



December 1, 2020

Mr. Brian Tierney  
10 Baldwin Yonkers AMS LLC  
595 Madison Avenue, Suite 1101  
New York, NY 10022

**Re: Additional Borings Geotechnical Letter Report  
North Broadway Assemblage  
Yonkers, New York**

Dear Brian:

In accordance with your request and our October 16, 2020 proposal, this Letter Report presents the results of our Additional Borings Investigation conducted in Yonkers, New York. As stated in our proposal, and in order to supplement the rock data collected during our April 2019 preliminary geotechnical investigation and October 2019 supplemental geotechnical investigation, the purpose for this investigation was to provide additional rock type, quality, and top of rock data in various locations across the proposed North Broadway Assemblage in Yonkers, New York.

Based on recent discussions between you and Mr. Ziad H. Maad, P.E., D. GE. of Geotechnical Engineering Services, P.C. (GES), we understand the project site occupies several lots spanning the western ends of Baldwin Place, Overlook Terrace, extending down a steep tree-covered slope, through select lots to North Broadway in the City of Yonkers, New York. We understand the lots/addresses proposed to be part of the new development include the following addresses. Borings performed for this current investigation were performed where noted in **bold** below. The outline of the proposed site is shown on the attached Boring Location Plan:

- **2 Baldwin Place** – Open lot covered by trees and debris
- **10 Baldwin Place** – Two-story house and surrounding yard and trees
- **7 Overlook Terrace** – Three-story house and driveway
- 10-12 Overlook Terrace – Three-story house and yard
- **14 Overlook Terrace** – Tree-covered open lot
- **15 Overlook Terrace** – Four-story building and surrounding trees
- 23 Overlook Terrace – Five-story building and trees
- **14 North Broadway** – Five-story building on North Broadway with rear tree-covered slope
- 16 North Broadway – Open lot
- 18 North Broadway – Two-story building
- 28 North Broadway – Two-story building plus rear yard

- 30-32 North Broadway – Two-story (plus cellar) building and rear yard.
- 52 North Broadway – Three-story building

Based on the Phase 1 Concept Design Package recently provided to us, we understand the proposed development includes the construction of several new buildings of varying height across the combined footprint of the above-mentioned lots. In the area of 14 Overlook Terrace, a 23-story residential building with no below grade levels will be constructed (Overlook Tower), with a three-story building at 16 and 18 North Broadway, connected to the tower. A five-story terraced building would be constructed at 28 and 30 North Broadway. An about 13,677-square-foot (in footprint), 6-story parking structure (with two (2) below grade levels) would be constructed at 7 and 15 Overlook Terrace. This parking structure would connect to another larger and below grade parking structure at 2 and 10 Baldwin Place. Additional development, including frontage on North Broadway, are also planned as part of a Phase 2 of this project, further to the north, which includes a 23-story tower (Baldwin Tower) and three-story frontage at 52 North Broadway.

GES did not perform any surveying and solely relied on our information as measured in the field from fixed locations, as well as an August 29, 2019 plan of existing ground elevations by Empire State Layout, Inc. of the proposed site. All elevations noted in this survey and in this Letter Report refer to the North American Vertical Datum of 1988 (NAVD 88).

## **SUMMARY OF FINDINGS**

As noted above, the purpose of this investigation was to better understand the top of rock across the combined site, which will guide foundation and Support of Excavation (SOE) design, as well as provide an updated Boring Location Plan and Geologic Cross-Sections through the site, showing the approximate level of top of rock, based on all the geotechnical data collected to date. Additional recommendations would be covered by a final investigation, once the specific lots for the proposed development have been finalized. Please refer to the Boring Location Plan, Geologic Cross-Sections, typed boring logs, and rock core photographic logs, attached to this Letter Report.

### **General**

Borings were performed at a total of ten (10) geotechnical boring locations, referred to as B-10 through B-19. Please refer to our April 2019 Preliminary Geotechnical Letter Report for Borings B-1 and B-2, and our October 2019 Supplemental Geotechnical Letter Report for Borings B-3 through B-9. The logs for these borings have also been included with this report. The general boring locations were selected by your office. Offsets for borings drilled, in which bedrock was not encountered due to collapsing boreholes or other reasons, have been denoted with an “A” following the boring number.

Borings B-10 through B-19 were performed by Municipal Testing Laboratory, Inc. (MTL) of Hauppauge, New York, using a Portable Gas-Powered Drill Rig, from October 26 to November 11, 2020, under continuous special inspection by Messrs. Michael Torino, P.E. and Haykel Melaouhia, Ph. D. of GES. The borings were performed in about the locations as shown on the

attached Boring Location Plan, as measured from fixed points in the field by GES.

Soil samples were obtained using techniques and equipment in general accordance with the American Society for Testing and Materials (ASTM) Standard Specification D1586-Standard Penetration Test (SPT). The SPT consists of driving a 2-inch O.D. split-spoon sampler with repeated blows of a 140-lb hammer free falling distance of 30-inches. The standard penetration resistance, or N-Value, is determined as the number of blows required to advance the sampler the middle 12-inches of a 24-inch penetration. MTL used a donut hammer (cathead and rope), which operates at about a 60% efficiency. A correction factor of 0.75 is generally used to convert the N-Values from the donut hammer to the normalized N-Value ( $N_{60}$ ).

Where the split-spoon sampler could not be advanced through a boulder or bedrock, the sampler was driven for 50 blows, and length of actual penetration was recorded. Soil samples were placed in jars following completion of sampler advancement. The recovered split-spoon soil samples were labeled with the project name, boring number, sample number, depth of sample, SPT blow counts and length of recovery. All samples were taken to MTL's Office for storage. Boring logs showing N-Values and stratigraphy are attached to this Letter Report.

Our general methodology for soil sampling was to perform continuous split-spoon sampling to top of rock, then core at least five (5) feet of competent rock (NX-Core), in order to confirm top of rock, as well as rock quality. Where split-spoon sampling could not be performed, boulders and bedrock were cored using an NX-size core barrel with a diamond bit. The length of recovery and Rock Quality Designation (RQD) were measured and calculated for each rock core run, and denoted as a percent recovery and percent RQD, respectively. RQD does not apply to boulders refers to the sum of the lengths of rock core pieces four inches or longer, neglecting mechanical breaks, expressed as a percentage of the total length of the core run. Percentage recovery, RQD, and rock sample descriptions are included on the boring logs. Photographs of the rock cores have also been attached to this Letter Report.

Rock core samples were arranged and organized in wooden five-foot-long core boxes, labeled with project name and number, boring number, sample number, depth of sample, and core recovery and RQD percentages. All core samples were transported to MTL's shop for storage.

## **SUBSURFACE CONDITIONS**

The following general descriptions of the subsurface strata are based on our interpretations of the results of the field investigation. Due to the slope at the site, strata descriptions for top of rock are presented below in terms of elevation, as opposed to depth. The soil is presented in terms of depth and thickness of each layer. Typed boring logs for the borings performed for this investigation, as well as the two previous investigations have been attached to this Letter Report. The delineation between the composition of each stratum has not been modified from the previous two investigations:

**Stratum 1 – Fill:** This stratum was encountered in all borings to depths of about 2.5 to 6 feet. The fill generally consists of loose brown, black, and gray medium to fine sand, with varying amounts of boulders, silt, gravel, concrete and wood, glass and metal fragments. SPT N-Values ranged from 1 to 46-blows/ft (bpf), with an average of 11 bpf. However, four (4) spoons encountered refusal before reaching the full sample depth, and more than two-thirds of all split-spoon samples had N-Values less than 10 bpf. A 1-foot-long boulder in Stratum 1 was cored in Boring B-16.

**Stratum 2 – Glacial Till:** Encountered just above bedrock in all borings, Stratum 2 generally consists of brown and tan silty medium to fine sand, cobbles, and boulders, with varying amounts of gravel, rock fragments, mica, and roots. Stratum 2 was measured to be between about 2 to 15.5 feet thick. More than half of all SPT split-spoon samples taken reached refusal before extending the full sample depth, due to the presence of gravel or boulders. SPT N-Values for the rest of the samples, ranged from 10 to 92 bpf, with an average of 51 bpf. Boulders were cored in Borings B-12, B-13A, B-14, and B-19, with zones of boulders ranging from about 1 to 5 feet.

**Stratum 3a – Weathered/Decomposed Bedrock:** Stratum 3a was encountered in all borings and is generally regarded as gray and white decomposed gneiss fragments, closely jointed to broken, with weathered and iron-stained joints. Stratum 3a was measured to be about 1 to 16 feet thick, with top of Stratum 3a ranging from about el. +111 to +73, depending on what elevation the boring was performed from. In general, decomposed rock was encountered at the boring locations between 4 and 14.5 feet below grade. Therefore, the slope of the site generally appears to follow a general slope of the rock, as evidenced by our attached Boring Location Plan and Geologic Cross Sections. Three (3) SPT split-spoons taken within Stratum 3a all reached refusal before extending to the full sample depth. Rock core recoveries within Stratum 3a generally ranged from 10 to 100 percent, with an average of 77 percent. RQD values generally ranged from 0 to 20 percent, with an average of 8 percent, indicative of highly fractured bedrock.

**Stratum 3b – Bedrock:** Stratum 3b was encountered in all borings and is generally regarded as gray and white hard to intermediate gneiss, slightly weathered, with weathered and iron-stained joints, trace white quartz and pink biotite. All borings terminated within Stratum 3b, after extending between 2 and 16 feet into Stratum 3b. As shown on our attached Boring Location Plan and Geologic Cross Sections, the top of Stratum 3b ranges from about el. +109.5 to +70. Stratum 3b was encountered between about 5 to 25.5 feet below grade. Rock core recoveries within Stratum 3a generally ranged from 86 to 100 percent, with an average of 97 percent. RQD values generally ranged from 33 to 95 percent, with an average of 65 percent, indicative of competent bedrock.

## **GROUNDWATER OBSERVATIONS**

No groundwater monitoring wells were installed as part of this investigation, as this was not the purpose for the investigation. We will perform groundwater level monitoring at the site by installing piezometers and performing the remaining geotechnical borings, as part of our final geotechnical investigation, once the site footprint has been finalized.

Mr. Brian Tierney – 10 Baldwin Yonkers AMS LLC  
North Broadway Assemblage  
Additional Borings Geotechnical Letter Report  
December 1, 2020  
Page 5 of 5

### **Closing**

If you have any questions or would like to discuss the contents of this Letter Report, please don't hesitate to call me in the office at 914-592-4616 or on my mobile at 973-727-7329.

Very truly yours,  
**Geotechnical Engineering Services, P.C.**

Ziad H. Maad, P.E., D. GE.

### **Attachments:**

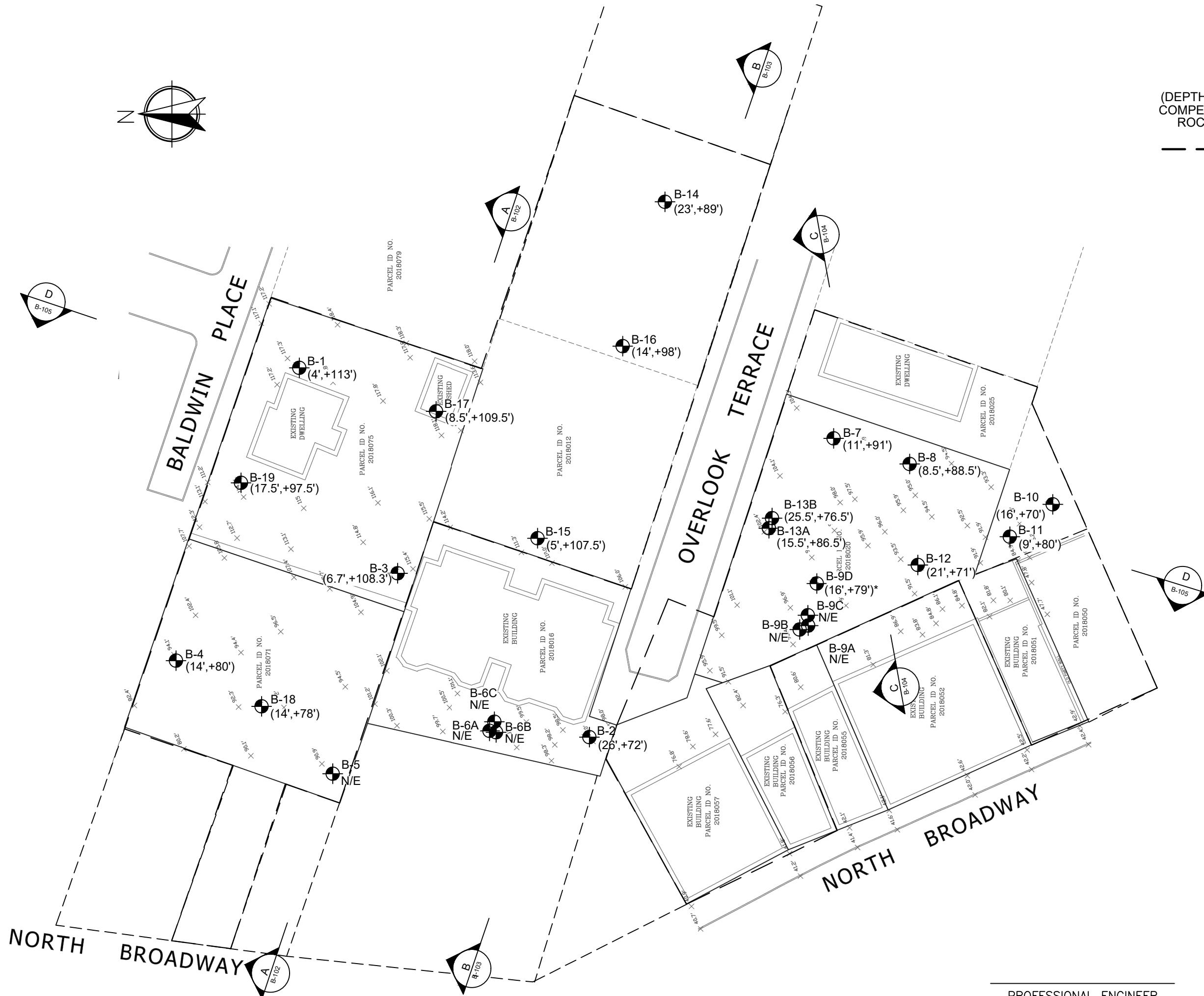
- Drawing No. B-101.02 – Boring Location Plan
- Drawing Nos. B-102.00 to B-105.00 – Geologic Cross Sections A-A to D-D
- Geotechnical Boring Logs
- Rock Core Photographic Logs

# LEGEND

BORING #  
(DEPTH TO COMPETENT ROCK, TOP EL. OF COMPETENT ROCK) 2019/2020 GES Boring

PROPOSED SITE

\*: POSSIBLE DECOMPOSED BEDROCK



2	ADDED B-10 THROUGH B-19	11-23-20	HM
1	ADDED B-3 THROUGH B-9D	11-18-19	DJG
No.	DESCRIPTION	DATE	BY

**GES**  
**GEOTECHNICAL ENGINEERING SERVICES, P.C.**  
6 BAYBERRY ROAD  
ELMSFORD, NEW YORK 10523  
PHONE: 914-592-4616 FAX: 914-592-0416

**NORTH BROADWAY  
ASSEMBLAGE  
YONKERS, NY**

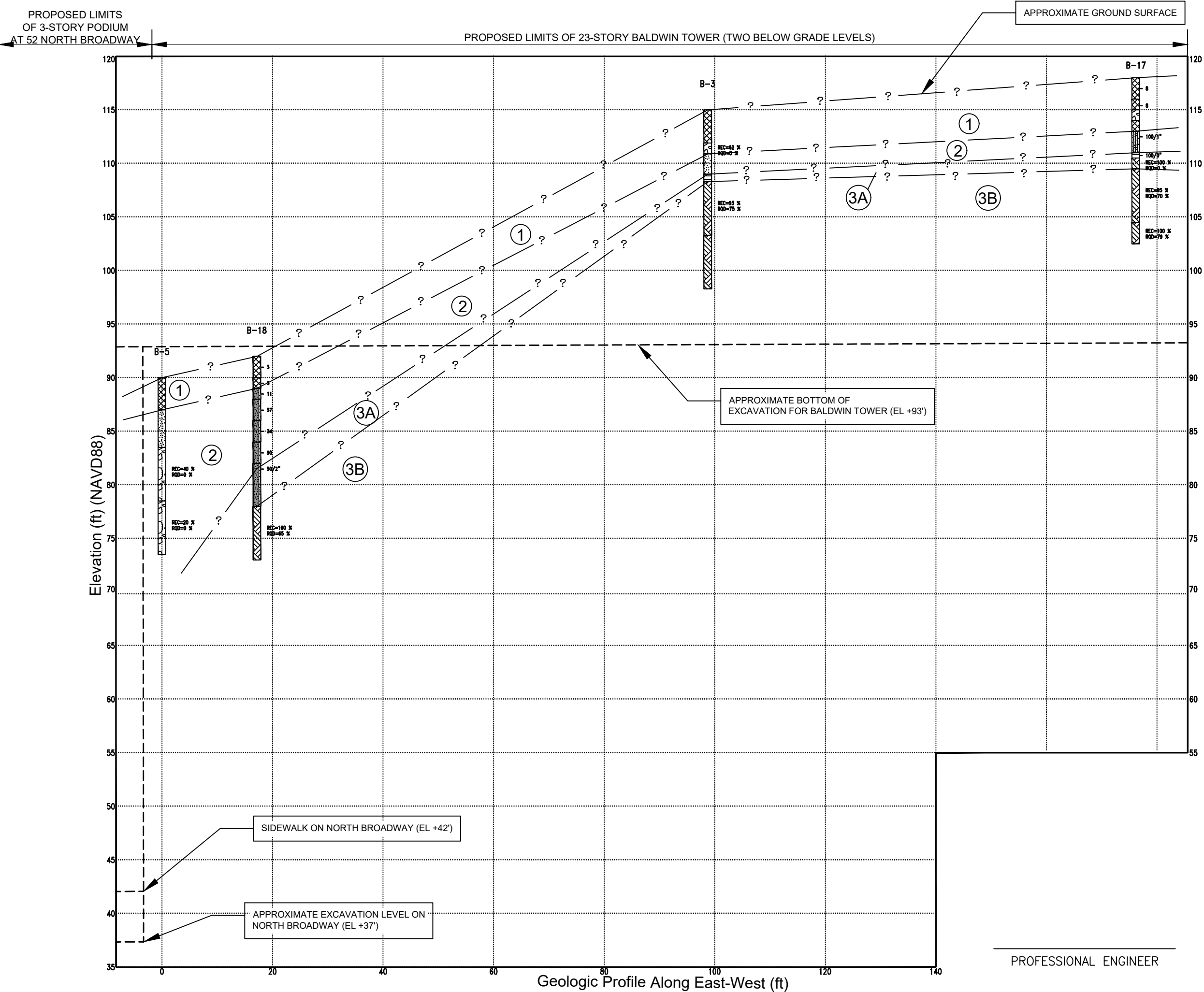
BLOCK: LOT: ZONE: MAP:

**BORING  
LOCATION PLAN**

UNAUTHORIZED ALTERATION OR ADDITION TO THIS PLAN IS A VIOLATION OF SECTION 7209 OF THE NYS EDUCATION LAW. COPIES OF THIS PLAN NOT BEARING THE PROFESSIONAL ENGINEER'S INKED SEAL OR EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY.

PROJECT #:	2019038
SCALE:	NTS
DATE:	4/22/2019
DRAWING NO:	B-101.01
SHEET NO:	1 OF 5

PROFESSIONAL ENGINEER



LEGEND

- Fill
- Boulders and Cobbles
- Silty Sand
- Poorly-graded Sand
- Weathered Bedrock
- Bedrock

No.	DESCRIPTION	DATE	BY

**GES**  
**GEOTECHNICAL ENGINEERING SERVICES, P.C.**  
6 BAYBERRY ROAD  
ELMSFORD, NEW YORK 10523  
PHONE 914-592-4616 FAX 914-592-0416

**NORTH BROADWAY ASSEMBLAGE YONKERS, NY**

BLOCK: LOT: ZONE: MAP:

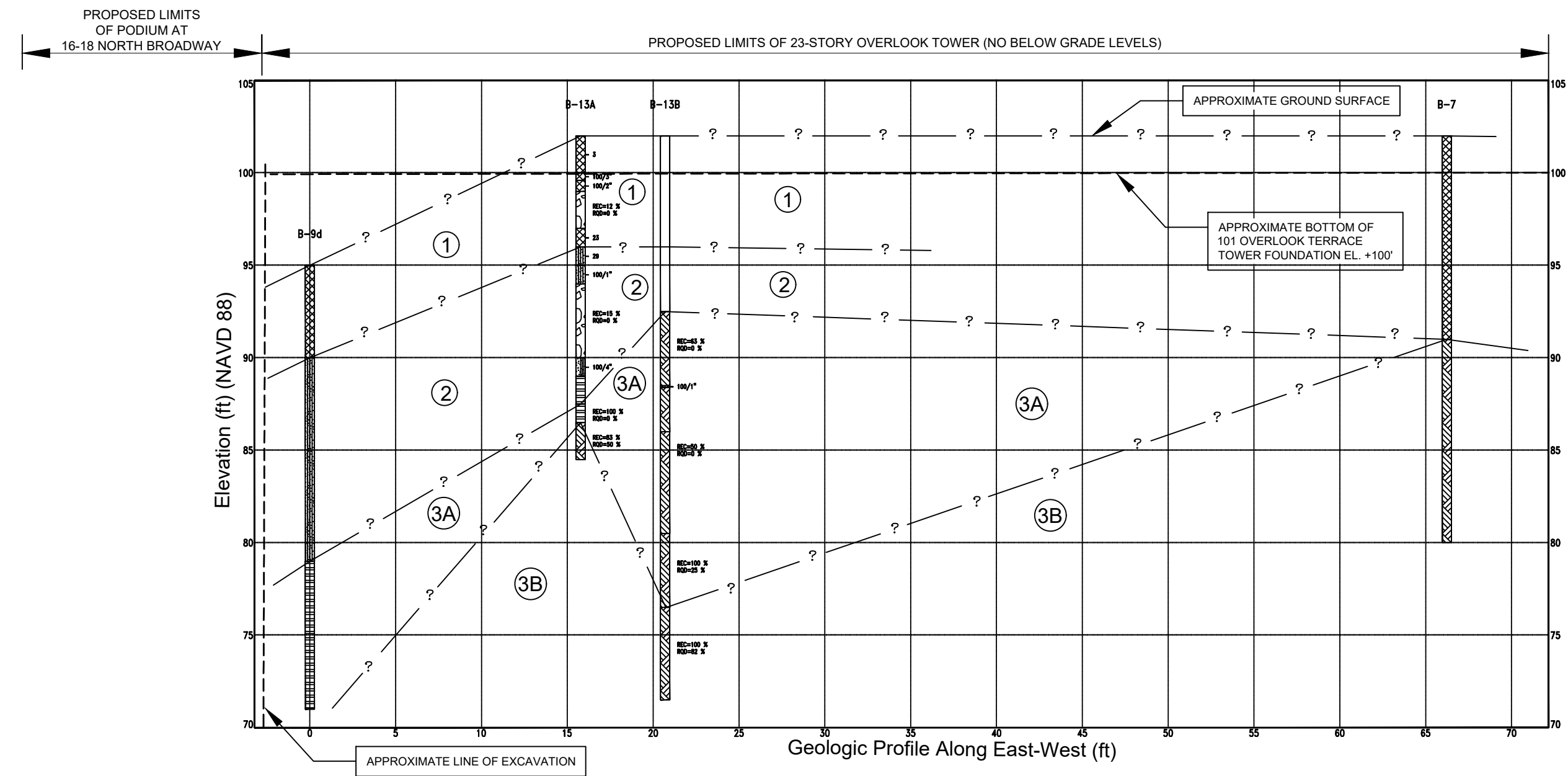
**GEOLOGIC CROSS SECTION A-A'**

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PROJECT #:	2019038
SCALE:	NTS
DATE:	11/23/2020
DRAWING NO:	B-102.00
FIGURE NO:	2 OF 5







LEGEND

- Fill
- Boulders and Cobbles
- Silty Sand
- Poorly-graded Sand with Silt
- Weathered Bedrock
- Bedrock

STRATUM LEGEND:

STRATUM 1 - FILL: BROWN, BLACK, AND GRAY MEDIUM TO FINE SAND, WITH VARYING AMOUNTS OF BOULDERS, SILT, GRAVEL, CONCRETE AND BRICK FRAGMENTS, AND WOOD, GLASS AND METAL FRAGMENTS.

STRATUM 2 - GLACIAL TILL: BROWN AND TAN SILTY MEDIUM TO FINE SAND, COBBLES, AND BOULDERS, WITH VARYING AMOUNTS OF GRAVEL, ROCK FRAGMENTS, MICA, AND ROOTS.

STRATUM 3A - DECOMPOSED ROCK: GRAY AND WHITE DECOMPOSED GNEISS FRAGMENTS, CLOSELY JOINTED TO BROKEN, WITH WEATHERED AND IRON-STAINED JOINTS.

STRATUM 3B - COMPETENT ROCK: GRAY AND WHITE HARD TO INTERMEDIATE GNEISS, SLIGHTLY WEATHERED, WITH WEATHERED AND IRON-STAINED JOINTS, TRACE WHITE QUARTZ AND PINK BIOTITE.

NOTE: STRATIFICATIONS REPRESENT INTERPRETATIONS BETWEEN BORINGS BY GES AND MAY NOT REPRESENT ACTUAL SUBSURFACE CONDITIONS.

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY

**GES**  
**GEOTECHNICAL ENGINEERING SERVICES, P.C.**  
6 BAYBERRY ROAD  
ELMSFORD, NEW YORK 10523  
PHONE 914-592-4616 FAX 914-592-0416

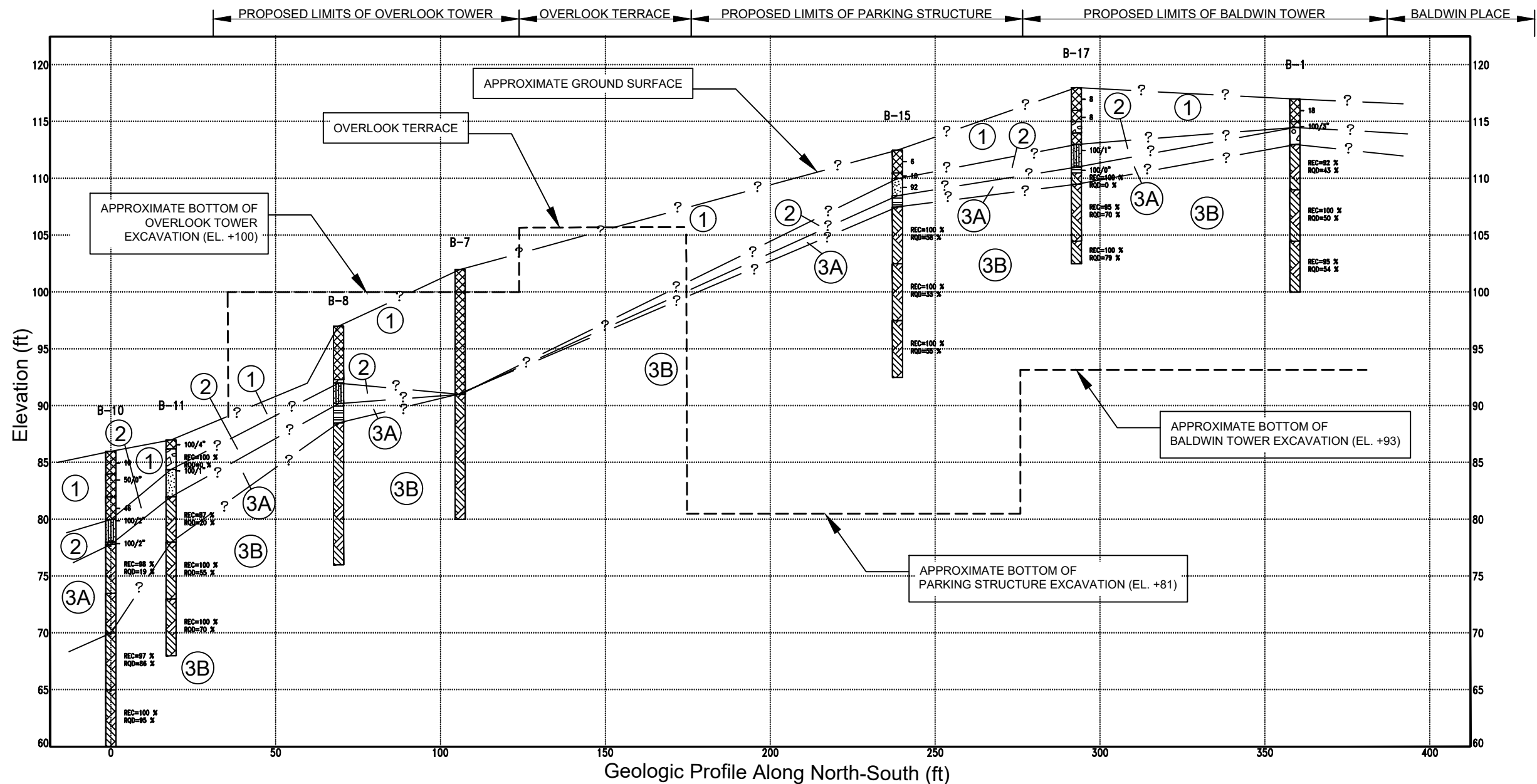
**NORTH BROADWAY ASSEMBLAGE YONKERS, NY**

BLOCK: LOT: ZONE: MAP:

**GEOLOGIC CROSS SECTION C-C'**

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PROJECT #:	2019038
SCALE:	NTS
DATE:	11/23/2020
DRAWING NO:	B-104.00
FIGURE NO:	4 OF 5



## LEGEND

- Fill
- Poorly-graded Gravel
- Silty Sand
- Poorly-graded Sand
- Boulders and Cobbles
- Weathered Bedrock
- Bedrock

## STRATUM LEGEND:

STRATUM 1 - FILL: BROWN, BLACK, AND GRAY MEDIUM TO FINE SAND, WITH VARYING AMOUNTS OF BOULDERS, SILT, GRAVEL, CONCRETE AND BRICK FRAGMENTS, AND WOOD, GLASS AND METAL FRAGMENTS.

STRATUM 2 - GLACIAL TILL: BROWN AND TAN SILTY MEDIUM TO FINE SAND, COBBLES, AND BOULDERS, WITH VARYING AMOUNTS OF GRAVEL, ROCK FRAGMENTS, MICA, AND ROOTS.

STRATUM 3A - DECOMPOSED ROCK: GRAY AND WHITE DECOMPOSED GNEISS FRAGMENTS, CLOSELY JOINTED TO BROKEN, WITH WEATHERED AND IRON-STAINED JOINTS.

STRATUM 3B - COMPETENT ROCK: GRAY AND WHITE HARD TO INTERMEDIATE GNEISS, SLIGHTLY WEATHERED, WITH WEATHERED AND IRON-STAINED JOINTS, TRACE WHITE QUARTZ AND PINK BIOTITE.

NOTE: STRATIFICATIONS REPRESENT INTERPRETATIONS BETWEEN BORINGS BY GES AND MAY NOT REPRESENT ACTUAL SUBSURFACE CONDITIONS.

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY

**GES**  
**GEOTECHNICAL ENGINEERING**  
**SERVICES, P.C.**

6 BAYBERRY ROAD  
ELMSFORD, NEW YORK 10523  
PHONE 914-592-4616 FAX 914-592-0416

**NORTH BROADWAY**  
**ASSEMBLAGE**  
**YONKERS, NY**

BLOCK: LOT: ZONE: MAP:

**GEOLOGIC**  
**CROSS SECTION D-D'**

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PROJECT #: 2019038

SCALE: NTS

DATE: 11/23/2020

DRAWING NO: B-105.00

FIGURE NO: 5 OF 5

# Log of Boring B-1

Sheet 1 of 1

Project: North Broadway Assemblage					Project Number: 2019038	
Location: 10 Baldwin Place, Yonkers, NY						
Date(s) Drilled	4/8/19 - 4/9/19	Inspector	Haykel Melaouhia, Ph.D.		Coordinates	North: East:
Drilling Agency	Municipal Testing Laboratory	Foreman	Mike Saltz / Anthony Kappel		Approximate Surface Elevation (feet) ± 117	
Drilling Equipment	Geoprobe Track Rig	Drilling Method	Mud Rotary		Completion Depth (feet)	17.0 Rock Depth (feet) 4.0
Casing Size/Type	4" Steel	Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s)	2" Split Spoon
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	140/30" (Auto)	Casing Hammer Wt/Drop	140/30" (Auto)	Size/Type of Core Barrel 2" NX (Double Tube)
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 2 Undist.: 0 Core (ft): 13	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	1.5	3 2 16 28					FILL: Brown and black medium to fine Sand, some Gravel, some Silt					S-1: Dry
	S-2	0.7	32 100/3"					FILL: Gray medium to fine Gravelly Sand					S-2: Dry. Cased to 4 ft
								NATURAL: Gray Decomposed Rock fragments (GP)					Decomposed rock at tip of spoon sampler Spoon refusal at 2.8 ft
5				C-1	92	43		Intermediate gray Slightly weathered Gneiss, closely jointed to broken, weathered and iron-stained joints					Losing water
								Same as Above					Barrel clogged at 8 ft
10				C-2	100	50							Losing water
								Same as Above					Barrel clogged at 12.5 ft
15				C-3	95	54							Losing water
													Barrel clogged at 17 ft
20								Boring completed to 17 ft below ground. Backfilled with soil cuttings upon completion					

GES P.C.

Printed: 11/18/20

# Log of Boring B-2

Sheet 1 of 2

Project: North Broadway Assemblage					Project Number: 2019038			
Location: 23 Overlook Terrace, Yonkers, NY								
Date(s) Drilled	4/9/19 - 4/10/19	Inspector	Haykel Melaouhia, PhD. / Mike Torino, P.E.		Coordinates	North: East:		
Drilling Agency	Municipal Testing Laboratory	Foreman	Anthony Kappel		Approximate Surface Elevation (feet)	± 98		
Drilling Equipment	Geoprobe Track Rig	Drilling Method	Mud Rotary		Completion Depth (feet)	30.0	Rock Depth (feet)	25.0
Casing Size/Type	3 and 4" Steel	Size/Type of Bit	2-7/8" and 3-7/8" Roller Bit		Sampler Type(s)	2" Split Spoon		
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	140/30" (Auto)	Casing Hammer Wt/Drop	140/30" (Auto)	Size/Type of Core Barrel	2" NX (Double Tube)	
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 7 Undist.: 0 Core (ft): 10			

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								~3" Concrete Slab					Cored through concrete slab
	S-1	1.0	4 6 7 9					FILL: Brown and dark gray coarse to fine Sand, some Gravel, Concrete fragments, trace Silt					S-1: Moist
	S-2	0.7	3 4 9 13					FILL: Brown medium to fine Sand, some Gravel, some Silt, trace Concrete fragments					S-2: Moist
5	S-3	0.9	7 6 9 9					FILL: Brown medium to fine Sand, some Gravel, Silt, trace Brick fragments, Roots					S-3: Moist
	S-4	0.9	9 13 9 8					FILL: Same as Above					S-4: Moist
	S-5	1.0	7 7 8 9					FILL: Gray and brown medium to fine Sand, some Gravel, Silt					S-5: Moist
10	S-6a	0.5	5 5					FILL: Same as Above					S-6: Moist. Cased to 15 ft with 4" casing
	S-6b	0.5	6 6					NATURAL: Brown Silty medium to fine Sand (SM)					
													Rig chatter from 13 to 15 ft
15	S-7	0.5	8 6 3 7					Brown Gravelly coarse to fine Sand (SP-SW)					
													Rig chatter from 17 to 18 ft
								Cored through Boulders					Cased to 18 ft with 4" casing
20													

GES P.C.

Printed: 11/18/20

# Log of Boring B-2

Sheet 2 of 2

<b>Project: North Broadway Assemblage</b>	<b>Project Number: 2019038</b>
<b>Location: 23 Overlook Terrace, Yonkers, NY</b>	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20				C-1	16	0							
								Presumed same as above					
25								Medium hard gray Gneiss, slight to moderate weathering at joints, trace Quartz and pink biotite intrusion					
				C-2	83	58							
30								Boring completed to 30 ft below ground. Backfilled with soil cuttings and patched with concrete upon completion					
35													
40													

Template: GENERAL GES LOGO Proj ID: NORTH BROADWAY ASSEMBLAGE.GPJ

**GES P.C.**

Printed: 11/18/20

# Log of Boring B-3

Sheet 1 of 1

Project: North Broadway Assemblage					Project Number: 2019038				
Location: 10 Baldwin Place, Yonkers, NY									
Date(s) Drilled	11/5/19 - 11/5/19	Inspector	Daniel George, P.E.		Coordinates	North: East:			
Drilling Agency	Big Apple Testing, Inc	Foreman	Rob		Approximate Surface Elevation (feet)	± 115			
Drilling Equipment	Acker Soil Scout Track	Drilling Method	Mud Rotary		Completion Depth (feet)	16.7	Rock Depth (feet)	6.7	
Casing Size/Type	4" Steel	Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s)	NA			
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	140/30" (Safety)			Size/Type of Core Barrel	2" NX (Double Tube)
Boring Location See Boring Location Plan (Figure 1)					No. of Samples			Dist.: 0 Undist.: 0 Core (ft): 11	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								FILL: Advanced Roller Bit to 3.1 ft without Sampling. Presumed Fill.					Fill at grade
													Drove Casing to 3 ft
				C-1	62	0		Gray Cobble					Hard drilling at 3 ft, losing water Cored through cobble from 3 to 4 ft
5								NATURAL: Advanced Roller bit to 6.7 ft without sampling					
													Possible Decomposed Rock, Hard drilling at 6 ft Losing water throughout coring Casing advanced to 7 ft
				C-2	93	75		Medium Hard to Hard, slightly weathered Gray Gneiss, Jointed with weathered and iron-stained joints					Tan wash while coring C-2 and C-3
10								Presumed Same as Above.					
				C-3									Core barrel jammed in hole after boring completion.
15													
								Boring Completed to 16.7 ft below ground. As of November 13, 2019 Big Apple has not removed casing and core barrel from boring.					
20													

GES P.C.

Printed: 11/18/20

# Log of Boring B-4

Sheet 1 of 1

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 2 Baldwin Place, Yonkers, NY</b>					
Date(s) Drilled	11/6/19 - 11/6/19		Inspector	Michael Torino, P.E.	
Drilling Agency	Big Apple Testing, Inc		Foreman	Rob	
Drilling Equipment	Acker Soil Scout Track		Drilling Method	Mud Rotary	
Casing Size/Type	4" Steel		Size/Type of Bit	3-7/8" Roller Bit	
Groundwater Level and Date Measured	NA NA		Hammer Wt/Drop	140/30" (Safety)	Casing Hammer Wt/Drop 140/30" (Safety)
Boring Location See Boring Location Plan (Figure 1)				No. of Samples	Dist.: 1 Undist.: 0 Core (ft): 9
				Approximate Surface Elevation (feet)	± 94
				Completion Depth (feet)	16.0
				Rock Depth (feet)	14.0
				Sampler Type(s)	2" Split Spoon
				Size/Type of Core Barrel	2" NX (Double Tube)

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								FILL: Advanced roller bit to 4.6 ft without sampling. Presumed Fill.					Fill at grade
													Drove casing to 3 ft Tan wash while drilling
5	S-1	0.1	8 7					FILL: Black Silty medium to fine Sand, trace metal fragments					Hard drilling at 4.5 ft
								NATURAL: Advanced roller bit to 7 ft without sampling					Advanced casing to 5 ft Losing water while drilling from 4 to 7 ft
								Gray cobbles and boulders					Hard drilling at 7 ft Losing water throughout coring C-1, C-2, C-3
10				C-1	37	0							
								Gray cobbles and boulders					
				C-2	50	0							
15				C-3	100	79		Medium Hard, slightly weathered Gray Gneiss. Moderately weathered at joints					Barrel clogged at 14 ft. Removed barrel and then resumed coring from 14 to 16 ft.
								Boring Completed to 16 ft below ground. Backfilled with soil cuttings upon completion					
20													

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# Log of Boring B-5

Sheet 1 of 1

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 2 Baldwin Place, Yonkers, NY</b>					
Date(s) Drilled <b>11/7/19 - 11/7/19</b>		Inspector <b>Michael Torino, P.E.</b>		Coordinates <b>North: East:</b>	
Drilling Agency <b>Big Apple Testing, Inc</b>		Foreman <b>Rob</b>		Approximate Surface Elevation (feet) <b>± 90</b>	
Drilling Equipment <b>Acker Soil Scout Track</b>		Drilling Method <b>Mud Rotary</b>		Completion Depth (feet) <b>16.5</b>	Rock Depth (feet) <b>NA</b>
Casing Size/Type <b>4" Steel</b>		Size/Type of Bit <b>3-7/8" Roller Bit</b>		Sampler Type(s) <b>NA</b>	
Groundwater Level and Date Measured <b>NA</b>		Hammer Wt/Drop <b>NA</b>	Casing Hammer Wt/Drop <b>140/30" (Safety)</b>	Size/Type of Core Barrel <b>2" NX (Double Tube)</b>	
Boring Location <b>See Boring Location Plan (Figure 1)</b>				No. of Samples <b>Dist.: 0 Undist.: 0 Core (ft): 10</b>	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced roller bit to 6.5 ft without sampling. Presumed Fill from 0 to 3 ft					Fill at grade
								NATURAL					Tan return from 3 to 6.5 ft
5													Drove casing to 4 ft
				C-1	40	0		Gray cobbles and boulders					Hard drilling at 6.5 ft
10													Cored 6.5 to 11.5. Losing water throughout coring
				C-2	20	0		Gray cobbles and boulders					Cored 11.5 to 16.5. Losing water throughout coring
15													
								Big Apple refused to core a third run in this location due to water loss. Boring completed to 16.5 ft and backfilled with soil cuttings upon completion					
20													

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# Log of Boring B-6a

Sheet 1 of 2

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 23 Overlook Terrace, Yonkers, NY</b>					
Date(s) Drilled	11/12/19 - 11/12/19	Inspector	Michael Torino, P.E. / Aflaaz Saleem		Coordinates North: East:
Drilling Agency	Siteworks, Inc	Foreman	Hector		Approximate Surface Elevation (feet) ± 100
Drilling Equipment	Furukawa Track Rig	Drilling Method	Air Hammer		Completion Depth (feet) 24.0 Rock Depth (feet) NA
Casing Size/Type	NA	Size/Type of Bit	3-7/8" Rock Hammer		Sampler Type(s) NA
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	NA NA
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 0 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced with air hammer directly to top of bedrock. Possible Fill from 0 to 7 ft					Fill at grade. Dark brown return
5													Soil classifications noted based on wash from top of borehole
								NATURAL: Tan Silty fine Sand (SM)					Tan return
10								Gray Cobble					Gray return and rig chatter from 9 to 10 ft
								Tan Silty fine Sand (SM)					Tan return
15													
20													Hole collapsing at 18 ft. 3" PVC added to top of boulder and attempted to continue drilling.

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# Log of Boring B-6a

Sheet 2 of 2

<b>Project:</b> North Broadway Assemblage	<b>Project Number:</b> 2019038
<b>Location:</b> 23 Overlook Terrace, Yonkers, NY	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20													
25								Boring collapsing at 24 feet. Bedrock not encountered. Backfilled with soil cuttings upon completion					
30													
35													
40													

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# Log of Boring B-6b

Sheet 1 of 2

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 23 Overlook Terrace, Yonkers, NY</b>					
Date(s) Drilled	11/12/19 - 11/12/19	Inspector	Michael Torino, P.E. / Aflaaz Saleem		Coordinates North: East:
Drilling Agency	Siteworks, Inc	Foreman	Hector		Approximate Surface Elevation (feet) ± 100
Drilling Equipment	Furukawa Track Rig	Drilling Method	Air Hammer		Completion Depth (feet) 24.0 Rock Depth (feet) NA
Casing Size/Type	NA	Size/Type of Bit	3-7/8" Rock Hammer		Sampler Type(s) NA
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	NA
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 0 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced with air hammer directly to top of bedrock. Possible Fill from 0 to 6.5 ft					Fill at grade. Dark brown return
5													Soil classifications noted based on wash from top of borehole
								Gray Cobble					Gray return and rig chatter from 6.5 to 7 ft
								NATURAL: Tan Silty medium to fine Sand (SM)					Tan return
10													
15													
20													

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# Log of Boring B-6b

Sheet 2 of 2

<b>Project:</b> North Broadway Assemblage	<b>Project Number:</b> 2019038
<b>Location:</b> 23 Overlook Terrace, Yonkers, NY	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20													
25								Boring collapsing at 24 feet. Bedrock not encountered. Backfilled with soil cuttings upon completion					
30													
35													
40													

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# Log of Boring B-6c

Sheet 1 of 2

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 23 Overlook Terrace, Yonkers, NY</b>					
Date(s) Drilled	11/12/19 - 11/12/19	Inspector	Michael Torino, P.E. / Aflaaz Saleem		Coordinates North: East:
Drilling Agency	Siteworks, Inc	Foreman	Hector		Approximate Surface Elevation (feet) ± 100
Drilling Equipment	Furukawa Track Rig	Drilling Method	Air Hammer		Completion Depth (feet) 24.0 Rock Depth (feet) NA
Casing Size/Type	NA	Size/Type of Bit	3-7/8" Rock Hammer		Sampler Type(s) NA
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	NA
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 0 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced with air hammer directly to top of bedrock. Possible Fill from 0 to 6 ft					Fill at grade. Dark brown return
5													Soil classifications noted based on wash from top of borehole
								NATURAL: Tan Silty fine Sand (SM)					Tan return
10													
15								Gray Cobble					Gray return and chattering from 16 to 17 ft
								Tan Silty fine Sand (SM)					Tan return
20													

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# Log of Boring B-6c

Sheet 2 of 2

<b>Project:</b> North Broadway Assemblage	<b>Project Number:</b> 2019038
<b>Location:</b> 23 Overlook Terrace, Yonkers, NY	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20													
25								Boring collapsing at 24 feet. Bedrock not encountered. Backfilled with soil cuttings upon completion					
30													
35													
40													

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# Log of Boring B-7

Sheet 1 of 2

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 14 Overlook Terrace, Yonkers, NY</b>					
Date(s) Drilled	11/12/19 - 11/13/19	Inspector	Michael Torino, P.E. / Aflaaz Saleem		Coordinates North: East:
Drilling Agency	Siteworks, Inc	Foreman	Hector		Approximate Surface Elevation (feet) ± 102
Drilling Equipment	Furukawa Track Rig	Drilling Method	Air Hammer		Completion Depth (feet) 22.0 Rock Depth (feet) 11.0
Casing Size/Type	NA	Size/Type of Bit	3-7/8" Rock Hammer		Sampler Type(s) NA
Groundwater Level and Date Measured	NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	NA
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 0 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced with air hammer directly to top of bedrock. FILL: Dark brown Sand					Dark brown return. Possible Fill
5													Soil classifications noted based on wash from top of borehole
10													
15								Possible Gneiss from 11 to 22 ft. Attempted to video borehole with HD down-the-hole camera, but unable to see					Gray return and Hard drilling from 11 to 22 ft 3" PVC added to boring to hold open
20													

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# Log of Boring B-7

Sheet 2 of 2

<b>Project:</b> North Broadway Assemblage	<b>Project Number:</b> 2019038
<b>Location:</b> 14 Overlook Terrace, Yonkers, NY	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20													
25								Boring Completed to 22 ft below ground. Backfilled with soil cuttings upon completion					
30													
35													
40													

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# Log of Boring B-8

Sheet 1 of 2

Project: North Broadway Assemblage					Project Number: 2019038				
Location: 14 Overlook Terrace, Yonkers, NY									
Date(s) Drilled	11/13/19 - 11/13/19	Inspector	Michael Torino, P.E. / Aflaaz Saleem			Coordinates	North: East:		
Drilling Agency	Siteworks, Inc	Foreman	Hector			Approximate Surface Elevation (feet)	± 97		
Drilling Equipment	Furukawa Track Rig	Drilling Method	Air Hammer			Completion Depth (feet)	21.0	Rock Depth (feet)	6.8
Casing Size/Type	NA	Size/Type of Bit	3-7/8" Rock Hammer			Sampler Type(s)	NA		
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	NA			Size/Type of Core Barrel	NA
Boring Location See Boring Location Plan (Figure 1)						No. of Samples Dist.: 0 Undist.: 0 Core (ft): 0			

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced with air hammer directly to top of bedrock. FILL: Dark brown Sand					Dark brown return. Presumed Fill
5								Gray Cobble NATURAL: Tan Silty medium to fine Sand (SM)					Tan return from 5 to 8 ft
								Heavily fractured Gray Gneiss					
10								Gray Gneiss, few fractures					Gray return and Hard drilling from 8 to 21 ft
15													Used HD Down the hole camera to video boring to a depth of 13.5 ft. Heavily fractured mica schist was seen from 6.8 to 8.5 ft and competent mica schist from 8.5 to 13.5 ft
20													Groundwater observed on video at 13.5 ft. Unable to see below water.

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## Log of Boring B-8

Sheet 2 of 2

Project: North Broadway Assemblage	Project Number: 2019038
Location: 14 Overlook Terrace, Yonkers, NY	

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# Log of Boring B-9a

Sheet 1 of 2

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 14 Overlook Terrace, Yonkers, NY</b>					
Date(s) Drilled	11/13/19 - 11/13/19	Inspector	Michael Torino, P.E. / Aflaaz Saleem		Coordinates North: East:
Drilling Agency	Siteworks, Inc	Foreman	Hector		Approximate Surface Elevation (feet) ± 94
Drilling Equipment	Furukawa Track Rig	Drilling Method	Air Hammer		Completion Depth (feet) 24.0 Rock Depth (feet) NA
Casing Size/Type	NA	Size/Type of Bit	3-7/8" Rock Hammer		Sampler Type(s) NA
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	NA
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 0 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced with air hammer directly to top of bedrock. FILL: Dark brown Sand					Dark brown return. Presumed Fill
5								FILL: Gray boulders and cobbles					Soil classifications noted based on wash from top of borehole
10								NATURAL: Tan Silty medium to fine Sand (SM)					Gray return and rig chatter from 5 to 12 ft
15													Tan return
20													

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# Log of Boring B-9a

Sheet 2 of 2

<b>Project:</b> North Broadway Assemblage	<b>Project Number:</b> 2019038
<b>Location:</b> 14 Overlook Terrace, Yonkers, NY	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20													
25								Boring collapsing at 24 feet. Bedrock not encountered. Backfilled with soil cuttings upon completion					
30													
35													
40													

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# Log of Boring B-9b

Sheet 1 of 2

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 14 Overlook Terrace, Yonkers, NY</b>					
Date(s) Drilled	11/13/19 - 11/13/19	Inspector	Michael Torino, P.E. / Aflaaz Saleem		Coordinates <b>North:</b>
Drilling Agency	Siteworks, Inc	Foreman	Hector		<b>East:</b>
Drilling Equipment	Furukawa Track Rig	Drilling Method	Air Hammer		Approximate Surface Elevation (feet) <b>± 94</b>
Casing Size/Type	NA	Size/Type of Bit	3-7/8" Rock Hammer		Completion Depth (feet) <b>24.0</b> Rock Depth (feet) <b>NA</b>
Groundwater Level and Date Measured	NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	NA
Boring Location <b>See Boring Location Plan (Figure 1)</b>					No. of Samples <b>Dist.: 0    Undist.: 0    Core (ft): 0</b>

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced with air hammer directly to top of bedrock. FILL: Dark brown Sand					Dark brown return. Presumed Fill
5								FILL: Gray boulders and cobbles					Soil classifications noted based on wash from top of borehole
10								NATURAL: Tan Silty medium to fine Sand (SM)					Gray return and rig chatter from 5 to 12 ft
15													Tan return
20													

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# Log of Boring B-9b

Sheet 2 of 2

<b>Project:</b> North Broadway Assemblage	<b>Project Number:</b> 2019038
<b>Location:</b> 14 Overlook Terrace, Yonkers, NY	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20													
25								Boring collapsing at 24 feet. Bedrock not encountered. Backfilled with Soil cuttings upon completion.					
30													
35													
40													

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# Log of Boring B-9c

Sheet 1 of 1

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 14 Overlook Terrace, Yonkers, NY</b>					
Date(s) Drilled	11/13/19 - 11/13/19	Inspector	Michael Torino, P.E. / Aflaaz Saleem		Coordinates North: East:
Drilling Agency	Siteworks, Inc	Foreman	Hector		Approximate Surface Elevation (feet) ± 95
Drilling Equipment	Furukawa Track Rig	Drilling Method	Air Hammer		Completion Depth (feet) 15.0 Rock Depth (feet) NA
Casing Size/Type	NA	Size/Type of Bit	3-7/8" Rock Hammer		Sampler Type(s) NA
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	NA NA
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 0 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced with air hammer directly to top of bedrock. FILL: Dark brown Sand					Dark brown return. Presumed Fill
5								FILL: Gray boulders and cobbles					Soil classifications noted based on wash from top of borehole
10								NATURAL: Tan Silty medium to fine Sand (SM)					Tan return
15								Boring collapsing at 15 feet. Bedrock not encountered. Backfilled with soil cuttings upon completion					
20													

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# Log of Boring B-9d

Sheet 1 of 2

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 14 Overlook Terrace, Yonkers, NY</b>					
Date(s) Drilled	11/13/19 - 11/13/19	Inspector	Michael Torino, P.E. / Aflaaz Saleem		Coordinates North: East:
Drilling Agency	Siteworks, Inc	Foreman	Hector		Approximate Surface Elevation (feet) ± 95
Drilling Equipment	Furukawa Track Rig	Drilling Method	Air Hammer		Completion Depth (feet) 24.0 Rock Depth (feet) NA
Casing Size/Type	NA	Size/Type of Bit	3-7/8" Rock Hammer		Sampler Type(s) NA
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	NA	Casing Hammer Wt/Drop	NA NA
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 0 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Advanced with air hammer directly to top of bedrock. FILL: Dark brown Sand					Dark brown return
5								NATURAL: Tan Silty medium to fine Sand (SM)					Tan return
10													
15								Possible decomposed bedrock					Gray return from 24 ft
20													

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# Log of Boring B-9d

Sheet 2 of 2

<b>Project:</b> North Broadway Assemblage	<b>Project Number:</b> 2019038
<b>Location:</b> 14 Overlook Terrace, Yonkers, NY	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20													
25								Boring Completed to 24 ft. Unable to video due to hole collapse to 13.3 ft. Backfilled with soil cuttings upon completion					Hole collapsing while drilling at 24 ft
30													
35													
40													

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# Log of Boring B-10

Sheet 1 of 2

Project: North Broadway Assemblage					Project Number: 2019038						
Location: 14 North Broadway, Yonkers, NY											
Date(s) Drilled	10/26/20 - 10/27/20		Inspector	Michael Torino, P.E.		Coordinates	North: East:				
Drilling Agency	Municipal Testing Laboratory		Foreman	Karthik Gopidi		Approximate Surface Elevation (feet)	± 86				
Drilling Equipment	Portable Gas Powered Rig		Drilling Method	Mud Rotary		Completion Depth (feet)	26.0	Rock Depth (feet)	8.2		
Casing Size/Type	4" Steel		Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s)	2" Split Spoon				
Groundwater Level and Date Measured	NA NA		Hammer Wt/Drop	140/30" (Donut)	Casing Hammer Wt/Drop	140/30" (Donut)			Size/Type of Core Barrel	2" NX (Double Tube)	
Boring Location See Boring Location Plan (Figure 1)						No. of Samples		Dist.: 5		Undist.: 0	Core (ft): 15

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	1.9	3 4 6 8					FILL: Black and brown medium to fine Sand, some Gravel, Silt, trace Brick fragments					S-1: Dry. Cased to 2 ft
	S-2	0.5	12 50/0"					FILL: Black and brown medium to fine Sand, some Gravel, Silt, trace Brick and concrete fragments					S-2: Dry Spoon refusal at 2.5 ft
5	S-3	0.8	15 19 27 22					FILL: Tan coarse to fine Sand, trace Brick fragments, Silt					S-3: Dry
	S-4	0.2	100/2"					NATURAL: Brown coarse to fine Sand, some Silt, trace Gravel (SM)					S-4: Moist Spoon refusal at 6.2 ft
	S-5	0.2	100/2"					Brown coarse to fine Sand, trace Silt (SP) Dark gray and white Gneiss, trace Quartz, closely jointed to broken, weathered joints					S-5: Moist Spoon refusal at 8.2 ft
10				C-1	98	19							
								Presumed Same as Above					Core Barrel clogged at 12.5 ft
													Drilled through with roller bit to 16 ft
15													
								Gray and white medium hard to broken Gneiss, trace Quartz, Mica, Pink Biotite, slightly weathered joints					
				C-2	97	86							
20													

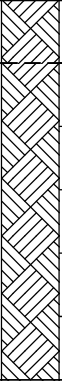
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# Log of Boring B-10

Sheet 2 of 2

<b>Project: North Broadway Assemblage</b>	<b>Project Number: 2019038</b>
<b>Location: 14 North Broadway, Yonkers, NY</b>	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20								Gray and white, hard, slightly weathered Gneiss, moderately jointed, trace Quartz, Pink Biotite					
				C-3	100	95							
25													
30								Boring completed to 26 ft below ground. Boring backfilled with soil cuttings upon completion.					
35													
40													

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# Log of Boring B-11

Sheet 1 of 1

Project: North Broadway Assemblage					Project Number: 2019038					
Location: 14 North Broadway, Yonkers, NY										
Date(s) Drilled	10/27/20 - 10/28/20		Inspector	Michael Torino, P.E.		Coordinates	North: East:			
Drilling Agency	Municipal Testing Laboratory		Foreman	Karthik Gopidi		Approximate Surface Elevation (feet)	± 87			
Drilling Equipment	Portable Gas Powered Rig		Drilling Method	Mud Rotary		Completion Depth (feet)	19.0	Rock Depth (feet)	5.0	
Casing Size/Type	4" Steel		Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s)	2" Split Spoon			
Groundwater Level and Date Measured	NA NA		Hammer Wt/Drop	140/30" (Donut)	Casing Hammer Wt/Drop	140/30" (Donut)			Size/Type of Core Barrel	2" NX (Double Tube)
Boring Location See Boring Location Plan (Figure 1)						No. of Samples Dist.: 3 Undist.: 0			Core (ft): 16	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0	S-1	0.5	1 100/4"					FILL: Black Silty medium to fine Sand, trace roots and glass fragments					S-1: Dry. Cased to 2 ft
				C-1	100	0		Cored through Boulder					Spoon refusal at 0.8 ft
	S-2	0.1	100/1"					NATURAL: Gray coarse to fine Sand, trace Gravel (SP)					S-2: Wet. Spoon refusal at 2.6 ft Possible decomposed bedrock at 2.5 ft
5				C-2	87	20		Dark gray and white, medium hard to weathered, Gneiss, trace Quartz, Mica Intrusion, jointed to broken, weathered joints					Spoon refusal at 5 ft. S-3: No Recovery or penetration
10				C-3	100	55		Dark gray and white medium hard to intermediate Gneiss, trace Quartz, pink Biotite, jointed to broken weathered and iron-stained joints					Core barrel clogged at 9 ft
15				C-4	100	70		Dark gray and white hard to medium hard Gneiss, trace Quartz, pink Biotite, closely jointed to moderately jointed.					
20								Boring completed to 19 ft below ground. Backfilled with soil cuttings upon completion.					

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## Sheet 1 of 2

Project: North Broadway Assemblage					Project Number: 2019038		
Location: 14 Overlook Terrace, Yonkers, NY							
Date(s) Drilled	10/28/20 - 10/29/20		Inspector	Michael Torino, P.E.		Coordinates North: East:	
Drilling Agency	Municipal Testing Laboratory		Foreman	Karthik Gopidi		Approximate Surface Elevation (feet) ± 92	
Drilling Equipment	Portable Gas Powered Rig		Drilling Method	Mud Rotary		Completion Depth (feet) 26.0	Rock Depth (feet) 19.5
Casing Size/Type	4" Steel		Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s) 2" Split Spoon	
Groundwater Level and Date Measured	NA NA		Hammer Wt/Drop	140/30" (Donut)	Casing Hammer Wt/Drop	140/30" (Donut)	
Boring Location See Boring Location Plan (Figure 1)						No. of Samples Dist.: 5 Undist.: 0 Core (ft): 14	

[illegible]

# Log of Boring B-12

Sheet 2 of 2

<b>Project: North Broadway Assemblage</b>	<b>Project Number: 2019038</b>
<b>Location: 14 Overlook Terrace, Yonkers, NY</b>	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20													
								Dark gray and white medium hard to intermediate Gneiss, trace Quartz, pink Biotite, moderately jointed to jointed, weathered and iron-stained joints					
				C-4	97	62							
25													
								Boring completed to 26 ft below ground. Backfilled with soil cuttings upon completion.					
30													
35													
40													

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# Log of Boring B-13A

Sheet 1 of 1

Project: North Broadway Assemblage					Project Number: 2019038		
Location: 14 Overlook Terrace, Yonkers, NY							
Date(s) Drilled	10/29/20 - 10/30/20		Inspector	Michael Torino, P.E.		Coordinates North: East:	
Drilling Agency	Municipal Testing Laboratory		Foreman	Karthik Gopidi		Approximate Surface Elevation (feet) ± 102	
Drilling Equipment	Portable Gas Powered Rig		Drilling Method	Mud Rotary		Completion Depth (feet) 17.5	Rock Depth (feet) 14.5
Casing Size/Type	4" Steel		Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s)	2" Split Spoon
Groundwater Level and Date Measured	NA NA		Hammer Wt/Drop 140/30" (Donut)	Casing Hammer Wt/Drop 140/30" (Donut)	Size/Type of Core Barrel 2" NX (Double Tube)		
Boring Location See Boring Location Plan (Figure 1)						No. of Samples Dist.: 5 Undist.: 0 Core (ft): 9	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	0.3	2 2 1 2					FILL: Brown Silty medium to fine Sand, some Gravel, trace brick and concrete fragments					S-1: Dry. Cased to 2 ft
	S-2a	0.1	100/3"					FILL: Same as Above					S-2: Dry. Split Spoon refusal at 2.4 ft
	S-2b	0.1	100/2"					FILL: Gray and black Silty medium to fine Sand Cored through boulders					
				C-1	12	0							
5													
	S-3a	1.0	29 23					FILL: Brown Gravelly medium to fine Sand, some Silt					S-3: Wet. Cased to 7 ft
	S-3b	1.0	30 29					NATURAL: Red brown Silty medium to fine Sand, trace Gravel (SM)					
	S-4	0.0	100/1"					No Recovery. Presumed Same as Above (SM)					S-4: Empty Spoon. Split spoon refusal at 7 ft.
								Cored through Boulders					
				C-2	15	0							
10													
	S-5	0.2	10 100/4"					Brown coarse to fine Sand, some Gravel, trace Silt. (SP-SM)					S-5: Moist Spoon refusal at 12.8 ft. Possible decomposed rock at 12 ft
				C-3	100	0		Gray and white weathered Gneiss, trace Quartz, broken					
				C-4	83	50		Light gray and white medium hard Gneiss, trace Quartz, closely jointed, slightly weathered joints					Core barrel clogged at 15.5 ft Core barrel stuck at 17.5 ft
								Boring completed at 17.5 ft. Backfilled with soil cuttings upon completion. Offset 5 ft south to B-13B					
20													

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# Log of Boring B-13B

Sheet 1 of 2

<b>Project: North Broadway Assemblage</b>				<b>Project Number: 2019038</b>	
<b>Location: 14 Overlook Terrace, Yonkers, NY</b>					
Date(s) Drilled	11/2/20 - 11/3/20	Inspector	Michael Torino, P.E.		Coordinates <b>North:</b>
Drilling Agency	Municipal Testing Laboratory	Foreman	Karthik Gopidi		East:
Drilling Equipment	Portable Gas Powered Rig	Drilling Method	Mud Rotary		Approximate Surface Elevation (feet) <b>± 102</b>
Casing Size/Type	4" Steel	Size/Type of Bit	3-7/8" Roller Bit		Completion Depth (feet) <b>30.5</b> Rock Depth (feet) <b>9.5</b>
Groundwater Level and Date Measured	NA	Hammer Wt/Drop	140/30" (Donut)	Casing Hammer Wt/Drop	140/30" (Donut)
Boring Location See Boring Location Plan (Figure 1)					Sampler Type(s) <b>2" Split Spoon</b>
					Size/Type of Core Barrel <b>2" NX (Double Tube)</b>
					No. of Samples <b>Dist.: 1 Undist.: 0 Core (ft): 15</b>

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Drilled with roller bit to 9.5 ft without sampling. For geotechnical data from 0 to 9 ft, please refer to Boring B-13A.					
5													
10				C-1	63	0		NATURAL: Weathered white and gray Gneiss, closely jointed to broken, weathered joints					
15	S-1	0.1	100/1"					Heavily weathered dark gray medium to fine Sand (SM)					Core barrel clogged at 13.6 ft S-1: Wet. Spoon refusal at 13.6 ft. Decomposed rock fragments Advanced with 3-7/8" roller bit to 16 ft
				C-2	50	0		Heavily weathered white and gray Gneiss fragments, broken					
20													Core barrel clogged at 18 ft  Advanced with 3-7/8" roller bit to 21.5 ft

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
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# Log of Boring B-13B

Sheet 2 of 2

<b>Project: North Broadway Assemblage</b>	<b>Project Number: 2019038</b>
<b>Location: 14 Overlook Terrace, Yonkers, NY</b>	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20								White and gray intermediate to weathered Gneiss, trace Quartz, closely jointed to jointed, heavily weathered joints					
				C-3	100	25							
25								White and gray medium hard Gneiss, trace Quartz, pink Biotite, jointed to moderately jointed, slightly weathered joints					Cased to 25 ft with 3" diameter casing
				C-4	100	82							
30								Boring completed to 30.5 ft below ground. Backfilled with soil cuttings upon completion.					
35													
40													

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# Log of Boring B-14

Sheet 1 of 2

Project: North Broadway Assemblage					Project Number: 2019038			
Location: 7 Overlook Terrace, Yonkers, NY								
Date(s) Drilled	11/3/20 - 11/4/20	Inspector	Michael Torino, P.E.		Coordinates	North: East:		
Drilling Agency	Municipal Testing Laboratory	Foreman	Karthik Gopidi		Approximate Surface Elevation (feet)	± 112		
Drilling Equipment	Portable Gas Powered Rig	Drilling Method	Mud Rotary		Completion Depth (feet)	27.0	Rock Depth (feet)	17.0
Casing Size/Type	4" Steel	Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s)	2" Split Spoon		
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	140/30" (Donut)	Casing Hammer Wt/Drop	140/30" (Donut)	Size/Type of Core Barrel	2" NX (Double Tube)	
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 7    Undist.: 0    Core (ft): 11			

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0	S-1	0.8	1 WoH/6"					FILL: Brown and black Clayey medium to fine Sand, trace wood fragments					S-1: Dry. Cased to 2 ft
	S-2a	1.0	4 3 6					FILL: Same as Above					S-2: Dry. Cased to 4 ft
	S-2b	0.5	20					NATURAL: Brown Silty medium to fine Sand, trace brick and concrete fragments (SM)					
5	S-3	1.0	23 100/2"					Brown Silty medium to fine Sand, some Gravel, trace rock fragments (SM)					S-3: Dry. Spoon refusal at 5.2 ft
	S-4	0.0	100/1"					No Recovery. Presumed same as Above (SM)					S-4: No Recovery. Spoon refusal at 6.1 ft
				C-1	60	0		Cored through Boulders					
	S-5	1.0	5 12 30 100/2"					Brown Silty medium to fine Sand, trace Gravel, Mica (SM)					S-5: Dry. Spoon refusal at 9.7 ft
10	S-6	0.5	40 100/1"					Same as Above (SM)					S-6: Dry. Heavily decomposed rock at tip of spoon sample Spoon refusal at 10.6 ft
15	S-7	0.1	100/2"					Black and gray Silty medium to fine Sand and rock fragments (SM - GM)					S-7: Moist. Heavily decomposed rock at tip of spoon sample Spoon refusal at 15.2 ft
								Dark gray weathered Gneiss, broken					
				C-2	86	0							
20													

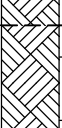
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# Log of Boring B-14

Sheet 2 of 2

<b>Project: North Broadway Assemblage</b>	<b>Project Number: 2019038</b>
<b>Location: 7 Overlook Terrace, Yonkers, NY</b>	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20				C-3	93	18		Dark gray and white weathered Gneiss, trace Quartz, broken to closely jointed					
25				C-4	100	40		Gray and white medium hard Gneiss, trace Quartz, pink Biotite, jointed to closely jointed, weathered joints					
30								Boring completed to 27 ft below ground. Backfilled with soil cuttings upon completion.					
35													
40													

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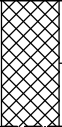



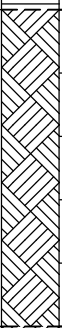
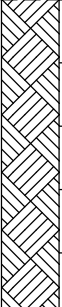
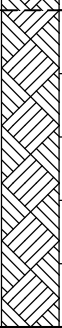
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# Log of Boring B-15

Sheet 1 of 2

Project: North Broadway Assemblage					Project Number: 2019038			
Location: 15 Overlook Terrace, Yonkers, NY								
Date(s) Drilled	11/6/20 - 11/6/20	Inspector	Michael Torino, P.E.		Coordinates	North: East:		
Drilling Agency	Municipal Testing Laboratory	Foreman	Karthik Gopidi		Approximate Surface Elevation (feet)	± 112.5		
Drilling Equipment	Portable Gas Powered Rig	Drilling Method	Mud Rotary		Completion Depth (feet)	20.0	Rock Depth (feet)	5.0
Casing Size/Type	4" Steel	Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s)	2" Split Spoon		
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	140/30" (Donut)	Casing Hammer Wt/Drop	140/30" (Donut)	Size/Type of Core Barrel	2" NX (Double Tube)	
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 3    Undist.: 0    Core (ft): 15			

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	0.6	3 3 3 2					FILL: Brown and black Silty medium to fine Sand, some Gravel, trace roots, concrete fragments					S-1: Dry. Cased to 2 ft
	S-2a	0.5	10					FILL: Same as Above					S-2: Dry. Cased to 4 ft
	S-2b	1.0	40 54 38					NATURAL: Brown and white coarse to fine Sand, trace Gravel, Silt (SP)					
								Possible Heavily decomposed rock					
5								Dark gray and white medium hard to hard Gneiss, trace Quartz and pink Biotite, jointed to closely jointed, slightly weathered joints.					S-3: Spoon attempted at 5 ft. Bouncing, no penetration
				C-1	100	58							
10								Same as Above					Core barrel clogged at 11 ft
				C-2	100	33							
15								Same as Above					
				C-3	100	55							
20													

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## Log of Boring B-15

Sheet 2 of 2

Project: North Broadway Assemblage	Project Number: 2019038
Location: 15 Overlook Terrace, Yonkers, NY	

[illegible]

# Log of Boring B-16

Sheet 1 of 1

Project: North Broadway Assemblage					Project Number: 2019038			
Location: 7 Overlook Terrace, Yonkers, NY								
Date(s) Drilled	11/4/20 - 11/5/20	Inspector	Michael Torino, P.E.		Coordinates	North: East:		
Drilling Agency	Municipal Testing Laboratory	Foreman	Karthik Gopidi		Approximate Surface Elevation (feet)	± 112		
Drilling Equipment	Portable Gas Powered Rig	Drilling Method	Mud Rotary		Completion Depth (feet)	19.0	Rock Depth (feet)	12.0
Casing Size/Type	4" Steel	Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s)	2" Split Spoon		
Groundwater Level and Date Measured	NA NA	Hammer Wt/Drop	140/30" (Donut)	Casing Hammer Wt/Drop	140/30" (Donut)	Size/Type of Core Barrel	2" NX (Double Tube)	
Boring Location See Boring Location Plan (Figure 1)					No. of Samples Dist.: 3    Undist.: 0    Core (ft): 12			

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	0.3	1 WoH/6"					FILL: Black Silty medium to fine Sand, trace roots					S-1: Dry. Cased to 2 ft
			2										
			4										
	S-2	0.5	4 6 30 100/2"					FILL: Brown Silty medium to fine Sand, trace Gravel, roots					S-2: Dry. Spoon refusal at 3.6 ft
				C-1	100	0		Cored through Boulders					Cased to 4 ft
5	S-3	0.2	100/4"					NATURAL: Brown Silty medium to fine Sand, trace Gravel, Mica (SM)					S-3: Dry. Spoon refusal at 5.3 ft
10				C-2	25	0		Cored through Boulders					
				C-3	50	0		White to dark gray weathered Gneiss, trace Quartz, broken					
15								White and dark gray medium hard to intermediate Gneiss, trace Quartz, slightly weathered, jointed to broken, weathered joints					Core barrel clogged at 14 ft
				C-4	86	48							
20								Boring completed to 19 ft below ground. Backfilled with soil cuttings upon completion.					

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## Log of Boring B-17

Sheet 1 of 1

Project: North Broadway Assemblage					Project Number: 2019038		
Location: 10 Baldwin Place, Yonkers, NY							
Date(s) Drilled	11/4/20 - 11/5/20		Inspector	Michael Torino, P.E.		Coordinates North: East:	
Drilling Agency	Municipal Testing Laboratory		Foreman	Dave Johnson		Approximate Surface Elevation (feet) ± 118	
Drilling Equipment	Fordia Track Rig		Drilling Method	Mud Rotary		Completion Depth (feet) 15.5	Rock Depth (feet) 7.5
Casing Size/Type	4" Steel		Size/Type of Bit	3-7/8" Roller Bit		Sampler Type(s) 2" Split Spoon	
Groundwater Level and Date Measured	NA NA		Hammer Wt/Drop	140/30" (Donut)	Casing Hammer Wt/Drop	140/30" (Donut)	
Boring Location See Boring Location Plan (Figure 1)						No. of Samples Dist.: 4 Undist.: 0 Core (ft): 8	

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










## Sheet 1 of 1

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													S-1: Dry
	S-1	0.8	1 WoH/6"					FILL: Dark brown medium to fine Sand, some Gravel, trace Silt					Cased to 2 ft
	S-2a	0.4	2 3					FILL: Same as Above					S-2: Dry
	S-2b	0.5	11 11					NATURAL: Brown Silty medium to fine Sand, some Gravel (SM)					Cased to 4 ft
	S-3	0.7	11 20 17 50					Same as Above (SM)					S-3: Dry
5	S-4	0.7	22 20 14 13					Same as Above (SM)					S-4: Dry
	S-5	1.0	22 50 40 42					Brown medium to fine Sand, some Silt, Gravel (SM)					S-5: Dry
	S-6	0.2	48 50/2"					Same as Above (SM)					S-6: Moist. Spoon refusal at 10.7 ft
10													
15				C-1	100	65		Dark gray and white medium hard to hard Gneiss, some Quartz and Mica intrusion. Jointed to broken, slightly weathered at joints, iron stained joints.					Rig chatter from 13 to 14 ft
20								Boring Completed to 19 ft Below Ground Surface. Backfilled with soil cuttings upon completion.					

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## Sheet 1 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	0.9	1 WoH/6"					FILL: Brown Silty medium to fine Sand, some Roots, Asphalt fragments					S-1: Dry  Cased to 2 ft
	S-2	0.1	6 9 13 16					FILL: Brown medium to fine Sand, some Silt, Gravel					S-2: Dry  Cased to 4 ft
5	S-3	0.2	17 42 100/1"					NATURAL: Brown medium to fine Sand, some Silt, Gravel (SM)					S-3: Dry. Spoon refusal at 5.1 ft  Cased to 6 ft
	S-4	100/0"						Cored through Boulder					Rig chatter from 5 to 6 ft S-4: Spoon Bouncing at 6 ft, No penetration
				C-1	33	0		Presumed same as Below (SM)					
10	S-5	0.4	100 50/0"					Brown medium to fine Sand, some Gravel, trace Silt (SP)					S-5: Moist Spoon bouncing at 9.5 ft. Cased to 10 ft
	S-6	0.4	11 50/5"					Same as Above (SP)					S-6: Moist. Spoon refusal at 11.5 ft
15								Black and gray weathered to medium hard Gneiss trace Quartz intrusion. Closely jointed to broken, slight weathering at joints.					
				C-2	90	10							
20								Black and light gray medium hard to hard Gneiss, trace Quartz and pink Biotite intrusion. Moderately jointed to jointed, slightly weathered at joints.					
				C-3	96	78							

# Log of Boring B-19

Sheet 2 of 2

<b>Project:</b> North Broadway Assemblage	<b>Project Number:</b> 2019038
<b>Location:</b> 10 Baldwin Place, Yonkers, NY	


Depth, feet	Soil Samples			Rock Coring			Graphic Log	DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
20													
25								Boring Completed to 22.5 ft Below Ground Surface. Boring backfilled with cuttings upon completion.					
30													
35													
40													

Template: GENERAL GES LOGO Proj ID: NORTH BROADWAY ASSEMBLAGE.GPJ

**GES P.C.**


Printed: 11/18/20



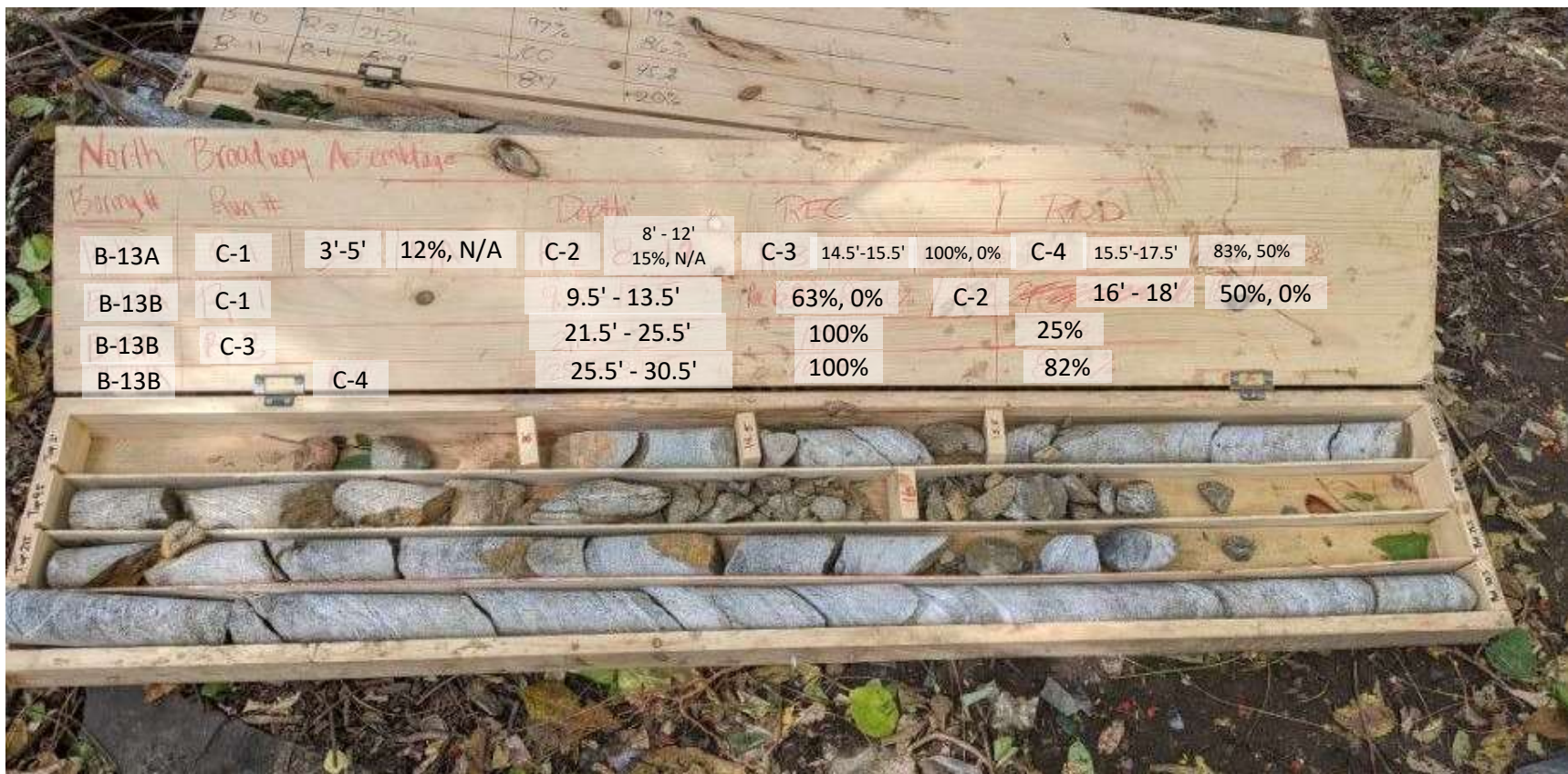
	ROCK CORE PHOTOGRAPHIC PLATE					Project Name: North Broadway Assemblage	
	Boring No.	Core No.	Depth (ft)	Rec %	RQD %	Project Location: N. Bwy, Overlook Terr., Baldwin Pl., Yonkers, NY	
GEOTECHNICAL ENGINEERING SERVICES, P.C. 6 Bayberry Road Elmsford, NY 10523	B-10	C-1	8 - 12.5	98	19	Dwg No. Plate 1	
	B-10	C-2	16 - 21	97	86	Drawn By: DJG	Project No: 2019038
	B-10	C-3	21 - 26	100	95		
	B-11	C-2	5 - 9	87	20	Ch'ked By: ZM	Date: 11/11/2020





 <b>GEOTECHNICAL ENGINEERING SERVICES, P.C.</b> 6 Bayberry Road Elmsford, NY 10523	ROCK CORE PHOTOGRAPHIC PLATE					Project Name: <b>North Broadway Assemblage</b>	
	Boring No.	Core No.	Depth (ft)	Rec %	RQD %	Project Location: N. Bwy, Overlook Terr., Baldwin Pl., Yonkers, NY	
	B-11	C-3	9 - 14	100	55	Dwg No. Plate 2	
	B-11	C-4	14 - 19	100	70	Drawn By: DJG	Project No: 2019038
	B-12	C-1	5 - 7.5	80	N/A		
	B-12	C-2	7.5 - 12.5	10	N/A	Ch'ked By: ZM	Date: 11/11/2020
	B-12	C-3	19.5 - 21	10	0		
	B-12	C-4	21 - 26	97	62		





**GEOTECHNICAL ENGINEERING  
SERVICES, P.C.**  
6 Bayberry Road  
Elmsford, NY 10523

### ROCK CORE PHOTOGRAPHIC PLATE

Boring No.	Core No.	Depth (ft)	Rec %	RQD %
B-13A	C-1	3 - 5	12	N/A
B-13A	C-2	8 - 12	15	N/A
B-13A	C-3	14.5 - 15.5	100	0
B-13A	C-4	15.5 - 17.5	83	50
B-13B	C-1	9.5 - 13.5	63	0
B-13B	C-2	16 - 18	50	0
B-13B	C-3	21.5 - 25.5	100	25
B-13B	C-4	25.5 - 30.5	100	82

Project Name: **North Broadway  
Assemblage**

Project Location: N. Bwy, Overlook Terr., Baldwin Pl.,  
Yonkers, NY

Dwg No. Plate 3

Drawn By: DJG


Project No: 2019038

Ch'ked By: ZM

Date: 11/11/2020






	ROCK CORE PHOTOGRAPHIC PLATE					Project Name: North Broadway Assemblage	
	Boring No.	Core No.	Depth (ft)	Rec %	RQD %	Project Location: N. Bwy, Overlook Terr., Baldwin Pl., Yonkers, NY	
	B-14	C-1	7 - 8	60	N/A	Dwg No. Plate 4	
GEOTECHNICAL ENGINEERING SERVICES, P.C. 6 Bayberry Road Elmsford, NY 10523	B-14	C-2	17 - 20.5	86	0	Drawn By: DJG	Project No: 2019038
	B-14	C-3	20.5 - 23	93	18		
	B-14	C-4	23 - 27	100	40	Ch'ked By: ZM	Date: 11/11/2020
	B-16	C-2	8 - 12	25	N/A		
	B-16	C-3	12 - 14	50	0		






 <p><b>GEOTECHNICAL ENGINEERING SERVICES, P.C.</b> 6 Bayberry Road Elmsford, NY 10523</p>	ROCK CORE PHOTOGRAPHIC PLATE					Project Name:	North Broadway Assemblage	
	Boring No.	Core No.	Depth (ft)	Rec %	RQD %	Project Location:	N. Bwy, Overlook Terr., Baldwin Pl., Yonkers, NY	
	B-16	C-4	14 - 19	86	48	Dwg No.	Plate 5	
	B-15	C-1	5 - 10	100	58	Drawn By:	DJG	Project No: 2019038
	B-15	C-2	10 - 15	100	33	Ch'ked By:	ZM	Date: 11/11/2020
	B-15	C-3	15 - 20	100	55			









 <p><b>GEOTECHNICAL ENGINEERING SERVICES, P.C.</b> 6 Bayberry Road Elmsford, NY 10523</p>	ROCK CORE PHOTOGRAPHIC PLATE					Project Name: <b>North Broadway Assemblage</b>	
	Boring No.	Core No.	Depth (ft)	Rec %	RQD %	Project N. Bwy, Overlook Terr., Baldwin Pl., Location: Yonkers, NY	
	B-18	C-1	14 - 19	100	65	Dwg No. Plate 7	
	B-19	C-1	6 - 9	33	N/A	Drawn By: DJG	Project No: 2019038
	B-19	C-2	12.5 - 17.5	90	10		
	B-19	C-3	17.5 - 22.5	96	78	Ch'ked By: ZM	Date: 11/11/2020