"	DRIVE SPLIT SPOON S4 FROM 15-17FT REFUSAL AT 15'-6"
		16					DRIVE CASING TO 15FT ~300 BLOWS
		17					
		18					DRILL TO 20FT W/ EZ-MUD TO CLEAN OUT HOLE SLIGHT RIG CHATTER WASH LIGHT BROWN
		19					
	SAND, TRACE SILT, GRAVEL, ROCK (NYC BC CLASS 2a)	20	S5	SS	R=8"	100/8"	DRIVE SPLIT SPOON S5 FROM 20-22FT REFUSAL AT 20'-4"
		21					
		22					DRILL TO 25FT W/ EZ-MUD TO CLEAN OUT HOLE SLIGHT RIG CHATTER WASH LIGHT BROWN
		23					
		24					
	COARSE SAND, TRACE GRAVEL, DECOMPOSED ROCK (NYC BC CLASS 2a)	25	S6	SS	R=6"	100/6"	DRIVE SPLIT SPOON S6 FROM 25-27FT REFUSAL AT 25'-6"
	?---?---?---?---?	26					STOP WORK 2:15PM 9/30/24 RESUME WORK 8:00AM 10/1/24
ROCK		27					CORE ROCK STARTING AT 27'

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JOB NO. 12032
DATE 9/30/24 - 10/1/24

LOG OF BORING NO. B4

SHEET 3 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
ROCK	SOFT MARBLE (NYC BC CLASS 1c)	3 2.5 3.5 3 2.5	27–32	CORE RUN 1	NX DOUBLE-TUBE CORE BARREL	REC = 44"/60" = 73%	RQD = 21"/60" = 35%	CORE RUN 1 27'–28': WHITE WASH SMOOTH DRILLING FOR ~3 MIN 28'–29': WHITE WASH SMOOTH DRILLING FOR ~2.5 MIN 29'–30': WHITE WASH SMOOTH DRILLING FOR ~3.5 MIN 30'–31': WHITE WASH SMOOTH DRILLING FOR ~3 MIN 31'–32': WHITE WASH SMOOTH DRILLING FOR ~2.5 MIN TOTAL CORING TIME APPROX. 14.5 MIN
	SOFT SCHIST (NYC BC CLASS 1b)	2.5 2.5 2.5 3 3	32–37	CORE RUN 2	NX DOUBLE-TUBE CORE BARREL	REC = 60"/60" = 100%	RQD = 32"/60" = 53%	CORE RUN 2 32'–33': LIGHT GRAY WASH SMOOTH DRILLING FOR ~2.5 MIN 33'–34': LIGHT GRAY WASH SMOOTH DRILLING FOR ~2.5 MIN 34'–35': LIGHT GRAY WASH SMOOTH DRILLING FOR ~2.5 MIN 35'–36': LIGHT GRAY WASH SMOOTH DRILLING FOR ~3 MIN 36'–37': LIGHT GRAY WASH SMOOTH DRILLING FOR ~3 MIN TOTAL CORING TIME APPROX. 13.5 MIN
	BORING COMPLETED @ 37 FT		37–42					BORING COMPLETED AT A DEPTH OF 37'–0" END OF BORING B4

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LOG OF BORING B5 SHEET 1 OF 3

PROJECT 1150 RIVER AVE		**PROJECT NO.** 12032	
LOCATION 1150 RIVER AVE, BRONX, NEW YORK		**ELEVATION AND DATUM** APPROX. EL. 37FT+/-	
DRILLING AGENCY AXCISS GEOTECHNICAL DRILLING, LLC.		**DATE STARTED** 10/2/24	**DATE FINISHED** 10/2/24
DRILLING EQUIPMENT TRACK MOUNTED DRILL RIG		**COMPLETION DEPTH** 35'-0"	**ROCK DEPTH** 18'-0"
SIZE AND TYPE OF BIT 2 7/8" TRICONE ROLLER BIT		**NO. SAMPLES**	**DIST.** 3 **UNDIST.** N/A **CORE** 3
CASING 3" DIAMETER STEEL CASING & EZ DRILLING MUD		**WATER LEVEL**	**FIRST** N/A **COMPL.** N/A **24 HR** N/A
CASING HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"		**FOREMAN** DRILLER- ERIC, HELPER- TERRY	
SAMPLER 2" DIAMETER SPLIT SPOON (SS) SAMPLER; NX DOUBLE TUBE CORE BARREL		**INSPECTOR** ALEX CORMAN	
SAMPLER HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"			

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	TYPE	RECOV.FT.	PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
MISC. FILL	SAND, SILT, ASPHALT, TRACE GRAVEL, BRICK, CINDERS [MISCELLANEOUS FILL] (NYC BC CLASS 7)	1	S1	SPLIT SPOON	REC = 16"	15 5 1 5	BEGIN DRILLING 8:45AM DRIVE SPLIT SPOON S1 FROM 0-2FT
		2					DRIVE CASING TO 5FT ~100 BLOWS
		3					DRILL TO 5FT W/ EZ-MUD TO CLEAN OUT HOLE HEAVY RIG CHATTER TO 3.5FT WASH LIGHT GRAY W/ GRAVEL CLEAR BLOCKAGE AT 3.5FT SMOOTH DRILLING, WASH BROWN
		4					
		5					
	SAND, SILT, TRACE GRAVEL, BRICK, CLAY [MISCELLANEOUS FILL] (NYC BC CLASS 7)	6	S2	SPLIT SPOON	REC = 12"	4 3 2 1	DRIVE SPLIT SPOON S2 FROM 5-7FT
		7					
	?---?---?---?---?	8					DRIVE CASING TO 10FT ~150 BLOWS
DECOMPOSED ROCK		9					DRILL TO 10FT W/ EZ-MUD TO CLEAN OUT HOLE HEAVY RIG CHATTER WASH LIGHT BROWN
		10					
	SILTY SAND, TRACE GRAVEL TO DECOMPOSED MARBLE (NYC BC CLASS 2b)	11	S3	SPLIT SPOON	REC = 5"	9 3 17 100/1"	DRIVE SPLIT SPOON S3 FROM 10-12FT
		12					

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JOB NO. 12032
DATE 10/2/24

LOG OF BORING NO. B5

SHEET 2 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	DRILL TIME MIN/FT.	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
DECOMPOSED ROCK		12						DRIVE CASING TO 15FT ~125 BLOWS
		13						
		14						
		15						
		16						DRILL TO 20FT W/ EZ-MUD TO CLEAN OUT HOLE HEAVY RIG CHATTER WASH LIGHT BROWN
		17						
	?——?——?——?——?	18						
		19						CORE ROCK STARTING AT 20'
ROCK	ROCK (NYC BC CLASS 1d)	20	2	CORE RUN 1	NX DOUBLE-TUBE CORE BARREL	REC = 34"/60" = 57%	RQD = 17"/60" = 28%	CORE RUN 1 20'-21': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN
		21	1.5					21'-22': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN
		22	1.5					22'-23': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN
		23	2					23'-24': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN
		24	1.5					24'-25': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN
		25						TOTAL CORING TIME APPROX. 8.5 MIN

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JOB NO. 12032
DATE 10/2/24

LOG OF BORING NO. B5

SHEET 3 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
ROCK		2	25	CORE RUN 2	NX DOUBLE-TUBE CORE BARREL	REC = 48"/60" = 80%	RQD = 10"/60" = 17%	CORE RUN 2 25'–26': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN 26'–27': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 27'–28': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 28'–29': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 29'–30': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN TOTAL CORING TIME APPROX. 8.5 MIN
	?—?—?—?—?—?	1.5	26					
DECOMPOSED ROCK	HARD MARBLE TO DECOMPOSED SCHIST (NYC BC CLASS 1d)	1.5	27					
		1.5	28					
		2	29					
		1.5	30	CORE RUN 3	NX DOUBLE-TUBE CORE BARREL	REC = 43"/60" = 72%	RQD = 24"/60" = 40%	CORE RUN 3 30'–31': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 31'–32': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN 32'–33': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN 33'–34': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 34'–35': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN TOTAL CORING TIME APPROX. 8.5 MIN
	?—?—?—?—?—?	2	31					
	DECOMPOSED TO HARD MARBLE (NYC BC CLASS 1c)	1.5	32					
		2	33					
		1.5	34					
	BORING COMPLETED @ 35 FT	1.5	35					BORING COMPLETED AT A DEPTH OF 35'–0" END OF BORING B5
ROCK			36					
			37					
			38					
			39					
			40					

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LOG OF BORING B6 SHEET 1 OF 3

PROJECT 1150 RIVER AVE		**PROJECT NO.** 12032	
LOCATION 1150 RIVER AVE, BRONX, NEW YORK		**ELEVATION AND DATUM** APPROX. EL. 39FT+/-	
DRILLING AGENCY AXCISS GEOTECHNICAL DRILLING, LLC.		**DATE STARTED** 10/4/24	**DATE FINISHED** 10/4/24
DRILLING EQUIPMENT TRACK MOUNTED DRILL RIG		**COMPLETION DEPTH** 28'-0"	**ROCK DEPTH** 3'-0"
SIZE AND TYPE OF BIT 2 7/8" TRICONE ROLLER BIT		**NO. SAMPLES**	**DIST.** 1 **UNDIST.** N/A **CORE** 5
CASING 3" DIAMETER STEEL CASING & EZ DRILLING MUD		**WATER LEVEL**	**FIRST** N/A **COMPL.** N/A **24 HR** N/A
CASING HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"		**FOREMAN** DRILLER- ERIC, HELPER- TERRY	
SAMPLER 2" DIAMETER SPLIT SPOON (SS) SAMPLER; NX DOUBLE TUBE CORE BARREL		**INSPECTOR** ALEX CORMAN	
SAMPLER HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"			

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	DRILL TIME MIN/FT.	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
MISC. FILL	SILT, ASPHALT, GRAVEL, TRACE SAND, BRICK [MISCELLANEOUS FILL] (NYC BC CLASS 7)	1	S1	SPLIT SPOON	REC = 15"	18 8 6 8		BEGIN DRILLING 8AM DRIVE SPLIT SPOON S1 FROM 0-2FT DRIVE CASING TO 4FT, ~150 BLOWS
D.ROCK	?---?---?---?---?---?	2						DRILL TO 3FT TO CLEAN OUT HOLE HEAVY RIG CHATTER, WASH CLEAR HARD DRILLING/REFUSAL AT 3FT
ROCK	?---?---?---?---?---?	3	CORE RUN 1	NX DOUBLE-TUBE CORE BARREL	REC = 38"/60" = 63%	RQD = 29"/60" = 48%	2	CORE ROCK STARTING AT 3'
	MARBLE (NYC BC CLASS 1c)	4					2	CORE RUN 1 3'-4': WHITE WASH SMOOTH DRILLING FOR ~2 MIN
		5					2	4'-5': WHITE WASH SMOOTH DRILLING FOR ~2 MIN
		6					2	5'-6': BROWN WASH SMOOTH DRILLING FOR ~2 MIN
		7					2	6'-7': LIGHT BROWN WASH SMOOTH DRILLING FOR ~2 MIN
		8					2	7'-8': WHITE WASH SMOOTH DRILLING FOR ~2 MIN TOTAL CORING TIME APPROX. 10 MIN

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JOB NO. 12032
DATE 10/4/24

LOG OF BORING NO. B6

SHEET 2 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
ROCK	MARBLE (NYC BC CLASS 1d)	2	8	CORE RUN 2	NX DOUBLE-TUBE CORE BARREL	REC = 17"/60" = 28%	RQD = 17"/60" = 28%	CORE RUN 2 8'–9': GRAY WASH SMOOTH DRILLING FOR ~2 MIN 9'–10': GRAY WASH SMOOTH DRILLING FOR ~1.5 MIN 10'–11': GRAY WASH SMOOTH DRILLING FOR ~2 MIN 11'–12': BROWN WASH SMOOTH DRILLING FOR ~2 MIN 12'–13': BROWN WASH SMOOTH DRILLING FOR ~2 MIN TOTAL CORING TIME APPROX. 9.5 MIN
		1.5	9					
		2	10					
		2	11					
		2	12					
		2	13					
		2.5	14	CORE RUN 3	NX DOUBLE-TUBE CORE BARREL	REC = 54"/60" = 90%	RQD = 30"/60" = 50%	CORE RUN 3 13'–14': WHITE WASH SMOOTH DRILLING FOR ~2.5 MIN 14'–15': WHITE WASH SMOOTH DRILLING FOR ~1 MIN 15'–16': WHITE WASH SMOOTH DRILLING FOR ~2 MIN 16'–17': LIGHT BROWN WASH SMOOTH DRILLING FOR ~2 MIN 17'–18': BROWN WASH SMOOTH DRILLING FOR ~2.5 MIN TOTAL CORING TIME APPROX. 10 MIN
	HARD MARBLE (NYC BC CLASS 1b)	1	15					
		2	16					
		2	17					
		2.5	18					
DR	? ? ? ? ? ?	2.5	19	CORE RUN 4	NX DOUBLE-TUBE CORE BARREL	REC = 46"/60" = 77%	RQD = 27"/60" = 45%	CORE RUN 4 18'–19': LIGHT BROWN WASH SMOOTH DRILLING FOR ~2.5 MIN 19'–20': WHITE WASH SMOOTH DRILLING FOR ~2 MIN 20'–21': WHITE WASH SMOOTH DRILLING FOR ~2 MIN 21'–22': WHITE WASH SMOOTH DRILLING FOR ~2 MIN 22'–23': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN TOTAL CORING TIME APPROX. 10.5 MIN
ROCK	HARD MARBLE TO DECOMPOSED SCHIST (NYC BC CLASS 1c)	2	20					
		2	21					
D. ROCK		2	22					
		2	23					

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JOB NO. 12032
DATE 10/4/24

LOG OF BORING NO. B6

SHEET 3 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
DECOMPOSED ROCK	SOFT DECOMPOSED SCHIST (NYC BC CLASS 1d)	1.5	23	CORE RUN 5	NX DOUBLE-TUBE CORE BARREL	REC = 50"/60" = 83%	RQD = 18"/60" = 30%	CORE RUN 5
		1.5	24					23'-24': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN
		2	25					24'-25': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN
		2	26					25'-26': NO WASH SMOOTH DRILLING FOR ~2 MIN
		2	27					26'-27': NO WASH SMOOTH DRILLING FOR ~2 MIN
	BORING COMPLETED @ 28 FT	2	28					27'-28': NO WASH SMOOTH DRILLING FOR ~2 MIN
			29					TOTAL CORING TIME APPROX. 9 MIN
			30					BORING COMPLETED AT A DEPTH OF 28'-0"
			31					END OF BORING B6
			32					
			33					
			34					
			35					
			36					
			37					
			38					

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LOG OF BORING B7 SHEET 1 OF 2

PROJECT 1150 RIVER AVE		**PROJECT NO.** 12032	
LOCATION 1150 RIVER AVE, BRONX, NEW YORK		**ELEVATION AND DATUM** APPROX. EL. 39FT+/-	
DRILLING AGENCY AXCISS GEOTECHNICAL DRILLING, LLC.		**DATE STARTED** 10/3/24	**DATE FINISHED** 10/3/24
DRILLING EQUIPMENT TRACK MOUNTED DRILL RIG		**COMPLETION DEPTH** 25'-0"	**ROCK DEPTH** 15'-0"
SIZE AND TYPE OF BIT 2 7/8" TRICONE ROLLER BIT		**NO. SAMPLES** **DIST.** 2	**UNDIST.** N/A **CORE** 4
CASING 3" DIAMETER STEEL CASING & EZ DRILLING MUD		**WATER LEVEL** **FIRST** N/A	**COMPL.** N/A **24 HR** N/A
CASING HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"		**FOREMAN** DRILLER- ERIC, HELPER- TERRY	
SAMPLER 2" DIAMETER SPLIT SPOON (SS) SAMPLER; NX DOUBLE TUBE CORE BARREL		**INSPECTOR** ALEX CORMAN	
SAMPLER HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"			

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	DRILL TIME MIN/FT.	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
MISC. FILL	SAND, SILT, ASPHALT, GRAVEL, BRICK [MISCELLANEOUS FILL] (NYC BC CLASS 7)	1	S1	SPLIT SPOON	REC = 14"	16 6 8 11		BEGIN DRILLING 12:00PM DRIVE SPLIT SPOON S1 FROM 0-2FT DRIVE CASING TO 5FT, ~175 BLOWS
		2						DRILL TO 3FT TO CLEAN OUT HOLE HEAVY RIG CHATTER WASH LIGHT GRAY, WATER LEVEL LOW
	?---?---?---?---?	3						REFUSAL AT 3FT
DECOMPOSED ROCK	SOFT SANDY MARBLE (NYC BC CLASS 1d)	4	CORE RUN 1	NX DOUBLE-TUBE CORE BARREL	REC = 19"/60" = 32%	RQD = 10"/60" = 17%	1.5	CORE ROCK STARTING AT 3' CORE RUN 1 3'-4': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
		5					1.5	4'-5': LIGHT BROWN WASH SMOOTH DRILLING FOR ~1.5 MIN
		6					1	5'-6': WHITE WASH SMOOTH DRILLING FOR ~1 MIN
		7					1.5	6'-7': BROWN WASH SMOOTH DRILLING FOR ~1.5 MIN
		8					1.5	7'-8': WHITE WASH SMOOTH DRILLING FOR ~1.5 MIN
	SANDY, DECOMPOSED MARBLE (NYC BC CLASS 2a)	8	S2	SS	R=2"	100/3"		TOTAL CORING TIME APPROX. 7 MIN
		9						DRIVE SPLIT SPOON S2 FROM 8-10FT REFUSAL AT 8'-3"
		10						

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JOB NO. 12032
DATE 10/3/24

LOG OF BORING NO. B7

SHEET 2 OF 2

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
DECOMPOSED ROCK	SOFT DECOMPOSED MARBLE (NYC BC CLASS 1d)	1 1 1 1.5 1.5	10–15	CORE RUN 2	NX DOUBLE-TUBE CORE BARREL	REC = 16"/60" = 27%	RQD = 0"/60" = 0%	CORE RUN 2 10'–11': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN 11'–12': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN 12'–13': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN 13'–14': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 14'–15': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN TOTAL CORING TIME APPROX. 6 MIN
? ? ? ? ?	SOFT SCHIST TO HARD MARBLE (NYC BC CLASS 1c)	1.5 1 1.5 1.5 1.5	15–20	CORE RUN 3	NX DOUBLE-TUBE CORE BARREL	REC = 44"/60" = 73%	RQD = 29"/60" = 48%	CORE RUN 3 15'–16': YELLOW/GRAY WASH SMOOTH DRILLING FOR ~1.5 MIN 16'–17': GRAY WASH SMOOTH DRILLING FOR ~1.5 MIN 17'–18': GRAY WASH, WATER LOW SMOOTH DRILLING FOR ~1 MIN 18'–19': GRAY WASH, WATER LOW SMOOTH DRILLING FOR ~1.5 MIN 19'–20': GRAY WASH, WATER LOW SMOOTH DRILLING FOR ~1.5 MIN TOTAL CORING TIME APPROX. X MIN
ROCK	SCHIST (NYC BC CLASS 1b) BORING COMPLETED @ 25 FT	3 2 3 3 2	20–25	CORE RUN 4	NX DOUBLE-TUBE CORE BARREL	REC = 53"/60" = 88%	RQD = 32"/60" = 53%	CORE RUN 4 20'–21': LIGHT WASH, WATER LOW SMOOTH DRILLING FOR ~3 MIN 21'–22': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN 22'–23': LIGHT WASH, WATER LOW SMOOTH DRILLING FOR ~3 MIN 23'–24': LIGHT WASH, WATER LOW SMOOTH DRILLING FOR ~3 MIN 24'–25': LIGHT WASH, WATER LOW SMOOTH DRILLING FOR ~2 MIN TOTAL CORING TIME APPROX. 13 MIN BORING COMPLETED AT DEPTH OF 25' END OF BORING B7

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LOG OF BORING B8 SHEET 1 OF 3

PROJECT 1150 RIVER AVE		**PROJECT NO.** 12032	
LOCATION 1150 RIVER AVE, BRONX, NEW YORK		**ELEVATION AND DATUM** APPROX. EL. 42FT+/-	
DRILLING AGENCY AXCISS GEOTECHNICAL DRILLING, LLC.		**DATE STARTED** 10/3/24	**DATE FINISHED** 10/3/24
DRILLING EQUIPMENT TRACK MOUNTED DRILL RIG		**COMPLETION DEPTH** 35'-0"	**ROCK DEPTH** 17'-0"
SIZE AND TYPE OF BIT 2 7/8" TRICONE ROLLER BIT		**NO. SAMPLES** **DIST.** 5	**UNDIST.** N/A **CORE** 3
CASING 3" DIAMETER STEEL CASING & EZ DRILLING MUD		**WATER LEVEL** **FIRST** N/A	**COMPL.** N/A **24 HR** N/A
CASING HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"		**FOREMAN** DRILLER- ERIC, HELPER- TERRY	
SAMPLER 2" DIAMETER SPLIT SPOON (SS) SAMPLER; NX DOUBLE TUBE CORE BARREL		**INSPECTOR** ALEX CORMAN	
SAMPLER HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"			

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
MISC. FILL	SAND, SILT, ASPHALT, GRAVEL, BRICK, CINDERS [MISCELLANEOUS FILL] (NYC BC CLASS 7)	1	S1	SPLIT SPOON	REC = 13"	17 6 9 6	BEGIN DRILLING 8:45AM DRIVE SPLIT SPOON S1 FROM 0-2FT
		2					DRIVE CASING TO 5FT ~200 BLOWS
	?---?---?---?---?---?	3					
SAND	FINE SAND, TRACE SILT, GRAVEL, SHINY MINERALS (NYC BC CLASS 3b)	4					DRILL TO 5FT W/ EZ-MUD TO CLEAN OUT HOLE HEAVY RIG CHATTER HARD DRILLING WASH LIGHT BROWN
		5					
		6	S2	SPLIT SPOON	REC = 18"	6 5 5 6	DRIVE SPLIT SPOON S2 FROM 5-7FT
		7					DRIVE CASING TO 10FT ~125 BLOWS
	?---?---?---?---?---?	8					
DECOMPOSED ROCK		9					DRILL TO 10FT W/ EZ-MUD TO CLEAN OUT HOLE HEAVY RIG CHATTER WASH BROWN, WATER LVL LOW
		10					
	WHITE COARSE SAND, DECOMPOSED MARBLE (NYC BC CLASS 2b)	11	S3	SPLIT SPOON	REC = 14"	6 7 6 6	DRIVE SPLIT SPOON S3 FROM 10-12FT
		12					

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JOB NO. 12032
DATE 10/3/24

LOG OF BORING NO. B8

SHEET 2 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	DRILL TIME MIN/FT.	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
DECOMPOSED ROCK	DECOMPOSED ROCK TRACE SAND, SILT (NYC BC CLASS 2b)	12	S4	SPLIT SPOON	REC = 14"	9 12 13 12		DRIVE SPLIT SPOON S4 FROM 12–14FT
		13						DRIVE CASING TO 15FT, ~150 BLOWS
		14						DRILL TO 15FT W/ EZ–MUD TO CLEAN OUT HOLE SMOOTH DRILLING WASH BROWN, WATER LVL LOW
		15	S5	SPLIT SPOON	REC = 15"	12 19 40 100/3"		DRIVE SPLIT SPOON S5 FROM 15–17FT
	DECOMPOSED ROCK, SCHIST (NYC BC CLASS 2a)	16						REFUSAL AT 16'–9"
	?—?—?—?—?—	17						
ROCK	HARD MARBLE (NYC BC CLASS 1b)	18						DRILL TO 20FT W/ EZ–MUD TO CLEAN OUT HOLE HARD DRILLING HEAVY RIG CHATTER WASH LIGHT BROWN WATER LEVEL LOW
		19						
		20	CORE RUN 1	NX DOUBLE–TUBE CORE BARREL	REC = 33"/60" = 55%	RQD = 33"/60" = 55%	2.5 1 1 2.5 1 1 2.5	CORE ROCK STARTING AT 20' CORE RUN 1 20'–21': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN 21'–22': LIGHT WASH SMOOTH DRILLING FOR ~2.5 MIN 22'–23': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN 23'–24': LIGHT WASH, WATER LOW SMOOTH DRILLING FOR ~1 MIN 24'–25': LIGHT WASH SMOOTH DRILLING FOR ~2.5 MIN TOTAL CORING TIME APPROX. 8 MIN
		21						
		22						
		23						
		24						
		25						

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JOB NO. 12032
DATE 10/3/24

LOG OF BORING NO. B8

SHEET 3 OF 3

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
ROCK	SOFT SCHIST (NYC BC CLASS 1d)	1.5	25	CORE RUN 2	NX DOUBLE-TUBE CORE BARREL	REC = 16"/60" = 27%	RQD = 7"/60" = 12%	CORE RUN 2 25'-26': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 26'-27': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 27'-28': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN 28'-29': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 29'-30': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN TOTAL CORING TIME APPROX. 6.5 MIN
		1.5	26					
		1	27					
		1.5	28					
		1	29					
		2	30	CORE RUN 3	NX DOUBLE-TUBE CORE BARREL	REC = 49"/60" = 82%	RQD = 18"/60" = 30%	CORE RUN 3 30'-31': WHITE WASH SMOOTH DRILLING FOR ~2 MIN 31'-32': LIGHT WASH, WATER LOW SMOOTH DRILLING FOR ~3 MIN 32'-33': LIGHT WASH SMOOTH DRILLING FOR ~2.5 MIN 33'-34': BROWN WASH SMOOTH DRILLING FOR ~2.5 MIN 34'-35': BROWN WASH SMOOTH DRILLING FOR ~3.5 MIN TOTAL CORING TIME APPROX. 13.5 MIN
	SOFT SCHIST (NYC BC CLASS 1d)	3	31					
		2.5	32					
		2.5	33					
		3.5	34					
	BORING COMPLETED @ 35 FT		35					BORING COMPLETED AT A DEPTH OF 35'-0" END OF BORING B8
			36					
			37					
			38					
			39					
			40					

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LOG OF BORING B9 SHEET 1 OF 2

PROJECT 1150 RIVER AVE		**PROJECT NO.** 12032	
LOCATION 1150 RIVER AVE, BRONX, NEW YORK		**ELEVATION AND DATUM** APPROX. EL. 40FT+/-	
DRILLING AGENCY AXCISS GEOTECHNICAL DRILLING, LLC.		**DATE STARTED** 10/1/24	**DATE FINISHED** 10/1/24
DRILLING EQUIPMENT TRACK MOUNTED DRILL RIG		**COMPLETION DEPTH** 20'-0"	**ROCK DEPTH** 15'-0"
SIZE AND TYPE OF BIT 2 7/8" TRICONE ROLLER BIT		**NO. SAMPLES** **DIST.** 3 **UNDIST.** N/A **CORE** 3	
CASING 3" DIAMETER STEEL CASING & EZ DRILLING MUD		**WATER LEVEL** **FIRST** N/A **COMPL.** N/A **24 HR** N/A	
CASING HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"		**FOREMAN** DRILLER- ERIC, HELPER- TERRY	
SAMPLER 2" DIAMETER SPLIT SPOON (SS) SAMPLER; NX DOUBLE TUBE CORE BARREL		**INSPECTOR** ALEX CORMAN	
SAMPLER HAMMER AUTOMATIC **WEIGHT** 140 LBS **DROP** 30"			

MAT. SYM.	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES NO. LOC.	TYPE	RECOV.FT.	PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
MISC. FILL	SAND, SILT, ASPHALT, GRAVEL, BRICK, CINDERS [MISCELLANEOUS FILL] (NYC BC CLASS 7)	1	S1	SPLIT SPOON	REC = 22"	20	BEGIN DRILLING 1:00PM
						17	
						14	DRIVE SPLIT SPOON S1 FROM 0-2FT
		2				20	
							DRIVE CASING TO 5FT ~100 BLOWS
	?---?---?---?---?---?	3					
SAND		4					DRILL TO 5FT W/ EZ-MUD TO CLEAN OUT HOLE SLIGHT TO HEAVY RIG CHATTER WASH LIGHT GRAY
		5					
	SILTY SAND TRACE ROCK TO SANDY DECOMPOSED ROCK (NYC BC CLASS 3b)		S2	SPLIT SPOON	REC = 6"	2	
		6				3	DRIVE SPLIT SPOON S2 FROM 5-7FT
	?---?---?---?---?---?					15	
		7				49	
DECOMPOSED ROCK							DRIVE CASING TO 10FT ~50 BLOWS
		8					
							DRILL TO 10FT W/ EZ-MUD TO CLEAN OUT HOLE HEAVY RIG CHATTER WASH LIGHT BROWN
		9					
		10	S3	SS	NR	100/1"	DRIVE SPLIT SPOON S3 FROM 10-12FT
							REFUSAL AT 10'-1"
							CORE ROCK STARTING AT 10'

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JOB NO. 12032
DATE X/X/24 - X/X/24

LOG OF BORING NO. B9

SHEET 2 OF 2

MAT. SYM.	SAMPLE DESCRIPTION	DRILL TIME MIN/FT.	DEPTH SCALE	SAMPLES NO. LOC.	SAMPLES TYPE	SAMPLES RECOV.FT.	SAMPLES PENETR. RESIST BL/6in	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
DECOMPOSED ROCK	SOFT DECOMPOSED MARBLE (NYC BC CLASS 1d)	1 1.5 1.5 1 1	10–15	CORE RUN 1	NX DOUBLE-TUBE CORE BARREL	REC = 42"/60" = 70%	RQD = 9"/60" = 15%	CORE RUN 1 10'–11': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN 11'–12': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 12'–13': LIGHT WASH SMOOTH DRILLING FOR ~1.5 MIN 13'–14': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN 14'–15': LIGHT WASH SMOOTH DRILLING FOR ~1 MIN TOTAL CORING TIME APPROX. 6 MIN
ROCK	HARD MARBLE (NYC BC CLASS 1b)	2 2.5 2 3 2.5	15–20	CORE RUN 2	NX DOUBLE-TUBE CORE BARREL	REC = 55"/60" = 92%	RQD = 40"/60" = 67%	CORE RUN 2 15'–16': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN 16'–17': LIGHT WASH SMOOTH DRILLING FOR ~2.5 MIN 17'–18': LIGHT WASH SMOOTH DRILLING FOR ~2 MIN 18'–19': LIGHT WASH SMOOTH DRILLING FOR ~3 MIN 19'–20': LIGHT WASH SMOOTH DRILLING FOR ~2.5 MIN TOTAL CORING TIME APPROX. 12 MIN
	BORING COMPLETED @ 20 FT		20					BORING COMPLETED AT A DEPTH OF 20'–0" END OF BORING B9

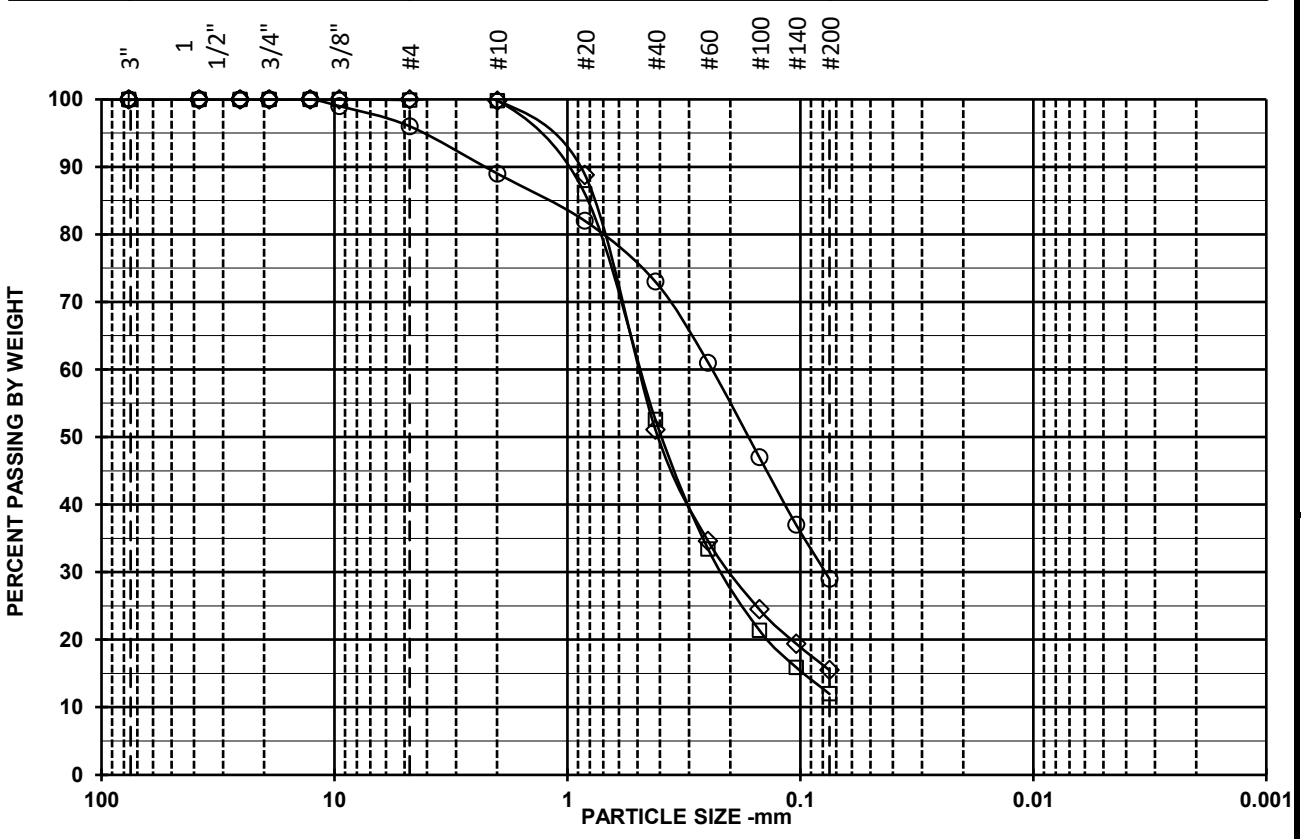
APPENDIX C

LABORATORY-TEST RESULTS

Bilow Engineering, LLC
1150 River Avenue - Bronx, NY
LABORATORY TESTING DATA SUMMARY

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS			REMARKS
			WATER CONTENT (%)	USCS SYMB. (1)	SIEVE MINUS NO. 200 (%)	
B-1	S-3	10-12	8.4	SP-SM	12.0	
B-1	S-4	15-17	11.3	SM	15.5	
B-1	S-5	20-22	15.9	SM	29	
B-4	S-3	10-12	18.8	SM	41.7	
B-8	S-4	12-14	10.8	SP-SM	11.0	
B-8	S-5	15-17	13.9	SM	14.7	

Note: (1) USCS symbol based on visual observation and Sieve reported.



Open Symbols: Sieve analysis by ASTM D6913
Filled symbols: Hydrometer analysis by ASTM D7928 corrected for complete sample

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	8.4				SP-SM		Brown, Poorly graded sand with silt	10/17/24
◇	11.3				SM		Light brown, Silty sand	10/17/24
○	15.9				SM		Light brown, Silty sand	10/17/24

Symbol	□	◇	○
Boring	B-1	B-1	B-1
Sample	S-3	S-4	S-5
Depth	10-12	15-17	20-22
% +3"	0	0	0
% Gravel	0.1	0	4
% SAND	87.9	84.5	67
%C SAND	0.1	0.2	7
%M SAND	47.2	48.7	16
%F SAND	40.6	35.6	44
% FINES	12	15.5	29
D_{100} (mm)	9.53	4.75	12.7
D_{60} (mm)	0.489	0.494	0.24
D_{30} (mm)	0.22	0.2	0.078
D_{10} (mm)			
Cc			
Cu			

Sieve Size/ID #	Percent Finer Data		
6"	100.0	100.0	100
4"	100.0	100.0	100
3"	100.0	100.0	100
1 1/2"	100.0	100.0	100
1"	100.0	100.0	100
3/4"	100.0	100.0	100
1/2"	100.0	100.0	100
3/8"	100.0	100.0	99
#4	99.9	100.0	96
#10	99.8	99.8	89
#20	86.0	88.8	82
#40	52.6	51.1	73
#60	33.4	34.6	61
#100	21.4	24.5	47
#140	15.9	19.4	37
#200	12.0	15.5	29
5μ m			
2μ m			
1μ m			

Bilow Engineering, LLC

TERRASENSE Geotechnical Laboratory

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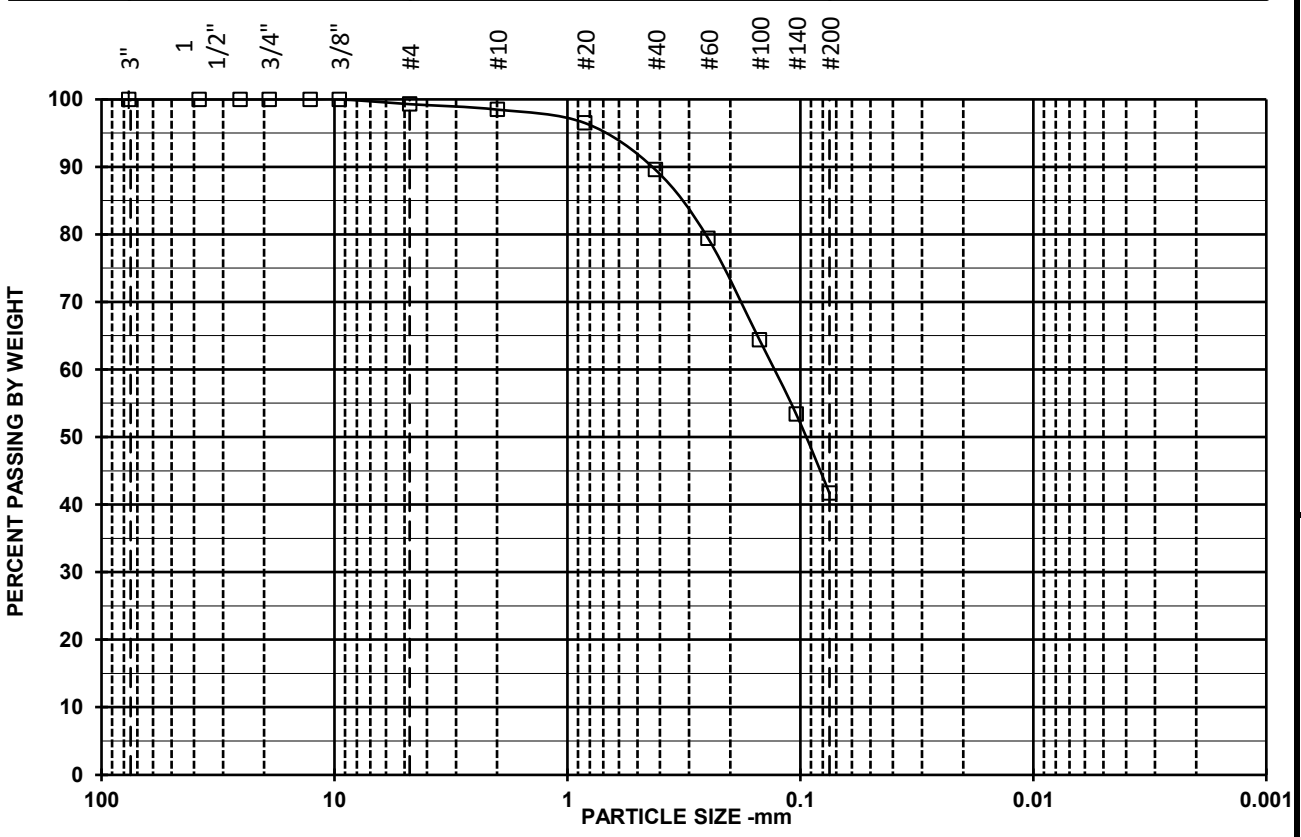

Open Symbols: Sieve analysis by ASTM D6913
Filled symbols: Hydrometer analysis by ASTM D7928 corrected for complete sample

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	18.8				SM		Greenish gray, Silty sand	10/17/24
◇								
○								

Symbol	□	◇	○
Boring	B-4		
Sample	S-3		
Depth	10-12		
% +3"	0		
% Gravel	0.7		
% SAND	57.6		
%C SAND	0.8		
%M SAND	8.9		
%F SAND	47.9		
% FINES	41.7		
D_{100} (mm)	9.53		
D_{60} (mm)	0.13		
D_{30} (mm)			
D_{10} (mm)			
Cc			
Cu			

Sieve Size/ID #	Percent Finer Data		
6"	100.0		
4"	100.0		
3"	100.0		
1 1/2"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
#4	99.3		
#10	98.5		
#20	96.5		
#40	89.6		
#60	79.4		
#100	64.4		
#140	53.4		
#200	41.7		
5μ m			
2μ m			
1μ m			

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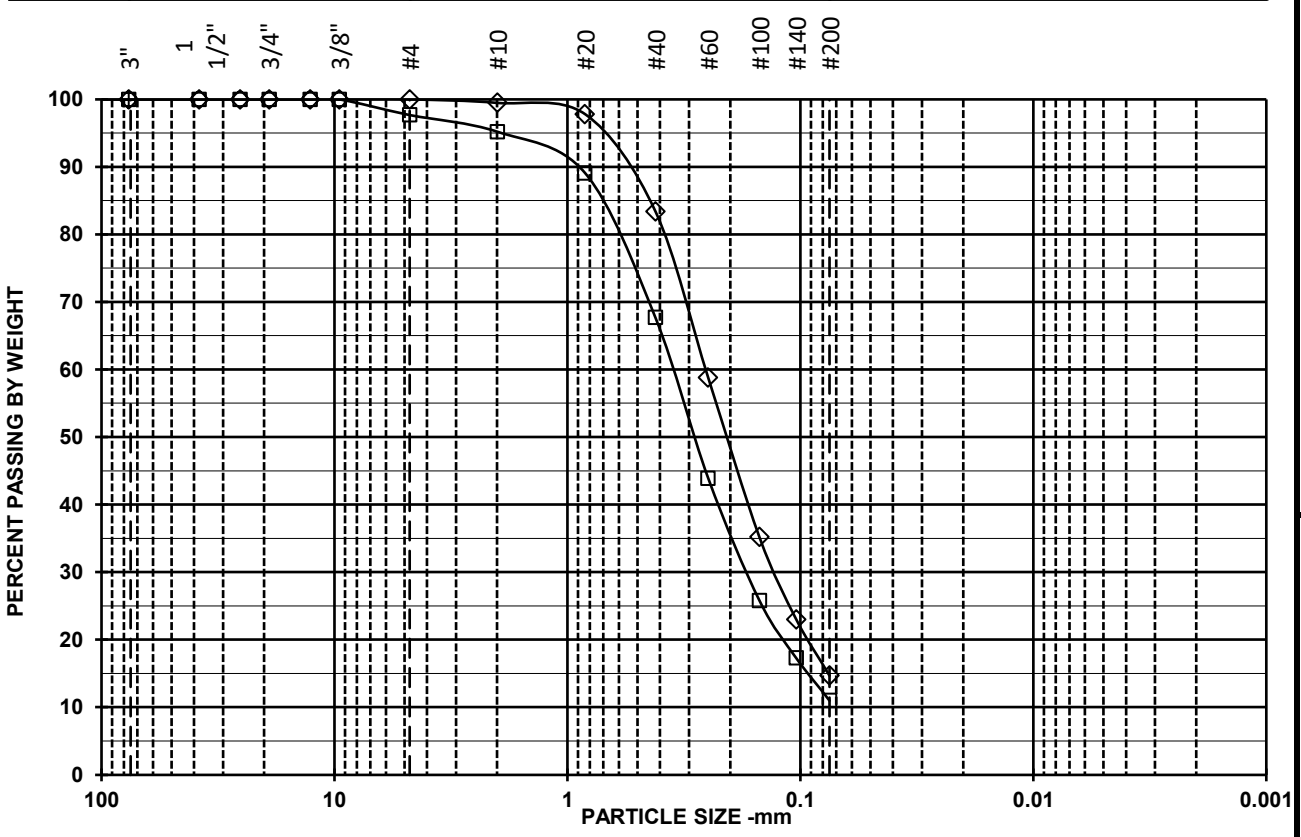

Open Symbols: Sieve analysis by ASTM D6913
Filled symbols: Hydrometer analysis by ASTM D7928 corrected for complete sample

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	10.8				SP-SM		Grayish brown, Poorly graded sand with silt	10/17/24
◇	13.9				SM		Grayish brown, Silty sand	10/17/24
○								

Symbol	□	◇	○
Boring	B-8	B-8	
Sample	S-4	S-5	
Depth	12-14	15-17	
% +3"	0	0	
% Gravel	2.3	0	
% SAND	86.7	85.3	
%C SAND	2.5	0.5	
%M SAND	27.5	16.1	
%F SAND	56.7	68.7	
% FINES	11	14.7	
D_{100} (mm)	9.53	4.75	
D_{60} (mm)	0.354	0.255	
D_{30} (mm)	0.17	0.13	
D_{10} (mm)			
Cc			
Cu			

Sieve Size/ID #	Percent Finer Data		
6"	100.0	100.0	
4"	100.0	100.0	
3"	100.0	100.0	
1 1/2"	100.0	100.0	
1"	100.0	100.0	
3/4"	100.0	100.0	
1/2"	100.0	100.0	
3/8"	100.0	100.0	
#4	97.7	100.0	
#10	95.2	99.5	
#20	89.1	97.8	
#40	67.7	83.4	
#60	43.9	58.8	
#100	25.8	35.2	
#140	17.3	23.0	
#200	11.0	14.7	
5μ m			
2μ m			
1μ m			

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TERRASENSE Geotechnical Laboratory

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1150 River Avenue
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ASTM D6913 & ASTM D7928

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 3

Date Rec'd in Lab: 9/17/24

ALPHA Job #: L2453181

Client Information
Client: SESI
Address: 959 Rt 46 E
Parsippany NJ
Phone: 973 808 9050
Fax:
Email: sheng.long@sesi.org

Project Information
Project Name:
Project Location: 1140 River Ave., Bronx NY
Project #: 13740.5
(Use Project name as Project #) ☐
Project Manager: Sheng Long
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

These samples have been previously analyzed by Alpha ☐

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other Spreadsheet & PDF

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☒ Other USCO, RSCO, RRSCO ☒

Billing Information
☒ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
NY site. Regs: USCO, RSCO, RRSCO
Please specify Metals or TAL.
Deliverables: Spreadsheet & PDF

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Metals	SVOCs	VOCs	PCBs	Total Bottle	Sample Specific Comments
53181-21	SB-121 (3.5-4)	9/6/2024	1334	Soil	SWG	X	X				
-22	SB-122 (4-4.5)		1344						X		
-23	SB-123 (4-4.5)		1351					X	X		
-24	SB-124 (2.5-3)		1404								
-25	SB-125 (3.5-4)	↓	1414			↓	↓				

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type											
Preservative											

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/6/2024	[signature] (PDE)	9/17/24 1235
[signature]	9/17/24 1525	NYSE	9/17/24 1525
		Paul Mazzella	9/17/24 1700
Paul Mazzella	9/17/24 2210	[signature]	9/17/24 22:10

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)