REVISED GEOTECHNICAL INVESTIGATION REPORT

2401 Third Avenue
Bronx, New York

Prepared for:

NY Developers & Management Inc.
1825 65th Street
Brooklyn, New York 11204

Prepared By:

Pillori Associates
333 Meadowlands Pkwy, Suite 102
Secaucus, New Jersey 07094

October 2015

PILLORI ASSOCIATES, P.A.
Geotechnical Engineering

October 23, 2015
Via Email: josephdris@nydevelopers.net

NY Developers & Management Inc.
1825 65th Street
Brooklyn, New York 11204

Attn: Mr. Joseph Dris

Re: Revised Geotechnical Engineering Investigation Report
2401 Third Avenue
Bronx, New York

Gentlemen:

Presented herein is the revised geotechnical engineering report for the referenced project. The revised report corrects information presented earlier in Table 4 We are confident that the subsurface information and engineering recommendations contained herein will meet the needs of the project. Thank you for the opportunity to be of service. Please call if you have any questions or if we can be of further assistance.

Sincerely,

Gregory Pillori

Pillori Associates, PA

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Introduction

Presented herein are the results of the geotechnical investigation conducted for the proposed development at 2401 Third Avenue in Bronx, New York. The subsurface investigation and engineering recommendations were performed in accordance with our revised proposal dated July 1, 2015. The purpose of the investigation was to identify the subsurface soil, bedrock and groundwater conditions in order to determine the relative soil parameters for the design and construction of new foundations for the proposed development.

Project Description

The site is located on the northern side of Third Avenue adjacent to Harlem River in Bronx, New York as shown in Figure 1. The project site measures approximately 60,902 square feet (1.40 acres) in plan dimensions. Currently, the site is occupied by a 5-story brick building, one and two-story warehouses, and vacant space.

The planned development entails constructing multiple high-rise and low-rise buildings with one cellar level approximately 9'-8" below the street grade. The new development will occupy a base footprint area of approximately 31,193 square feet.

Figure 1 Site Vicinity Map

Geotechnical Investigation

The geotechnical investigation consisted of drilling sixteen exploratory soil borings (B-1 to B-16). Warren George, Inc. drilled the borings using a truck mounted drilling rig between the dates of August 5 and September 9, 2015. The borings were drilled using rotary mud drilling techniques, and were advanced to completion depths ranging from 44 to 102 feet below the existing grade. In the borings, Standard Penetration Tests (SPTs) were performed at regular 5-foot intervals within the overburden soil in accordance with procedures specified in ASTM D1586. Bedrock was core drilled in borings B-3, B-4, B-5, B-6, B-10 and B-16 using double tube core barrel in accordance with ASTM D1143. Soil and rock samples obtained at the SPT locations and core runs were visually classified in accordance with Unified Soil Classification System (USCS) and New York City Building Code

(NYCBC). A groundwater observation wells consisting of 1-1/4" PVC pipe and well screen was installed in completed borings B-2W and B-15W.

Full-time engineering supervision was provided by Pillori Associates to locate the explorations in the field, direct drilling and sampling activities, and maintain continuous logs of the explorations. The logs recorded pertinent subsoil information for our engineering evaluation. The boring locations are shown on the Boring Location Plan, Drawing No. B-001.00, attached to this report.

At the conclusion of the boring program, the soil and rock samples were delivered to our soil laboratory for re-examination and further classification. The individual sample classifications were combined according to soil group and geologic origin, and their descriptions were recorded on finalized logs. The final logs of the borings along with soil/rock profile Sections A-A and B-B illustrating the stratigraphy encountered in the borings are shown on Drawing Nos. B-001.00 through B-006.00, attached to this report. Ground surface elevations shown on the plans and logs attached to this report refer to North American Vertical Datum (NAVD 88), which is 1.493 feet lower than Borough of Bronx Highway Department Datum. (Reference: "Topographical Survey", prepared by Rogers Surveying, PLLC dated June 29, 2015).

Stratigraphy

In general, the subsoil conditions consisted of a surface layer of miscellaneous fill material overlying soft estuarine deposits, followed by compact glacial soils. Beneath the glacial soils decomposed bedrock was found overlying competent bedrock. Detailed descriptions of the subsurface stratigraphy encountered in the borings are presented on the individual boring logs attached to this report, and generalized descriptions are presented below in order of increasing depth.

Fill (F): A surface layer of miscellaneous fill was encountered in all the explorations immediately beneath the ground surface. The fill was heterogeneous mixture of sand, silt and gravel with miscellaneous debris, asphalt, timber, brick and concrete fragments. The fill layer was approximately 8 to 13 feet deep in all the borings, except for boring B-8 wherein a 28-foot thick layer of loose backfill sand was encountered below the existing grade. The fill material was loose to medium compact in terms of relative density and was classified as nominally unsatisfactory bearing material, Class 7, in accordance with the NYCBC.

Estuarine River Deposit (Es): A thick tidal marsh deposit (slit, clay and peat) approximately 5 to 16 feet thick, extending in depth from 13 to 24 feet below the existing grade was encountered in all the borings except for borings B-1, B-2W, B-8 and B-9. The marsh deposit once formed the ground surface, flanking a small stream that fed into the Harlem River. Prior to the existing development, fill was placed to reclaim the land, forming the current ground surface. The marsh deposit was nominally unsatisfactory bearing material MH, Class 6 material, in accordance with USCS and NYCBC, respectively.

Glacial Alluvium (G_A): A deep deposit of glacial alluvium was encountered beneath the estuarine deposits and fill in all the borings. The deposit consisted of both well-graded and poorly graded sand, and contained varying percentages of silt and gravel. The thickness of the deposit ranged from 19 to 69 feet, varying in depth from 39 to 82 feet below the existing grade. The sand deposits were loose to medium compact to compact in terms of relative density and was classified in the field as SP, SM, SW, and GM, Classes 3a, 3b and 6, material in accordance with the USCS and NYCBC, respectively.

Glacial Till (G_T): A discontinuous deposit glacial till was encountered beneath the glacial alluvium in borings B-1, B-2W, B-3, B-6, B-7, B-8, B-13 and B-16. Where found, the thickness of the deposit ranged from 7 to 23 feet, varying in depth from 50 to 86 feet below the existing grade. The material was compact to very compact in terms of relative density and was classified as SP, SC, SM, SW, and GW, Classes 3a and 2a, material in accordance with the USCS and NYCBC, respectively.

Decomposed Rock/Residual Soil (DR): Decomposed rock and residual soils derived from the complete weathering of the underlying parent bedrock were encountered beneath the glacial soil deposits in borings B-2W, B-7, B-8, B-9, B-10 and B-16. The residual soil material consisted of sand, silt and rock fragments, while the decomposed rock maintained the fabric and structure of the parent bedrock but was typically weak and broken with moderate hand pressure. The decomposed rock/residual soil was classified as, Class 1d material, in accordance with the NYCBC.

Inwood Marble/Gneiss Bedrock (R): Inwood Marble and Gneiss bedrock were encountered beneath the glacial soil deposits and decomposed rock at depths ranging from 39 to 95 feet in borings B-3, B-4, B-5, B-6, B-10 and B-16. The core samples of the underlying competent rock possessed a recovery values (REC) ranging from 83% to 100% and a rock quality designation value (RQD) ranging from 40% to 95% as well. The rock was classified as Hard Sound Rock to Intermediate Rock, Class 1a, 1b, and 1c material, in accordance with the NYCBC.

Groundwater: Groundwater was measured in groundwater observation wells located in the borings B-2W and B-15W. Considerable variation in groundwater depth was measured in the wells, ranging from 5.75 to 9.0 feet below the existing grade. Table No. 1 presents the final groundwater readings. The groundwater levels are expected to fluctuate with tidal action in the Harlem River, as well as seasonal wet and dry periods.

Table 1 – Groundwater Level Readings

Boring Number	Ground Surface Elevation	Groundwater Depth (ft)	Groundwater Elevation
B-2W	9.1	9.0	0.1
B-15W	6.4	5.75	0.65

Seismic Evaluation and Criteria

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. The soil and rock encountered in the borings most closely resemble a "Rock Profile", Site Class B. The profile is based on Table 1615.1.1 of the NYCBC and the peak accelerations may be estimated using Tables 1615.1.2(1) and 1615.1.2(2). The soil/rock underlying the site was classified as "Liquefaction Unlikely" in accordance with Figure 1813.1 of the NYCBC

Engineering Evaluation

The presence of relatively deep unsuitable fill and soft estuarine preclude the use of shallow foundations for the support of new buildings. Conventional shallow foundations bearing in these materials would experience excessive settlement; therefore, excavations to reach suitable bearing soil (glacial soil) would generally be between 13 to 22 feet deep across the site, and as much as 5 to 15 feet below the measured ground water level. Given the depth of suitable bearing soil on the site, pile foundations will be most economical foundation solution for the proposed building. Two piling options are recommended for the project: 1) drilled caisson piles, and 2) driven H piles or open-ended pipe piles. Specific recommendations for both piling options are presented below. Load testing will be required for the drilled caisson piles and for driven piles with capacities greater than 40 tons. Special inspection during installation will be required, regardless of the pile type. The inspection records should be signed and sealed by a professional engineer licensed in the State of New York and submitted to the NYCBD for approval.

Because some of the neighboring buildings may be supported at shallow foundations bearing within the soft surface soils, it would be inadvisable to drive piles within 25 feet of the neighboring buildings. Ground vibrations generated by pile driving could consolidate the loose fill and soften the estuarine deposits, causing ground loss and/or settlement of surrounding areas. Buildings located within the influence of the ground disturbances could experience significant settlement, resulting in cracking and damage to structural elements, such as walls, floors, beams and columns. As a consequence, we recommend that drilled piles be used in lieu of driven piles within 25 feet of the neighboring structures.

Engineering Recommendations

Drilled Piles

Drilled piles are recommended in areas where neighboring buildings are located within 25 feet. Drilled piles develop their capacity through skin friction between the grout and the natural soils within an earth socket formed below the casing. Drilled piles are constructed by drilling a steel casing to the specified depth within suitable bearing soils. Dual rotary drilling techniques will be required during casing installation. Once the casing reaches the specified depth, steel reinforcing bars and tremie pipes are then installed to the bottom of the casings. Centralizers, spaced approximately 10 feet on center, should be used to keep the reinforcing steel centered in the casings. Cement grout is then tremie pumped to fill the casings as the casings are slowly withdrawn to form earth sockets within the bearing stratum. Secondary pressure grouting may be required to develop the design capacity. Table 2 below presents our recommended 60 to 90-ton drilled pile designs. A minimum final casing depth of 5 feet below the estuarine deposits is recommended to avoid the escape of grout into the soft deposits.

The table below presents minimum design requirements for the 60 and 90 ton drilled piles. The uplift capacity of the listed caisson piles will be limited by the soil friction and tension capacity of the bar reinforcement. Additional uplift capacity, if needed, can be generated using larger reinforcing bars and/or deeper earth sockets.

Table 2 –Drilled Pile Design Sections

Pile Capacity	Casing Size (in)	Reinforcing Steel (75 ksi)	Estimated Earth Socket Length (ft)
60-ton	9.625 O.D. X 0.472 wall	#11 threadbar	30
90-ton	11.875 O.D. X 0.582 wall	#14 threadbar	35

A minimum of two successful static load tests must be performed in accordance with the NYCBC, Section 1808.4.1. The test procedures must conform to the provisions specified in ASTM D1143. A professional engineer licensed in the State of New York must inspect the static pile load tests and installation of the test and production piles.

The caisson pile designs presented above are for estimating purposes only. The actual design can be determined once the column loads (compression, uplift, and lateral forces) are known. The caissons must be inspected to verify the construction of the shaft and the depth and quality of the earth socket. The inspection records should be signed and sealed by a professional engineer licensed in the State of New York and submitted to the NYCBD for approval.

Driven Piles

Driven Piles (open-end pipe piles or H piles) can be successfully driven to capacities ranging from 40 to 90 tons within the decomposed rock/bedrock. Typical steel pile sections for 40 and 90 ton pile capacities are presented in the following table. Pile lengths are anticipated to vary from 35 to 85 feet, generally mimicking the depth to compact glacial till or bedrock across the site. Hard drilling through the fill should be anticipated, requiring spudding and or pre-drilling to reach appropriate pile depths. Pile locations intersecting the locations of the previous building foundations should be pre-excavated to remove any remnant foundations in order to minimize the number of misaligned piles.

Table 3 – Driven Piles

Pile Capacity	Open-End Pipe Pile	H Pile
40 tons	8 inch O.D. pipe with a 0.322 inch wall, A36 steel	HP 8 X 36
90 tons	12 inch O.D. pipe with 0.5 inch wall, A36 steel	HP 12 X 53

Piles can be driven using compressed air, single or double acting hammers, with minimum energy ratings of 15,000 or 35,000 ft-lbs for 40 ton and 90 ton capacities, respectively. For 100 ton pile capacities, the piles can be driven to refusal (5 blows per ¼ inch) within the glacial soil/decomposed rock/bedrock, or to a final driving resistance determined by Pile Dynamic Analyzer (PDA) testing. We recommend that a minimum of 6 index piles be driven using PDA instrumentation to collect the necessary resistance data to establish the

final pile driving criteria. At least two pile load tests must be performed in accordance with NYCBC to verify the driving criteria determined by the PDA test pile program. For 40-ton pile capacities, the final driving resistance can be determined by the following formula.

$$P = 2E / (S+0.1)$$

Where P = allowable load in pounds; E = rated energy in foot-pounds; and S = average penetration in inches per hammer blow over the final foot of driving. The driving resistance due to the non-bearing material must be added to the driving resistance as determined by the driving formula.

The test pile program and installation of production piles should be inspected by a professional engineer licensed in the State of New York.

Uplift and Lateral Load Capacity

The uplift capacity of the caisson piles will be limited by the tension capacity of the internal threadbar, whereas the uplift capacity of driven piles will be achieved through soil friction and will be a function of the actual pile lengths. For design purposes we recommend using an allowable uplift capacity of 25 tons. Static uplift tests may be required if the allowable uplift capacity possesses a factor of safety less than 3.0 against the ultimate uplift capacity. If required, the static uplift tests should be performed in accordance with ASTM D3689.

The NYCBC allows for a minimum lateral load capacity of 1 ton per pile. Higher capacities must be verified by lateral load tests performed in accordance with ASTM D3966.

Cellar Floor

The cellar slab should be designed as structural slab supported on pile foundations. Because groundwater was encountered at or above the anticipated foundation levels, the slabs should be waterproofed and designed to resist a hydrostatic pressure equivalent to a 3-foot rise in the measured groundwater level on the site. Beneath the slabs, we recommend that a 12-inch layer of ¾ inch crushed stone be placed and compacted over the entire subgrade to facilitate dewatering during construction. A 2-inch concrete mud mat and continuous waterproofing membrane should be placed on the top of the crushed stone prior to pouring the slab. The waterproofing membrane should be continuous up the outside of the foundation walls. Waterstops and other seepage control measures should be incorporated into the foundation design.

Excavation and Dewatering

Unfortunately, the high groundwater level, surface fill layer and thick estuarine deposits encountered in the borings will complicate the excavation and dewatering. Dewatering systems must be installed and operating before excavation for underpinning and new foundations is attempted. Considering pile cap elevations 3.0 feet or more below the measured groundwater level on the site, the groundwater level will have to be lowered as

much as 4 or 5 feet to allow foundation construction. Continuous 24-hour dewatering will probably be required to maintain safe groundwater levels and impervious containment walls probably will be required to prevent seepage from destabilizing the neighboring bearing soils. Additional care and planning will be required for dewatering deeper excavations, such as for elevator and eject pits.

The dewatering system should consist of shallow well points or sumps installed above the estuarine layer to prevent desiccation. Desiccation of the estuarine stratum will cause area wide settlements substantial enough to damage neighboring properties. During construction, close monitoring of groundwater levels should be afforded to insure that the lowering of the groundwater levels outside the site does not occur. The monitoring can be performed by installing groundwater observation wells on a regular pattern around the outside of the site. The dewatering system should be designed by an experienced, licensed professional engineer.

Support of Excavation

Steel sheet piling and/or secant pile SOE walls should be used to control groundwater levels outside the perimeter of the excavation. The SOE walls should be designed to resist the appropriate earth, water and surcharge loads and should be deep enough to effectively cutoff inflows to the excavation. Excavation within the SOE walls should be staged to allow installation of tiebacks or internal braces.

Table 4 – Support of Excavation Design Criteria

Parameter	Existing Fill	Estuarine Deposit	Glacial Soil
Total Unit Weight of Soil (γ)	125 pcf	100 pcf	130 pcf
Angle of Internal Friction (ϕ)	26°	18°	34°
Active Earth Pressure Coefficient (K_a)	0.39	0.53	0.28
Passive Earth Pressure Coefficient (K_p)	2.6	1.89	3.6
At-Rest Pressure Coefficient (K_o)	0.5	0.69	0.45

Underpinning

Underpinning of neighboring and existing buildings will be required where new foundations extend below neighboring and existing foundations. The underpinning should be supported on drilled piles or titan piles. The piles should be installed at each underpinning pit locations before the pits are excavated. The pits should be lagged to prevent sloughing or loss bearing capacity during excavation. Once the piles are installed, the underpinning pits can be excavated in sequence, in which every fourth pit is excavated and concreted. The final 3 inches should be performed using steel wedges and plates, and dry pack concrete. The sequence is repeated until the entire walls are completely supported on the new pile supported concrete underpinning. The individual underpinning pits should be 4 feet wide and should extend 1-foot below the planned depth of the excavation on the site.

If requested, Pillori Associates can design the SOE and underpinning under a separate fee agreement.

Exterior Fill and Backfill

All compact fill and backfill placed outside the building footprint, beneath floor slabs, pavements and used for backfilling foundation walls and utility trenches should be performed in a controlled manner using onsite or off-site material free of organic matter and debris. The fill material should be placed in 8-inch thick loose lifts and compacted to 93% of the maximum dry density as determined ASTM D1557. Compaction can be performed using walk-behind-vibratory plate or jumping jack type compactors. Lift thickness may be increased to 12 inches for larger compaction equipment. Imported fill material, if required, should be approved prior to its use.

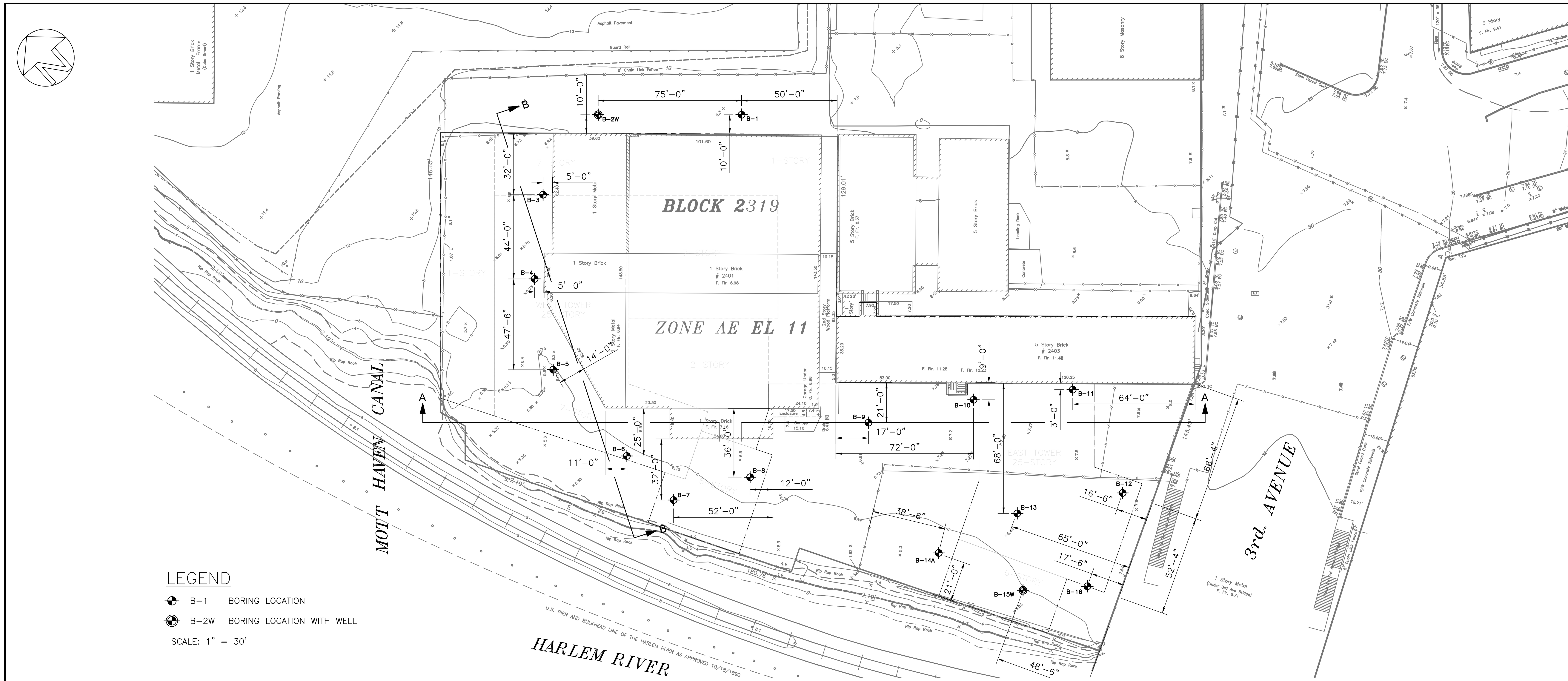
Protection of Adjacent Structure

We strongly recommend that a pre-construction survey be conducted for the 3rd Avenue Bridge and the existing buildings adjacent to the site. The survey should be completed prior to excavation or construction. Each building and bridge should be inspected and photographed, inside and out, to record existing conditions. In addition, crack monitors should be installed on all visible cracks greater than 1/16 inches.

Vibration and optical survey monitoring programs should be implemented to record potential movements of the bridge and neighboring buildings. The monitoring program should be initiated prior to the start of the construction, and periodic readings should be taken during construction. Any landmark buildings located within 90 feet of the site must be monitored in accordance with TPPN 10/88.

Closure

This report presents the results of the geotechnical investigation performed at 2401 Third Avenue in Bronx, New York. This report is not a bid document, and any contractor reviewing this report must draw his own conclusions regarding specific construction techniques to be used on this project.



Project: **2401 3rd Avenue** Bronx, New York				**Boring No.: B-1**	
Date: 09/08/2015 - 09/09/2015				Sheet: 1 of 2	
Contractor: Warren George, Inc.				Ground El: 9.3±	
				Groundwater Depth: NA	
Depth Feet	**SAMPLES** Number	Blows / 6"	Strata	**SOIL DESCRIPTION**	**Classification** **Depth** **Elevation**
			F	6" Concrete	
	S-1	10-6-4-6	F	Black fine Sand, little Silt, some coarse to fine Gravel with brick fragments and misc. debris	FILL (7)
5	S-2	10-8-7-5	F		
10	S-3	8-8-8-20	F	Possible Fill: Brown coarse to fine Sand, trace Silt, some coarse to fine Gravel	13'0" -3.7
15	S-4	8-9-9-9	GA	Brown coarse to fine Sand, trace Silt, some coarse to fine Gravel	SW (3b)
20	S-5	10-11-13-21	GA		23'0" -13.7
25	S-6	14-20-16-34	GA	Brown coarse to fine Sand, little Silt, Some medium to fine Gravel	SM (3a)
30	S-7	23-16-10-17	GA		33'0" -23.7
35	S-8	9-6-6-6	GA	Gray coarse to fine Sand, little Silt, and medium to fine Gravel	SM/GM (3b/2b)
40	S-9	50/0"	GA	Cobbles and boulders from 40.0' to 42.0'	43'0" -33.7
45	S-10	13-16-15-14	GA	Gray coarse to fine Sand, trace Silt	SW (3b)
50	S-11	12-13-15-17	GA		

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue** Bronx, New York				**Boring No.: B-1**	
Date: 09/08/2015 - 09/09/2015				Sheet: 2 of 2	
Contractor: Warren George, Inc.				Ground El: 9.3±	
				Groundwater Depth: NA	
Depth Feet	**SAMPLES** Number	Blows / 6"	Strata	**SOIL DESCRIPTION**	**Classification** **Depth** **Elevation**
	S-11	12-13-15-17	GA	Gray coarse to fine Sand, trace Silt	SW (3b)
55	S-12	7-10-15-16	GA		
60	S-13	11-10-14-17	GA		63'0" -53.7
65	S-14	20-20-19-20	GT	Red brown coarse to fine Sand, and seams of silty Clay, little fine Gravel	SC (3a)
70	S-15	19-21-20-23	GT		73'0" -63.7
75	S-16	18-22-24-26	GT	Gray coarse to fine Sand, trace Silt, trace fine Gravel	SW (3a)
80	S-17	20-26-27-24	GT		82'0" -72.7
85				End of Boring	
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

PROJECT NAME:

2401 3RD AVENUE
BRONX, NEW YORK

CLIENT NAME:

NY DEVELOPERS & MANAGEMENT INC.
1825 65TH STREET
BROOKLYN, NEW YORK 11204

GEOTECHNICAL ENGINEER:

PILLORI ASSOCIATES, P.A.
Geotechnical Engineering
71 Route 35, Laurence Harbor, New Jersey 08879, Tel. 732.335.0059 Fax. 732.335.8515
333 Meadowlands Parkway, Suite 102, Secaucus, New Jersey 07094, Tel. 201.558.0065 Fax. 201.558.1427
email : office@pilloriassociates.com

No.	DRAWINGS/REVISIONS	DATE

DRILL RIG TYPE: TRUCK MOUNTED
DRILLING METHOD: ROTARY
SAMPLE HAMMER WEIGHT: 140 LBS.
CASING HAMMER WEIGHT: 300 LBS.
CASING DIAMETER: 4"
SAMPLER DIAMETER: 2"

DRAWING TITLE:

BORING LOCATION PLAN
BORING B-1

DRAWN: RM	CHECKED: GP	REVIEWED: GP
		DATE: 09/22/2015
		SCALE: AS NOTED
		JOB NO.: 150303A
		DRAWING No. B-001.00
		SHEET 1 OF 7

Project: **2401 3rd Avenue**
Bronx, New York
Date: 09/03/2015 - 09/08/2015
Contractor: Warren George, Inc.

Boring No.: B-2W
Sheet: 1 of 2
Ground El: 9.1±
Groundwater Depth: 9'0"

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
				6" Concrete	
5	S-1	11-18-14-18	F	Brown fine Sand, trace Silt, some fine Gravel with brick and concrete fragments	FILL (7)
10	S-2	49-100/5"			
	S-3	1-1-3-3		Possible Fill: Brown medium to fine Sand, little Silt	13'0"
15	S-4	14-15-14-10		Brown medium to fine Sand, little Silt, little medium to fine Gravel	-3.9 SM (3b) 18'-0"
20	S-5	7-7-7-7		Brown coarse to fine Sand, trace Silt	-8.9 SW (3b)
25	S-6	5-7-7-10			
30	S-7	10-12-15-16	GA		
35	S-8	12-12-14-12		Gray coarse to fine Sand, trace Silt	38'0"
40	S-9	7-10-14-18		Brown medium to fine Sand, trace Silt	-28.9 SP (3b) 43'0"
45	S-10	13-22-24-24		Gray coarse to fine Sand, trace Silt, some fine Gravel	-33.9 SW (3a)
50	S-11	13-15-14-13			

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 09/03/2015 - 09/08/2015
Contractor: Warren George, Inc.

Boring No.: B-2W
Sheet: 2 of 2
Ground El: 9.1±
Groundwater Depth: 9'0"

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
55	S-11	13-15-14-13		Gray coarse to fine Sand, trace Silt, some fine Gravel	SW (3a) 53'0"
	S-12	10-11-15-15	GA	Gray fine Sand, little Silt, little fine Gravel	-43.9 SM (3b) 63'0"
60	S-13	7-7-6-7			
65	S-14	11-17-26-27	GT	Gray coarse to fine Sand, trace Silt	-53.9 SW (3a) 68'0"
70	S-15	12-12-17-19		Gray medium to fine Sand, trace Silt	-58.9 SP (3a) 73'0"
75	S-16	100/4"	DR	Decomposed Gneiss	-63.9 (1d)
80	S-17	50/0"			82'0"
85				End of Boring	-72.9
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/10/2015
Contractor: Warren George, Inc.

Boring No.: B-3
Sheet: 1 of 2
Ground El: 6.5±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
				5" Concrete	
5	S-1	11-6-4-8	F	Black coarse to fine Sand, little Silt, little medium to fine Gravel with misc. debris and brick fragments	FILL (7)
	S-2	24-12-3-3			8'0"
10	S-3	WOH	ES	Dark gray Silt and Clay	-1.5 MH (6)
15	S-4	WOH-3-3-1			15'6"
20	S-5	6-4-4-3	GA	Gray fine Sand, some Silt	-9.0 SM (6)
25	S-6	5-4-5-6			28'0"
30	S-7	8-6-8-6		Brown medium to fine Sand, little Silt, trace medium to fine Gravel	-21.5 SM (3b) 33'0"
35	S-8	12-10-12-17		Gray fine Sand, little Silt	-26.5 SM (3b)
40	S-9	10-10-12-10			43'0"
45	S-10	42-100/2"	GT	Gray fine Sand, little Silt, trace medium to fine Gravel	-36.5 SM (3a) 50'0"
50			R	Gneiss Bedrock: very Hard, moderately jointed	-43.5

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/10/2015
Contractor: Warren George, Inc.

Boring No.: B-3
Sheet: 2 of 2
Ground El: 6.5±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
55	R-1	RUN = 60" 50.0' - 55.0' REC = 100% RQD = 90%	R	Gneiss Bedrock: very Hard, mediumly jointed	(1a) 55'0"
				End of Boring	-48.5
60					
65					
70					
75					
80					
85					
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 09/02/2015 - 09/03/2015
Contractor: Warren George, Inc.

Boring No.: B-4
Sheet: 1 of 1
Ground El: 6.7±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-1	12-14-11-16		5" Concrete	
5	S-2	100/5"	F	Black fine Sand, and coarse to fine Gravel with cinders and concrete fragments	FILL (7)
10	S-3	12-2-3-3	ES	Dark gray Silt and Clay, trace shells	9'0" -2.3 MH (6) 14'0"
15	S-4	1-2-3-3		Black coarse to fine Sand, and Silt with Shells	-7.3 SM (6) 20'0"
20	S-5	14-17-100/3"	GA	Brown coarse to fine Sand, trace Silt, some medium to fine Gravel	-13.3 SW (3a) 23'0"
25	S-6	19-13-14-21		Brown medium to fine Sand, little Silt	-16.3 SM (3b) 28'0"
30	S-7	13-9-9-10		Gray coarse to fine Sand, trace Silt, trace fine Gravel	-21.3 SW (3b) 33'0"
35	S-8	15-19-19-20		Gray coarse to fine Sand, little Silt	-26.3 SM (3a) 39'0"
40	R-1	RUN = 60" 39.0' - 44.0' REC = 100% RQD = 95%	R	Gneiss Bedrock: very Hard, mediumly jointed	-32.3 (1a) 44'0"
45				End of Boring	-37.3
50					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/10/2015 - 08/11/2015
Contractor: Warren George, Inc.

Boring No.: B-5
Sheet: 1 of 1
Ground El: 6.2±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-1	12-12-38-40		6" Concrete	
5	S-2	8-4-5-2	F	Black coarse to fine Sand, trace Silt, some medium to fine Gravel with miscellaneous debris	FILL (7)
10	S-3	3-4-5-2		Gray fine Sand, trace Silt	8'0" -1.8 SP (6) 11'0"
15	S-4	WOH	ES	Dark gray Silt and Clay	-4.8 MH (6) 18'0"
20	S-5	6-5-2-3	GA	Brown fine Sand and clayey Silt, trace fine Gravel	-11.8 SM (6) 23'0"
25	S-6	18-6-7-9		Gray fine Sand, trace Silt	-16.8 SP (3b) 28'0"
30	S-7	15-24-57-67		Brown coarse to fine Sand, trace Silt, some coarse to fine Gravel	-21.8 SW (3a)
35	S-8	22-16-16-19			
40	S-9	100/0"			40'0"
45	R-1	RUN = 60" 41.0' - 46.0' REC = 90% RQD = 76%	R	Gneiss Bedrock: medium Hard, slightly weathered, mediumly jointed	-33.8 (1b) 46'0"
50				End of Boring	-39.8

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

PROJECT NAME:

2401 3RD AVENUE
BRONX, NEW YORK

CLIENT NAME:

NY DEVELOPERS & MANAGEMENT INC.
1825 65TH STREET
BROOKLYN, NEW YORK 11204

GEOTECHNICAL ENGINEER:

PILLORI ASSOCIATES, P.A.
Geotechnical Engineering
71 Route 35
Laurence Harbor, New Jersey 08879
Tel. 732.335.0059 Fax. 732.335.8515
333 Meadowlands Parkway, Suite 102
Secaucus, New Jersey 07094
Tel. 201.558.0065 Fax. 201.558.1427
email : office@pilloriassociates.com

No.	DRAWINGS/REVISIONS	DATE

DRILL RIG TYPE: TRUCK MOUNTED
DRILLING METHOD: ROTARY
SAMPLE HAMMER WEIGHT: 140 LBS.
CASING HAMMER WEIGHT: 300 LBS.
CASING DIAMETER: 4"
SAMPLER DIAMETER: 2"

DRAWING TITLE:

BORINGS B-2W TO B-5

DRAWN :	CHECKED :	REVIEWED :
RM	GP	GP

DATE : 09/22/2015
SCALE : AS NOTED
JOB NO. : 150303A
DRAWING No. B-002.00
SHEET 2 OF 7

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/31/2015 - 09/04/2015
Contractor: Warren George, Inc.

Boring No.: B-6
Sheet: 1 of 2
Ground El: 5.8±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
				5" Concrete	
	S-1	41-49-100/6"	F	Black coarse to fine Sand, trace Silt, some coarse to fine Gravel with cinders	FILL (7)
5	S-2	25-22-24-18			8'0"
					-2.2
10	S-3	3-3-3-3	Es	Dark gray Silt and Clay, trace shells	MH (6)
15	S-4	1-2-1-1			
20	S-5	1-1-2-1			23'0"
					-17.2
25	S-6	12-16-18-18	GA	Coarse to fine Gravel, brown medium to fine Sand, little Silt	GM (2a)
					29'0"
					-23.2
30	S-7	26-17-18-18		Dark gray coarse to fine Sand, little Silt, some medium to fine Gravel	SM (3a)
					34'0"
35	S-8	28-29-26-25		Gray fine Sand, little Silt	-28.2 SM (3a)
40	S-9	12-100/5"			41'0"
		RUN = 48"			-35.2
	R-1	41.0' - 45.0'		Gray fine Sand, little Silt Cobbles and boulders from 41.0' to 45.0'	SM (3a)
		REC = 23%			45'0"
45	S-10	RQD = 0% 30-100/5"	GT	Gray coarse to fine Sand, trace Silt, and coarse to fine Gravel	-39.2 GW (2a)
					48'0"
50	S-11	42-54-61-75		Brown coarse to fine Sand, little Silt	-42.2 SM (3a)

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/31/2015 - 09/04/2015
Contractor: Warren George, Inc.

Boring No.: B-6
Sheet: 2 of 2
Ground El: 5.8±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-11	42-54-61-75	GT	Brown coarse to fine Sand, little Silt	SM (3a)
55	S-12	50/0"			55'0"
		RUN = 60"			-49.2
	R-2	55.0' - 60.0'	R	Gneiss Bedrock: Hard, slightly weathered, widely jointed	(1a)
60		REC = 100% RQD = 93%			60'0"
				End of Boring	-54.2
65					
70					
75					
80					
85					
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/28/2015 - 08/31/2015
Contractor: Warren George, Inc.

Boring No.: B-7
Sheet: 1 of 2
Ground El: 5.5±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
				Heavy Fill: Asphalt, Gravel, Cobbles	
5	S-1	8-8-5-4	F	Brown coarse to fine Sand, little Silt, some fine Gravel with asphalt and misc. debris	FILL (7)
10	S-2	6-6-7-11			13'0"
					-7.5
15	S-3	1-1-2-3	Es	Dark gray Silt and Clay, trace Shells	MH (6)
20	S-4	2-2-3-4			23'0"
					-17.5
25	S-5	11-11-10-8		Brown coarse to fine Sand, little Silt, little medium to fine Gravel	SM (3b)
30	S-6	10-6-7-10	GA		33'0"
					-27.5
35	S-7	10-16-18-21		Gray coarse to fine Sand, trace Silt	SW (3a)
					38'0"
40	S-8	11-12-18-21		Gray coarse to fine Sand, little Silt	-32.5 SM (3b)
					43'0"
45	S-9	18-28-47-24	GT	Gray coarse to fine Sand, little Silt, little medium to fine Gravel	-37.5 SM (3a)
50	S-10	22-25-52-48			

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/28/2015 - 08/31/2015
Contractor: Warren George, Inc.

Boring No.: B-7
Sheet: 2 of 2
Ground El: 5.5±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-10	22-25-52-48	GT	Gray coarse to fine Sand, little Silt, little medium to fine Gravel	SM (3a)
55	S-11	26-49-46-47		Gray coarse to fine Sand, little Silt, little medium to fine Gravel with decomposed rock fragments	63'0"
					-57.5
60	S-12	49-100/6"	DR	Decomposed Inwood Marble	(1d)
65	S-13	90-100/2"			
70	S-14	84-60-100/6"			
75	S-15	100/6"			
80	S-16	100/5"			82'0"
				End of Boring	-76.5
85					
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/26/2015 - 08/27/2015
Contractor: Warren George, Inc.

Boring No.: B-8
Sheet: 1 of 2
Ground El: 6.4±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-1	100/6"	F	5" Concrete Brown coarse to fine Sand, trace Silt, and coarse to fine Gravel with asphalt fragments	FILL (7)
5	S-2	6-14-100/6"			
10	S-3	100/6"		Brown fine Sand, trace Silt, and coarse to fine Gravel	
15	S-4	4-6-6-9		Possible Fill: Brown coarse to fine Sand, little Silt, little medium to fine Gravel	
20	S-5	0-0-1-1		Possible Fill: Brown coarse to fine Sand, little Silt	
25	S-6	13-6-5-7			28'0"
30	S-7	18-13-16-15	GA	Gray coarse to fine Sand, trace Silt, trace fine Gravel	-21.6 SW (3b)
35	S-8	13-13-17-21			
40	S-9	9-9-9-9			
45	S-10	15-10-12-18			48'0"
50	S-11	28-39-28-31	GT	Gray medium to fine Sand, trace Silt, and coarse to fine Gravel	-41.6 SP/GW (3a/2a)

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/26/2015 - 08/27/2015
Contractor: Warren George, Inc.

Boring No.: B-8
Sheet: 2 of 2
Ground El: 6.4±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-11	28-39-28-31	GT	Gray medium to fine Sand, trace Silt, and coarse to fine Gravel	SP/GW (3a/2a)
55	S-12	32-48-42-71		Gray coarse to fine Sand, trace Silt, some medium to fine Gravel	53'0" -46.6 SW (3a)
60	S-13	49-100/5"		Gray fine Sand, little Silt, little medium to fine Gravel	58'0" -51.6 SM (3a)
65	S-14	18-16-37-26		Gray fine Sand, trace Silt	63'0" -56.6 SP (3a)
70	S-15	67-38-100/2"	DR	Decomposed Inwood Marble	68'0" -61.6 (1d)
75	S-16	100/2"			
80	S-17	50/0"		End of Boring	80'0" -73.6
85					
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

PROJECT NAME:

2401 3RD AVENUE
BRONX, NEW YORK

CLIENT NAME:

NY DEVELOPERS & MANAGEMENT INC.
1825 65TH STREET
BROOKLYN, NEW YORK 11204

GEOTECHNICAL ENGINEER:

PILLORI ASSOCIATES, P.A.
Geotechnical Engineering
71 Route 35
Laurence Harbor, New Jersey 08879
Tel. 732.335.0059 Fax. 732.335.8515
333 Meadowlands Parkway, Suite 102
Secaucus, New Jersey 07094
Tel. 201.558.0065 Fax. 201.558.1427
email : office@pilloriassociates.com

No.	DRAWINGS/REVISIONS	DATE

DRILL RIG TYPE: TRUCK MOUNTED
DRILLING METHOD: ROTARY
SAMPLE HAMMER WEIGHT: 140 LBS.
CASING HAMMER WEIGHT: 300 LBS.
CASING DIAMETER: 4"
SAMPLER DIAMETER: 2"

DRAWING TITLE:

BORINGS B-6 TO B-8

DRAWN :	CHECKED :	REVIEWED :
RM	GP	GP

DATE : 09/22/2015
SCALE : AS NOTED
JOB NO. : 150303A
DRAWING No. B-003.00
SHEET 3 OF 7

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/27/2015
Contractor: Warren George, Inc.

Boring No.: B-9
Sheet: 1 of 2
Ground El: 7.3±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-1	31-17-22-17	F	4" Asphalt and Concrete Black coarse to fine Sand, trace Silt, little fine Gravel with misc. debris and Asphalt fragments	FILL (7)
10	S-3	100/5"	F	Possible Fill: Gray coarse to fine Sand, trace Silt, little fine Gravel	13'0"
	S-4	8-14-14-13	GA	Brown coarse to fine Sand, trace Silt, little coarse to fine Gravel	-5.7 SW (3b)
20	S-5	8-13-100/4"			
25	S-6	12-17-11-10			28'0"
	S-7	4-7-100/4"	GA	Brown coarse to fine Sand, trace Silt	-20.7 SW (3b)
35	S-8	10-9-10-10			
40	S-9	9-9-13-13			41'0"
	S-10	14-13-17-22		Gray fine Sand, little Silt	-33.7 SM (3a)
50	S-11	9-14-16-16			

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/27/2015
Contractor: Warren George, Inc.

Boring No.: B-9
Sheet: 2 of 2
Ground El: 7.3±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-11	9-14-16-16		Gray fine Sand, little Silt	SM (3a)
55	S-12	100/0"		Cobbles and boulders from 55.0' to 58.0'	53'0" -45.7 GW (2a)
60	S-13	9-13-15-17	GA	Gray coarse to fine Sand, trace Silt	58'0" -50.7 SW (3a)
65	S-14	10-13-16-16			68'0"
70	S-15	11-15-16-23		Gray medium to fine Sand, trace Silt	-60.7 SP (3a)
75	S-16	8-23-100/4"		Gray fine Sand, and clayey Silt	73'0" -65.7 SM (3b)
			DR	Decomposed Inwood marble	76'0" -68.7 (1d)
80	S-17	50/0"		End of Boring	80'0" -72.7
85					
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/12/2015 - 08/13/2015
Contractor: Warren George, Inc.

Boring No.: B-10
Sheet: 1 of 2
Ground El: 7.6±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-1	15-24-25-22	F	6" Paver stone Brown medium to fine Sand, trace Silt, trace fine Gravel with brick fragments	FILL (7)
10	S-3	2-1-1-1	ES	Dark gray Silt and Clay	8'0" -0.4 MH (6)
15	S-4	3-3-4-4			18'0"
20	S-5	17-22-29-34	GA	Brown coarse to fine Sand, trace Silt, some coarse to fine Gravel	-10.4 SW (3a)
25	S-6	34-24-18-21			28'0"
30	S-7	40-100/3"		Gray coarse to fine Sand, trace Silt, and fine Gravel	-20.4 SW/GP (3a/2a)
35	R-1	RUN = 24" 34.0' - 36.0' REC = 50% RQD = 0%			
	S-8	20-14-10-12		Cobbles and boulders from 34.0' to 36.0'	39'0"
40	S-9	5-3-4-4		Gray medium to fine Sand, trace Silt, little fine Gravel	-31.4 SP (6)
45	S-10	12-10-10-11		Gray coarse to fine Sand, trace Silt	43'0" -35.4 SW (3b)
50	S-11	12-12-11-11			

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/12/2015 - 08/13/2015
Contractor: Warren George, Inc.

Boring No.: B-10
Sheet: 2 of 2
Ground El: 7.6±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-11	12-12-11-11		Gray coarse to fine Sand, trace Silt	SW (3b)
55	S-12	12-17-15-15		Gray coarse to fine Sand, trace Silt, little fine Gravel	53'0" -45.4 SW (3a)
60	S-13	11-14-15-18	GA		63'0"
65	S-14	15-16-22-20		Gray medium to fine Sand, trace Silt	-55.4 SP (3a)
70	S-15	10-16-23-18		Gray fine Sand, some Silt	68'0" -60.4 SM (3a)
75	S-16	7-9-22-22			78'0"
80	R-2	RUN = 60" 80.0' - 85.0' REC = 37% RQD = 25%	DR	Decomposed Inwood Marble	-70.4 (1d)
85	R-3	RUN = 36" 85.0' - 88.0' REC = 0% RQD = 0%			
90	R-4	RUN = 48" 88.0' - 92.0' REC = 0% RQD = 0%			92'0"
95	R-5	RUN = 60" 92.0' - 97.0' REC = 88% RQD = 40%	R	Inwood Marble Bedrock: medium Hard, weathered, jointed	-84.4 (1c) 97'0"
100	R-6	RUN = 60" 97.0' - 102.0' REC = 83% RQD = 57%		End of Boring	-89.4 (1b)

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/17/2015 - 08/18/2015
Contractor: Warren George, Inc.

Boring No.: B-11
Sheet: 1 of 2
Ground El: 8.0±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-1	6-5-7-13	F	Brown coarse to fine Sand, trace Silt, trace fine Gravel with brick fragments and misc. debris	FILL (7)
10	S-2	WOH-2-3	ES	Dark gray Silt and Clay	8'0" 0.0 MH (6)
15	S-3	36-15-12-15	GA	Brown coarse to fine Sand, trace Silt, little fine Gravel	13'0" -5.0 SW (3b)
20	S-4	14-19-29-17			
25	S-5	14-10-14-15			
30	S-6	25-8-9-12			
35	S-7	13-10-14-12			
40	S-8	30-11-9-12			43'0"
45	S-9	9-7-14-11		Gray coarse to fine Sand, trace Silt, trace fine Gravel	-35.0 SW (3b)
50	S-10	11-6-8-14			

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/17/2015 - 08/18/2015
Contractor: Warren George, Inc.

Boring No.: B-11
Sheet: 2 of 2
Ground El: 8.0±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-10	11-6-8-14			
55	S-11	15-12-9-9			
60	S-12	6-5-8-9			
65	S-13	17-18-21-34	GA	Gray coarse to fine Sand, trace Silt, little fine Gravel	SW (3b)
70	S-14	9-7-8-11			
75	S-15	4-5-5-4			
80	S-16	7-12-8-14			82'0"
85				End of Boring	-74.0
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* **Project No.: 150303A**

PROJECT NAME:

2401 3RD AVENUE
BRONX, NEW YORK

CLIENT NAME:

NY DEVELOPERS & MANAGEMENT INC.
1825 65TH STREET
BROOKLYN, NEW YORK 11204

GEOTECHNICAL ENGINEER:

PILLORI ASSOCIATES, P.A.
Geotechnical Engineering
71 Route 35
Laurence Harbor, New Jersey 08879
Tel. 732.335.0059 Fax. 732.335.8515
333 Meadowlands Parkway, Suite 102
Secaucus, New Jersey 07094
Tel. 201.558.0065 Fax. 201.558.1427
email : office@pilloriassociates.com

No.	DRAWINGS/REVISIONS	DATE

DRILL RIG TYPE: TRUCK MOUNTED
DRILLING METHOD: ROTARY
SAMPLE HAMMER WEIGHT: 140 LBS.
CASING HAMMER WEIGHT: 300 LBS.
CASING DIAMETER: 4"
SAMPLER DIAMETER: 2"

DRAWING TITLE:

BORINGS B-9 TO B-11

DRAWN :	CHECKED :	REVIEWED :
RM	GP	GP

DATE : 09/22/2015
SCALE : AS NOTED
JOB NO. : 150303A
DRAWING No. B-004.00
SHEET 4 OF 7

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/05/2015 - 08/06/2015
Contractor: Warren George, Inc.

Boring No.: B-12
Sheet: 1 of 2
Ground El: 7.5±
Groundwater Depth: NA

Depth Feet	SAMPLES Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-1	12-12-9-10	F	Brown fine Sand, trace Silt, trace fine Gravel with brick fragments and misc. debris	FILL (7)
5	S-2	7-2-14-15			9'0" -1.5
10	S-3	WOH	ES	Dark gray Silt and Clay	MH (6)
15	S-4	8-8-7-9	GA	Gray coarse to fine Sand, little Silt, little fine Gravel	14'0" -6.5 SM (3b)
20	S-5	5-5-3-3			
25	S-6	8-6-5-6		Brown coarse to fine Sand, little Silt, little medium to fine Gravel	28'0" -20.5
30	S-7	9-10-10-9		Gray fine Sand, little Silt, trace medium to fine Gravel	
35	S-8	10-8-7-5		Gray medium to fine Sand, little Silt, trace medium to fine Gravel	SM (3b)
40	S-9	11-9-10-8			
45	S-10	10-7-5-4		Gray medium to fine Sand, little Silt, some coarse to fine Gravel	
50	S-11	12-7-5-6			

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/05/2015 - 08/06/2015
Contractor: Warren George, Inc.

Boring No.: B-12
Sheet: 2 of 2
Ground El: 7.5±
Groundwater Depth: NA

Depth Feet	SAMPLES Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-11	12-7-5-6	GA	Gray medium to fine Sand, little Silt, trace coarse to fine Gravel	SM (3b)
55	S-12	10-6-6-5			
60	S-13	14-8-7-8		Gray medium to fine Sand, little Silt	
65	S-14	12-6-7-9			68'0" -60.5
70	S-15	30-18-17-20		Gray fine Sand, some Silt	SM (3a)
75	S-16	22-27-39-38			
80	S-17	10-13-16-22			82'0" -74.5
85				End of Boring	
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/24/2015 - 08/25/2015
Contractor: Warren George, Inc.

Boring No.: B-13
Sheet: 1 of 2
Ground El: 7.4±
Groundwater Depth: NA

Depth Feet	SAMPLES Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-1	8-40-100/2"	F	3" Asphalt	
5	S-2	16-37-67-100/2"		Brown medium to fine Sand, little Silt with brick and mortar fragments	FILL (7)
10	S-3	1-2-5-7	ES	Dark gray Silt and Clay	8'0" 0.6 MH (6)
15	S-4	WOR-WOH-6-4			19'0" -11.6
20	S-5	7-13-7-5	GA	Gray coarse to fine Sand, little Silt, little medium to fine Gravel	SM (3b)
25	S-6	7-7-7-8			23'0" -15.6
30	S-7	7-6-6-6			
35	S-8	6-4-6-4		Gray coarse to fine Sand, trace Silt, little medium to fine Gravel	SW (3b)
40	S-9	7-8-10-9			
45	S-10	9-13-14-15			48'0" -40.6
50	S-11	12-15-19-19		Gray coarse to fine Sand, trace Silt	SW (3a)

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/24/2015 - 08/25/2015
Contractor: Warren George, Inc.

Boring No.: B-13
Sheet: 2 of 2
Ground El: 7.4±
Groundwater Depth: NA

Depth Feet	SAMPLES Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-11	12-15-19-19	GA	Gray coarse to fine Sand, trace Silt	
55	S-12	14-20-20-20		Gray coarse to fine Sand, trace Silt, little medium to fine Gravel	SW (3a)
60	S-13	14-20-20-19			
65	S-14	12-15-15-22		Gray coarse to fine Sand, trace Silt	68'0" -60.6
70	S-15	15-22-24-34	GT	Gray fine Sand, little Silt	SM (3a)
75	S-16	22-52-100/6"		Red brown Clayey Silt	73'0" -65.6 ML (5a)
80	S-17	18-24-25-30		Red brown Clayey Silt, trace fine Sand	82'0" -74.6
85				End of Boring	
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/21/2015 - 08/24/2015
Contractor: Warren George, Inc.

Boring No.: B-14A
Sheet: 1 of 2
Ground El: 5.3±
Groundwater Depth: NA

Depth Feet	SAMPLES Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
			F	3" Asphalt	
5	S-1	2-2-1-4		Gray fine Sand, some Silt, some fine Gravel with brick, and asphalt fragments	FILL (7)
10	S-2	1-1-0-1	ES	Dark gray Silt and Clay	8'0" -2.7 MH (6)
15	S-3	WOR-2-2-2			18'0" -12.7
20	S-4	5-4-6-3	GA	Brown coarse to fine Sand, trace Silt	SW (3b)
25	S-5	7-5-6-7			
30	S-6	7-9-11-13			
35	S-7	8-9-14-16			
40	S-8	9-15-13-12			
45	S-9	13-11-12-28			48'0" -42.7
50	S-10	31-40-19-23	GT	Gray medium to fine Sand, trace Silt	SP (3a)

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/21/2015 - 08/24/2015
Contractor: Warren George, Inc.

Boring No.: B-14A
Sheet: 2 of 2
Ground El: 5.3±
Groundwater Depth: NA

Depth Feet	SAMPLES Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-10	31-40-19-23			
55	S-11	50/0"			
60	S-12	26-26-31-39	GT	Gray medium to fine Sand, trace Silt	SP (3a)
65	S-13	20-27-25-39			
70	S-14	11-12-18-21			
75	S-15	12-19-24-31			77'0" -71.7
80				End of Boring	
85					
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* Project No.: 150303A

PROJECT NAME:

2401 3RD AVENUE
BRONX, NEW YORK

CLIENT NAME:

NY DEVELOPERS & MANAGEMENT INC.
1825 65TH STREET
BROOKLYN, NEW YORK 11204

GEOTECHNICAL ENGINEER:

PILLORI ASSOCIATES, P.A.
Geotechnical Engineering
71 Route 35
Laurence Harbor, New Jersey 08879
Tel. 732.335.0059 Fax. 732.335.8515
333 Meadowlands Parkway, Suite 102
Secaucus, New Jersey 07094
Tel. 201.558.0065 Fax. 201.558.1427
email : office@pilloriassociates.com

No.	DRAWINGS/REVISIONS	DATE

DRILL RIG TYPE: TRUCK MOUNTED
DRILLING METHOD: ROTARY
SAMPLE HAMMER WEIGHT: 140 LBS.
CASING HAMMER WEIGHT: 300 LBS.
CASING DIAMETER: 4"
SAMPLER DIAMETER: 2"

DRAWING TITLE:

BORINGS B-12 TO B-14

DRAWN :	CHECKED :	REVIEWED :
RM	GP	GP

DATE : 09/22/2015
SCALE : AS NOTED
JOB NO. : 150303A
DRAWING No. B-005.00
SHEET 5 OF 7

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/19/2015
Contractor: Warren George, Inc.

Boring No.: B-15W
Sheet: 1 of 2
Ground El: 5.8±
Groundwater Depth: 5'9"

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
				3" Asphalt	
5	S-1	13-14-99-100/3"	F	Gray fine Sand, little Silt with timber fragments	FILL (7)
	S-2	15-14-6-8			8'0"
10					-2.2
	S-3	3-4-4-5	Es	Dark gray Silt and Clay, trace fine Sand, trace shells	MH (6)
15	S-4	7-2-2-4			
20	S-5	WOR-1-7-16			21'0"
					-15.2
25	S-6	7-6-5-5			
30	S-7	7-8-8-10	GA	Gray coarse to fine Sand, trace Silt, some fine Gravel	SW (3b)
35	S-8	14-11-13-15			
40	S-9	6-6-6-20			43'0"
					-37.2
45	S-10	4-4-5-6		Gray coarse to fine Sand, trace Silt	SW (3b)
50	S-11	5-8-9-9			

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/19/2015
Contractor: Warren George, Inc.

Boring No.: B-15W
Sheet: 2 of 2
Ground El: 5.8±
Groundwater Depth: 5'9"

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
55	S-11	5-8-9-9		Gray coarse to fine Sand, trace Silt	SW (3b)
	S-12	6-2-8-13			
60	S-13	12-15-15-19			63'0"
					-57.2
65	S-14	15-11-11-14	GA	Gray coarse to fine Sand, trace Silt, and fine Gravel	SW (3b)
70	S-15	11-17-11-7			
75	S-16	10-8-6-10			78'0"
					-72.2
80	S-17	12-11-9-9		Gray coarse to fine Sand, trace Silt, little fine Gravel	SW (3b)
					82'0"
85				End of Boring	-76.2
90					
95					
100					

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/06/2015 - 08/07/2015
Contractor: Warren George, Inc.

Boring No.: B-16
Sheet: 1 of 2
Ground El: 7.5±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
				3" Asphalt	
	S-1	3-4-7-20	F	Dark gray fine Sand, little Silt, trace medium to fine Gravel with misc. debris	FILL (7)
5	S-2	15-100/2"			8'0"
10					-0.5
	S-3	WOH-1-0	Es	Dark gray Silt and Clay	MH (6)
15	S-4	WOH			
20	S-5	WOH			24'0"
					-16.5
25	S-6	67-18-13-10			
30	S-7	13-10-9-7			
35	S-8	11-7-8-7	GA	Gray medium to fine Sand, little Silt, trace medium to fine Gravel	SM (3b)
40	S-9	17-14-11-14			
45	S-10	12-10-10-7			48'0"
					-40.5
50	S-11	14-7-8-6		Gray medium to fine Sand, trace Silt, trace medium to fine Gravel	SP (3b)

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

Project: **2401 3rd Avenue**
Bronx, New York
Date: 08/06/2015 - 08/07/2015
Contractor: Warren George, Inc.

Boring No.: B-16
Sheet: 2 of 2
Ground El: 7.5±
Groundwater Depth: NA

Depth Feet	Number	Blows / 6"	Strata	SOIL DESCRIPTION	Classification Depth Elevation
	S-11	14-7-8-6		Gray medium to fine Sand, trace Silt, trace medium to fine Gravel	
55	S-12	15-13-13-12	GA	Gray medium to fine Sand, trace Silt	SP (3b)
60	S-13	12-13-13-20			63'0"
					-55.5
65	S-14	15-18-28-25			
70	S-15	18-21-25-27	GT	Gray fine Sand, some Silt	SM (3a)
75	S-16	31-40-35-30			
80	S-17	33-40-35-48			
85	S-18	26-30-31-50			86'0"
					-78.5
90	S-19	79-100/5"	DR	Decomposed Inwood Marble	(1d)
95					95'0"
	R-1	RUN = 60" 95.0' - 100.0' REC = 100% RQD = 83%	R	Inwood Marble Bedrock: Hard, slightly weathered, mediumly jointed	-87.5 (1b)
100				End of Boring	100'0" -92.5

PILLORI ASSOCIATES, P.A. *Geotechnical Engineering* — Project No.: 150303A

PROJECT NAME:

2401 3RD AVENUE
BRONX, NEW YORK

CLIENT NAME:

NY DEVELOPERS & MANAGEMENT INC.
1825 65TH STREET
BROOKLYN, NEW YORK 11204

GEOTECHNICAL ENGINEER:

PILLORI ASSOCIATES, P.A.
Geotechnical Engineering
71 Route 35
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333 Meadowlands Parkway, Suite 102
Secaucus, New Jersey 07094
Tel. 201.558.0065 Fax. 201.558.1427
email : office@pilloriassociates.com

No.	DRAWINGS/REVISIONS	DATE

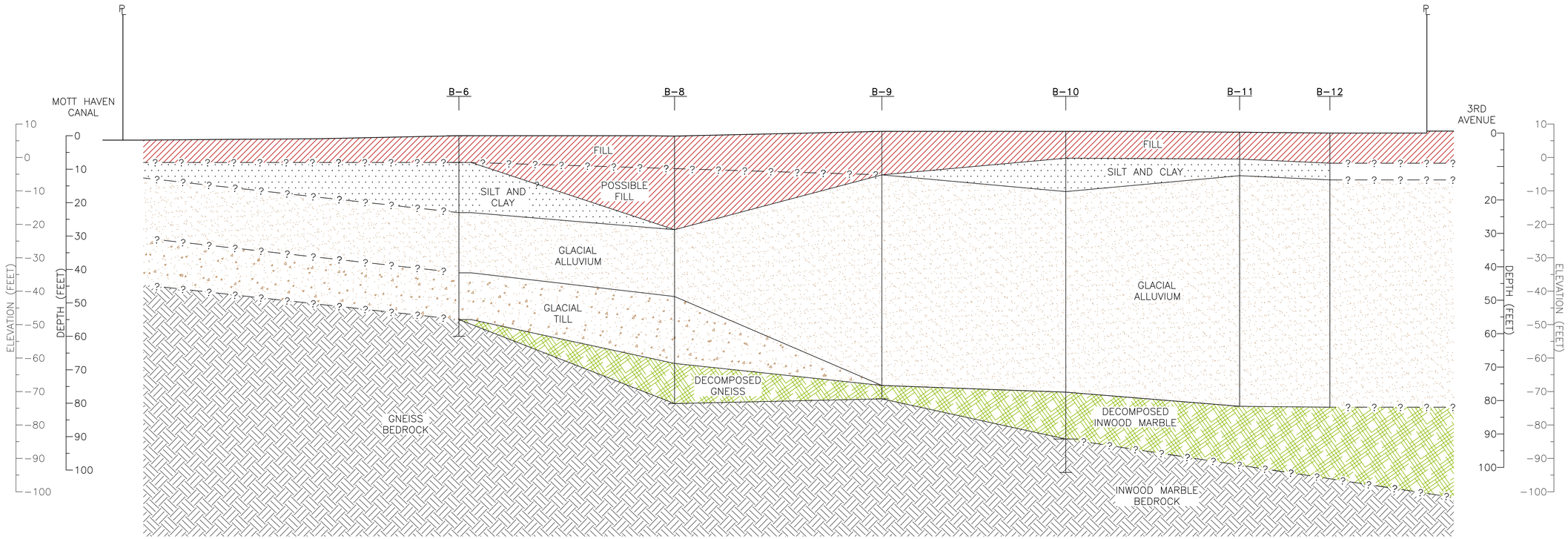
DRILL RIG TYPE: TRUCK MOUNTED
DRILLING METHOD: ROTARY
SAMPLE HAMMER WEIGHT: 140 LBS.
CASING HAMMER WEIGHT: 300 LBS.
CASING DIAMETER: 4"
SAMPLER DIAMETER: 2"

DRAWING TITLE:

BORINGS B-15W & B-16

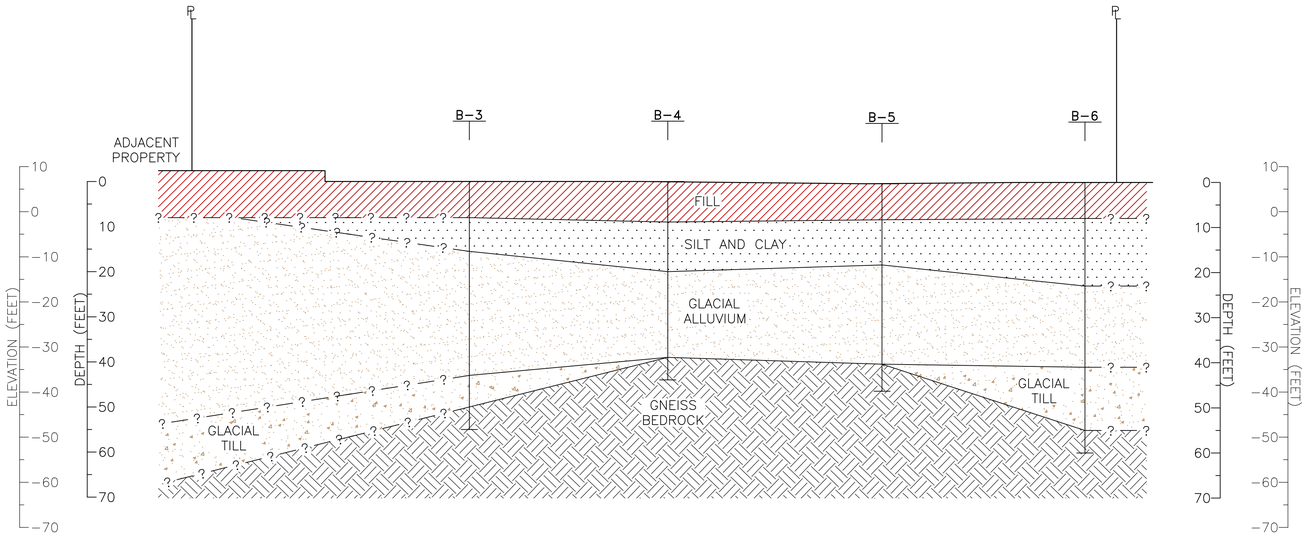
DRAWN :	CHECKED :	REVIEWED :
RM	GP	GP

DATE : 09/22/2015
SCALE : AS NOTED
JOB NO. : 150303A
DRAWING No. B-006.00
SHEET 6 OF 7



SUBSURFACE SECTION – AA

SCALE: 1" = 16'



SUBSURFACE SECTION – BB

SCALE: 1" = 16'

PROJECT NAME:

2401 3RD AVENUE
BRONX, NEW YORK

CLIENT NAME:

NY DEVELOPERS & MANAGEMENT INC.
1825 65TH STREET
BROOKLYN, NEW YORK 11204

GEOTECHNICAL ENGINEER:

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Secaucus, New Jersey 07094
Tel. 201.558.0065 Fax. 201.558.1427
email : office@pilloriassociates.com

No.	DRAWINGS/REVISIONS	DATE

DRILL RIG TYPE: TRUCK MOUNTED
DRILLING METHOD: ROTARY
SAMPLE HAMMER WEIGHT: 140 LBS.
CASING HAMMER WEIGHT: 300 LBS.
CASING DIAMETER: 4"
SAMPLER DIAMETER: 2"

DRAWING TITLE:

SOIL/ROCK PROFILES

DRAWN :	CHECKED :	REVIEWED :
RM	GP	GP

DATE : 09/22/2015
SCALE : AS NOTED
JOB NO. : 150303A
DRAWING No. B-007.00
SHEET 7 OF 7

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			GROUP SYMBOLS (ASTM D2487)	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOIL MORE THAN 50% RETAINED ON NO.200 SIEVE*	GRAVEL 50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVEL	GW	WELL- GRADED GRAVEL & GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVEL & GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVEL WITH FINES	GM	SILTY GRAVEL, GRAVEL SAND CLAY MIXTURES
			GC	CLAYEY GRAVEL, GRAVEL SAND CLAY MIXTURES
	SANDS MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SIEVE	CLEAN SAND	SW	WELL-GRADED SAND & GRAVELLY SAND, LITTLE OR NO FINES
			SP	POORLY GRADED SAND & GRAVELLY SAND, LITTLE OR NO FINES
		SAND WITH FINES	SM	SILTY SAND, SAND-SILT MIXTURES
			SC	CLAYEY SAND, SAND-CLAY MIXTURES
FINE-GRAINED SOIL 50% OR MORE PASSING NO.200 SIEVE*	SILT & CLAY LIQUID LIMIT LESS THAN 50%		ML	INORGANIC SILT, VERY FINE SAND, ROCK FLOUR, SILTY OR CLAYEY FINE SAND
			CL	INORGANIC CLAY OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAY, SANDY CLAY, SILTY CLAY, LEAN CLAY
			OL	ORGANIC SILT & ORGANIC SILTY CLAY OF LOW PLASTICITY
	SILT & CLAY LIQUID LIMIT GREATER THAN 50%		MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT, ELASTIC
			CH	INORGANIC CLAY OF HIGH PLASTICITY, FAT CLAY
			OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOIL			PT	PEAT, MUCK & OTHER HIGHLY ORGANIC SOIL

* BASED ON MATERIAL PASSING THE 3" (75MM) SIEVE

GRADATION**

TERM	% BY WEIGHT
TRACE	1 TO 10
LITTLE	10 TO 20
SOME	20 TO 35
AND	35 TO 50

COMPACTNESS**
(SAND AND/OR GRAVEL)

TERM	% RELATIVE DENSITY
LOOSE	0 TO 40
MEDIUM DENSE	41 TO 70
DENSE	71 TO 90
VERY DENSE	91 TO 100

CONSISTENCY**
(CLAY AND/OR SILT)

SHEAR STRENGTH TERM	TONS/SQ.FT.
SOFT	LESS THAN 0.25
FIRM	0.25 TO 0.5
STIFF	0.5 TO 1.0
VERY STIFF	1.0 TO 2.0
HARD	OVER 2.0

** VALUES ARE FROM LABORATORY OR FIELD TEST DATA, WHERE APPLICABLE, WHEN NO TESTING WAS PERFORMED VALUES ARE ESTIMATED.