HISTORICAL PERSPECTIVES INC.



Phase IA Archaeological Documentary Study

MTA Broadway Junction Station Upgrades

and Circulation Improvements

Block 1545, Lot 1, Block 1555, Lot 19 and Part of Lot 1

Brooklyn, Kings County, New York

Phase IA Archaeological Documentary Study MTA Broadway Junction Station Upgrades and Circulation Improvements Block 1545, Lot 1, Block 1555, Lot 19 and Part of Lot 1 Brooklyn, Kings County, New York

Prepared For:

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and

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December 2022

MANAGEMENT SUMMARY

SHPO Project Review Number (if available):

Involved State and Federal Agencies: FTA, MTA

Phase of Survey: Phase IA Archaeological Documentary Study

Location Information

Location: Broadway Junction, East New York, Brooklyn

Minor Civil Division: 04701

County: Kings

Survey Area

Length: varies Width: varies

Number of Acres Surveyed: ca. 6

USGS 7.5 Minute Quadrangle Map: Brooklyn, NY.

Archaeological Survey Overview

Number & Interval of Shovel Tests: N/A

Number & Size of Units: N/A Width of Plowed Strips: N/A

Surface Survey Transect Interval: N/A

Results of Archaeological Survey

Number & name of precontact sites identified: None

Number & name of historic sites identified: Site may be sensitive for two historic backyards.

Number & name of sites recommended for Phase II/Avoidance: None

Results of Architectural Survey

Number of buildings/structures/cemeteries within Project Site: None

Number of buildings/structures/cemeteries adjacent to Project Site: None

Number of previously determined S/NRHP listed or eligible buildings/structures/cemeteries/districts:

None

Number of identified eligible buildings/structures/cemeteries/districts: None

Report Authors(s): Faline Schneiderman, M.A., R.P.A., Historical Perspectives, Inc.

Date of Report: December 2022

EXECUTIVE SUMMARY

MTA Construction & Development (C&D) is proposing changes at the Broadway Junction Complex (Complex) aimed at improving accessibility and connections between the five subway lines that converge in this location (A, C, J, L, and Z). The Complex is situated in the east end of the triangular New York City Callahan-Kelly Park (Park) in the East New York community of Brooklyn, Kings County, New York. The proposed work would include sections of the Station complex and Park, a paved parking lot southeast of the Complex, and a storage area below the elevated subway. The site is located between Truxton Street to the north, Fulton Street and Herkimer Street to the south, Broadway and Williams Place to the east, and Eastern Parkway to the west, and encompasses Block 1545, Lot 1, Block 1546, Lot 1, a small section of Block 1547, Lots 25 and 32, and Block 1555, Lot 1.

The purpose of the project is to provide ADA accessibility and circulation improvements at the Complex and will entail adding elevators within the Complex, constructing a transfer bridge between A/C and L lines and between A/C and J/Z lines, repairing the J and Z subway platforms, replacing three escalators, creating a new entrance to the L line on Van Sinderen Avenue, improving an existing MTA parking lot, de-mapping Sackman Street through the Park (City action), and constructing a Comfort Station within the Callahan-Kelly Playground. The section of Sackman Street proposed for de-mapping lies in the mid-section of the Park between Truxton Street to the north and Fulton Street to the south; it is already listed on the city's "Open Streets" program. An extant New York Police Department (NYPD) building that abuts the MTA complex is not included in any of the proposed changes. The proposed Comfort Station would be constructed to the north of an extant MTA Vent Building.

Alienation of parkland is anticipated for the following actions: the expansion of the A/C Control House West would involve 5,836 square feet (SF) of parkland, while the A/C Control House East Expansion would involve 2,485 SF. The proposed High Connector to J/Z over the park would involve 773 SF of air rights within the Park, while the A/C-L Bridge over the Park would affect 522 SF of air rights. The closure and demapping of Sackman Street through the Park will provide a gain of 10,968 SF, resulting in a net gain to the Park of 1,352 SF.

The proposed upgrades at the Complex require compliance with city, state, and federal environmental regulations and must meet NEPA/SEQRA/CEQR requirements, as well as Section 106, Section 4(f), and Uniform Land Use Review Procedure (ULURP) processes. The Federal Transit Administration (FTA) is the lead federal agency for this proposed project. As part of the environmental review process, Historical Perspectives, Inc. (HPI) has undertaken this Phase IA Archaeological Documentary Study of the proposed Area of Potential Effect (APE), defined in 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking." For archaeological resources, the APE consists of areas that are subject to ground disturbance (Figure 3). This includes only four areas in the Park, most of Block 1555, and discrete locations of pile driving north and east of the extant Control House in Van Sinderen Street and on Block 1547. A separate report has been prepared for the Historical Resources Study Area.

This Phase IA report 1) identifies areas of potential archaeological sensitivity that may be impacted by the proposed project, 2) assesses project impacts, and 3) provides recommendations for further research, where necessary. The study complies with the guidelines of the LPC (2018) and the CEQR Technical Manual (2021) and complies with the standards of the New York State Office of Parks, Recreation and Historic Preservation/State Historic Preservation Office (NYSOPRHP/SHPO) (New York Archaeological Council 1994; NYSOPRHP 2005).

Documentary research found that the site lacks sensitivity for precontact resources due to extensive historic development and excavation episodes. Soil borings reviewed for the project found that there are no intact buried soil strata in the APE, only fill and sandy levels beneath. Therefore, no further consideration is recommended for this resource type.

Research also found that two structures were constructed between 1869 and 1873 at the northeastern corner of Block 1555 on Lots 14 and 16. The structures likely predated municipal sewer and water availability and, therefore, have back yards that could have once hosted subsurface features including privies and cisterns. Further archaeological study of these two locations on Block 1555 are recommended.

TABLE OF CONTENTS

MANAGEMENT SUMMARY	
EXECUTIVE SUMMARY	ii
I. INTRODUCTION	.1
II. METHODOLOGY	.2
III. BACKGROUND RESEARCH	.2
A. Current Conditions	
B. Soils and Hydrology	.3
C. Soil Boring Analysis	.3
IV. HISTORICAL OVERVIEW	.5
A. Previously Recorded Archaeological Sites and Surveys	.5
B. Historic Period Summary	6
C. Site Specific Development	.7
V. ARCHAEOLOGICAL POTENTIAL IN THE APE	9
A. Precontact Resources	9
B. Historical Resources	0
VI. CONCLUSIONS AND RECOMMENDATIONS	1
BIBLIOGRAPHY1	2

FIGURES

PHOTOGRAPHS

APPENDICES

APPENDIX A: PROPOSED PLANS

APPENDIX B: SOIL BORING PLANS AND LOGS

FIGURES

- 1. Project Site on *Brooklyn*, *NY* 7.5 Minute topographic quadrangle (U.S.G.S. 2019).
- 2. Project Site and photograph key on *Digital Tax Map* (Department of Finance 2022).
- 3. Project Site and Archaeological Area of Potential Effect (APE).
- 4. Project Site on Map of New-York Bay and Harbor and the Environs (U.S.C.S. 1845).
- 5. Project Site on Map of Kings and part of Queens Counties, Long Island, N.Y. (Dripps 1852).
- 6. Project Site on Map of East New York, Kings County, Long Island, N.Y. (Johnson 1859).
- 7. Project Site on *Map of the City of Brooklyn...* (Dripps 1869).
- 8. Project Site on *Portion of East New York, New Lots Tn., Kings Co., L.I.* (Beers 1873).
- 9. Project Site on Atlas of the entire city of Brooklyn, complete in one volume (Bromley 1880).
- 10. Project Site on *Insurance Maps of Brooklyn, New York* (Sanborn 1887).
- 11. Project Site on Atlas of the Brooklyn Borough of the City of New York: Originally Kings Co. (Hyde 1898).
- 12. Project Site on *Insurance Maps of the Borough of Brooklyn* (Sanborn 1908).
- 13. Project Site on *Insurance Maps of the Borough of Brooklyn* (Sanborn 1951).
- 14. Archaeologically sensitive locations on *Insurance Maps of the Borough of Brooklyn, New York* (Sanborn 1951).

PHOTOGRAPHS

(see Figure 2 for locations)

- Photograph 1: Facing west from Van Sinderen Avenue to the Station entrance at the Control House for the A, C, E, J, and Z Subway lines.
- Photograph 2: Facing south from the east sidewalk on Van Sinderen Avenue to the location of the proposed new elevated A/C to L transfer bridge.
- Photograph 3: Facing west from the east side of Van Sinderen Avenue to the location of the proposed new elevated A/C to L transfer bridge and the A/C Station Expansion East.
- Photograph 4: Facing north from the west side of Van Sinderen Avenue to the location of the proposed new elevated A/C to L transfer bridge. Elevated A/C Line at right.
- Photograph 5: Facing east from the west side of Van Sinderen Avenue at Fulton Street with the Elevated L line above and the Block 1555 parking area at right.
- Photograph 6: Facing north from Herkimer Street to the parking area on Block 1555, Lot 1.
- Photograph 7: Facing south from Fulton Street to the northeast corner of Block 1555 with Williams Place at far left (Google 11/2019).
- Photograph 8: Facing south in the Callahan-Kelly Playground, under construction, to the location of a proposed new Comfort Station and the extant MTA Vent Building, with Sackman Street within the Park at right.
- Photograph 9: Facing north to Truxton Street from Callahan-Kelly Playground while under construction.
- Photograph 10: Facing northeast from the Callahan-Kelly Playground to the Control House at center right and the escalator over Truxton Street to the J/Z Line over Broadway.
- Photograph 11: Facing northeast from the Callahan-Kelly Playground to the Control House at right and the location of the proposed A/C Station Expansion West in foreground.
- Photograph 12: Facing northeast from the Callahan-Kelly Playground to the Control House and the location of the proposed A/C Station Expansion West in foreground.
- Photograph 13: Facing north from east side of New York Police Department Building to the Station entrance at the Control House and the approximate location of the proposed A/C Station Expansion East at far center.

I. INTRODUCTION

MTA Construction & Design (C&D) is proposing changes at the Broadway Junction Complex (Complex) aimed at improving accessibility and connections between the five subway lines that converge in this location (A, C, J, L, and Z). The Complex is situated in the east end of the triangular New York City Callahan-Kelly Park (Park) in the East New York community of Brooklyn, Kings County, New York (Figure 1). The proposed work would include sections of the Complex and Park, a paved parking lot southeast of the Complex, and a storage area below the elevated subway. The site is located between Truxton Street to the north, Fulton Street and Herkimer Street to the south, Broadway and Williams Place to the east, and Eastern Parkway to the west, and encompasses Block 1545, Lot 1, Block 1546, Lot 1, a small section of Block 1547, Lots 25 and 32, and Block 1555, Lot 1 (Figure 2).

The purpose of the project is to provide ADA accessibility and circulation improvements at the Complex and will entail adding elevators within the Complex, constructing a transfer bridge between A/C and L lines and between A/C and J/Z lines, repairing the J and Z subway platforms, replacing three escalators, creating a new entrance to the L line on Van Sinderen Avenue, improving an existing MTA parking lot, de-mapping Sackman Street through the Park (City action), and constructing a Comfort Station within the Callahan-Kelly Playground. The section of Sackman Street proposed for de-mapping lies in the mid-section of the Park between Truxton Street to the north and Fulton Street to the south; it is already listed on the city's "Open Streets" program. An extant New York Police Department (NYPD) building that abuts the MTA complex is not included in any of the proposed changes. The proposed Comfort Station would be constructed to the north of an extant MTA Vent Building.

The proposed scope of work requires the alienation of parkland to accommodate new Station elements (see Appendix A). Work in and above the Park includes:

- 1) Adding a new A/C to L transfer bridge.
- 2) Revising the A/C line underground platform and control house as follows:
 - a. Installing two elevators between the platform and the control house.
 - b. Constructing ADA complaint boarding areas.
 - c. Expanding the control house and add an employee facility.
- 3) Revising and adding to the A/C to J/Z transfer bridge as follows:
 - a. Installing one Elevator Connect A/C Control House and A/C-J/Z transfer bridge.
 - b. Installing egress stair to accompany the new elevator.
 - c. Replace three existing escalators.
- 4) Revising and adding to the L Station as follows:
 - a. Installing two new elevators.
 - b. Constructing ADA compliant boarding areas.
 - c. Constructing a new transfer mezzanine.
 - d. Constructing a new street level entrance/control house.
- 5) Revising and adding to the J/Z elevated station platform
 - a. Installing two new elevators.
 - b. Constructing ADA compliant boarding areas.
 - c. Undertaking platform component repairs.
 - d. Modifying the J, Z mezzanine to the L station corridor to make it ADA compliant.

Alienation of parkland addressed the following actions: the expansion of the A/C Control House West would involve 5,836 square feet (SF) of parkland, while the A/C Control House East Expansion would involve 2,485 SF. The proposed High Connector to J/Z over the park would involve 773 SF of air rights within the Park, while the A/C-L Bridge over the Park would affect 522 SF of air rights. The closure and demapping of Sackman Street through the Park will provide a gain of 10,968 SF, resulting in a net gain to the Park of 1,352 SF.

In addition, a staging area would be created on MTA-owned Block 1555, Lot 1, just southeast of the Complex (Figure 2). The staging area will eventually be replaced by a permanent parking lot with a stormwater collection system, new paving, and fencing.

¹ An alienation bill was passed by the New York State legislature during the 2021/2022 legislative session.

The proposed upgrades at the Complex require compliance with city, state, and federal environmental regulations and must meet NEPA/SEQRA/CEQR requirements, as well as Section 106, Section 4(f), and Uniform Land Use Review Procedure (ULURP) processes. The Federal Transit Administration (FTA) is the lead federal agency for this proposed project. As part of the environmental review process, Historical Perspectives, Inc. (HPI) has undertaken this Phase IA Archaeological Documentary Study of the proposed Area of Potential Effect (APE), defined in 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking." For archaeological resources, the APE consists of areas that are subject to ground disturbance (Figure 3). This includes only four areas in the Park, most of Block 1555, and discrete locations of pile driving north and east of the extant Control House in Van Sinderen Street and on Block 1547. A separate report has been prepared for the Historical Resources Study Area.

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II. METHODOLOGY

The present study entailed review of various resources.

- Primary and secondary sources concerning the general precontact period and history of Brooklyn and specific events associated with the project site and vicinity were reviewed using materials available online at the Center for Brooklyn History (formerly the Brooklyn Historical Society), the Brooklyn Public Library, the library of HPI, and other online resources.
- Historic maps and photographs, and images were searched using materials from the New York Public
 Library, the Center for Brooklyn History (formerly the Brooklyn Historical Society), the New York City
 Municipal Archives, the library of HPI, and using various online websites. These materials provided a
 chronology of land usage for the project site.
- Land abstracts when relevant were reviewed at the Center for Brooklyn History (formerly the Brooklyn Historical Society) and familysearch.com, focusing on the 19th century.
- Selected city directories and federal and state census records were reviewed where relevant.
- Department of Building (DOB) index records and certificates of occupancy were reviewed online.
- Information about previously recorded archaeological sites and surveys in the area was compiled from data available at the NYSOPRHP, the LPC, and the library of HPI.

In addition, a site visit to discern areas of prior disturbance and current conditions was conducted on February 9, 2022, when conditions were clear, and the site lacked snow cover (Photographs 1-13; Figure 2).

III. BACKGROUND RESEARCH

A. Current Conditions

The project site lies in the East New York neighborhood of Brooklyn near the crossroads of several major historic roads including Fulton Street, Eastern Parkway, and Broadway (Figures 1 and 2). The Broadway Junction Complex includes three separate transit lines operating at, and with stations at, differing elevations. The Stations were known historically by three separate names up until 2003. These were the Eastern Parkway Station of the BMT Broadway-Jamaica (J and Z) Line (elevated), the Broadway Junction Station of the BMT Canarsie (L) Line (elevated), and the Broadway-East New York Station of the IND Eighth Avenue (A and C) Line (underground). They have shared a common street-level entrance at a brick Control House building on Van Sinderen Avenue since the 1940s. Extensive upgrades were made to the complex in the late 1990s and early 2000s.

The Park encompasses approximately 5.6 acres of land immediately southwest of the MTA East New York Yard where subway cars are stored and repaired. Created in the 1940s after the construction of the IND Eighth Avenue Line, the Park is currently under reconstruction by the New York City Department of Parks & Recreation (NYC DPR). A site survey undertaken for that project (2017) showed the Park generally sloping downward from west to east, with an elevation of 97.5 feet (NAVD88) at Eastern Parkway and at elevation of 80 feet ASL at Van Sinderen Avenue (CNY DPR 2017). Block 1555, not included in the 2017 survey, was shown in 1951 as sloping gently downhill from north to south with the elevation at the intersection of Van Sinderen with Fulton Street at 74.6 feet, and with Herkimer Street at 71.1 (Sanborn 1951, Figure 13).

The Park has experienced extensive subsurface disturbance over the years. Historically, Block 1546 was subdivided into numerous individual building lots which had had multi-story structures on them fronting surrounding streets. These were all razed in the early 1930s and open excavations (aka cut-and-cover construction) were undertaken for the IND Eighth Avenue Line subway station and tunnel, running east to west beneath the entirety of the Park. This line was built above another four-track tunnel created by cut-and-cover construction running north to south, formerly used by the Long Island Railroad (LIRR) Bay Ridge Line and now used for New York and Atlantic Railway freight operations. The Park was constructed after the subway line was completed. As previously mentioned, at the time this report was completed, the entire Park was under reconstruction (Photographs 8-11, Figure 2).

In addition to playground furniture and play areas, there are several extant buildings within the Park. At its east end are the East New York Control House building that serves as an entrance for all three subway lines, a Vent Building to the immediate west, and a brick Police Headquarters building to the immediate south (Photographs 1-4, 9-14, Figure 2). Further west along the eastern boundary of Sackman Street is another brick MTA Vent Building (Photographs 8, Figure 2). Block 1555 is currently undeveloped and used for parking (Photographs 5-7, Figure 2).

B. Soils and Hydrology

According to a Phase II Environmental Site Assessment (November 2020), the project site is located in the Coastal Plain Physiographic Province of Southeastern New York and is underlain by the Cretaceous-aged Raritan Formation consisting of clay, silty clay, and gravel as much as 2,000 feet thick. The overlying soils consist of outwash sand and gravel consisting of coarse to fine gravel with sand and manmade fill material (Island Pump & Tank 2018: 2). The Harbor Hill Moraine extends southwest across Queens from Little Neck Bay, across Brooklyn and Staten Island and into New Jersey. In Brooklyn, the moraine follows the course of Bushwick Avenue, Eastern Parkway, Crown Heights, Prospect Park, Park Slope, and Bay Ridge, southeast of the project site (Wolfe 1995:460).

According to the *New York City Soil Reconnaissance Survey*, the entire project site falls within an area characterized by Number 2 type soils described as "Pavement & buildings, till substratum, 0 to 5 percent slopes: Nearly level to gently sloping, highly urbanized areas with more than 80 percent of the surface covered by impervious pavement and buildings, over glacial till; generally located in urban centers" (New York City Soil Survey Staff 2005).

The project site is located more than two miles north of Jamaica Bay, and about the same distance southeast of the Newtown Creek. Historic maps and atlases (Heyward 1842, USCS 1845, Colton 1849, Walling 1860) do not depict any bodies of fresh water near the project site. However, in 1860, the headwaters for Fresh Creek were mapped about a mile southwest of the project site (Walling 1860). And when a map recreating key locations relevant to the Revolutionary War Battle of Brooklyn was produced in 1867, a pond was depicted on the north side of the Jamaica Turnpike at an undetermined distance west and slightly north of the project site (Stiles 1867). When the 1891 Bien and Vermeule atlas was published, several ponds were mapped in the Cemetery of the Evergreens, within a halfmile east of the project site, although it is unknown if these are natural and pre-date cemetery landscaping (Bien and Vermeule 1891).

C. Soil Boring Analysis

In anticipation of proposed work for this project, 12 soil borings were undertaken in proximity to the extant Control House building, on Van Sinderen Avenue, on Block 1547, and on Block 1555 (WSP 2022, Appendix B). Soil boring WSP-1 was placed on the north side of Truxton Street immediately west of the elevated passage between the IND Eighth Avenue Line and the BMT Broadway-Jamaica Line (see plan in Appendix B). The soil boring reported

coarse sandy fill with brick fragments and silt to eight feet below grade. Beneath this were levels of dry dense brown coarse to fine sand with gravel and little silt. At about 15 feet below grade, soils became moist but were otherwise not remarkably different from those reported above this point. Moist levels of coarse sand and gravel were reported to a depth of about 60 feet below grade, where the sand became fine grained. No evidence of topsoil or a living surface (e.g., dark brown loam or silt that represent a natural buried surface that could have supported precontact people) were noted in the boring (Appendix B). Boring WSP-2, placed on west side of Van Sinderen Avenue, produced fill levels to about five feet below grade, where dry medium brown coarse to fine sand with some silt levels were encountered. Like Boring WSP-1, levels of dense sand with little silt were found from this point down to about 100 feet below grade, with moisture encountered at about 15 feet below grade (Ibid.).

Boring WSP-3 was placed in the Park just north of the Control House building, and slightly west of the existing stairs and elevated passage between the IND Eighth Avenue Line and the BMT Broadway-Jamaica Line. The upper six feet reportedly contained brown coarse to fine sand and silt with architectural debris (bricks, steel wire) interpreted as fill. Beneath this were dry dense levels of brown coarse to fine sand with some silt and gravel to 15 feet below grade where levels became moist. After this point, similar sand levels were encountered to a final depth of 100 feet below grade. Boring WSP-4, taken from the sidewalk on the south side of Truxton Street immediately west of the escalator and stair passage, produced no fill levels but reported brown coarse to fine sand with some silt and medium to fine gravel to four feet below grade. Beneath this was a three-foot level of red to gray and brown to white coarse to fine sand with gravel. Levels beneath this were categorized as brown coarse to fine sand or coarse to fine gravel with sand, all dry until about 15 feet below grade. Only traces of silt were found in all levels (Appendix B).

Boring WSP-5, placed in the sidewalk at the southwest intersection of Truxton Street and Van Sinderen Avenue, contained a slightly different soil profile than the other borings, with levels of dark brown coarse to fine sand with coarse to fine gravel and silt reported to a depth of about eight feet below grade (Appendix B). Beneath this were levels of medium brown and red to dark gray coarse to fine sand with gravel; moisture was encountered at about 12 feet below grade. At 20 feet below grade, another dark brown coarse to fine sand level with traces of medium gravel was encountered. Beneath this at about 22 feet below grade were fairly similar levels of brown to dark gray sand and gravel. The dark brown upper levels of this boring *could* potentially represent an intact soil stratum, although there was no specific descriptor of loam or silt. The only cultural intrusion reported from the boring was an occasional brick fragment at four feet below grade. None of the levels were interpreted as fill.

Boring WSP-6, placed just south of boring WSP-5, did not produce any of the dark brown levels observed in WSP-5. Instead, it produced soils like those found in WSP-3 taken within the Park. Levels were some variation of brown medium to fine sand with traces of silt and gravel, and were dry to about ten feet below grade after which they became moist. Boring, WSP-7 was placed in the center of Van Sinderen Avenue about 50 feet south of Broadway. Fill levels were reported to about four feet below grade, with brown to yellow to gray coarse to fine sand with some silt and gravel beneath. Borings were dry to about nine feet below grade, below which they were moist. No dark brown levels, suggestive of a natural buried precontact layer that could have served as a living surface, were reported to the base of the boring at 102 feet below grade (Appendix B).

Boring WSP-8 was placed east of Van Sinderen Avenue in Block 1547, beneath extant elevated tracks (Appendix B). The uppermost six feet of the boring were excavated by hand and contained levels of coarse to fine sand and gravel with traces of silt. No evidence of organic material was reported. Levels were moist from about seven feet below grade to the bottom of the boring. Although darker brown to black levels were noted at roughly 16 feet below grade, they were described as very dense gravel levels with some sand and traces of silt. Again, no organics or loam levels were reported.

Borings WSP-9 through WSP-12 were all placed in Block 1555 (Appendix B). Each of these was also hand-excavated from the surface down to six feet below grade. WSP-9 produced levels of fill with sand, gravel, traces of silt, shell fragments, and brick fragments from the surface down to about 10 feet below grade. Beneath this, levels were unremarkably characterized as gravel with traces of silt and sand. Boring WSP-10, placed near the northeastern corner of the block, did not have any reported fill levels; instead layers not unlike those reported in other borings with gravel, sand, and traces of silt continued down to 20 feet below grade. Boring WSP-11 was placed in the south center of the block and, like Boring WSP-9, contained levels of possible fill from the surface down to about seven feet below grade. Beneath this to 20 feet below grade were levels of sand and gravel of various

colors, with at least one level at 10 feet below grade described as brown to purple sand and gravel with black granite fragments. Lastly, Boring WSP-12 was placed in the southeast section of the block and contained levels of possible fill down to seven feet below grade (Appendix B). Beneath this were levels of gravel with traces of sand and silt, and rocks of varying composition and color. No organics were reported.

Additional borings were taken in 1989 in anticipation of construction the Police Headquarters building (Warren George Inc.). Boring ENY-POL-HQ1 taken from the western end of the proposed building site produced miscellaneous fill with silt, brown sand, gravel, and brick fragments to 11 feet below grade (Appendix B). Beneath this was a deep level of highly compacted fine to coarse silty brown sand with fine to coarse gravel to 91 feet below grade. Boring ENY-POL-HQ2 was placed to the east and produced a similar profile with fill to 12 feet below grade, and boulders, cobbles, and silty brown sand beneath. Likewise, boring ENY-OL-HQ3 produced fill to 12 feet below grade with similar strata beneath. None of the borings produced any levels that could be interpreted as an intact buried A horizon that could have once been a living surface.

Another series of borings was completed in 2018 before the reconstruction of the Park began (Dynamic Earth, LLC). Closest to the Control House building, five of these were completed within the Park west of the Vent Building and east of Sackman Street (Borings B-1, B-1A, B-2, B-3, and B-4, Appendix B). All contained fill from the surface down to between seven- and eight feet below grade, below which were levels of sand and gravel described as "glacial deposits" (Appendix B). Borings B-2 and B-4, taken just west of the LIRR Tunnel and closest to the Control House building, had strata interpreted as fill and described as "brown and dark brown coarse to fine sand, little silt and little gravel" (Appendix B). The designation of these levels as "fill" despite the dark brown color suggests that the dark strata observed in the upper level of Boring WSP-5 may not necessarily be a buried living surface that could have potential precontact archaeological deposits.

In summary, virtually all of the borings produced fill – or disturbed levels – to varying depths ranging from four feet to 12 feet below grade. Only Boring WSP-5 contained strata that could be interpreted as a potential precontact living surface. However, the lack of recorded silt or loam levels suggests this assessment is tenuous.

IV. HISTORICAL OVERVIEW

A. Previously Recorded Archaeological Sites and Surveys

The archaeological site file inventories from the NYSOPRHP online Cultural Resources Information System (CRIS) reported no historical period archaeological site within a one-mile radius of the project site. Nor did CRIS report nearby precontact sites, or that the site was in an area of precontact sensitivity, likely due to the lack of nearby fresh water sources.

Historian Grumet reported a major Native American trail running north to south through the project site and continuing east along the south side of the Cemetery of the Evergreens (Grumet 1981:70). According to historian Bolton, the trail connected settlements to the north with those to the south on Jamaica Bay. He wrote:

The natural line of communication between these places and the mainland north and west, was the Rockaway trail, which ran from the Brooklyn path along the base of the hilly ground known as the Green hills that form the central backbone of the island from Fort Hamilton to North Hempstead. This path followed the line of the old Bedford and Jamaica highway, which the present Atlantic avenue and Jamaica avenue succeed...The path was expanded into a King's highway in 1704, and for many years bore that name. It became known later as the Jamaica and Brooklyn plank road, and sometimes as the Old Ferry road (Bolton 1922:178).

While the project site has not been subjected to any previous archaeological studies, there have been a number of archaeological surveys completed within a one-mile radius of the project site. These include the *Cross Harbor Freight Movement Project: Phase IA Archaeological Assessment* completed more than one-quarter of a mile to the south on Van Sinderen Avenue, a *Phase IA Archaeological Documentary Study Our Lady of Lourdes Apartments* about one-quarter of a mile to the north of the project site between Broadway and Bushwick Avenues, *The*

Evergreens Cemetery Phase 1A Survey An Archaeological Assessment of Beacon Hill and Lawn Side completed about one-quarter of a mile east of the project site in Evergreens Cemetery, three archaeological studies at Prospect Plaza about a half mile west of the project site, a Phase IA Literature Search and Archaeological Sensitivity Assessment, Wolff-Alport Chemical Company Superfund Site Remediation located just under a mile northeast of the project site, and a Phase IA completed for the Weeksville Master Plan EAS... Cultural Facility Site located just under a mile to the southwest (Geismar 2001, 2016; AKRF 2002, 2011, 2014; Parsons 2002; JMA 2002; and RGA 2018).

None of the above listed surveys concluded that the project sites were potentially sensitive for precontact archaeological resources due to disturbed soils and/or the lack of mapped pre-development landforms associated with precontact settlement.

B. Historic Period Summary

The project site falls within the eastern part of Brooklyn in the East New York neighborhood, which was once part of New Lots. The community was known as the Town of New Lots from 1852, when the area seceded from the Town of Flatbush, until it was annexed in 1886 as the 29th Ward of Brooklyn. The project site straddled the boundary between Brooklyn and New Lots, with the "City Line" of Brooklyn bisecting the site, as visible on 18th and 19th century maps and atlases (see Figures 5-11). Immediately east of, and possibly including the project site, was the "Jamaica Pass," a natural topographic passage though the morainal hills to the east and west, and which served as a particularly critical location during the American Revolution.

During the mid-17th century, settlements in Brooklyn were founded by the Dutch, and when Kings County was established in 1683, it encompassed the towns of Bedford, Brooklyn, Bushwick, Flatbush, Flatlands, Gravesend, and New Utrecht. A Native American trail that ran east to west from the East River through Long Island, and described above, was eventually widened into a wagon road and became known as the Ferry Road. In 1704, then Governor Cornbury appointed a commission to lay out the Kings Highway following the Ferry Road, and this later became the Jamaica Plank Road then later still, the Brooklyn and Jamaica Turnpike (Armbruster 1919: 13). The road ran north of and roughly parallel to what is now Fulton Street, veering south to cut through the Jamaica Pass and the project site, then continued east. In the 1890s, the section in the project site was dubbed Norman Place.

In 1677, the residents of Flatbush obtained a patent for a new settlement to the east that they called New Lots, which covered the area presently bounded by Ralph Avenue, the Queens County line, Fulton Street, Cemetery Hills, Canarsee, and Jamaica Bay (Landesman 1977:11). New Lots was divided into 47 farm lots and allotted mostly to Flatbush inhabitants. One was a farm tract purchased by William Howard, the eldest of seven brothers who came to the Flatbush area in the late 17th century from England. Howard erected his home near the crossroads where the Jamaica Plank Road intersected with other local roads, including what would become Atlantic Avenue. At the turn of the 18th century, William Howard converted his large Dutch style farm house into an inn and tavern he called the Halfway House (Ibid.). His customers were farmers, merchants and others who traveled between Brooklyn and Long Island.

Howard's Halfway House stood near what is now the intersection of Fulton Street and the north side of Broadway, about 1,000 feet southeast of the project site. It was reportedly constructed of stone, with the sides covered by shingles (Stiles 1867:266). During the Revolutionary War the proprietor of the inn, an American sympathizer, was reportedly coerced by General Howe's forces to guide them up the adjacent hill to the west of and overlooking the unguarded Jamaica Pass. The occupation of the hill made possible the flanking maneuver that swayed the Battle of Long Island in favor of the British. The Halfway House was reportedly torn down in 1902 by the Long Island Railroad to make room for its elevated tracks (Armbruster 1947).

In 1832, the Brooklyn and Jamaica Rail Road [sic] Company was incorporated and received a charter to build a steam railroad to Jamaica along the Jamaica branch of the Ferry Road. Service on the line began in 1836, and the route was leased almost immediately to the Long Island Railroad. In 1837 the company was authorized to alter its route and the straight line of present Atlantic Avenue, from Flatbush Avenue eastwards, was substituted for the crooked line of the Turnpike (Armbruster 1919:27). From Bedford to Jamaica wooden sleepers or ties and cast iron chairs weighing fifteen pounds were installed (Reifschneider 2022). Since steam was not allowed in the City of Brooklyn, from 1836 until 1839 trains were pulled by horses between Brooklyn and Bedford. In 1845 the project site was depicted as vacant and to the north of the Brooklyn and Jamaica Rail Road (U.S.C.S. 1845, Figure 5).

The development of East New York began in 1835 through the enterprise of John R. Pitkin, a wealthy Connecticut merchant who visualized the area becoming a great city rivaling New York. In 1835-36 he purchased several farms in the area, but with the panic of 1837 he relinquished ownership, retaining only a small tract south of the project site. There he laid out Streets and lots, and in 1853 a modest development began. Pitkin's efforts were focused to the southeast of the project site, which itself was characterized by the intersection of several transit routes. Consequently, by the mid-19th century the vicinity of the project site had several inns that generally clustered around the intersection of the multiple roads and a stop on the railroad.

C. Site Specific Development

James L. Williams owned all the acreage in the southeastern section of the project site in New Lots by the early 1840s, and in 1848 acquired most of Block 1546 as well (Heyward 1842, Liber 74:353). While the project site was depicted as vacant, Williams' house stood opposite Howard's Halfway House at Fulton Street facing Jamaica Avenue, a block southeast of Block 1555 and out of the APE (U.S.C.S. 1845, Figure 4). The project site was also vacant when mapped in 1852, 1855, and 1856 (Dripps 1852, Figure 5; Perris 1855; Dripps 1856). It is after this time that development slowly began on the project blocks.

Block 1546: By 1859, the Mattowack House was depicted in the southeastern end of the project site on Block 1546 – but out of the APE - at the corner of Norman Place (aka Jamaica Plank Road) and Van Sinderen Avenue (Johnson 1859, Figure 6). At that time, that inn was reportedly run by William Simonson (Ross 1902:515; Armbruster 1947). It was also mapped in the project site in both 1869 and 1873, although by the latter date it appeared to have been under ownership of J. H. Sackman (Dripps 1869, Beers 1873; Figures 7 and 8). The Manhattan Beach and Canarsie Railroad formerly ran along the line of Van Sinderen Avenue and the Mattowack House served travelers along the route. According to historian Armbruster, the inn had an address of 2443 Fulton Street and by 1874 it was run by James L. Hogins (Armbruster 1947). When Armbruster published his book on East New York history in 1947, he noted that the Mattowack House was still standing, albeit dilapidated.

In 1859, a marble works owned by J. Edwards had also been established on the south side of Block 1546 in the project site, but also out of the APE (Johnson 1859, Figure 6). In the 1850s, Williams subdivided his land in and around the project site and advertised individual building lots for sale (Ross 1902: 515). The western section of Block 1546, west of the Jamaica Turnpike, was sold by Williams to Jacob Sackman and Andrew Barbey in 1852 (Liber 299:79), and in 1860 all lots were conveyed from Barbey to Sackman (Liber 519:291; Liber 520:106). In January 1868 the lots were conveyed by Sackman to Charles Lowrey, and five months later they were sold by Lowrey to Robert S. Bussing (Liber 795:363; Liber 829:353). In 1871, Bussing sold his landholdings within Block 1546 to Cornelius Payne and Francis Ripley (Liber 875:149).

By 1869, three structures in addition to the Mattowack House had been built fronting Fulton Street on Block 1546, and one small section of the APE appeared to have extended across the rear yard of at least one lot with a dwelling (Dripps 1869, Figure 7). Four years later in 1873 (and on later maps as well), the same buildings were more precisely mapped in a different configuration so that the APE did not extend across any developed lots with yards (Beers 1873, Figure 8).

When the Bromley atlas and the Hopkins map were published in 1880, Block 1546 contained multiple residential row-houses in or adjacent to the APE fronting Truxton Street just east of Sackman Street and with the addresses of 52, 54, and 56 Truxton Street (Figure 9). The lots on which they stood had been conveyed by Cornelius Payne to John Drake, and then Drake to William White in 1870 (Liber 933:390; Liber 947:23). The lots were acquired by Richard Whipple the following year during a foreclosure settlement, who then conveyed them to Luther Teaz (Liber 983:88; Liber 1019:79, 82). Frequent conveyances of the lots to multiple owners continued throughout the 1870s.

A section of the APE appeared to have crossed the back end of the buildings fronting Truxton Street, and possibly a small section of their rear yards, a location where subsurface features such as privies and cisterns are often found if a structure predates the availability of sewer and water lines. Water lines were depicted in Truxton Street in 1880 (Hopkins 1880), and sewer lines had been installed in both Truxton and Fulton Streets near these structures in 1869 (*Brooklyn Daily Eagle 4*/11/1869). Sewer lines were also shown on Truxton Street adjacent to the project site when the sewer map of Brooklyn was published in 1875 (Adams). It is likely that the row houses were erected in

conjunction with the availability of these municipal services, although it is not definitive since sewer and water hook-up dates were unavailable for these lots (NYC DEP 4/18/2022). Regardless, this section of the project site was later extensively disturbed by open excavations for the below-grade subway, meaning that any backyard features would have been eradicated.

By 1887, the Union Elevated Railroad had been built above Broadway near the project site, and many additional structures had been built on the project blocks. On Block 1546, the APE appeared to continue to straddle the rear yards of the three row houses east of Sackman Street, each of which were each depicted as two-story dwellings measuring 15 feet wide by 50 feet long on lots that were 15 feet wide and 60 feet long, and with the addresses of 48, 50, and 52 Truxton Street (Sanborn 1887, Figure 10).

The Broadway-East New York Station of the IND Eighth Avenue Line construction was begun in the early 1930s using cut-and-cover (open) construction, which necessitated the demolition of all buildings on Blocks 1546, Block 1547 to the east. By issuance of the 1932 Sanborn map, all structures on Blocks 1547 had been razed, and Conway Street had been cut through Block 1546, outside the APE (Sanborn 1932). Construction of the line was halted during WWII, and resumed after the war when the signal, trackwork, and escalator to the BMT platforms were installed; the Control House and Station opened in 1946. The Callahan-Kelly Park was created concurrently. In the early 1950s, the Station platforms were extended to 660 feet (200 m) to accommodate 11-car trains. As depicted on the 1951 Sanborn (Figure 13), the Jamaica Plank Road through the project site was closed, surrounding roads were reconfigured slightly, and the project site was left appearing much as it does today (Sanborn 1951, Figure 13). Virtually all of the APE within the Park was disturbed by building demolition, subway excavations and construction, and later Park landscaping. The location of the subsurface tunnels for both the LIRR and the subway are outlined on the 1951 Sanborn map so that the extent of cut-and-cover excavations are understood. Little has changed since 1951, other than the construction and reconstruction of the Park on Block 1546.

Block 1555: Although vacant in earlier years, between 1869 and 1873 two structures had been erected in the APE on the northeastern corner of Block 1555, on Lots 14 and 16 (Dripps 1869, Figure 7; Beers 1873, Figure 8). The two structures were likely built following the sale of multiple lots on the block in 1869 and 1870 after the death of landowner James L. Williams, who had acquired the block as part of a larger tract he purchased and mortgaged in 1848 (Liber 174:350). At the time of his death, the *Brooklyn Daily Eagle* reported that the Surrogate of Kings County ordered the sale of all lots on Block 1555 by Executrix Lucia Williams, except for lots numbered 1, 3, and 5 (10/13/1869). A week before the surrogate's notice (10/6/1869), the *Brooklyn Daily Eagle* advertised for sale 6 lots on Fulton Avenue [now Street] at the intersection of Jamaica Plank Road, 16 lots on Herkimer Street between Van Sinderen Avenue and Williams Place, and 6 lots on Van Sinderen Avenue between Herkimer Street and Atlantic Avenue, for a total of what appeared to be 28 lots on or adjacent to Block 1555. When Block 1555 was mapped in 1873, it had been subdivided into 18 lots. At that time, Lots 14 and 16 each had a structure fronting onto the Jamaica Plank Road/Fulton Street, and a second small structure behind to the southwest (Beers 1873, Figure 8).

Deed abstracts report that Lot 14 was sold by the Williams estate to August Muller on December 1, 1869, and Lot 16 was sold to David J. Malloy on December 31 (Liber 925:155; Liber 926:256). A newspaper search found no reference to August Muller in the project vicinity but did find that David Malloy was a land speculator who owned numerous lots in Brooklyn and lived in the city proper. Directories confirmed that he was never a resident of any location on or near Block 1555. In 1870, Malloy sold Lot 14 to Thomas Rooney (Liber 926:262). Tax records for New Lots reported that Rooney was assessed for a house on the lot from 1871 through at least 1880, while Miller was taxed for "buildings" on Lot 16 at twice the amount of Rooney during the same period (Kings County Assessment Rolls 1869-1880). Lain's *City Directories* from 1872 through 1883 reported no August Muller near the APE, but from 1888 through 1893 listed August Muller, blacksmith, living at the corner of Williams Place and Herkimer Street on Block 1555, out of the APE, but working at Williams Place near Fulton Street, possibly in or near the APE. A newspaper search found no report of Thomas Rooney near Block 1555, but he was listed in a directory as a driver at 2153 Fulton Street in 1871. This address does not correspond to Block 1555, however, since Fulton Street addresses on the north (opposite) side of the road near Truxton Street were given odd numbers likely placing 2153 on the wrong side of Fulton Street and far west of the project site (see Figure 10). No entries in the directories in 1869 or between 1872 and 1883 placed Rooney on or near Block 1555.

A review of directories and U.S. Census records searched for both 2486 and 2488 Fulton Street, as well as 2, 4, 6, and 8 Williams Street – alternative addresses for Lot 16 in 1908 (Hyde) - found no residents in the project site

before the late 1800s and early 1900s, likely because the properties appeared to have remained without addresses as late as 1887 (Beers 1873, Sanborn 1887, Figures 8 and 10). In 1897, the Brooklyn directory listed Albert Morasey as a liquor merchant at 2488 Fulton Street, and the 1899 directory listed him together with Francis Lopardo as operating a liquor store at 2488 Fulton Street. That same year, Eva Louisa Wallace, a 34 year old housewife, was residing on the lot when she died. Census records place Frank (aka Francis) Lopardo – a saloon keeper - his wife Rosi [sic], their four children and Rosi's parents, all Italian, living at 2488 Fulton Street at Williams Place in 1900. No other records place him on the lot prior to the 1897 date, but a search of newspapers found he owned multiple lots in Brooklyn and East New York in the late 1890s and early 1900s and did not live in one place for more than three years. The 1900 census also reported four additional families at 2, 4, 6, and 8 Williams Place, presumably in the same building as the Lopardos. The Cerski (Polish), Gebhardt (German), Malone (New York), and Happ (also New York) families lived there, for a total of 23 people, excluding the Lopardos, suggesting that the building functioned as a tenement with multiple apartments.

When the Bromley atlas and the Hopkins map were published in 1880, neither included the eastern section of the project site in East New York (Hopkins 1880, Bromley 1880, Figure 9). By 1887, many additional structures had been built on Block 1555, and the two ca. 1873 structures at the northeast corner on Lots 14 and 16 were depicted as stores (Sanborn 1887, Figure 10). At that time Lot 14 had an open back yard, while Lot 16 was completely covered by a frame structure. The project site and APE appeared relatively unchanged in 1898 and 1908, although in 1898 the two lots on Block 1555 were numbered 8 and 9, and in 1908 both buildings were labeled as stores (Hyde 1898, Sanborn 1908, Figures 11 and 12). By 1929, all buildings on Block 1555 had been razed (Hyde 1929).

Newspapers revealed that by the late 1890s, the neighborhood encompassing Block 1555 had acquired the disparaging designation of "Guinea Row," a derogatory term for the "squalid tenements at Fulton and Broadway" that were predominantly occupied by people of Italian descent. An 1898 article reported the roundup and arrest of various people in the "notorious Italian colony," including several women who were fined for loitering (*Brooklyn Citizen* 12/30/1898). In 1900, the U.S. Census reported Lorenzo Noneli, an Italian-born day-laborer, his wife, and two children were living at 2486 Fulton Street. Earlier references to residents of the neighborhood were not found.

Research found that Block 1555 Lots 14 and 16 were likely owned by absentee landlords who could not be definitively identified as residents of their structures. Likely, given the commercial nature of surrounding building, the occupants were always renters who were probably working class.

Summary: To summarize, historic development was observed in only limited locations relevant to the APE that were not later disturbed extensively by deep subway excavations. The historic lots, addresses, dates, and locations are presented in Table 1 below.

Table 1: Historical Resources Identified in the Area of Potential Effect (APE)

Historical Block and Lot	Historical Address	Dates of Structures	Location
Block 1555	None in 1887	ca. 1871-1929	NW portion of block
Lot 14 (1873)	2486 Fulton (1898)		
Lot 8 (1887)	2474 Fulton (1908)		
Block 1555	None in 1887	ca. 1871-1929	NW portion of block
Lot 16 (1873)	2488 Fulton (1898)		
Lot 9 (1887)	2476 Fulton; 2, 4, 6, 8		
	Williams Place (1908)		

All other structures and associated yards observed on maps in the project site were either far removed from the archaeological APE or were in locations that were later tremendously disturbed by open cut excavations, including those on Block 1546.

V. ARCHAEOLOGICAL POTENTIAL IN THE APE

A. Precontact Resources

Predevelopment topography of the project site suggests that it was located within a pass between morainal hills, and that it was crossed by a well-traveled Native American trail that later became a plank road and then a paved road. No Native American sites have been reported in the immediate vicinity, and the site is in a location of low archaeological potential, because of the lack of resources necessary to establish an encampment or sustained settlement, namely fresh water. Further, most of the project site and APE were later disturbed by historical development and use. Typically, precontact habitation or hunting sites tend to be identified on relatively level land with fresh water resources nearby, and with topographic features that would have provided shelter and/or abundant food. Further, precontact archaeological sites tend to be found within three to four feet of the ground surface, which makes them particularly vulnerable to later disturbances in urban environments. Soil borings reported fill and disturbed levels to roughly five feet below grade. There is no evidence of an undisturbed living surface capped beneath fill.

The project site has only low sensitivity for precontact resources. The site has experienced extensive 19th and 20th century development with residential and commercial structures, cut-and-cover excavations for both the LIRR and the IND Eighth Avenue Line subway, and later by the creation of the playground within the Park. Virtually all of the APE locations have been extensively disturbed.

B. Historical Resources

Block 1555 Lots 14 and 16 had structures on them built in the early 1870s. Sewer and water records requested and received from the New York City Department of Environmental Protection (DEP) (4/15/2022, 4/18/2022) were scant, and generally covered only late 19th century sewer replacement dates (1890s) as well as mid-20th century water and sewer termination dates for lots in the APE (1930s). They reported that no specific water or sewer hookup dates were available for any lots in the APE. Sewer availability information gathered from local Brooklyn newspaper accounts found that pipes were installed in the eastern portion of the APE within the City of Brooklyn prior to 1870. More specifically, lots were assessed for sewer lines to be installed on Truxton Street between Stone and Fulton Avenues, and on Fulton Avenue [Street] between Truxton and Stuyvesant Avenue (to the west) in 1868 (*Brooklyn Daily Eagle* 4/11/1868).

There were no mapped water lines or sewers in Fulton Street or Williams Place adjacent to Block 1555 Lots 14 and 16 until late in the 19th century, in part because of this section of the APE fell in East New York and there were no detailed historic maps showing streets with or without sewer lines for the period between 1873 and 1887. The 1880 Hopkins map showed a 12-inch water pipe in Fulton Street by that time, extending slightly east beyond the Brooklyn boundary, but East New York and Block 1555 were not depicted so it is not clear if the line continued that far east (Hopkins 1880). The 1880 Bromley atlas depicted sewers in Truxton and Fulton Streets at that time, but also did not extend east beyond the Brooklyn City Line (Bromley 1880, Figure 9). In 1896, after the annexation of East New York to Brooklyn, additional sewers were installed in many surrounding streets including Fulton Street between Norman Place (the Jamaica Plank Road) and Williams Place, with the new line being tied in to the previously installed Williams Place sewer (Brooklyn Daily Eagle 1/16/1896). No reference to the initial date of installation for the Williams Place sewer could be found in newspaper accounts. A 1901 article about conditions at an Italian boarding house on the triangular block between East New York Avenue, Fulton Street, and Williams Place (due southeast of Block 1555) mentioned a "stream running from the Italian outhouses...Dr. Hill of the Health Board...did not know whether the Italian's house was connected with the public sewer..." (Brooklyn Daily Eagle 4/26/1901). This speaks to the state of public utilities and use of them in the neighborhood at the turn of the 20th century.

Since the date of sewer and water installation in Williams Place is unknown, the date of sewer installation on Fulton Street where the two structures fronted appears to be 1896, and the fact that some nearby structures may have not been hooked into sewer lines by the late date of 1901, it is likely that when these two structures were built between 1869 and 1873 that no municipal sewer and water lines were available to hook into. While it is possibly that the buildings had indoor plumbing hooked into cesspools, most likely they relied on the use of outdoor privies prior to sewer availability.

Each of the two lots had open yard areas at one time, although the yard area on Lot 16 was built over with a one-story wood extension in later years. Archaeological resources such as artifacts related to domestic and commercial use and refuse associated with the project site residents and businesses may have been deposited in shaft features—

particularly cisterns and privies—that were likely located in the yards of the houses that were constructed prior to the availability of municipal water and sewers. Comparative data has shown that these types of archaeological resources frequently are found in urban contexts, particularly in Brooklyn. Privies were usually located along the back lot line, or between structures if there was another building along the back lot line. Soil boring WSP-10 was taken roughly where the building stood on the front of Lot 16, which is now vacant

(Appendix B). The boring reported no fill levels or organic material, and only produced gravel with traces of sand. It did not report encountering building footings or a basement floor, so it may be that the building lacked any such subterranean feature or that they had been removed. No borings were taken from the location of potential privies in the back of the lot, but elsewhere on the block three borings reported fill to between seven and ten feet below grade (Borings WSP-9, WSP-11, and WSP-12).

VI. CONCLUSIONS AND RECOMMENDATIONS

Based on the conclusions outlined above, HPI recommends that a program of archaeological field testing be undertaken on portions of each historic lot, as shown on Figure 14. This testing, often referred to as Phase IB, would determine the presence or absence of 19th-century shaft features and possible yard deposits associated with the former residents and commercial endeavors on the property. Archaeological field testing would involve using a backhoe to remove the existing ground surface (some of which is now covered with paving) from test trenches within the sensitive areas. Mechanical excavations, under the direction of an archaeologist, would continue to assist with removing modern fill or debris underlying the removed pavement in order to expose potential archaeological resources.

All archaeological testing should be conducted according to OSHA regulations and applicable archaeological standards. Professional archaeologists, with an understanding of and experience in urban archaeological excavation techniques, would be required to be part of the archaeological team.

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1995 Geology. In *The Encyclopedia of New York City*, edited by Kenneth T. Jackson, pp. 458- 461. Yale University Press, New Haven and New York Historical Society, New York.

WSP

2022 ADA Upgrade of Broadway Junction Station, Soil Boring Location Plan and Boring Logs.

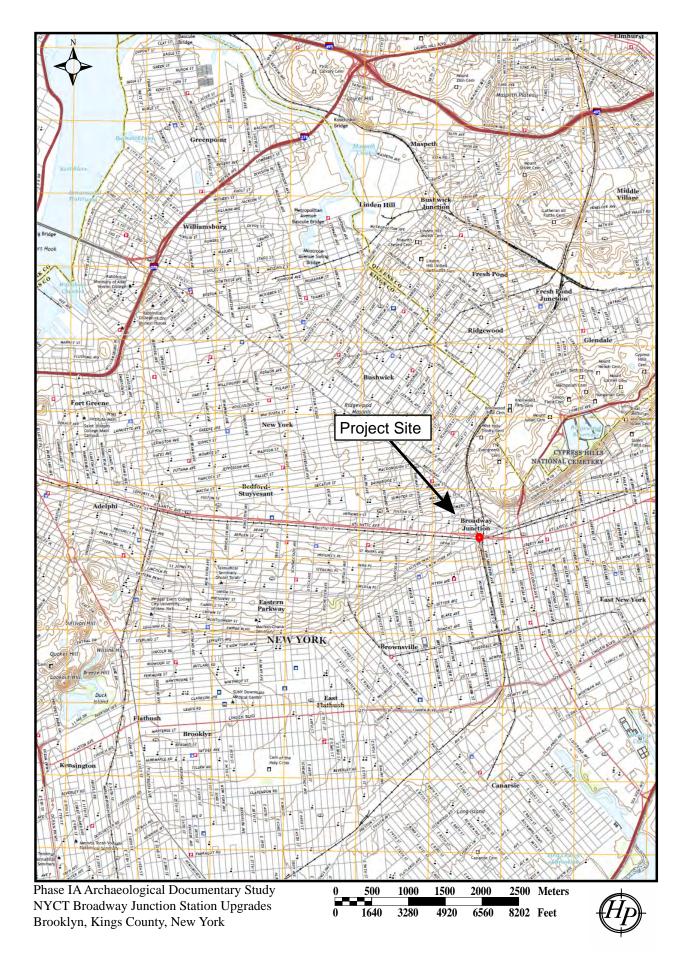
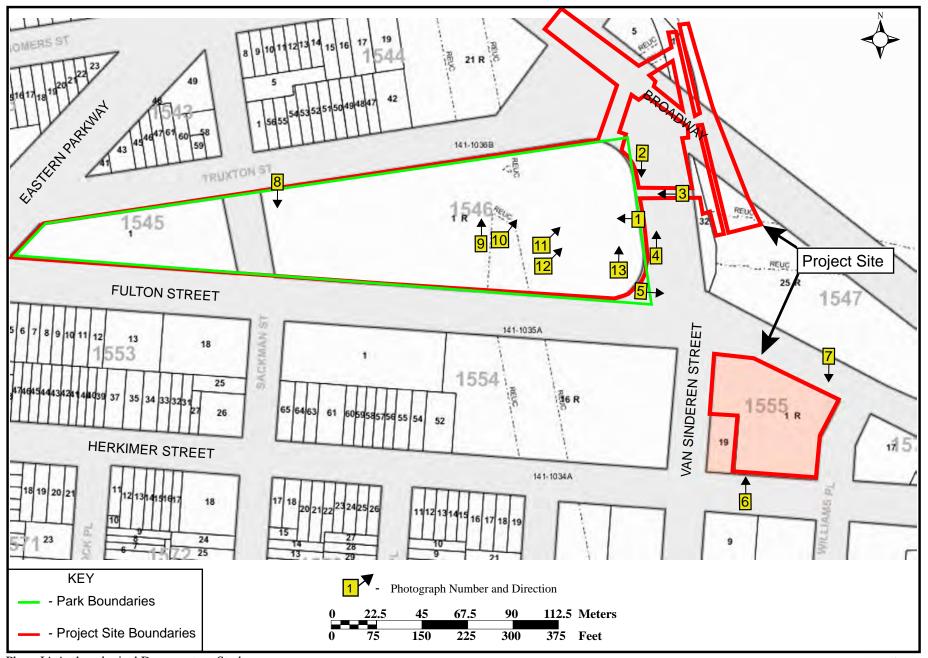


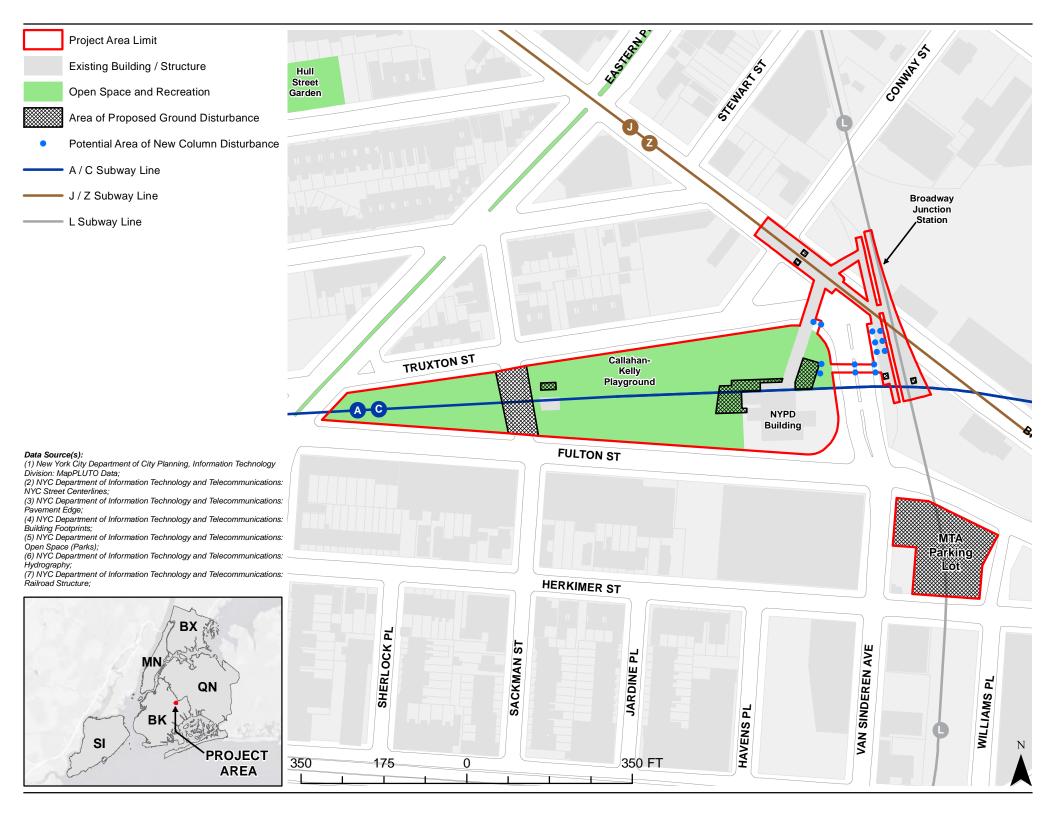
Figure 1: Project Site on *Brooklyn*, NY 7.5 Minute topographic quadrangle (U.S.G.S. 2019).

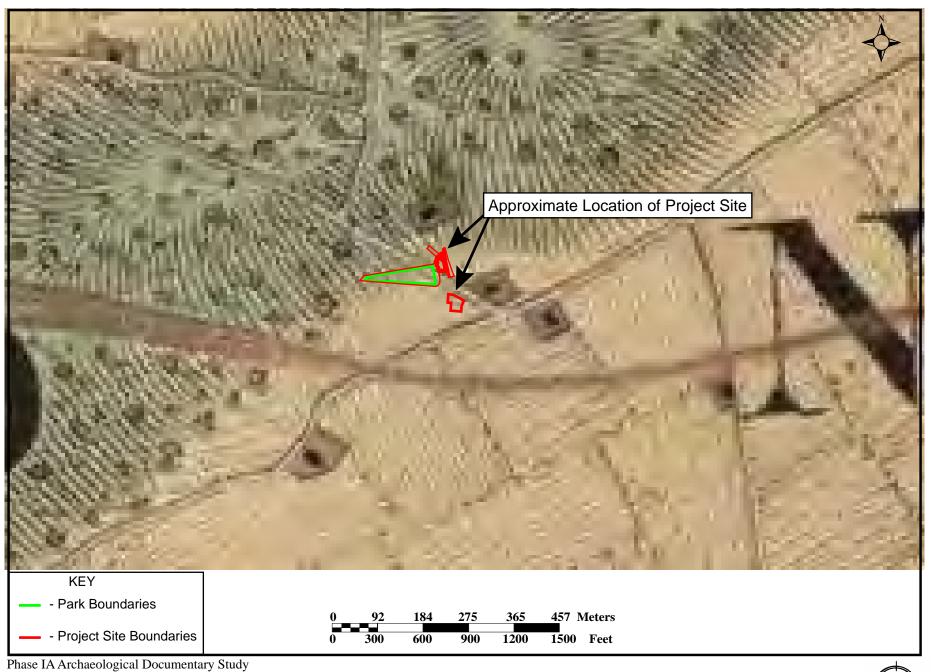


Phase IA Archaeological Documentary Study NYCT Broadway Junction Station Upgrades Brooklyn, Kings County, New York



Figure 2: Project Site and photograph key on Digital Tax Map (Department of Finance 2022).

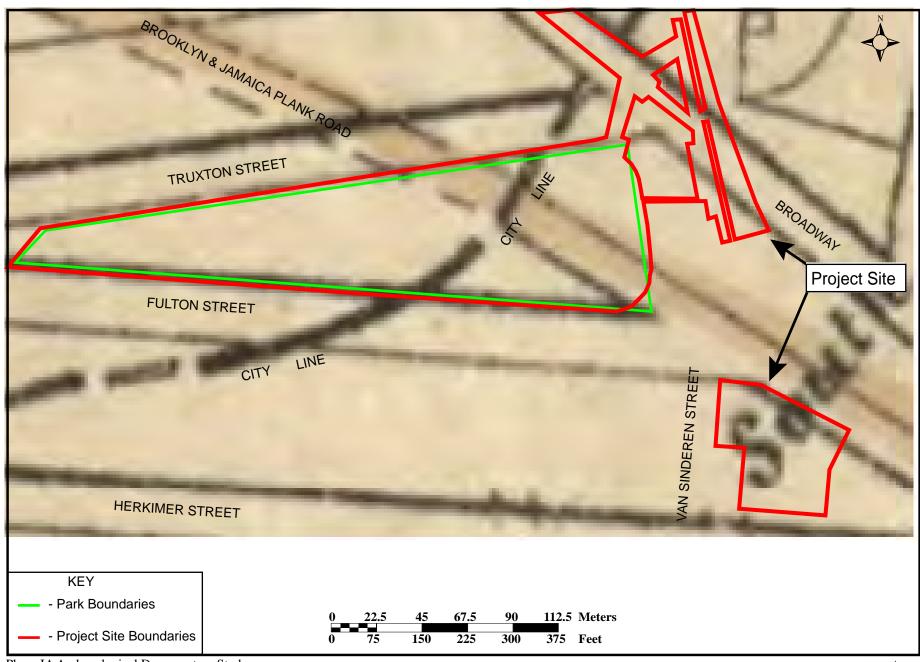




NYCT Broadway Junction Station Upgrades Brooklyn, Kings County, New York



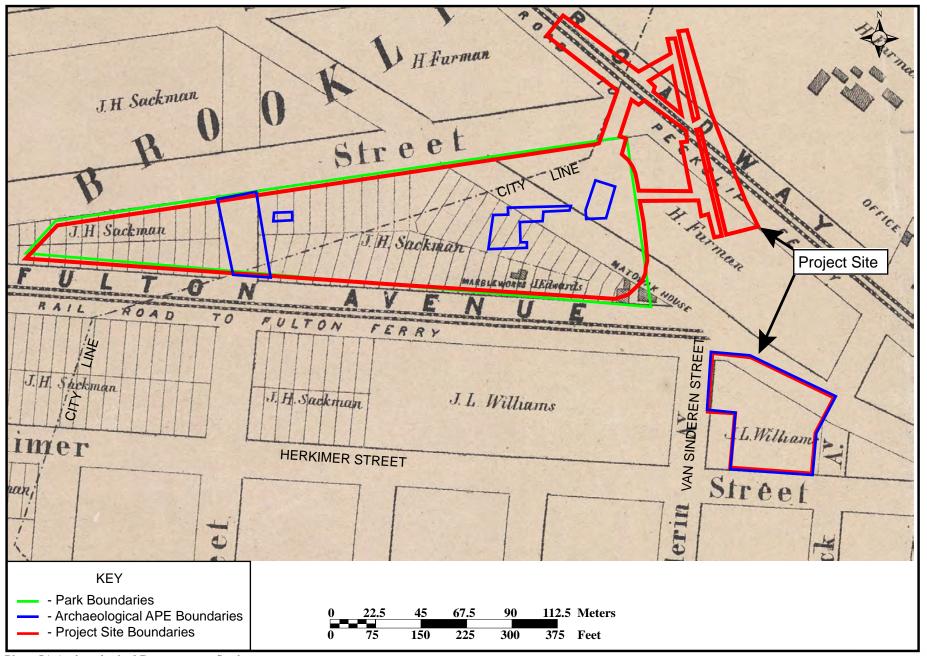
Figure 4: Project Site on Map of New-York Bay and Harbor and the Environs (U.S.C.S. 1845).



Phase IA Archaeological Documentary Study NYCT Broadway Junction Station Upgrades Brooklyn, Kings County, New York



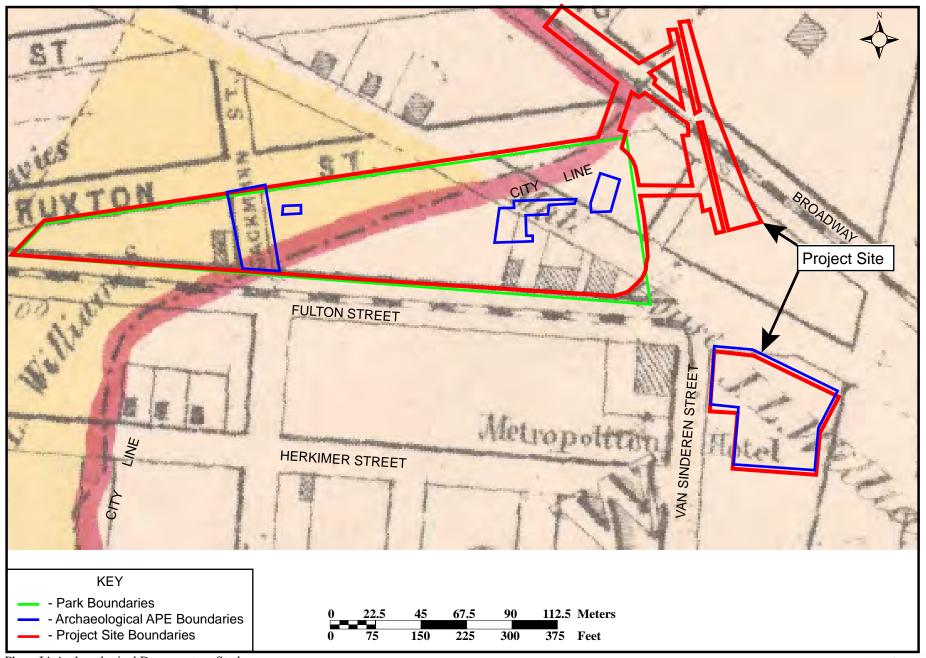
Figure 5: Project Site on Map of Kings and part of Queens Counties, Long Island, N.Y. (Dripps 1852).



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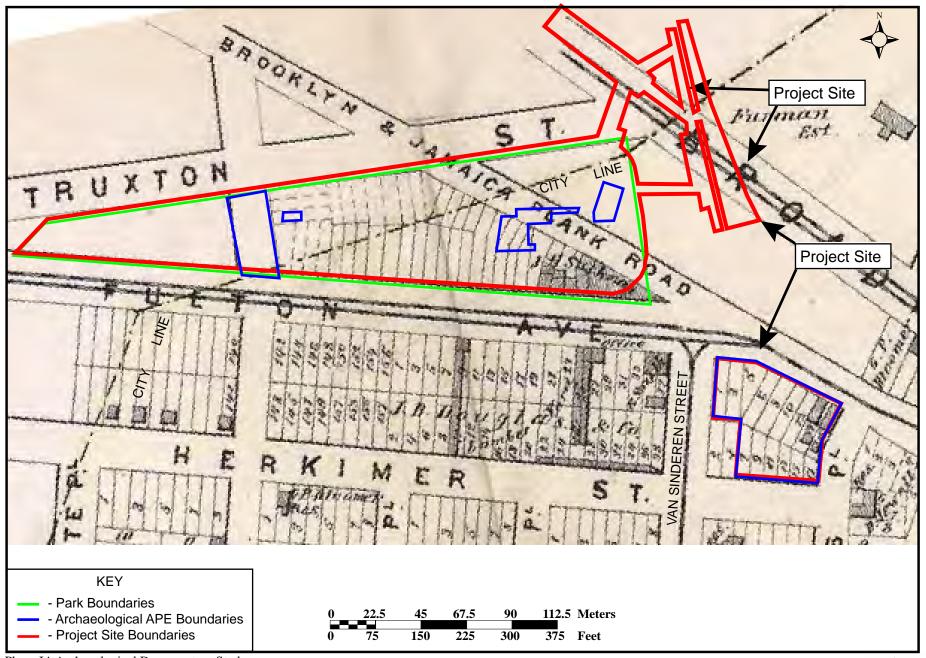
Figure 6: Project Site on Map of East New York, Kings County, Long Island, N.Y. (Johnson 1859).



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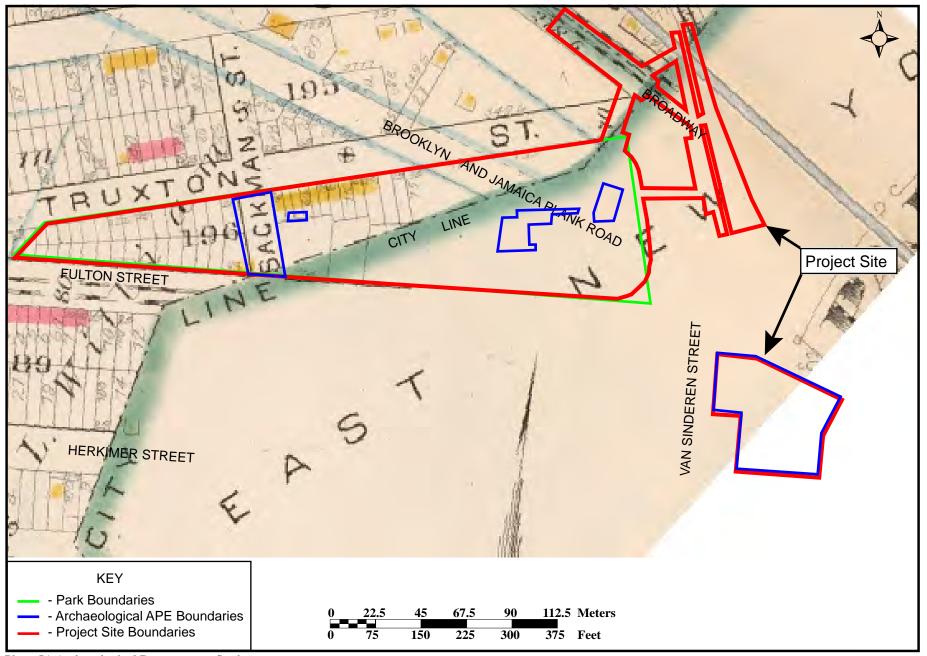
Figure 7: Project Site on Map of the City of Brooklyn... (Dripps 1869).



Phase IA Archaeological Documentary Study NYCT Broadway Junction Station Upgrades Brooklyn, Kings County, New York



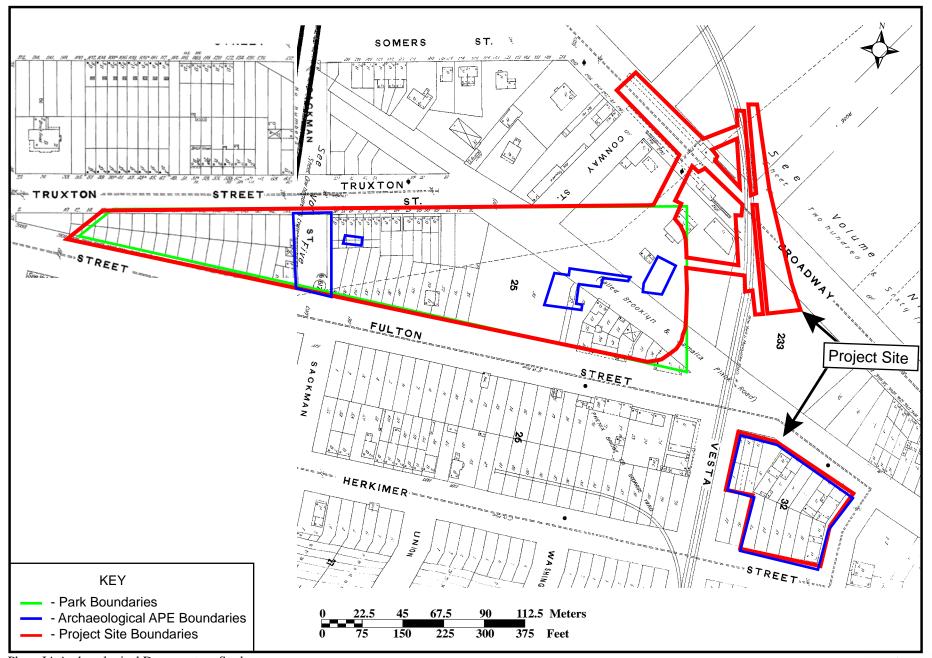
Figure 8: Project Site on Portion of East New York, New Lots Tn., Kings Co., L.I. (Beers 1873).



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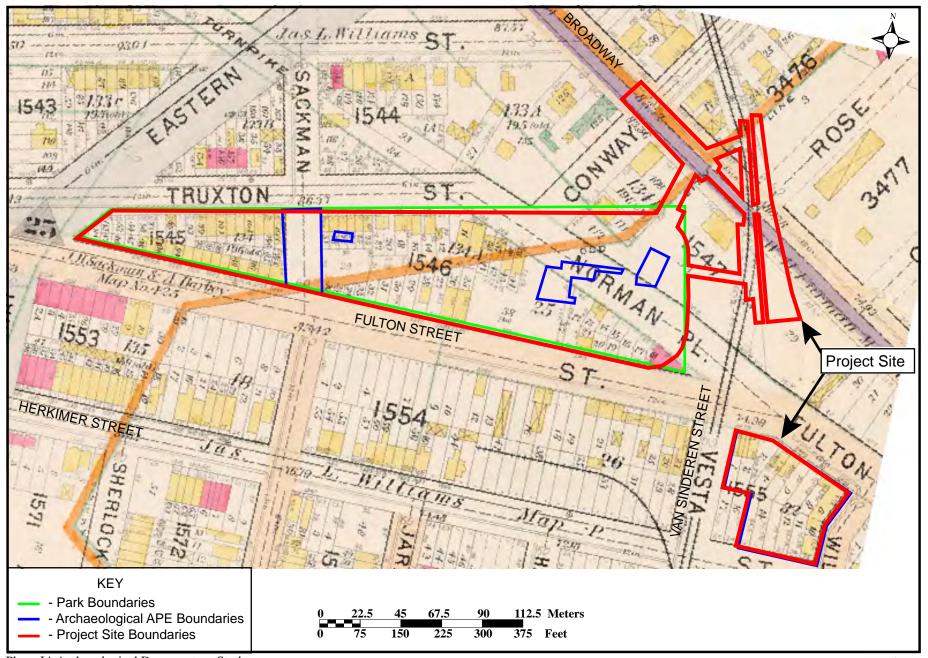
Figure 9: Project Site on Atlas of the entire city of Brooklyn, complete in one volume (Bromley 1880).



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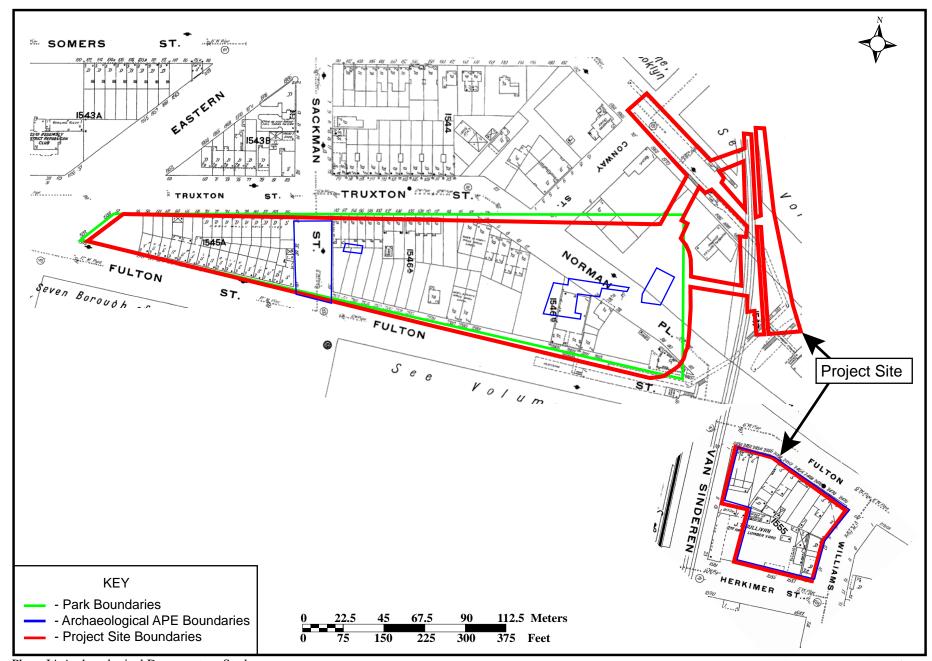
Figure 10: Project Site on Insurance Maps of the Borough of Brooklyn (Sanborn 1887).



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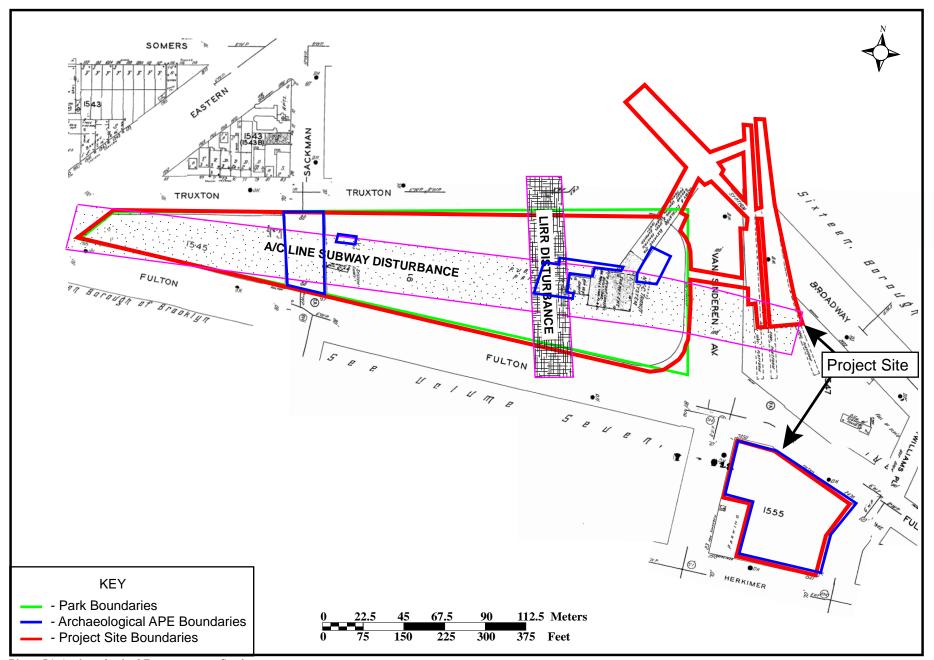
Figure 11: Project Site on Atlas of the Brooklyn Borough of the City of New York: Originally Kings Co. (Hyde 1898).



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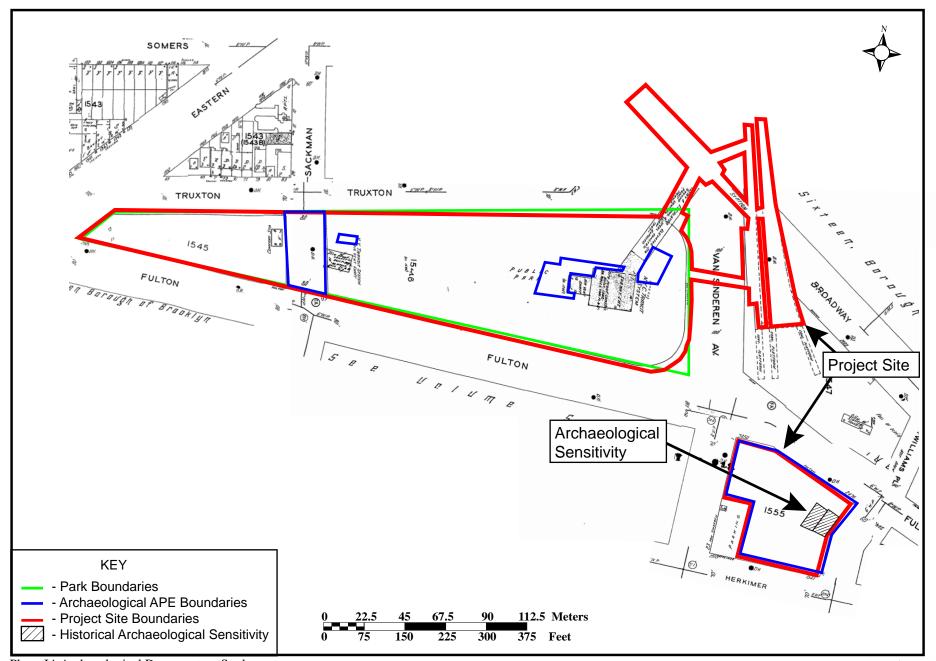
Figure 12: Project Site on Insurance Maps of the Borough of Brooklyn (Sanborn 1908).



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Figure 13: Project Site on Insurance Maps of the Borough of Brooklyn (Sanborn 1951).



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Figure 14: Archaeologically sensitive locations on Insurance Maps of the Borough of Brooklyn (Sanborn 1951).



Photograph 1: Facing west from Van Sinderen Avenue to the station entrance at the Control House for the A, C, E, J, and Z Subway lines.



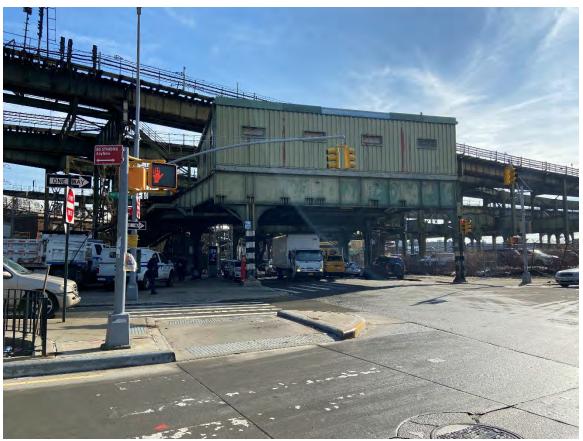
Photograph 2: Facing south from the east sidewalk on Van Sinderen Avenue to the location of the proposed new elevated A/C to L transfer bridge.



Photograph 3: Facing west from the east side of Van Sinderen Avenue to the location of the proposed new elevated A/C to L transfer bridge and the A/C Station Expansion East.

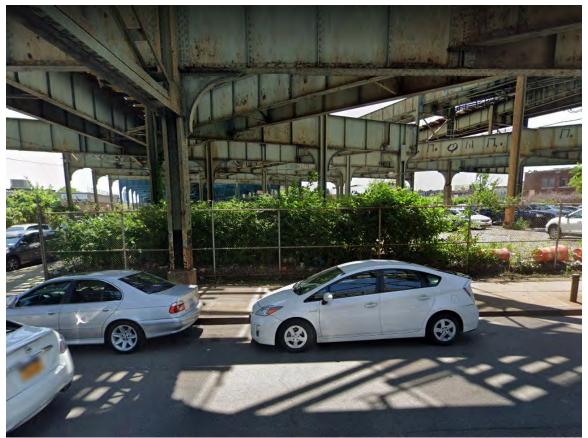


Photograph 4: Facing north from the west side of Van Sinderen Avenue to the location of the proposed new elevated A/C to L transfer bridge. Elevated A/C Line at right.



Photograph 5: Facing east from the west side of Van Sinderen Avenue at Fulton Street with the Elevated L line above and the Block 1555 parking area at right.





Photograph 7: Facing south from Fulton Street to the northeast corner of Block 1555 with Williams Place at far left (Google 11/2019).



Photograph 8: Facing south in the Callahan-Kelly Playground, under construction, to the location of a proposed new Comfort Station and the extant MTA Vent Building, with Sackman Street within the Park at right.



Photograph 9: Facing north to Truxton Street from Callahan-Kelly Playground while under construction.



Photograph 10: Facing northeast from the Callahan-Kelly Playground to the Control House at center right and the escalator over Truxton Street to the J/Z Line over Broadway.



Photograph 11: Facing northeast from the Callahan-Kelly Playground to the Control House at right and the location of the proposed A/C Station Expansion West in foreground.



Photograph 12: Facing northeast from the Callahan-Kelly Playground to the Control House and the location of the proposed A/C Station Expansion West in foreground.

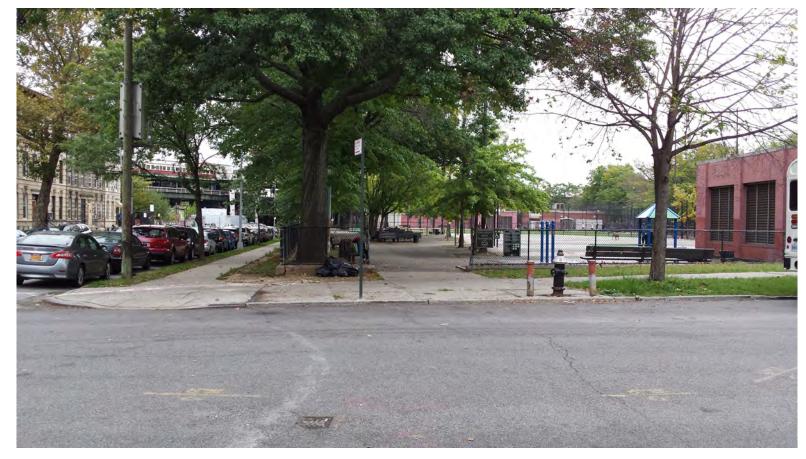


Photograph 13: Facing north from east side of New York Police Department Building to the station entrance at the Control House and the approximate location of the proposed A/C Station Expansion East at far center.

APPENDIX A: PROPOSED PLANS



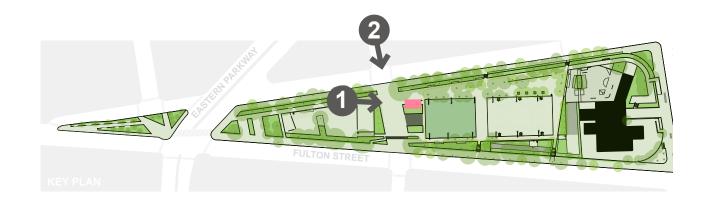




1 - View looking east



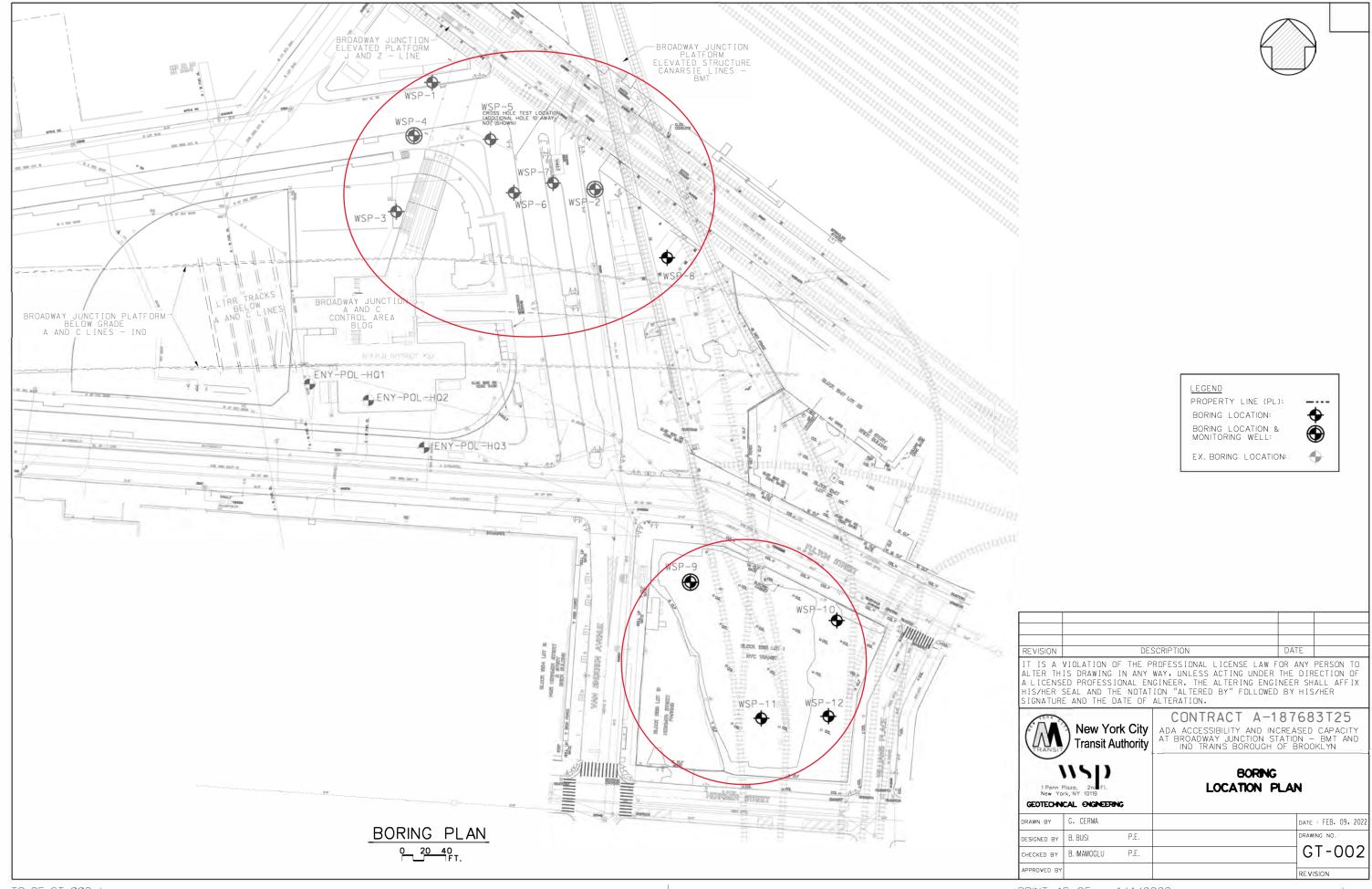
2 - View looking south





APPENDIX B: SOIL BORING PLANS AND LOGS

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STN. NO.: OFFSET: SURFACE ELEV.: 182.0 feet SURFACE EL												n, NY	•					
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RIG TYPE: Truck CYME-85; Automatic Hammer FINISH DATE: 11/719 TIME: 3:00 pm								h								/ 7 /19 T	IMF: 7:00) am
Casing Split Spoon Shelby Tube Pitcher Grab Core Barrel GROUNDWATER DATA									c Ham	mer								
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Date Time City	Type/	Symbo	ol	Н	W		S	U	П	PΝ	G	a	с目					
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Boring No. WSP-1 Sheet 1 of 4	<u> </u>												Por	ing No	WCD 1	Shoo	+ 1 -	of 1

PB BORINGS 2 BROADWAY JUNCTION REV2_DATABASE.GPJ BROADWAY JUNCTION-LIB.GLB.GLB 9/15/20

BORING LOG

(continued)

BORING NUMBER: WSP-1

SHEET NUMBER: ____2 of ___

PROJECT NUMBER: 187683T25

CONTRACTOR: Craig Test Boring Co. DRILLER: Nick Beehler

INSPECTOR: Raqib Caesar

PROJECT: ADA Upgrade of Broadway Junction Station
LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

						- City III			, (1,1,				
	U U				SAI	MPLE		SOIL	. (Blows/	6 in.)			
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)] _,	ELD CLASSIFICATION AND REMARKS
EPT	ZAPH	NG (B)		3ER	302	DEPTH (feet)			CORING	6			ELD CLASSIFICATION AND REWARKS
	Ğ	CASII	TYPE	NUMBER	SYMBOL	DEPT	RUN (in.)	REC. (in.)	REC.	L>4" (in.)	RQD %	Depth Elev.	
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- 30 - -			S	7		30.0 - 32.0	20	16	25	12	6		S-7: Brown, coarse to fine SAND, some coarse to fine Gravel, little Silt, dense, moist (SM)
- 35 - -			S	8		35.0 - 36.6	30	32	43	60/1"	19		S-8: Brown, coarse to fine SAND, some coarse to fine Gravel, little Silt, very dense, moist (SM)
- - - 40 -			S	9		40.0 - 41.3	20	36	100/3"		12		S-9: Brown, coarse to fine SAND, some coarse to fine Gravel, little Silt, very dense, moist (SM)
- 45 - -			S	10		45.0 - 46.1	50	60/1"			7		S-10: Brown, coarse to fine GRAVEL, some coarse to fine Sand, little Silt, very dense, moist (GM)
- 50 - -			S	11		50.0 - 51.3	30	51	80/3"		15		S-11: Brown, coarse to fine SAND, and medium to fine Gravel, trace Silt, very dense, moist (SP)
- - - 55 - -			S	12		55.0 - 57.0	24	40	72	66	12		S-12: Brown, coarse to fine SAND, some medium to fine Gravel, trace Silt, very dense, moist (SP)
_													_

BORING NUMBER: WSP-1

SHEET NUMBER: ____3 ___ of ___

PROJECT NUMBER: 187683T25

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

INSPECTOR: Ragib Caesar

CLIEN	H: Mr.	IA N	lew	/ Y (ork	City Trai	nsit Au	ithorit	y (NYC	JTA)		INSPECTOR: Raqib Caesar
	ŋ				SAI	MPLE		SOIL	_ (Blows/	6 in.)		
I (feet)	IC LO	ows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)	FIELD OF ACCIDINATION AND DEMARKS
DEPTH (feet)	SRAPHIC LOG	CASING (Blows/ft)	l	3ER	30L	DEPTH (feet)			CORING	i		FIELD CLASSIFICATION AND REMARKS
	ğ	CASII	TYPE	NUMBER	SYMBOL	DEPT	RUN (in.)	REC. (in.)	REC.	L>4" (in.)	RQD %	Depth Elev.
_				13		60.0 - 62.0	18	32	40	50	18	S-13: Brown, coarse to fine SAND, little medium to fine Gravel, trace Silt, very dense, moist (SP)
_												-
- -												
- 65			S	14		65.0 - 66.3	25	42	100/3"		12	S-14: Brown, coarse to fine SAND, little medium to
- -								6				fine Gravel, trace Silt, very dense, moist (SP)
_												
- 70			١						K			-
-			S	15		70.0 - 72.0	28	40	52	60	20	S-15: Brown, coarse to fine SAND, trace medium to fine Gravel, trace Silt, very dense, moist (SP)
-												
-												_
- 75 -			S	16		75.0 - 77.0	50	62	46	42	22	S-16: Brown, coarse to fine SAND, trace medium to fine Gravel, trace Silt, very dense, moist (SP)
_												-
- - 75 - - - 80 - - - - - - - - - - - -												_
- 80			S	17		80.0 - 82.0	20	22	20	22	10	S-17: Brown, coarse to fine SAND, little medium to
_						7						fine Gravel, little Silt, dense, moist (SM)
-												
- 85												_
65 -			S	18		85.0 - 87.0	25	26	32	24	20	S-18: Brown, coarse to fine SAND, trace medium to fine Gravel, little Silt, very dense, moist (SM)
_				1								-
-												
- 90			S	19		90.0 - 92.0	15	12	14	8	16	S-19: Brown, coarse to fine SAND, little medium to
<u>-</u> -												fine Gravel, little Silt, medium dense, moist (SM)
_												-
-												

7	\ &			1	A								BORING NUMBER: WSP-1
7 7	1						В	ORI	NG	LC)G		SHEET NUMBER: 4 of 4
								(c	ontinue	ed)			PROJECT NUMBER: 187683T25
PROJI	ECT:	ADA	U	pgı	rad	e of Broad	lway J	unctio	n Stati	on			CONTRACTOR: Craig Test Boring Co.
LOCA	TION	Bro	ad	way	y J	unction St	ation,	Borou	gh of E	Brookly	n, NY		DRILLER: Nick Beehler
CLIEN	IT: M	TA N	lev	v Y	ork	City Tra	nsit Aı	uthorit	y (NY	CTA)			INSPECTOR: Raqib Caesar
			Τ		SΔI	MPLE		SOII	_ (Blows	/6 in)			<u> </u>
) Sect	90-	s/ft)	H		U, 1.	VIII	0/0		<u> </u>		REC.	1	
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)		_		feet)	0/6	6/12	12/18	18/24	(in.)	FI	ELD CLASSIFICATION AND REMARKS
DEP	3RAF	NIG.	۳	NUMBER	SYMBOL	DEPTH (feet)			CORING			<u>.</u>	
		CAS	TYPE				RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
_			S	20		95.0 - 97.0	18	22	20	28	20		S-20: Brown, coarse to fine SAND, little medium to fine Gravel, little Silt, dense, wet (SM)
-		-	ł										
_			l										
- - 100													
- 100		:	S	21		100.0 - 102.0	28	42	40	50	18		S-21: Brown, coarse to fine SAND, little medium to fine Gravel, little Silt, very dense, wet (SM)
-		-	l					7					
-			l										102' End of Boring
_ 105													
-													
-			l										
-			l										
_ _ 110													
-													
_			ł										
-			l										
_ 115													
-													
-			ł										
-			l										
_ _ 120													
-													
-			1										
-			l										
- 125													
- - 110 - - - - 115 - - - 120 - - - - 125 -			1										
_			1										
Ė			1										
												Bori	ing No. WSP-1 Sheet 4 of 4

				_									BORING	NUMBER	R: WSP-2	2	
1			ı				D		NIC	1.0	\ <u>\</u>		SHEET N	NUMBER	:1	of	4
• '	•		ı	_			D	JKI	NG	LC							
													PROJEC	T NUMB	ER: 1876	83T25	
						e of Broad							LOCATION	ON: Van			
						unction St					n, N	Y	COORD	Trux N: 186,5		t SE Cor E: 1,011,	
						City Trailest Boring				JIA)			STN. NO			E: 1,011, FFSET:	030.3
DRILLE				_	_	est Doring	, Comp	pany, 1	110.				_	 E ELEV.:			
INSPE						sar							DATUM:	NYCT			
						tary Wasl								DATE: 11		IME: 7:00	
RIG TY	/PE:	Т			$^{\circ}$	IE-85; Au							FINISH D	DATE: 11/		IME: 3:00) pm
				sing		Split Spoon			Pitcher	Gra		Core Barrel		GROU	NDWATER Water	DATA Casing	Hole
Type/S	symbo	¹ ⊢		IW		S	U[Ш	PΩ	G [<u>XI </u>	с目	.		Depth	Depth	Depth
I.D.		-		.0"		1.375"							Date	Time	(ft)	(ft)	(ft)
O.D.				.5"		2.0"					4		12/26/2019	5:00 PM	16	40	102
Length Hamm		-		J/A		24"		rill Rod S	`i=o		N'	N/	1/30/2020 8/21/2020	1:00 PM 7:15 AM	15.9	40	102
Hamm		-		0 lbs 30"		140 lbs 30"		I.D. (O.E		2		2.625")	9/1/2020	8:40 AM		40	102
Hallilli	lei Fai		Т					-		_	23 (2	2.023)	9/1/2020	8.40 Alvi		40	102
⊋	၂ ဗွ	Ð	L	,	SAI	MPLE		SOIL	_ (Blows/	6 in.)		_					
(fee	C CC	ws/f	ı			G.	0/6	6/12	12/18	18/24	REC						
DEPTH (feet)	3RAPHIC LOG	CASING (Blows/ft)	ı	Ľ.	٦	DEPTH (feet)			CORING		(111.)	i Fi	ELD CLAS	SSIFICAT	ION AND	REMAR	KS
	GR/	SINC	TYPE	NUMBER	SYMBOL	РТН	RUN	REC.	REC.	L>4"	RQE	Depth					
		S	⊦	z	λ	DE	(in.)	(in.)	%	(in.)	%	Elev.					
-	***************************************		\downarrow	١.		10.60		D		ъ			Top 6' excav Sidewalk	-			-
-			G	1	$\backslash /$	1.0 - 6.0	G	R	A	В			G-1: Brown, Gravel, little	coarse to fit Silt, dry (SI	ne SAND, a M/FILL)	nd coarse to	fine _
_	**************************************		┨		\bigvee									, , ,	,		-
- -	**************************************		┨		Λ												-
5	*:-		┨	Ì	\mathbb{N}												
- -			s	1	/ \	6.0 - 8.0	12	13	10	12	20	4	S-1: Brown,				
			1										medium to fi	ine Gravel, n	nedium den	se, dry (SM) -
<u> </u>			S	2		8.0 - 10.0	16	14	12	10	24		S-2: Brown, fine Gravel,			e SAND, tra	.ce
- 10]										ŕ	•			_
			S	3		10.0 - 10.8	25	100/3"			6		S-3: Brown, Gravel, some				fine
			1					1					, = = = =	,, -	, -, (~	,	-
<u> </u>			1	4													-
- -			-														-
- 15			- _S	4		15.0 - 17.0	17	29	40	30	16		S-4: Brown,	coarse to fir	ne GRAVEI	. some coor	-se to
7	000		13	7		13.0 - 17.0	1 /	29	10	30	10		fine Sand, lit				-
_	9 O		ſ														-
<u></u>	0.00		┨														-
B-	0.0		+														_
20	6.00		S	5		20.0 - 22.0	60/3"				3		S-5: Brown,				se to
<u>}</u>	0.00		1										fine Sand, so	ome Silt, ver	y dense, mo	oist (GM)	_
- 20 20	6. C.		1														-
	0.0.0		1														-
	5.0.		1														
												Bor	ing No.	WSP-2	Shee	1 0	of 4

BORING NUMBER: WSP-2

SHEET NUMBER: 2 of ___

PROJECT NUMBER: 187683T25

CONTRACTOR: Craig Test Boring Co. DRILLER: Nick Beehler

INSPECTOR: Ragib Caesar

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIEN	1: IVI	IAN	ew	Y Y ()rk	City Trai	nsit Au	ithorit	y (NYC	JTA)		INSPECTOR: Raqib Caesar
	g				SAN	MPLE		SOIL	_(Blows/	6 in.)		
H (feet	IC LO	ows/ft				et)	0/6	6/12	12/18	18/24	REC. (in.)	
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)		3ER	30L	DEPTH (feet)			CORING	i		FIELD CLASSIFICATION AND REMARKS
	B	CASII	TYPE	NUMBER	SYMBOL	DEPT	RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.
_			S	6		25.0 - 27.0	24	40	48	34	13	S-6: Brown, coarse to fine GRAVEL, some coarse to fine Sand, trace silt, very dense, moist (GW)
-	0.00											
ļ	\$ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0											
- 30			S	7		30.0 - 32.0	22	26	33	25	12	S-7: Brown, coarse to fine SAND, some coarse to
-								R				fine Gravel, little Silt, very dense, moist (SM)
}												
- - 35						25.0 25.0					10	
-			S	8		35.0 - 37.0	46	44	70	66	18	S-8: Brown, coarse to fine Sand, and coarse to fine Gravel, little Silt, very dense, moist (SM)
<u> </u>												
02/01/0												
40			S	9		40.0 - 42.0	32	64	74	75	10	S-9: Brown, coarse to fine Sand, and coarse to fine Gravel, little Silt, hard, moist (SM)
15 - -												
- - -												
§ – 45			S	10		45.0 - 47.0	32	28	44	32	16	S-10: Brown, coarse to fine Sand, and coarse to fine
												Gravel, little Silt, very dense, moist (SM)
40												
- 50												_
30			S	11		50.0 - 52.0	40	42	29	24	10	S-11: Brown, coarse to fine Sand, and coarse to fine Gravel, little Silt, very dense, moist (SM)
55			S	12		55.0 - 57.0	24	20	40	30	17	S-12: Brown, coarse to fine SAND, little Silt, trace
Z -												medium to fine Gravel, very dense, moist (SM)

BORING NUMBER: WSP-2

SHEET NUMBER: 3 of ___

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

PROJECT NUMBER: 187683T25

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

INSPECTOR: Raqib Caesar

				10	<i>,</i> 1 IX	City Trai	iisit At	11110111	y (1111	J1A)			INSPECTOR. Raqib Caesar
	ပြ			;	SAN	//PLE		SOIL	. (Blows/	6 in.)			
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)] [IELD CLASSIFICATION AND REMARKS
EPT	ZAPH	NG (BI		3ER	30L	DEPTH (feet)			CORING	;] [ELD CLASSIFICATION AND REMARKS
	9	CASI	TYPE	NUMBER	SYMBOL	DEPT	RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
			S	13		60.0 - 62.0	27	30	50	42	11		S-13: Brown, coarse to fine SAND, little Silt, trace medium to fine Gravel, very dense, moist (SM)
- 65			S	14		65.0 - 67.0	30	34	40	34	18		S-14: Brown, coarse to fine SAND, some medium to
													fine Gravel, little Silt, very dense, moist (SM)
- 70													
			S	15		70.0 - 72.0	32	50	62	48	17		S-15: Brown, coarse to fine Gravel, and coarse to fine Sand, little Silt, very dense, moist (GM)
							X						
	90 C												
- 7 5	0.00		S	16		75.0 - 77.0	32	32	22	18	16		S-16: Brown, coarse to fine SAND, little medium to fine Gravel, little Silt, very dense, moist (SM)
													file Graver, fittle Sift, very defise, filosot (Sivi)
- 80			S	17		80.0 - 82.0	22	17	22	18	12		S-17: Brown, coarse to fine SAND, little medium to
			٥	1 /		80.0 - 82.0	ZZ	17	22	10	12		fine Gravel, little Silt, dense, moist (SM)
- 85			S	18		85.0 - 87.0	18	24	22	18	12		S-18: Brown, coarse to fine SAND, little medium to fine Gravel, little Silt, dense, moist (SM)
- 90			S	19		90.0 - 92.0	28	26	27	27	15		S-19: Brown, coarse to fine SAND, little Silt, trace
													medium to fine Gravel, very dense, moist (SM)

1	\ &			1									BORING NUMBER: WSP-2
\	1						В	ORI	NG	LC)G		SHEET NUMBER: 4 of 4
								(C	ontinue	ed)			PROJECT NUMBER: 187683T25
PROJ	ECT:	ADA	U	pgr	rad	e of Broad	lway J	unctio	n Stati	on			CONTRACTOR: Craig Test Boring Co.
LOCA	TION	Bro	aď	way	y Jı	unction St	ation,	Boroug	gh of B	rookly	n, NY		DRILLER: Nick Beehler
CLIEN	IT: M	TA N	lev	v Y	ork	City Tra	nsit Aı	uthorit	y (NYC	CTA)			INSPECTOR: Raqib Caesar
			Т		SΔI	MPLE		SOIL	_ (Blows/	6 in)			<u> </u>
eet)	F0G	s/ft)	H		ا ا	VII	0/0		1	1	REC.		
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)		~		feet)	0/6	6/12	12/18	18/24	(in.)	FI	ELD CLASSIFICATION AND REMARKS
DEP	3RAF	9ING	۳	NUMBER	SYMBOL	DEPTH (feet)			CORING				
		CAS	TYPE				RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
-			S	20		95.0 - 97.0	20	26	29	31	11		S-20: Brown, coarse to fine SAND, little Silt, trace medium to fine Gravel, very dense, wet (SM)
-		:	┨										
-			ł										
- - 100													
- 100			S	21		100.0 - 102.0	22	24	18	22	10		S-21: Brown, coarse to fine SAND, little Silt, trace medium to fine Gravel, dense, wet (SM)
_			ł					7					
-													End of Boring at 102'
_ 105													
-			$\ $										
-			ł				X						
_			1										
- 110													
_			ł										
_			ł										
- 115			┨										
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-			1										
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– 120			┨										
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- - 110 - - - - 115 - - - 120 - - - - 125 - -													
-			1										
	1		1										
-			1										
-													

	A			7	1								BORING	NUMBE	R: WSP-	3	
1	•						D4	יםר	NIC	10			SHEET N	NUMBER	:1	of	4
	•			4			D(JKI	NG	L	J						
													PROJEC	T NUMB	ER: 1876	683T25	
						e of Broad							LOCATIO	ON: Calla	han-Kel	ly Playgr	ound
						unction St					n, NY	•	00000	N. 106 5	160	E. 1.010	0747
						City Tra				JTA)			COORD. STN. NO			E: 1,010, DFFSET:	8/4.7
DRILL					_	est Boring	g Comj	pany, 1	nc.				SURFAC		_		
INSPE						sar							DATUM:		. 10010 10		
						tary Wasl	h						START D		/4/19 T	IME: 7:0 0) am
RIG T						IE-85; Au		c Ham	mer				FINISH D	ATE: 11	/5/19 T	IME: 3:00) pm
			Ca	sing		Split Spoon	-		Pitcher	Gra		Core Barrel		GROU	NDWATER		
Type/S	Symbo	ı	Н	W		S	U[PΩ	G		с目			Water Depth	Casing Depth	Hole Depth
I.D.			4	.0"		1.375"							Date	Time	(ft)	(ft)	(ft)
O.D.			4	.5"		2.0"											
Length	1		N	/A		24"					\triangle						
Hamm	ner Wt	. L	140	lbs		140 lbs	D	rill Rod S	Size		NW	7					
Hamm	ner Fal	I	3	80"		30"		I.D. (O.D).)	2	.25" (2	625")					
	U			;	SAI	MPLE		SOIL	_ (Blows/	6 in.)							
DEPTH (feet)	GRAPHIC LOG	ws/ft)				t)	0/6	6/12	12/18	18/24	REC. (in.)]		0.510.4			140
EPTH	APHI	IG (Bk		ËR	占	н (fee			CORING			- FI	ELD CLAS	SSIFICAT	ION ANL	REMAR	KS
	GR	CASING (Blows/ft)	TYPE	NUMBER	SYMBOL	DEPTH (feet)	RUN (in.)	REC.	REC.	L>4" (in.)	RQD %	Depth Elev.					
	- 1200		t				` '	, ,	A	,	70	Liov.	Top 6' excava	ated by han	d excavation	n tools. 6"	
 	₩.;;		G	1	V	0.5 - 3.0	G	R	A	В			Topsoil G-1: Brown,	coarse to fi	ne SAND, s	some Silt, litt	tle -
 	***		1		Λ								coarse to fine	e Gravel, dr	y (SM/FILL	L)	_
-	**************************************		G	2		3.0 - 3.5	G	R	A	В			G-2: Brown,	coarse to fi	ne Sand, an	d Silt, little	-
<u> </u>	4		G G		X	3.5 - 4.5 4.5 - 6.0	G G	R R	A	B B			coarse to fine G-3: Brown,	coarse to fi	ne Sand, an	d coarse to f	fine
5	*£*		10	4	X	4.3 - 0.0	ď	K	A	Б			Gravel, trace (SW/FILL)	Silt, debris	, bricks, ste	el wire	
5			S	1		6.0 - 8.0	10	12	48	15	14	1	G-4: Brown,	coarse to fi	ne Sand, an	d Silt, little	_
			1										coarse to fine S-1: Brown,	e Gravel, dr coarse to fir	y (SM-ML/. ne SAND, s	FILL) ome Silt, litt	le
<u> </u>			S	2		8.0 - 10.0	20	18	19	32	19		coarse to fine S-2: Brown,	e Gravel, ve	ry dense, dr	y (SM)	_
1			1					1					little Silt, der		ozuve, 11	anc mic Gra	
10			s	3		10.0 - 12.0	22	34	31	19	12		S-3: Brown, medium San				_
													modum ball	a, nace onl,	, very delise	(01)	_
																	_
	0.0																_
15																	_
15			S	4		15.0 - 17.0	15	15	38	25	7		S-4: Brown, fine Gravel, l				to
													mic Gravel, I	nuic om, ve	iy uciise (s.	141)	_
				1	1												_
																	_
20 - 20																	_
<u> </u>			S	5		20.0 - 21.3	31	65	100/3"		11		S-5: Brown, fine Sand, lit				se to
	0.0												mic band, iit	and one, very	, acrisc, 1110.	(OI)	_
	0.000																_
<u> </u>	0.0		1														_
	0.00																
	· <u></u>				_							Bori	ing No.	WSP-3	Shee	t 1 c	of 4

BORING NUMBER: WSP-3

SHEET NUMBER: 2 of ___

PROJECT NUMBER: 187683T25

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

INSPECTOR: Ragib Caesar

÷	92	£			SAN	MPLE		SOIL	_(Blows/	6 in.)			
DEPTH (feet)	GRAPHIC LOG	(Blows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)	FIF	ELD CLASSIFICATION AND REMARKS
DEPT	RAPI	NG (B	.	NUMBER	BOL	DEPTH (feet)		1	CORING	i			
_	O	CASING	TYPE	MUN	SYMBOL		RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
			S	6		25.0 - 26.3	34	44	100/3"		12	1	S-6: Brown, coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, very dense, moist (GW)
30			S	7		30.0 - 30.8	75	100/3"			6		S-7: Brown, coarse to fine GRAVEL, and coarse to
												1	fine Sand, trace Silt, very dense, moist (GW)
									K				
35			S	8		35.0 - 37.0	48	32	55	56	12		S-8: Brown, coarse to fine SAND, and coarse to fine Gravel, trace Silt, very dense, moist (SW)
	*****						K					K.	
40			S	9		40.0 - 42.0	27	42	46	34	16		S-9: Brown, coarse to fine SAND, little fine Gravel,
												l t	trace Silt, very dense, moist (SP)
						Ť							
4.5	°°°°° 1												
1 5			S	10		45.0 - 47.0	28	64	78	75	24	1	S-10: Brown, coarse to fine Gravel, and coarse to fine Sand, trace Silt, very dense, moist (GW)
	1.000												
50			S	11		50.0 - 52.0	80/3"				3		S-11: Brown, coarse to fine SAND, trace fine Gravel,
												t	trace Silt, very dense, moist (SP)
				1									
55			S	12		55.0 - 57.0	58	62	78	63	18		S-12: Brown, coarse to fine SAND, little fine Gravel, trace Silt, very dense, moist (SP)

BORING NUMBER: WSP-3

SHEET NUMBER: 3 of ___

PROJECT NUMBER: 187683T25

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

INSPECTOR: Ragib Caesar

£	92	₽.			SAN	MPLE		SOIL	(Blows/	'6 in.)			
DEPTH (feet)	GRAPHIC LOG	(Blows/ft)				eet)	0/6	6/12	12/18	18/24	REC. (in.)	FIE	ELD CLASSIFICATION AND REMARKS
DEPT	RAP	NG (E	.	NUMBER	SYMBOL	DEPTH (feet)			CORING	3			
	U	CASING	TYPE				RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
			S	13		60.0 - 62.0	26	36	50	33	13	S fi	ine Gravel, trace Silt, very dense, moist (SP)
65			S	14		65.0 - 67.0	27	28	30	34	20	S	3-14: Brown, coarse to fine SAND, little medium to ine Gravel, trace Silt, very dense, moist (SP)
70			S	15		70.0 - 72.0	28	30	36	40	10	S	3-15: Brown, coarse to fine SAND, little Silt, trace ine Gravel, very dense, moist (SM)
							X					"	ine Graver, very dense, moist (SW)
75				16		75.0. 77.0	10	24	20	10	1.4		
			S	16		75.0 - 77.0	18	24	20	18	14	S tr	3-16: Brown, coarse to fine SAND, trace fine Gravel, race Silt, dense, moist (SP)
30			S	17		80.0 - 82.0	68	69	80	70	17	S	5-17: Brown, coarse to fine SAND, little medium to ine Gravel, trace Silt, very dense, moist (SP)
35			S	18		85.0 - 87.0	25	20	18	15	12		8-18: Brown, coarse to fine SAND, some fine Gravel, race Silt, dense, moist (SP)
												u I	ent on, dense, most (of)
90			C	19		90.0 - 92.0	21	20	38	26	12		5-19: Brown, coarse to fine SAND, some medium to
			٥	19		90.0 - 92.0	<u> </u>	20	38	20	12		ine Gravel, trace Silt, very dense, moist (SP)

				7	A								BORING NUMBER: WSP-3
11			ı				R) Pl	NG	LC	C		SHEET NUMBER: 4 of 4
- '	_		ı				ים	OIXI (C	ontinue	ed)			
550 15	-OT	4 D 4	<u> </u>		_	c D		•					PROJECT NUMBER: 187683T25
						e of Broad							CONTRACTOR: Craig Test Boring Co.
				-		unction St			_	-	n, NY		DRILLER: Nick Beehler
CLIEN	T: M	TA N	lev	v Yo	ork	City Tra	nsit Aı	ıthorit	y (NYC	CTA)			INSPECTOR: Raqib Caesar
			Γ		SAI	MPLE		SOII	_(Blows/	/6 in.)			
eet)	LOG	s/ft)	H				0/6	6/12	12/18	18/24	REC.		
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	l			eet)	0/0				(in.)	FII	ELD CLASSIFICATION AND REMARKS
DEP	RAP	NG (<u> </u>	1BER	SYMBOL	DEPTH (feet)			CORING				
	U	CASI	TYPE	NUMBER	SYM	DEP'	RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
		:	S	20		95.0 - 97.0	20	22	25	27	24		S-20: Brown, coarse to fine SAND, little medium to fine Gravel, trace Silt, dense, wet (SP)
													file Graver, trace Siit, delise, wet (Si.)
-			1										
-		-	┨										
100			s	21		100.0 -	26	28	44	36	20		S-21: Brown, coarse to fine SAND, little medium to
-		-	1			102.0							fine Gravel, trace Silt, very dense, wet (SP)
<u> </u>			1										
													102' End of Boring
105			1										
-			┨										
-			┨				X						
			1										
5 440			1									Ì	
110]										
-			-										
<u>-</u>			┨										
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115			┨										
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120			┨				Ĭ						
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_			1										

WSP-3

Sheet 4 of

Boring No. __

				_	\ \								BORING	NUMBER	R: WSP-	4	
			ı				D	ADI	NC	10			SHEET N	NUMBER	:1	of	4
• '	•	-	ı				D	JKI	NG	LC	J						
													PROJEC	T NUMB	ER: 1876	683T25	
						e of Broad							LOCATION			Avenue a	
						unction St					n, NY	7				et SW Coi	
						City Tra				CTA)			STN. NO	N: 186,5		E: 1,010, DFFSET:	890.8
DRILLE						est Boring	g Comp	pany, I	nc.				_).: SE ELEV.:	_		
						narathna							DATUM:		102.0 10	.c.	
						tary Wasl	h							DATE: 8 /1	14/20 T	TME: 7:30) am
RIG TY						CME-55;		natic I	Hamme	er						IME: 1:30	
				sing	Ĩ	Split Spoon			Pitcher	Gra	ab	Core Barrel		GROU	NDWATER	DATA	
Type/S	Symbo	ı	Н	W		S	U		PΝ	G	a	с目			Water	Casing	Hole
I.D.	•		4	.0"		1.375"		_					Date	Time	Depth (ft)	Depth (ft)	Depth (ft)
O.D.			4	.5"		2.0"							8/21/2020	7:15 AM		50	102
Length			1	5'		24"					A		9/1/2020	8:40 AM		50	102
Hamm			140) lbs		140 lbs	D	rill Rod S	Size		NV	7					
Hamm	er Fal			0"	1	30"		I.D. (O.E).)	2	.25" (2	.625")					
			Т		201	MPLE		-	(Blows/		<u> </u>						
	9	£	H		ורכ	VII LL		1	_ (DIOWS/	0 111.)	DEO	_					
l (fee	I C L	/swc				it)	0/6	6/12	12/18	18/24	REC. (in.)			OUTIOAT	IONI ANIF		140
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)		జ	٦	DEPTH (feet)			CORING				ELD CLAS	SSIFICAT	ION ANL) REMAR	KS
	GR/	NIS	l۳	NUMBER	SYMBOL	PTH	RUN	REC.	REC.	L>4"	RQD	Depth					
		Š	TYPE	S	SYI	DE	(in.)	(in.)	% %	(in.)	W W	Elev.					
			G	1	\/	0.3 - 2.0	G	R	A	В			Top 6' excav Slab (4")	ated by han	d excavation	n tools. Con	crete
					X								G-1: Brown,	coarse to fin	ne SAND, s	some Silt, litt	le
			G	2	\setminus	2.0 - 4.0	G	R	A	В			medium to fi	ne Gravel, s	lightly mica	aceous, mois	t
0,000					\setminus								G-2: Brown, fine Gravel,	coarse to fi	ne SAND, t	race mediun	ı to
- 5			G	3	<	4.0 - 6.0	G	R	A	В			(SM)		ightiy iincat	cous, moist	
5					\setminus								Cobble at ap G-3: Brown	to red to gra	y, coarse to	fine GRAV	EL,
- B.G			S	1		6.0 - 8.0	25	42	31	19	12		some coarse fragments, sl	to fine Sand	l, trace Silt,	trace quartz	_
						Ť					Ť		S-1: Brown t	to white, coa	rse to fine	GRAVEL, li	
			S	2		8.0 - 10.0	25	32	43	36	19		coarse to fine dense, dry (S		e Silt, trace	quartz, very	
₹ - 10			1										S-2: Brown to some coarse	to white to g	ray, coarse	to fine SAN	D,
			S	3		10.0 - 12.0	4	5	13	13	12		micaceous, v	ery dense, d	lry (SM-GN	1)	•
													S-3A: (Top 6 and medium	o") Brown to to fine Grav	gray, coars vel, little Sil	se to fine Sai t, medium d	nd, ense,
			1										moist (SM-C S-3B: (Botto	GM)	· ·		
D. I			1										trace coarse				
4.5			1										moist (GM)				_
15			S	4		15.0 - 17.0	18	16	23	18	8		S-4: Brown, Gravel, trace				
													(SM-GM)	Sin, Siigini	y IIIIcaceous	s, delise, illo	ist -
	74		1		1												_
			1														_
<u> </u>																	-
20			S	5		20.0 - 20.2	100/2"				2		S-5: Gray, co				
E C			1										fine Sand, tra moist (GM)	ace siii, siig	ппу писасе	ous, very de	nse, -
25			1														_
			1														_
			1														_
												Bori	ing No.	WSP-4	Shee	t 1 c	of 4

BORING NUMBER: WSP-4

SHEET NUMBER: 2 of ___

PROJECT NUMBER: 187683T25

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

INSPECTOR: Gayani Gunarathna

GRAPHIC LOG	CASING (Blows/ft)	ω TYPE			DEPTH (feet)	0/6	1	12/18 CORING	18/24	REC. (in.)		ELD CLASSIFICATION AND REMARKS
	CASING (E						1	CORING			, FIF	LED OFFICIENT HOW BIND KEINBERG
	CASI					- * **]	
		S	6			(in.)	REC.	REC. %	L>4" (in.)	RQD %	Depth Elev.	
					25.0 - 27.0	24	22	21	80	12	1	S-6: Brown, coarse to fine GRAVEL, trace coarse to fine Sand, trace Silt, dense, moist (GM-SM)
· ^ +		S	7		30.0 - 32.0	30	27	21	23	11	S	S-7: Brown, coarse to fine SAND, some coarse to
					1						1	fine Gravel, trace Silt, dense, moist (SM)
⊋i∙i∤												
		S	8		35.0 - 37.0	21	17	18	17	13		S-8: Brown, coarse to fine SAND, little coarse to fine Gravel, trace Silt, dense, moist (SM) Approx. 1.5" Gravel piece
						X						Approx. 1.5 Graver piece
م`•`•]				K								
		S	9		40.0 - 40.8	30	100/3"			9	S	S-9: Brown to gray, coarse to fine SAND, little+ coarse to fine Gravel, trace Silt, very dense, moist
												(SM)
اه``ه``ه												
~ೆ•ೆ•ો		ç	10		15.0 15.9	51	100/4"			10		S 10. Proven aggregate fine SAND and medium to
		S	10		43.0 - 43.8	31	100/4			10	í	S-10: Brown, coarse to fine SAND, and medium to fine Gravel, trace Silt, very dense, moist (SM-GM)
		S	11		50.0 - 52.0	39	38	56	40	16	<u> </u>	S-11: Brown to dark gray, coarse to medium SAND, little coarse to fine Gravel, trace Silt, slightly
											1	micaceous, very dense, moist (SM)
		S	12		55 0 - 57 0	21	28	38	25	16		S-12: Brown to dark gray, coarse to medium SAND
					2.3 57.0			20			t	trace medium to fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
				S 8 8 9 S 10 S 11	S 8 8 9 S 10 S 10	S 8 35.0 - 37.0 S 9 40.0 - 40.8 S 10 45.0 - 45.8	S 8 35.0 - 37.0 21 S 9 40.0 - 40.8 30 S 10 45.0 - 45.8 51	S 8 35.0 - 37.0 21 17 S 9 40.0 - 40.8 30 100/3" S 10 45.0 - 45.8 51 100/4" S 11 50.0 - 52.0 39 38	S 8 35.0 - 37.0 21 17 18 S 9 40.0 - 40.8 30 100/3" S 10 45.0 - 45.8 51 100/4" S 11 50.0 - 52.0 39 38 56	S 8 35.0 - 37.0 21 17 18 17 S 9 40.0 - 40.8 30 100/3" S 10 45.0 - 45.8 51 100/4" S 11 50.0 - 52.0 39 38 56 40	S 8 35.0 - 37.0 21 17 18 17 13 S 9 40.0 - 40.8 30 100/3" 9 S 10 45.0 - 45.8 51 100/4" 10 S 11 50.0 - 52.0 39 38 56 40 16	S 8 35.0 - 37.0 21 17 18 17 13 S 9 40.0 - 40.8 30 100/3" 9 S 10 45.0 - 45.8 51 100/4" 10 S 11 50.0 - 52.0 39 38 56 40 16

BORING NUMBER: WSP-4

SHEET NUMBER: ____3 ___ of _

PROJECT NUMBER: 187683T25

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler INSPECTOR: Gayani Gunarathna

PROJECT: ADA Upgrade of Broadway Junction Station LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

	CLIEN	1 . 1 V1 1	IAI	en	1 (ЛК	City I rai	nsit At	ıtııdı it	y (1 11	CIA)			INSPECTOR. Gayani Gunaratina
		(5)				SAN	MPLE		SOIL	_(Blows/	'6 in.)			
	DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)		ELD CLASSIFICATION AND DEMARKS
	EPTF	ZAPHI	NG (BI		3ER	30	DEPTH (feet)			CORING	}		FI	ELD CLASSIFICATION AND REMARKS
		G.	CASIN	TYPE	NUMBER	SYMBOL	DEPT	RUN (in.)	REC. (in.)	REC.	L>4" (in.)	RQD %	Depth Elev.	
	_			S	13		60.0 - 62.0	38	43	52	35	20		S-13: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
	-													-
	-													
	- 65			S	14		65.0 - 67.0	31	39	49	41	21		S-14: Brown, coarse to fine SAND, trace fine Gravel,
	- -								•					trace Silt, slightly micaceous, very dense, moist (SM)
	_													
	- 70			S	15		70.0 - 72.0	30	38	40	46	22		S-15: Brown, coarse to fine SAND, trace fine
	_			٦	13		70.0 - 72.0	30	36	40	40	22		Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
0	-													
9/15/2	-													-
SE.GPJ BROADWAY JUNCTION-LIB.GLB.GLB 9/15/20	– 75 -			S	16		75.0 - 77.0	42	58	63	55	20		S-16: Brown to gray, coarse to fine SAND, little+ medium to fine Gravel, trace Silt, slightly micaceous,
N-LIB.G	-													very dense, moist (SM)
JNCTIO	-													- -
WAY JI	- 80			S	17		80.0 - 82.0	18	16	22	17	12		S-17: Brown to gray, coarse to fine SAND, trace fine
BROAD	- -													Gravel, trace Silt, slightly micaceous, dense, moist (SM)
E.GPJ	-													-
	- 85			١										
EV2_D/	-			S	18		85.0 - 87.0	24	21	20	15	16		S-18: Brown to gray, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, dense, moist (SM)
TION R	_													
Y JUNC	-													-
DADWA	- 90 -			S	19		90.0 - 92.0	20	19	27	26	14		S-19: Brown to gray, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, dense, moist
3 2 BRC	_													(SM)
PB BORINGS 2 BROADWAY JUNCTION REV2_DATABA	_													-
PB B														

	1							(c	ING ontinue	ed)	G		BORING NUMBER: WSP-4 SHEET NUMBER: 4 of 4 PROJECT NUMBER: 187683T25
LOCA	TION	: Bro	ad	way	y J	e of Broad unction St City Tra	ation,	Borou	gh of B	Brookly	n, NY		CONTRACTOR: Craig Test Boring Co. DRILLER: Nick Beehler INSPECTOR: Gayani Gunarathna
	ŋ				SAI	MPLE		SOIL	_ (Blows/	/6 in.)			
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)		ELD CLASSIFICATION AND REMARKS
DEPT	RAP	ING (B	_	NUMBER	SYMBOL	DEPTH (feet)			CORING	}]	LED GENOGII 10/11/014/1145 NEW 1116
		CAS	TYPE				RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
-			S	20		95.0 - 97.0	20	21	23	24	19		S-20: Brown to gray, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, dense, wet (SM)
- 100 - - -			S	21		100.0 - 102.0	24	24	33	32	19		S-21: Brown to gray, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, wet (SM) 102' End of Boring
- 105 - -			-										
76 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10			=										
— 115 — 115			-										
- 120 - 120 													
- 115 - 120 - 125													
												Bori	ing No. WSP-4 Sheet 4 of 4

				1	<u> </u>								BORING	NUMBER	R: WSP-	5	
1	\						D4	יםר	NIC	10			SHEET N	NUMBER	:1	of	4
• '	•			4			D(JKI	NG	L	J						
													PROJEC	T NUMB	ER: 1876	683T25	
				• •		e of Broad	•						LOCATIO				
						unction St					n, NY	•	00000			et SW Co	
						City Tra				JTA)			COORD. STN. NO			E: 1,010, FFSET:	,960.8
DRILLE				_	_	est Boring	g Comj	pany, I	IIC.				SURFAC				
						ayani Gui	1arath	na					DATUM:		. 102.010		
						tary Wasl							START D		5/20 T	IME: 10:3	30 am
RIG TY						CME-55;		natic I	<u> Iamme</u>	<u>er</u>			FINISH D			IME: 1:00	
			Ca	sing		Split Spoon	Shelby	Tube	Pitcher	Gra	ıb (Core Barrel		GROU	NDWATER	DATA	
Type/S	Symbo	ı L	Н	W		S	U[PΩ	G		С目			Water Depth	Casing Depth	Hole Depth
I.D.			4.	.0"		1.375"							Date	Time	(ft)	(ft)	(ft)
O.D.			4.	.5"		2.0"											
Length	l		1	.8'		24"											
Hamm	er Wt.		140) lbs		140 lbs	D	rill Rod S	Size		NV	7					
Hamm	er Fal	ı	3	80"		30"		I.D. (O.E	D.)	2	.25" (2	.625")					
	U)				SAI	MPLE		SOIL	_ (Blows/	6 in.)							
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				ıt)	0/6	6/12	12/18	18/24	REC. (in.)]		OIEIO AE	UON AND	. DEL	140
EPTH	≀APHI	IG (Bk		ER	占	н (fee		1	CORING			f FI	ELD CLAS	SSIFICAT	ION AND) KEMAR	KKS
	В	CASIN	TYPE	NUMBER	SYMBOL	DEPTH (feet)	RUN (in.)	REC.	REC.	L>4" (in.)	RQD %	Depth Elev.					
	<u> </u>		G		7	0.3 - 2.0	G	R	A	В	70		Top 6' excava	ated by han	d excavation	n tools. Con	crete
 			1	1	X	0.3 - 2.0	J	K	74	ט			Slab (4") G-1: Dark br	own, coarse	to fine SA	ND, little co	arse
F			G	2	$\left(\cdot \right)$	2.0 - 4.0	G	R	A	В			to fine Grave	l, little Silt,	moist (SW-	SM)	-
-			1		X								G-2: Dark br medium to fi	ne Gravel, t	race Silt, oc	casional bri	ck -
2 - 5			G	3		4.0 - 6.0	G	R	A	В			fragments, da Approx. 7" w	ry (SW) vide cobble :	at approx. 2	ft depth.	=
5			1		X			_					G-3: Dark br to fine Grave	own, coarse	e to fine SA	ND, little co	arse
-			s	1		6.0 - 8.0	10	21	22	14	22	1	Rotary drilling	ng started.			_
	8.7		1										S-1: Ďark bro SAND, some				
<u>-</u>			s	2		8.0 - 9.2	11	16	50/2"		5		dry (SW-SM S-2: Brown,)	·	· ·	_
			1					1					fine Gravel, t				
10			s	3		10.0 - 12.0	9	12	50	35	20		S-3A: (Top 1				and,
2			1										little medium micaceous, v	ery dense, r	noist (SW-S	SM)	_
2			1										S-3B: (Botto Gravel, and o	m ³ ") Dark	gray, coarse	e to medium	-
	8. (3)		1	1									dense, moist	(GP-SM)			_
4-			1										Rig chatterin	g at 12 ft.			_
15			S	4		15.0 - 17.0	5	38	35	29	12		S-4: Brown t				
- -													and coarse to (SM/GM)	tine Grave	ı, little Silt,	very dense,	moist -
		7	1														_
			1														-
<u> </u>																	_
20			S	5		20.0 - 22.0	13	21	23	27	12		S-5: Dark bro				
			1										medium Gramoist (SP-SN		ı, siightly m	ncaceous, de	ense, -
7 2	\$		1										•				_
			1														-
			1														_
-	0/3/8/											Bori	ing No.	WSP-5	Shee	t 1 c	of 4

1	\ K			1	1								BORING NUMBER: WSP-5
1	1						В	ORI	NG	LC)G		SHEET NUMBER: 2 of 4
							_	(C	ontinue	ed)			PROJECT NUMBER: 187683T25
ROJI	ECT:	ADA	\mathbf{U}_{j}	pgr	rad	e of Broad	lway J	unctio	n Stati	on			CONTRACTOR: Craig Test Boring Co.
OCA	TION:	Bro	ad	way	y Jı	unction St	ation,	Borou	gh of B	rookly	n, NY		DRILLER: Nick Beehler
CLIEN	IT: M	ΓA N	lew	Y	ork	City Tra	nsit Aı	ıthorit	y (NYC	CTA)			INSPECTOR: Xin Ma/ Gayani Gunarathna
<u> </u>	_Q				SAI	MPLE		SOIL	_ (Blows/	6 in.)			-
(feet	CLO	ws/ft				t)	0/6	6/12	12/18	18/24	REC. (in.)	_	
DEPTH (feet)	GRAPHIC LOG	G (Bic		ER	Ы	H (fee			CORING	}	, ,	 	IELD CLASSIFICATION AND REMARKS
□	G. B.	CASING (Blows/ft)	TYPE	NUMBER	SYMBOL	DEPTH (feet)	RUN (in.)	REC.	REC.	L>4" (in.)	RQD %	Depth Elev.	
	0,000		S	6		25.0 - 26.8	50	50	49	50/3"	11		S-6: Brown to dark gray, coarse to fine Gravel, and coarse to fine Sand, little Silt, very dense, moist
													(GM) Rig chattering at 29 ft
													rag chattering at 27 It
			1										
30		-	S	7		30.0 - 32.0	41	85	77	36	17		S-7: Brown to dark gray, coarse to fine SAND, some
			1										coarse to fine Gravel, little+ Silt, very dense, moist (SM)
			1										
35			S	8		35.0 - 37.0	15	22	24	23	19		S-8: Brown, coarse to fine SAND, little coarse to fine
						33.0 - 37.0	13		27	23			Gravel, trace Silt, dense, moist (SW)
			l				X						
			1										
40			١										
.0			S	9		40.0 - 40.8	44	50/4"			7		S-9: Brown to dark gray to red, coarse to fine SAND some coarse to fine Gravel, trace Silt, very dense,
			l										moist (SW)
			1										
45			1					1					
45			s	10		45.0 - 47.0	51	62	51	22	13		S-10: Brown to dark gray to red, coarse to fine SAND, some coarse to fine Gravel, trace Silt, very
								3					dense, moist (SW)
	*****		-										
			1										
50		-	s	11		50.0 - 52.0	29	29	27	24	13		S-11: Brown, coarse to fine SAND, trace medium
													Gravel, trace Silt, very dense, moist (SW)
			1	1									
				4									
55			S	12		55.0 - 57.0	20	15	27	27	14		S-12: Brown, coarse to fine SAND, trace medium
	*****			12		55.0 - 57.0	20	13		-	17		Gravel, trace Silt, dense, moist (SW) Bottom 3" dry
	****		1										Dottom 5 dry
			1										
	******		1										

1		•					В	ORI	NG	LC)G		BORING NUMBER: WSP-5 SHEET NUMBER:3 of4
OCA	ΓΙΟΝ:	Broa	adv	vay	y Jı	e of Broad unction St	ation,	unction Borous	n Stati gh of E	on Brookly	n, NY		PROJECT NUMBER: 187683T25 CONTRACTOR: Craig Test Boring Co. DRILLER: Nick Beehler INSPECTOR: Xin Ma/ Gayani
						MPLE			_ (Blows			1	Gunarathna
DEPTH (feet)	GRAPHIC LOG	lows/ft)					0/6	6/12	12/18	18/24	REC. (in.)	, F	FIELD CLASSIFICATION AND REMARKS
DEPT	GRAPI	CASING (Blows/ft)	TYPE	NUMBER	SYMBOL	DEPTH (feet)	RUN	REC.	CORING	L>4"	RQD	Depth	IZZD GZ (GGN 16) (I 16) (I 16) (I 16)
		0		13		60.0 - 62.0	(in.) 26	(in.) 34	40	(in.) 31	% 15	Elev.	S-13: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, moist (SW) Bottom 7" dry
65			S	14		65.0 - 67.0	23	38	35	35	18		S-14: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, very dense, moist (SW)
70			S	15		70.0 - 72.0	31	39	53	58	17		S-15: Brown, coarse to fine SAND, trace medium Gravel, trace Silt, slightly micaceous, very dense, moist (SW-SM)
75			S	16		75.0 - 77.0	34	32	38	32	19		S-16: Brown to yellow, coarse to fine SAND, trace medium to fine Gravel, trace Silt, slightly micaceous, very dense, moist (SW)
80			S	17		80.0 - 82.0	26	22	22	30	11		S-17: Brown to dark gray, coarse to fine SAND, trace medium to fine Gravel, trace Silt, slightly micaceous, dense, moist (SW)
85			S	18		85.0 - 87.0	18	22	21	25	13		S-18: Brown to dark gray, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, dense, moist (SW)
90			S	19		90.0 - 92.0	25	24	26	42	15		S-19: Brown to dark gray, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, dense to very dense, moist (SW)

				1	<u> </u>								BORING NUMBER: WSP-5
11	1 7						R/)DI	NIC	1 6	C		SHEET NUMBER: 4 of 4
	-	_		_			D	C)	ontinue	LC	J		DDO IFOT NUMBER (07/02/72
DDO "	-CT:	AD A	TT		10.1	a of D							PROJECT NUMBER: 187683T25
						e of Broad	-				NIV		CONTRACTOR: Craig Test Boring Co. DRILLER: Nick Beehler
				•	•	unction St City Tra			_	•	n, N Y		INSPECTOR: Xin Ma/ Gayani
CLILIN	1. 1V1	IAN	ıev	V 1 (UI K	City 11a	iisit At	11110111	y (1 11 1	CIA)			Gunarathna
	ں ا				SAI	MPLE		SOIL	_ (Blows	/6 in.)			
(feet	СГО	ws/ft				t)	0/6	6/12	12/18	18/24	REC. (in.)		
DEPTH (feet)	SRAPHIC LOG	CASING (Blows/ft)		R	占	DEPTH (feet)			CORING	}	, ,	FI	ELD CLASSIFICATION AND REMARKS
	GR	ASIN	TYPE	NUMBER	SYMBOL	EPTŀ	RUN	REC.	REC.	L>4"	RQD	Depth	
-	*****	3	⊢ S	20		95.0 - 97.0	(in.) 22	(in.)	% 29	(in.)	% 24	Elev.	S-20: Yellow to brown to dark gray, coarse to fine
-	*****		l								$\boldsymbol{\wedge}$		SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, wet (SW)
-		<u> </u>	l										
- 100		-	s	21		100.0 -	21	27	37	31	18		S-21: Brown, coarse to fine SAND, trace fine Gravel,
<u> </u>			1			102.0							trace Silt, slightly micaceous, very dense, wet (SW)
-		<u> </u>	-										
- 105			S	22		105.0 -	25	27	34	27	18		S-22: Brown, coarse to fine SAND, trace fine Gravel,
						107.0							trace Silt, slightly micaceous, very dense, wet (SW)
9/15/20					K								,
GLB.GLB 9/15/20 - 110			s	23		110.0 -	31	40	44	41	21		S-23: Brown, coarse to fine SAND, trace fine Gravel,
mil	*****					112.0							trace Silt, slightly micaceous, very dense, wet (SW)
- - -						·							112' End of Boring
DNO -			┨					V					112 End of Borning
₹ 115			l										
BROAL													
-GPJ			-										
4BASE			ł										
120													
Z REV													
OF -			\mid	1									
Ĭn													
125			1										
2 BR(
PB BORINGS 2 BROADWAY JUNCTION REV2 DATABASE.GPJ BROADWAY JUNCTION-LI			$\left\{ \right.$										
PB BO													

Boring No.

WSP-5

Sheet 4

of _

				7	\ \								BORING	NUMBE	R: WSP-	6	
1							D4) Di	NIC	10			SHEET N	NUMBER	:1	of	4
• '	₩				,		D(JKI	NG	L	J						
													PROJEC	T NUMB	ER: 187 6	683T25	
PROJE	ECT: A	ADA	U	pgra	ad	e of Broad	lway J	unctio	n Statio	on			!	ON: Van	Sinderen	Avenue	
						unction St					n, NY	7				et SW Co	
						City Tra				CTA)			COORD.			E: 1,010,	,982.0
						est Boring	g Comp	pany, I	nc.				STN. NO SURFAC			FFSET:	
DRILLE		-		-		narathna							DATUM:		102.0 16	et	
						naraunna tary Wasl	<u></u>						START D		18/20 T	IME: 9:30) am
RIG TY						CME-55;		natic I	Hamme	r			FINISH D			IME: 8:4 5	
		Ť		sing		Split Spoon			Pitcher	Gra	ıb	Core Barrel			NDWATER		
Type/S	Symbo	ı 🗀		W		S \blacksquare	υſ		PΝ	G	$\overline{\mathbf{A}}$	С目			Water	Casing	Hole
I.D.	,		4.	.0"		1.375"							Date	Time	Depth (ft)	Depth (ft)	Depth (ft)
O.D.				.5"		2.0"									(1.5)	(1.7)	(1)
Length	1			0'		24"											
Hamm) lbs		140 lbs	D	rill Rod S	Size		NV	<i>V</i>					
Hamm		·		30"	+	30"	_	I.D. (O.E		2	.25" (2						
1		·	Ť					-			,						
	၂ ၅	£	L	:) Al	MPLE		SOIL	_ (Blows/	6 In.)		4					
	C	/swo				et)	0/6	6/12	12/18	18/24	REC. (in.)] [,	ELD CLAS	SCIEICAT	TON AND		oke
DEPTH (feet)	GRAPHIC LOG	G (BI		띪	占	⊣ (fe∈			CORING				ELD CLAS	SIFICAT	ION AINL	ZEIVIAN	ino
	R	CASING (Blows/ft)	TYPE	NUMBER	YMB	DEPTH (feet)	RUN	REC.	REC.	L>4"	RQD	Depth					
-	****	0	+		(O)	_	(in.)	(in.)	%	(in.)	%	Elev.	Top 6' excava	ated by han	d excavatio	n tools. Con	crete
-			G	1	XI	0.3 - 2.0	G	R	A	В			Slab (4") G-1: Brown	-			_
-			G	2	$\langle \cdot \rangle$	2.0 - 4.0	G	R	A	В			Silt, little coa	rse to fine (arse to fine Gravel, mild	l odor, moist	t -
-			┨		XI								(SM) G-2: Brown	to gray, coa	rse to fine S	SAND, and S	Silt,
<u> </u>			G	3		4.0 - 6.0	G	R	A	В	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		trace coarse t G-3: Brown,	to fine Grav	el, moist (S	M)	_
g - 5			┨		XI							1	medium to fi	ne Gravel, r	noist (SM)	d Siit, iittic	_
<u>-</u>			S	1	′ V	6.0 - 8.0	7	7	8	8	24	1	S-1: Brown,				
<u>-</u>			┨										medium to fi dense, dry (S		slightly mica	aceous, med	ium -
-			s	2		8.0 - 10.0	11	11	11	18	24		S-2: Brown,	fine Sand, a	and Silt, trac	ce medium to	o fine
§ − ₹ − 10							1						Gravel, mica		ŕ	• ,	_
			S	3		10.0 - 12.0	16	14	10	7	19		S-3: Brown, medium to fi				
													dense, moist		menny iiiio	, med	
	0.70																_
	0.0																_
{ - 15	0.00																_
	0.0		S	4		15.0 - 17.0	31	37	38	27	14		S-4: Brown to fine Sand,				
													moist (GM-S		_l uartz Hagli	icinio, very u	
	0 D																_
																	_
20	6. O.																_
ZU			S	5		20.0 - 22.0	26	40	46	36	14		S-5: Brown to coarse to fine				
	6. D.												(GM-SM)	. Sana, nac	- 5111, VCI y (, 1110151	
			1														_
	6 D.																_
												Bori	ing No.	WSP-6	Shee	t 1 (of 4

1151)

BORING LOG

(continued)

BORING NUMBER: WSP-6

SHEET NUMBER: 2 of

of **4**

PROJECT NUMBER: 187683T25

CONTRACTOR: Craig Test Boring Co.

STOR. Claig Test Bul

DRILLER: Nick Beehler

INSPECTOR: Gayani Gunarathna

CLIENT: MTA New York City Transit Authority (NYCTA)

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

PROJECT: ADA Upgrade of Broadway Junction Station

SAMPLE SOIL (Blows/6 in.) GRAPHIC LOG DEPTH (feet) CASING (Blows/ft) REC. 0/6 6/12 12/18 18/24 (in.) DEPTH (feet) FIELD CLASSIFICATION AND REMARKS NUMBER **CORING** SYMBOL L>4" RUN REC. REC. RQD Depth (in.) (in.) (in.) Elev. S-6: Brown to gray, coarse to fine GRAVEL, some-25.0 - 25.4 100/5" coarse to fine Sand, trace Silt, very dense, moist (GM-SM) - 30 7 S 30.0 - 32.0 25 24 43 61 16 S-7: Brown, coarse to fine SAND, some+ coarse to fine Gravel, trace Silt, very dense, moist (SM-GM) Ö 35 S 8 35.0 - 37.0 37 34 27 26 13 S-8: Brown, coarse to fine SAND, and coarse to fine Gravel, trace Silt, very dense, moist (SM-GM) 9/15/20 D. BROADWAY JUNCTION-LIB.GLB.GLB 40 S 9 40.0 - 40.7 66 100/2" 8 S-9: Brown to gray, coarse to fine GRAVEL, somecoarse to fine Sand, trace Silt, very dense, moist (GM-SM) D. ·D. 45 S 10 45.0 - 47.0 36 39 36 25 15 S-10A: (Bottom 8") Brown, coarse to fine SAND, and coarse to fine Gravel, trace Silt, very dense, ·D: moist (SM-GM) S-10B: (Top 7") Brown, coarse to fine GRAVEL, DATABASE.GPJ little- coarse to fine Sand, trace Silt, very dense, moist (GM) - 50 S 11 50.0 - 52.0 S-11: Brown, coarse to fine SAND, little coarse to 23 24 30 31 18 fine Gravel, trace Silt, slightly micaceous, very dense, **BORINGS 2 BROADWAY JUNCTION REV2** moist (SM) - 55 S 12 55.0 - 57.0 17 19 34 32 17 S-12: Brown, coarse to fine SAND, little- coarse to fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)

BORING NUMBER: WSP-6

SHEET NUMBER: 3 of ___

PROJECT NUMBER: 187683T25

DRILLER: Nick Beehler

INSPECTOR: Gayani Gunarathna

CONTRACTOR: Craig Test Boring Co.

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

L														,
		ပ			(SAN	MPLE		SOIL	. (Blows/	6 in.)			
	l (feet	СГО	ows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)		IELD CLASSIFICATION AND DEMARKS
	DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)		3ER	ЗÖГ	DEPTH (feet)			CORING	i			IELD CLASSIFICATION AND REMARKS
		Ö	CASII	TYPE	NUMBER	SYMBOL	DEPT	RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
Ī				S	13		60.0 - 62.0	25	31	48	39	20	,	S-13: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
ŀ														-
F														
ŀ	- 65			S	14		65.0 - 67.0	23	31	39	41	22		S-14: Brown, coarse to fine SAND, trace fine Gravel,
F									7					trace Silt, slightly micaceous, very dense, moist (SM)
ŀ														
F	- 70			S	15		70.0 - 72.0	40	72	68	67	22		S-15: Brown to red, coarse to fine SAND, little
\mathbf{l}					10		70.0 72.0	10	72		0,			coarse to fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
٥														_
3 9/15/2	- 75													-
3LB.GLI	- 75			S	16		75.0 - 77.0	34	35	41	36	20		S-16: Brown, coarse to fine SAND, little- coarse to fine Gravel, trace Silt, slightly micaceous, very dense,
N-LIB.(moist (SM)
JUNCT									V					-
DWAY.	- 80			S	17		80.0 - 82.0	29	24	27	23	20		S-17: Brown, coarse to fine SAND, some- coarse to fine Gravel, trace Silt, slightly micaceous, very dense,
J BROA														moist (SM)
ASE.GP.														-
DATAB/	- 85			S	18		85.0 - 87.0	14	24	28	25	23		S-18: Brown, coarse to fine SAND, little medium to
REV2														fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
NCTION					1									-
NAY JU	- 90													- -
3ROAD	00			S	19		90.0 - 92.0	20	20	24	21	19		S-19: Brown, coarse to fine SAND, trace medium to fine Gravel, trace Silt, slightly micaceous, dense, moist (SM)
IGS 2 E														-
PB BORINGS 2 BROADWAY JUNCTION REV2 DATABASE.GPJ BROADWAY JUNCTION-LIB.GLB.GLB 9/15/20														-
∟		1[]												

1	BORING LOG											BORING NUMBER: WSP-6		
1	•						B	ORI	NG	LC)G	SH	IEET NUMBER:4 of4	
								(c	ontinue	ed)		PR	OJECT NUMBER: 187683T25	
PROJI	PROJECT: ADA Upgrade of Broadway Junction Station												ONTRACTOR: Craig Test Boring Co.	
LOCATION: Broadway Junction Station, Borough of Brooklyn, NY												DR	RILLER: Nick Beehler	
CLIEN	IT: M	TA N	lev	v Y	ork	City Tra	ransit Authority (NYCTA)					INS	SPECTOR: Gayani Gunarathna	
	(D	CASING (Blows/ft)			SAI	MPLE	SOIL (Blows/6 in.)					,		
DEPTH (feet)	GRAPHIC LOG		TYPE	NUMBER	SYMBOL	DEPTH (feet)	0/6	6/12	12/18	18/24	REC. (in.)			
EPTH	APHI						CORING					FIELD CLASSIFICATION AND REMARKS		
	l R						RUN (in.)	REC. (in.)	REC.	L>4" (in.)	RQD %	Depth Elev.		
			S	-		95.0 - 97.0	27	35	32	38	17	S-20:	: Brown, coarse to fine SAND, trace medium to Gravel, trace Silt, slightly micaceous, very dense,	
												wet (SM)		
-			ł											
+			l											
- 100 -			s	21		100.0 - 102.0	23	27	42	45	19	S-21:	: Brown, coarse to fine SAND, trace medium to Gravel, trace Silt, slightly micaceous, very dense,	
-		-	4					7				wet (
-			\mathbf{I}									102'	End of Boring	
- - 105									X					
103														
-			\mathbf{I}											
-			1											
5 ∃ — 110														
7 110 - 110			ł											
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∃ {			l											
SCAD -			1											
<u> </u>			1											
ASE.														
120														
- -														
				4										
) -			l		7									
125													-	
PKG P														
N 65.5			-											
PERCHANGS 2 BROADWAY JUNCTION REVZ DATABASE.GPJ BROADWAY JUNCTION 19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1											
L			_	1				<u> </u>		1	1	Boring N	No. WSP-6 Sheet 4 of 4	

				1	1								BORING	NUMBE	R: WSP-	7	
	1,						D4	OD i	NIC				SHEET N	NUMBER	:1	of	4
•	•			4			D(JKI	NG	LC	J						
													PROJEC	T NUMB	ER: 187 6	683T25	
PRC	JECT:	ADA	4 U	pgr	ad	e of Broad	lway J	unctio	n Stati	on			LOCATIO			Avenue	and
						unction St					n, NY	•				V Corner	
						City Tra				CTA)			COORD.			E: 1,011,	017.7
				_	_	est Boring	g Comp	pany, I	nc.				STN. NO SURFAC		_	FFSET:	
	LER: I					ınarathna							DATUM:		102.0 16	et	
						marauma tary Wasl	<u></u>						START D		20/20 T	IME: 9:15	Sam
	TYPE:					CME-55;		natic I	Iamme	r						IME: 2:0 0	
		T		sing		Split Spoon			Pitcher	Gra	b (Core Barrel			NDWATER		
Type	e/Symb	ol		IW		S 🔳	υſ		PΝ	G	a	с目			Water	Casing	Hole
I.D.	. ,		4	.0"		1.375"							Date	Time	Depth (ft)	Depth (ft)	Depth (ft)
O.D.				.5"		2.0"									(1-)	()	
1	ngth 10' 24"																
		_t					D	7									
1	ammer Wt. 140 lbs 140 lbs Drill Rod Size NW ammer Fall 30" 30" I.D. (O.D.) 2.25" (2.625")																
- 13.11		<u> </u>	T		<u> </u>			- /									
_₽	၂ ဗ	£	L	_	SAI	MPLE		SOIL	_ (Blows/	6 in.)		4					
DEPTH (feet)	GRAPHIC LOG	ws/f	ı				0/6	6/12	12/18	18/24	REC. (in.)						
	₹	(B)		<u>م</u>	١.	(feet			COBINE		(111.)	f I	ELD CLAS	SSIFICAT	ION AND	REMAR	KS
) RAI	DN G		IBE	BOI	H.			CORING								
		CASING (Blows/ft)	TYPE	NUMBER	SYN	DEPTH (feet)	RUN (in.)	REC. (in.)	REC.	L>4" (in.)	RQD %	Depth Elev.					
	***		G	1		0.3 - 2.0	G	R	A	В	74		Top 6' excav	ated by han	d excavation	n tools. Con	crete
-	/□ · □		┨`	1	X	0.3 - 2.0	U	K	,A	ь			Slab (4") G-1: Gray, co	oarse to fine	Sand, and	coarse to fin	ie –
 	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		G	2		2.0 - 4.0	G	R	A	В			Gravel, trace	Silt, trace of	ement, dry	(GM-SM/Fi	il) -
-	1 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		1		X								G-2: Brown coarse to fine	e Gravel, tra	ice Silt, bric	k fragments	,
<u> </u>	*		+ _G	3		4.0 - 6.0	G	R	A	В	\		moist (SM-G G-3: Brown	3M/Fill) to vellow co	narse to fine	SAND son	ne –
5			1		X								Silt, trace fin	e Gravel, m	oist (SM)	211,2,501	_
-			_S	1		6.0 - 8.0	8	8	10	7	23	1	S-1: Brown t	o yellow to	gray, coars	e to fine SAN	ND,
-			1										some- Silt, tr dense, dry (S		o fine Grav	el, medium	-
<u>-</u>			+s	2		8.0 - 10.0	11	11	12	11	24		S-2: Brown t	,	gray, coars	e to fine SAI	ND,
-		-	1										some- Silt, tr dense, dry (S		o fine Grav	el, medium	-
10			+ _s	3		10.0 - 12.0	5	7	8	20	16		S-3A: (Top 1	,	coarse to fi	ne SAND, se	ome-
<u> </u>			1										Silt, trace fin S-3B: (Botto	e Gravel, m	edium dens	e, moist (SN	1) -
<u></u>	°نن.ه	:	1										GRAVEL, tr	ace coarse t	o fine Sand	, trace Silt, c	
<u>-</u>) · O· (1	+										pieces, micao	ceous, medi	um dense, r	noist (GW)	-
<u> </u>	0. <u>()</u>	1	+														-
15	à.O.(-	- _S	4		15.0 - 17.0	14	15	18	30	12		S-4: Brown t	o white. cos	arse to fine	Sand. and co	parse
7	0.00	N	1			1,1,0	- '				-		to fine Grave	el, trace Silt,	quartz frag		
<u> </u>	9.O.(-										micaceous, d	ichse, moist	(DIVI-UIVI)		-
<u>[</u>	\circ \circ		+														-
<u> </u>																	-
20	6:00		S	5		20.0 - 20.6	18	100/1"			7		S-5: Brown t	o oray coo	rse to fine C	RAVEI 1:44	le
<u></u>		_	\perp			20.0 - 20.0	10	100/1			_ ′		coarse to fine				
-		<u> </u>	-										(GM)				-
22		_	-														-
<u> </u>		<u> </u>	-														-
		:															
												Bori	ing No.	WSP-7	Shee	t 1 c	of 4

BORING LOG (continued)

BORING NUMBER: WSP-7

SHEET NUMBER: 2 of ___

PROJECT NUMBER: 187683T25

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

INSPECTOR: Gayani Gunarathna

k	90	E E			SAN	MPLE		SOIL	(Blows	6 in.)	5	4
DEPTH (feet)	GRAPHIC LOG	(Blows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)	FIELD CLASSIFICATION AND REMARK
DEPT	RAP	NG (E	.	NUMBER	BOL	DEPTH (feet)			CORING	}		
_	0	CASING	TYPE	NOM	SYMBOL	DEP.	RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.
			S	6		25.0 - 27.0	13	21	28	35	15	S-6: Brown to red, coarse to fine SAND, little medium to fine Gravel, trace Silt, slightly micaceou dense, moist (SM)
30			S	7		30.0 - 32.0	24	25	27	34	15	S-7: Brown, coarse to fine SAND, little+ coarse to fine Gravel, trace Silt, slightly micaceous, very demoist (SM)
35			S	8		35.0 - 37.0	27	28	49	46	17	S-8: Brown, coarse to fine SAND, little- coarse to fine Gravel, trace Silt, slightly micaceous, very demoist (SM)
10			S	9		40.0 - 42.0	46	48	59	79	15	S-9: Brown to gray to white, coarse to fine Sand, a coarse to fine Gravel, trace Silt, quartz fragments, very dense, moist (GM-SM)
15			S	10		45.0 - 47.0	40	44	56	52	15	S-10: Brown to white, coarse to fine SAND, some coarse to fine Gravel, trace Silt, quartz fragments, very dense, moist (SM-GM)
50			S	11		50.0 - 52.0	29	33	36	24	13	S-11: Brown, coarse to fine SAND, little+ coarse to fine Gravel, trace Silt, quartz fragments, very dens moist (SM)
55			S	12		55.0 - 57.0	20	29	34	39	12	S-12: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, very dense, moist (SM)
												Gravei, trace Siit, very dense, moist (SM)

BORING LOG (continued)

BORING NUMBER: WSP-7

SHEET NUMBER: ____3 ___ of __

PROJECT NUMBER: 187683T25

CONTRACTOR: Craig Test Boring Co. **DRILLER: Nick Beehler**

INSPECTOR: Gavani Gunarathna

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

	CLIEN	1 . IVI	IAN	en	/ Y ()rk	City Tra	nsit At	ıtnorit	y (NYC	_IA)			INSPECTOR: Gayani Gunarathna
		U				SAI	MPLE		SOIL	_(Blows/	'6 in.)			
	DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)		IFI D CLASSIFICATION AND DEMARKS
	EPT	ZAPH	NG (BI	l	3ER	30L	DEPTH (feet)			CORING	}		F1	ELD CLASSIFICATION AND REMARKS
		Ö	CASII	TYPE	NUMBER	SYMBOL	DEPT	RUN (in.)	REC. (in.)	REC.	L>4" (in.)	RQD %	Depth Elev.	
	_			S	13		60.0 - 62.0	21	23	30	28	15		S-13: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, very dense, moist (SM)
	_													
	_													
	- 65			S	14		65.0 - 67.0	22	30	33	33	18		S-14: Brown, coarse to fine SAND, trace fine Gravel,
	_			l										trace Silt, slightly micaceous, very dense, moist (SM)
	-													
	-			ł										
	70 -			S	15		70.0 - 72.0	20	28	29	35	15		S-15: Brown, coarse to fine SAND, little+ coarse to fine Gravel, trace Silt, slightly micaceous, very dense,
	-			l										moist (SM) Approx. 1.5" red quartz fragment in the bottom
15/20	_													
GPJ BROADWAY JUNCTION-LIB.GLB.GLB 9/15/20	- 75			S	16		75.0 - 77.0	26	41	37	38	14		S-16: Brown, coarse to fine SAND, trace fine
B.GLB.	- -													Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
TION-L	_													
Y JUNC	- 00			l										
ADWA	80 			S	17		80.0 - 82.0	26	24	26	22	16		S-17: Brown, coarse to fine SAND, little- fine Gravel, trace Silt, slightly micaceous, dense to very dense,
J BRC	_			ł										moist (SM)
SE	- -			1										
DATAB	- 85			S	18		85.0 - 87.0	21	24	21	21	15		S-18: Brown, coarse to fine SAND, trace fine Gravel,
REV2	_													trace Silt, slightly micaceous, dense, moist (SM)
CTION	-			-	1									
PB BORINGS 2 BROADWAY JUNCTION REV2_DATABA	- 00													
ROADW	90 			S	19		90.0 - 92.0	24	26	27	23	15		S-19: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
3S 2 BF	_			-										
30RING	_													
PB E														

													BORING NUMBER: WSP-7
11		7					B	ORI	NG	LC)G		SHEET NUMBER: 4 of 4
								(c	ontinue	ed)			PROJECT NUMBER: 187683T25
PROJE	CT:	ADA	U	pgr	rad	e of Broad	lway J	unctio	n Stati	on			CONTRACTOR: Craig Test Boring Co.
				-		unction St			_	-	n, NY		DRILLER: Nick Beehler
CLIEN	Т: М	TA N	lev	v Yo	ork	City Tra	nsit Au	uthorit	y (NYC	CTA)			INSPECTOR: Gayani Gunarathna
	G				SAI	MPLE		SOIL	_ (Blows/	/6 in.)			
DEPTH (feet)	3RAPHIC LOG	CASING (Blows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)	FI	ELD CLASSIFICATION AND REMARKS
DEPT	RAPF	NG (B	l	BER	BOL	DEPTH (feet)			CORING	}			LED GENGGINGATION, AND INCIDENTAL
	Ö	CASII	TYPE	NUMBER	SYMBOL	DEPT	RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
			S	-		95.0 - 97.0	25	29	28	43	15		S-20: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, wet (SM)
-			ł										
<u> </u>			ł										
100													
- 100			s	21		100.0 - 102.0	29	30	38	33	16		S-21: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, wet (SM)
}			\mathbf{I}										
-			1										102' End of Boring
– 105			l										
-			1										
			1										
- - 110 -			-										
- 110			1										
-													
-			ł					V					
− 115													
<u>-</u>			l						>				
- 115 - 120 - 125			ł										
- - 120			1										
120													
-			ſ										
<u> </u>													
<u>-</u>			1										
-			-										
			<u> </u>									<u> </u>	ing No. WSP-7 Sheet 4 of 4

				_	_								BORING	NUMBE	R: WSP-	8	
1 1			ı				D	ORI	NC	1.0	10		SHEET	NUMBER	:1	of	4
• •		-	ı	_			D	UKI	ING	L	J						
													1	T NUMB			
						le of Broad						_	LOCATION			Avenue a	and
						unction St City Tra					n, N	Y	COORD.		dway SE	Corner	
CONTE	I : IVI. RACT	IAI OR:	nev · C	V X (raid	ork o T	est Boring	nsit At r Comi	นเทอกบุ กรกง T	y (IN I (nc	JIA)			STN. NC			FFSET:	
DRILLE						CSt DOI IIIg	, com	parry, 1	110.					 E ELEV.:			
INSPEC						edid										:. Zone 31	104
DRILLII	NG N	1ETH	Ю	D:	Ro	tary Wasl	h						START	DATE: 5/2	24/22 T	IME: 11:1	l0 am
RIG TY	PE:	T	rac	ck (CM	IE-55, Aut			mer				FINISH D	DATE: 5/2	$\overline{}$	IME: 10:2	24 am
				sing	ı	Split Spoon			Pitcher	Gra		Core Barrel		GROU	NDWATER		
Type/S	ymbo	ol		IW		S	U[Ш	P 🛛	G [<u> </u>	c⊟			Water Depth	Casing Depth	Hole Depth
I.D.				.0"		1.5"							Date	Time	(ft)	(ft)	(ft)
O.D.				.5"		2.0"											
Length				5'		24"											
	Hammer Wt. 140 lbs 140 lbs Drill Rod Size NW																
Hamme	Hammer Fall 30" 30" I.D. (O.D.) 1.875" (2.65")											(2.65")					
	(D				SA	MPLE											
eet)	Pool	s/ft)	r				0/6	6/12	12/18	18/24	REC						
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				eet)	0/0	- Fi	IELD CLAS	SSIFICAT	ION AND	REMAR	KS				
F	ZAP	9	l	3ER	应	H.			CORING								
"	ত	ASI	TYPE	NUMBER	SYMBOL	DEPTH (feet)	RUN	REC.	REC.	L>4"	RQE						
		0	+		0	_	(in.)	(in.)	%	(in.)	%	Elev.	Top 6' excav	ated by han	d excavation	ı tools. Aspl	nalt
-			G	1	X	0.3 - 2.0	G	R	A	В			(Top 4")				
-			G	2		2.0 - 4.0	G	R	Α	В			G-1: Black to	o grey, coars	se to fine G	RAVEL, and	1 -
_			1		X								coarse to fine				-
20-			G	3		4.0 - 6.0	G	R	A	В			G-2: Brown, fine Gravel,				m to -
5			S	1	ľ	5.0 - 7.0	1	3	2	3	10"		Casing to 5',				
										_			_	_			1
			S	2		7.0 - 9.0	7	58	48	100/6"	22"		S-1: Brown, some Silt, lo			race fine Gra	ivei, -
													S-2A: (Top 1	18") Brown,	medium to	fine GRAVI	EL,
10													little Sand, to S-2B: (Botto			fine SAND	_
			S	3		10.0 - 12.0	50	32	33	27	12"		some Silty C	lay, trace G	ravel, very o	lense, moist	_
													(SM)				_
													Casing to 10	,			_
													J				_
- 15			1										Falling head	test at 10'			
			S	4		15.0 - 17.0	44	51	50	54	14"		S-3: Brown a	and black. c	oarse to fine	e GRAVEL.	_
_													some coarse	to fine Sand			_
													moist (GW-C	Í		an	_
													S-4: Brown a some coarse				_
20			 			20.0.50.5	2.1	100 :=:					moist (GW-0			, ,,	
<u> </u>			S	5		20.0 - 20.8	34	100/3"			6"		Casing 14'				_
			1										- C				-
<u></u>			1										S-5: Brown,				
<u> </u>			-										fine Sand, tramoist (GW)	ace SIII, roci	k iragments	, very dense	-

												Bor	ing No.	WSP-8	Shee	t 1 c	of 4

1151)

BORING LOG

(continued)

BORING NUMBER: WSP-8
SHEET NUMBER: 2 of 4

PROJECT NUMBER: 187683T25

 ${\bf PROJECT: \ ADA\ Upgrade\ of\ Broadway\ Junction\ Station}$

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

INSPECTOR: Mabel Chedid

	,,				SAN	MPLE		SOIL	_ (Blows/	⁄6 in.)		
DEPTH (feet)	GRAPHIC LOG	(Blows/ft)				ıt)	0/6	6/12	12/18	18/24	REC. (in.)	FIELD OLI ASSIEIO L'EION AND DEMARKO
ЕРТН	KAPHI	IG (Bk		SER.	ا ا	н (fee			CORING	3	, ,	FIELD CLASSIFICATION AND REMARKS
Ω	R.	CASING	TYPE	NUMBER	SYMBOL	DEPTH (feet)	RUN (in.)	REC. (in.)	REC.	L>4" (in.)	RQD %	Depth Elev.
			S	6		25.0 - 27.0	34	50	52	45	12"	
												S-6: Brown, coarse to fine GRAVEL, and coarse to fine Sand, trace Silt, rock fragments, very dense, moist (GW-GM)
30			S	7		30.0 - 32.0	10	16	43	68	13"	S-7: Brown, coarse to fine SAND, and medium to
								1				fine Gravel, trace Silt, very dense, moist (SW-SM)
35			S	8		35.0 - 37.0	53	86	65	80	17"	
			3	0		33.0 - 37.0	33	80	05	80	17	S-8: Brown and purple, medium to fine GRAVEL, some coarse to fine Sand, trace Silt, very dense, moist (GW-GM)
40			S	9		40.0 - 42.0	20	36	61	100/6"	14"	
												S-9: Brown, medium to fine GRAVEL, some coarse to fine Sand, trace Silt, rock fragments, very dense, moist (GW)
45			S	10		45.0 - 47.0	29	34	28	27	11"	S-10: Brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, very dense, moist (SW-SM)
50			s	11		50.0 - 52.0	21	24	27	31	21"	S-11: Brown, coarse to fine SAND, some fine
												Gravel, trace Silt, very dense, moist (SW)
55			S	12		55.0 - 57.0	20	27	29	34	20"	S-12: Brown, coarse to fine SAND, little fine Gravel, trace Silt, very dense, moist (SW)

BORING LOG (continued)

BORING NUMBER: WSP-8 SHEET NUMBER: ____3 ___ of ___

PROJECT NUMBER: 187683T25

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

INSPECTOR: Mabel Chedid

02.2.11		171 11		10	/I IN	City Trai	iisit At	11110111	y (1 11)) IA)			INSPECTOR. Madel Chedid
	ڻ ن			;	SAN	MPLE		SOIL	_(Blows/	6 in.)			
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				et)	0/6	6/12	12/18	18/24	REC. (in.)		ELD CLASSIFICATION AND REMARKS
ЕРТЬ	RAPH	NG (BI		BER	30L	DEPTH (feet)			CORING	i			ELD CLASSIFICATION AND REWARKS
	ย	CASII	TYPE	NUMBER	SYME	DEPT	RUN (in.)	REC. (in.)	REC. %	L>4" (in.)	RQD %	Depth Elev.	
_				13		60.0 - 62.0	20	29	26	27	20"		S-13: Brown, coarse to fine SAND, trace Silt, very
_													dense, moist (SW)
-													
- 65			S	14		65.0 - 67.0	26	33	28	39	20"		-
-													S-14: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, very dense, moist (SW)
-								,					
- 70			<u> </u>	1.5		700 700	7.1	100/58			111		_
-			S	15		70.0 - 70.9	71	100/5"			11"		S-15: Brown, coarse to fine SAND, little fine Gravel, trace Silt, very dense, moist (SW)
-													
_													
– 75 -			S	16		75.0 - 77.0	24	26	19	22	13"		S-16: Brown, coarse to fine SAND, little fine Gravel,
-												1	trace Silt, dense, moist (SW)
-													
- 80			S	17		80.0 - 82.0	13	14	18	23	18"		-
												1	S-17: Brown, coarse to fine SAND, little fine Gravel, trace Silt, dense, wet (SW)
- - 85													_
-			S	18		85.0 - 87.0	20	21	16	20	14"		S-18: Brown, coarse to fine SAND, little fine Gravel, trace Silt, dense, wet (SW)
-													unce one, uchoe, wer (o w)
- 90			S	19		90.0 - 92.0	20	21	24	27	19"		S-19: Brown, coarse to fine SAND, trace fine Gravel,
													trace Silt, dense, wet (SW)
· 													

11		•)		В		ING)G		BORING NUMBER: WSP-8 SHEET NUMBER: 4 of 4
.OCAT	ION:	Bro	ad	way	Jı	e of Broad unction St	ation,	unctio Borou	n Statio	on rookly	n, NY		PROJECT NUMBER: 187683T25 CONTRACTOR: Craig Test Boring Co. DRILLER: Nick Beehler INSPECTOR: Mabel Chedid
	(J)				SAI	MPLE		SOII	_ (Blows/	6 in.)			
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)		2	7	I (feet)	0/6	6/12	12/18 CORING	18/24	REC. (in.)	FIE	ELD CLASSIFICATION AND REMARKS
	GR.	CASING	TYPE	NUMBER	SYMB	DEPTH (feet)	RUN (in.)	REC.	REC.	L>4" (in.)	RQD %	Depth Elev.	
			S	20		95.0 - 97.0	23	27	26	27	16"		S-20: Brown, coarse to fine SAND, trace fine Gravel
			S	21		97.0 - 99.0	26	28	35	52	24"		trace Silt, very dense, wet (SW) S-21: Brown, coarse to fine SAND, trace fine Gravel trace Silt, very dense, wet (SW)
100													99' End of Boring
105													
									\	¥			
110					K								
115													
120													
125													
			1										

			_	_	_								BORING	NIIMREI	Q. WCD	0	
				1			_				_		SHEET N				4
7 1		7					B	ORI	NG	LC)G			NUIVIDER	1	01	4
								<u>~</u> - `'					 	T NII IN 45	CD. 1051	102TD2F	
DDC 15	- 	AT	<u> </u>			CD		•	- Ct +•				PROJEC				Ci. I
						e of Broad					n NT	V	LOCATION		on Street we SE C		Sinderen
						unction St City Tra					11, IN	1	COORD.		ac SE C)1 IICI	
CONTE	 RACT	OR	. C	, IU raid	σK	est Boring	i Cumi	nanv. I	nc.	·117)			STN. NO			FFSET:	
DRILLE						-DV DVI III	, ~~iii	y 9 I					SURFAC				
INSPE						edid							DATUM:			. Zone 31	104
						tary Wasl	h						START L		-		
RIG TY						Œ-55, Aut		c Ham	mer				FINISH D	DATE: 5/2	23/22 T	IME: 8:25	5 am
			Ca	sing		Split Spoon	Shelby	Tube	Pitcher	Gra	ab	Core Barrel		GROU	NDWATER	DATA	
Type/S	ymbo	ol 🗀	Н	W		S	U[PΩ	G	\overline{A}	c目			Water	Casing	Hole
I.D.	-		4	.0"		1.5"		_					Date	Time	Depth (ft)	Depth (ft)	Depth (ft)
O.D.		F	4	.5"		2.0"									. ,		
Length				5'		24"											
Hamme		. -				140 lbs	n n	w				*					
	7.0.00																
1 Iaiiiiii	ammer Fall 30" I.D. (O.D.) 1.875" (2.65") SAMPLE SOIL (Blows/6 in.)															<u> </u>	<u> </u>
	g		L		SA	MPLE											
feet,	O/6 6/12 12/18 18/24 REC. (in.) CORING CORING																
l Ē	을	Blow				eet)		ˈ┤ Fì	ELD CLAS	SSIFICAT	ION AND	REMAR	KS				
l Ä	₹AP	S		3ER	ğ) H											
^	' ' ' ' ' ' ' ' ' '													7			
		े	_		က်	_	(in.)	(in.)	%	(in.)	%	Elev.	T CD	-4-11 1	4	. 41	
-			G	1	X	0.0 - 1.7	G	R	A	В			Top 6' excav	ated by han	d excavation	1 tools.	_
<u> </u>			1										G-1: Dark bi	2011m 2027	to fine CA	ND some	ooree -
L			G	2	\bigvee	2.0 - 4.0	G	R	A	В			to fine Grave	el, trace Silt,	slightly mi	caceous, mo	ist _
77													(SW-SM/Pos	ssible Fill)	•		_
			G	3	V	4.0 - 6.0	G	R	A	В			G-2: Dark bi	rown, coarse	to fine SA	ND, some co	oarse
5													to fine Grave micaceous, n	et, trace Silt, noist (SW-S	shell fragm M/Possible	ents, slightl Fill)	у —
			S	1		6.0 - 6.6	10	50/1"			7"						-
			1										G-3: Dark by to fine Grave	el, trace Silt,	shell fragm	ents, Cobbl	
			S	2		8.0 - 8.4	100/5"				5"		Boulder at 5	.5', moist (S	W-SM/Poss	sible Fill)	-
													S-1: Brown t				
10			S	3		10.0 - 12.0	7	26	36	49	13"		coarse to fine substance, b				vhite —
	1		1										(GW-GM/Po		,,	.,	-
É			1		,								S-2: Brown,				
3			1										fine Sand, tra				
			+										moist (GW)				-
15			$\frac{1}{s}$	4		15.0 - 17.0	79	24	52	62	13"		Casing to 10	'			
-			1,			13.0 - 17.0	19] 52	02	13						_
<u>-</u>			1										S-3: Red to be coarse to fine				
<u> </u>													very dense, r		,		,
<u></u>													Casing to 15	,			-
_ 20													60				
	S 5 20.0 - 22.0 43 62 50 65 15"												S-4: Brown t				_
<u>L</u>													GRAVEL, so fragments, m	ome coarse t	to fine Sand	, little Silt, o	quartz
																	_
]										S-5: Brown t				_
													quartz fragm				_
-												Bori	ing No.	WSP-9	Shee	+ 1 (of 4

PROJECT: ADA Upgrade of Broadway Junction Station

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

BORING LOG (continued)

BORING NUMBER: WSP-9

SHEET NUMBER: _____2 of ___

PROJECT NUMBER: 187683T25

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

					SAI	MPLE		SOIL	_(Blows/	6 in.)		
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				t)	0/6	6/12	12/18	18/24	REC. (in.)	
HTH	APHI	G (Bic		ER	OL	H (fee			CORING	i	,	FIELD CLASSIFICATION AND REMARKS
ቯ	GR	SASIN	TYPE	UMB	SYMBOL	DEPTH (feet)	RUN (in.)	REC. (in.)	REC.	L>4" (in.)	RQD %	Depth Elev.
			S	6	0,	25.0 - 27.0	40	48	61	34	14"	Casing to 20'
30												S-6: Black to brown and red, coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, micaceous, rock fragments within the bottom 2", very dense, moist (GW)
30			S	7		30.0 - 32.0	25	21	36	32	16"	S-7: Brown to black, coarse to fine SAND, and coarse to fine Gravel, trace Silt, rock fragments, slightly micaceous, very dense, moist (GW)
35			S	8		35.0 - 37.0	31	47	60	60	16"	S-8: Brown to red, coarse to fine GRAVEL, and coarse to fine Sand, trace Silt, rock fragments,
40			S	9		40.0 - 42.0	16	20	30	42	17"	S-9: Brown, coarse to fine SAND, some medium to fine Gravel, trace Silt, micaceous, very dense, moist (SW)
45			S	10		45.0 - 47.0	31	29	27	24	15"	S-10: Brown, coarse to fine SAND, and medium to fine Gravel, trace Silt, slightly micaceous, very dense, moist (SW)
50			s	11		50.0 - 52.0	21	21	21	21	15"	S-11: Brown, coarse to fine SAND, trace medium to fine Gravel, trace Silt, dense, moist (SW)
- 55			s	12		55.0 - 57.0	23	29	44	47	20"	S-12: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, very dense, moist (SW)

1151)

BORING LOG

(continued)

BORING NUMBER: WSP-9
SHEET NUMBER: 3 of 4

PROJECT NUMBER: 187683T25

 ${\bf PROJECT: \ ADA\ Upgrade\ of\ Broadway\ Junction\ Station}$

LOCATION: Broadway Junction Station, Borough of Brooklyn, NY

CLIENT: MTA New York City Transit Authority (NYCTA)

CONTRACTOR: Craig Test Boring Co.

DRILLER: Nick Beehler

INSPECTOR: Mabel Chedid

CLIEN	1: M	IA N	lew	7 Y (ork	City Tra	nsit Au	ithorit	y (NY(JTA)		INSPECTOR: Mabel Chedid
_	(1)				SAI	MPLE		SOIL	_ (Blows/	6 in.)		
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)				ıt)	0/6	6/12	12/18	18/24	REC. (in.)	FIELD OLI ADDIFICATION AND DEMARKS
EPTH	SAPHI	IG (Bk		3ER	2 Z	н (fее			CORING) }		FIELD CLASSIFICATION AND REMARKS
	<u> </u>	CASIN	TYPE	NUMBER	SYMBOL	DEPTH (feet)	RUN (in.)	REC. (in.)	REC.	L>4" (in.)	RQD %	Depth Elev.
_				13		60.0 - 62.0	25	26	29	28	18"	S-13: Brown, coarse to fine SAND, trace medium
-												Gravel, trace Silt, very dense, moist (SW)
-												
- 65			S	14		65.0 - 67.0	27	25	36	38	20"	_
-			~			00.0	_,			50		S-14; Brown, coarse to fine SAND, little medium to fine Gravel, trace Silt, very dense, moist (SW)
-						ji.		\				
												-
- 70 -			S	15		70.0 - 72.0	50	41	34	41	20"	S-15: Brown, coarse to fine SAND, some coarse to
-									\			fine Gravel, trace Silt, very dense, moist (SW)
_												
- 75			S	16		75.0 - 77.0	19	17	22	20	17"	_
L												S-16A: (Top 11") Brown, coarse to fine SAND, trace fine Gravel, trace Silt, dense, moist (SW)
-												S-16B: (Bottom 6") Brown, coarse to fine SAND, trace fine Gravel, trace Silt, dense, wet (SW)
-												-
- 80			S	17		80.0 - 82.0	20	18	16	16	13"	S-17: Brown, coarse to fine SAND, trace fine Gravel,
												trace Silt, dense, wet (SW)
- 85			S	18		85.0 - 87.0	16	14	15	14	15"	_
į												S-18: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, medium dense, wet (SW-SM)
-												-
- 75 - 75 - 80 - 85 90 												-
─ 90 -			S	19		90.0 - 92.0	23	26	28	24	18"	S-19: Brown, coarse to fine SAND, trace fine Gravel,
-												trace Silt, very dense, wet (SW-SM)
<u> </u>												

BORING NUMBER: WSP-9 SHEET NUMBER: ___ 4 **BORING LOG** (continued) PROJECT NUMBER: 187683T25 PROJECT: ADA Upgrade of Broadway Junction Station CONTRACTOR: Craig Test Boring Co. LOCATION: Broadway Junction Station, Borough of Brooklyn, NY DRILLER: Nick Beehler CLIENT: MTA New York City Transit Authority (NYCTA) INSPECTOR: Mabel Chedid SAMPLE SOIL (Blows/6 in.) GRAPHIC LOG DEPTH (feet) CASING (Blows/ft) REC. 0/6 6/12 12/18 18/24 (in.) DEPTH (feet) FIELD CLASSIFICATION AND REMARKS NUMBER **CORING** SYMBOL RUN REC. REC. L>4" RQD Depth Elev. (in.) (in.) (in.) S 20 23 95.0 - 97.0 22 17" 20 21 S-20: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, dense, wet (SW-SM) - 100 S 21 100.0 -16 19 25 20 16' S-21: Brown, coarse to fine SAND, trace fine Gravel, 102.0 trace Silt, dense, wet (SW) 102' End of Boring - 105 110 BORINGS 2 BROADWAY JUNCTION DATABASE 2022. GPJ BROADWAY JUNCTION-LIB.GLB.GLB

115

120

- 125

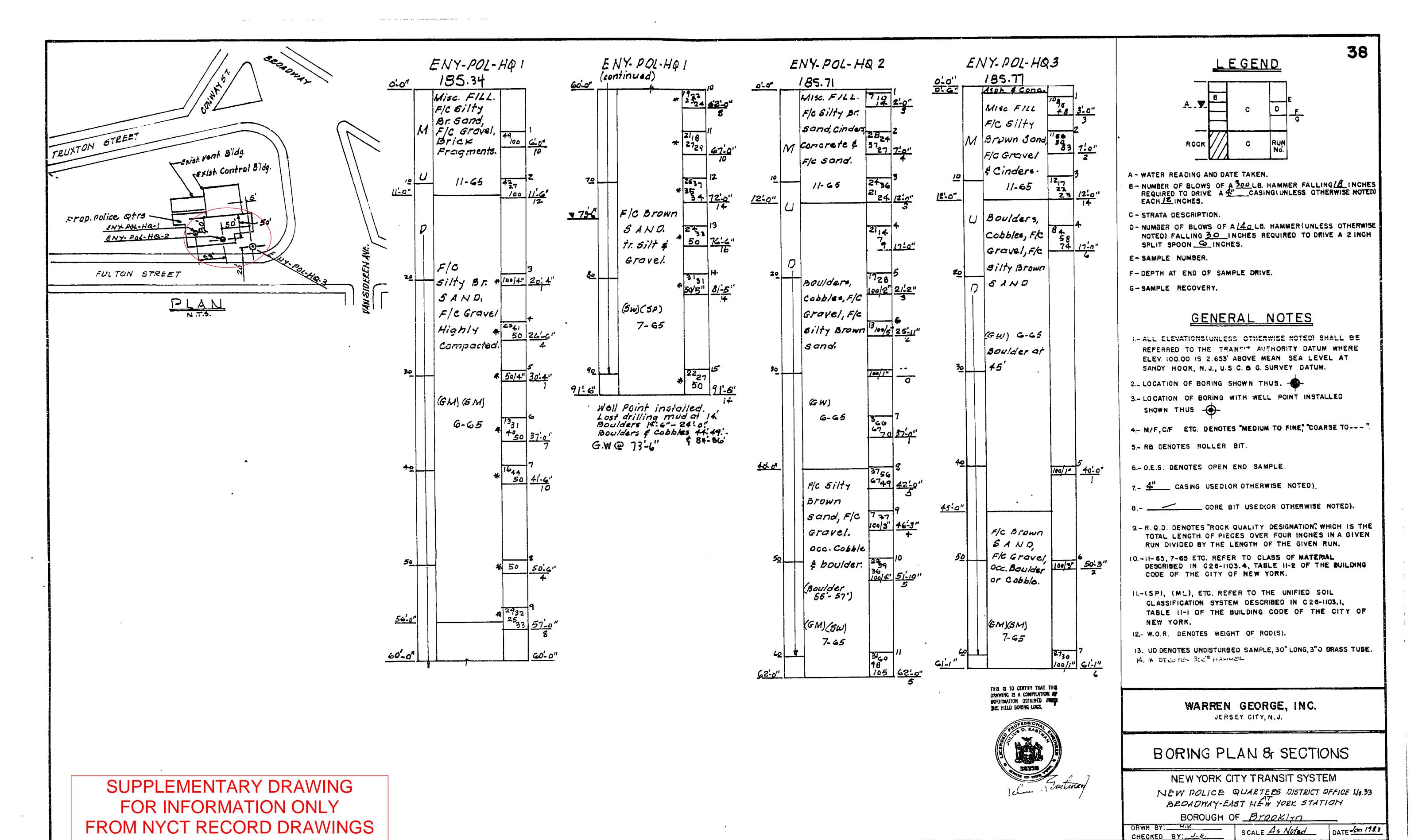
	•			1	<u> </u>								BORING	NUMBE	R: WSP-	10	
1 1			ı				D		ING		\		SHEET I	NUMBER	:1	of	1
• •		-	ı	-			D	JK		L	J						
													PROJEC	T NUMB	ER: 187 6	683T25	
						le of Broad							LOCATION			e and Fu	lton
						unction St					n, N	Z	00000		et SW Co	rner	
						City Tra				JTA)			COORD STN. NO			FFSET:	
DRILLE						est Boring	g Comp	pany, i	inc.) CE ELEV.:		nioli.	
INSPE						did										r. Zone 31	104
						tary Was	h									IME: 8:3 (
RIG TY	PE:	1	ru	ck (CIV.	IE-85, Au	tomati	c Ham	mer							TME: 10:3	
			Ca	sing		Split Spoon	Shelby	Tube	Pitcher	Gra	ıb	Core Barrel		GROU	NDWATER	DATA	
Type/S	ymbo	ol 🗆	I	łW		S	U[PΩ	G		с目			Water Depth	Casing Depth	Hole Depth
I.D.			4	.0"		1.5"							Date	Time	(ft)	(ft)	(ft)
O.D.			4	.5"		2.0"											
Length																	
Hamme	ammer Wt. 140 lbs 140 lbs Drill Rod Size NW																
Hamme	ammer Fall 30" 30" I.D. (O.D.) 1.875" (2.65")																
			Τ		SA	MPLE		SOI	L (Blows/	6 in.)							
l ŝ	SAMPLE SOIL (Blows/6 in.)																
(fee	DEPTH (feet) NG (Blows/ft) NG (Blows/ft) COSING COSING COSING														IONI ANI		1/0
🖁	CORING CORING CO													SSIFICAT	ION AINL	REMAR	.00
	GR/	NIS NIS	ايرا	MBE	MBC	F E	DUN	DEC			BOE	Donth					
	(1994) HL DEPTH (1995) HL DEPT																
			S	1		0.0 - 1.7	5	10	6	4	15"		Top 6' excav	ated by han	d excavation	n tools.	
													S-1: Dark B				_
			S	2		2.0 - 4.0	4	1	1	3	14"		medium to f	ine Gravel, t	race Silt, m	oist (SM)	_
77			1										S-2: Brown trace Silt, ve	coarse to fin	e SAND, lit	tle fine Grav	vel,
<u> </u>			1										trace siit, ve	ry 100se, mo	1St (3W1)		_
5			S	3		5.0 - 7.0	17	46	78	90	10"		Casing to 5'				
													_				_
			S	4		7.0 - 7.5	100/6"				4"		Falling Head	l Test at 5'			
													S-3: Brown : fine Sand, tr				
10			1										moist (GM)	ace siit, foci	k magments	, very defise	,
10			S	5		10.0 - 12.0	48	42	35	34	14"		S-4: Brown	medium to f	ine GRAVE	EL. some coa	arse
5			1										to fine Sand				_
			1										Casing to 10)'			_
													Falling Head	l Test at 10'			-
15													_		- CD AVEL	4	4-
15			S	6		15.0 - 17.0	14	40	48	45	13"		S-5: Brown fine Sand, tr	ace Silt, blac	ck rock frag	ments, sligh	
			1										micaceous, v	very dense, r	noist (GW-	GM)	=
													C 6, D	to blosts	man to E C	ED ANDEL	-
				1									S-6: Brown coarse to fin	e Sand, trace	e Silt, rock	fragments,	
													slightly mica	iceous, very	dense, mois	st (GW-GM)) -
20			s	7		20.0 - 20.5	100/6"						C 7, D	to doubt	mading: 4	fine CD ALT	
			1										S-7: Brown some coarse				
7 2 2			1									\	(GW-GM)				/ -
			1										20.5' End of	Boring			-
	L]				L				L						
												Bori	ing No.	WSP-10	Shee	t 1 (of 1

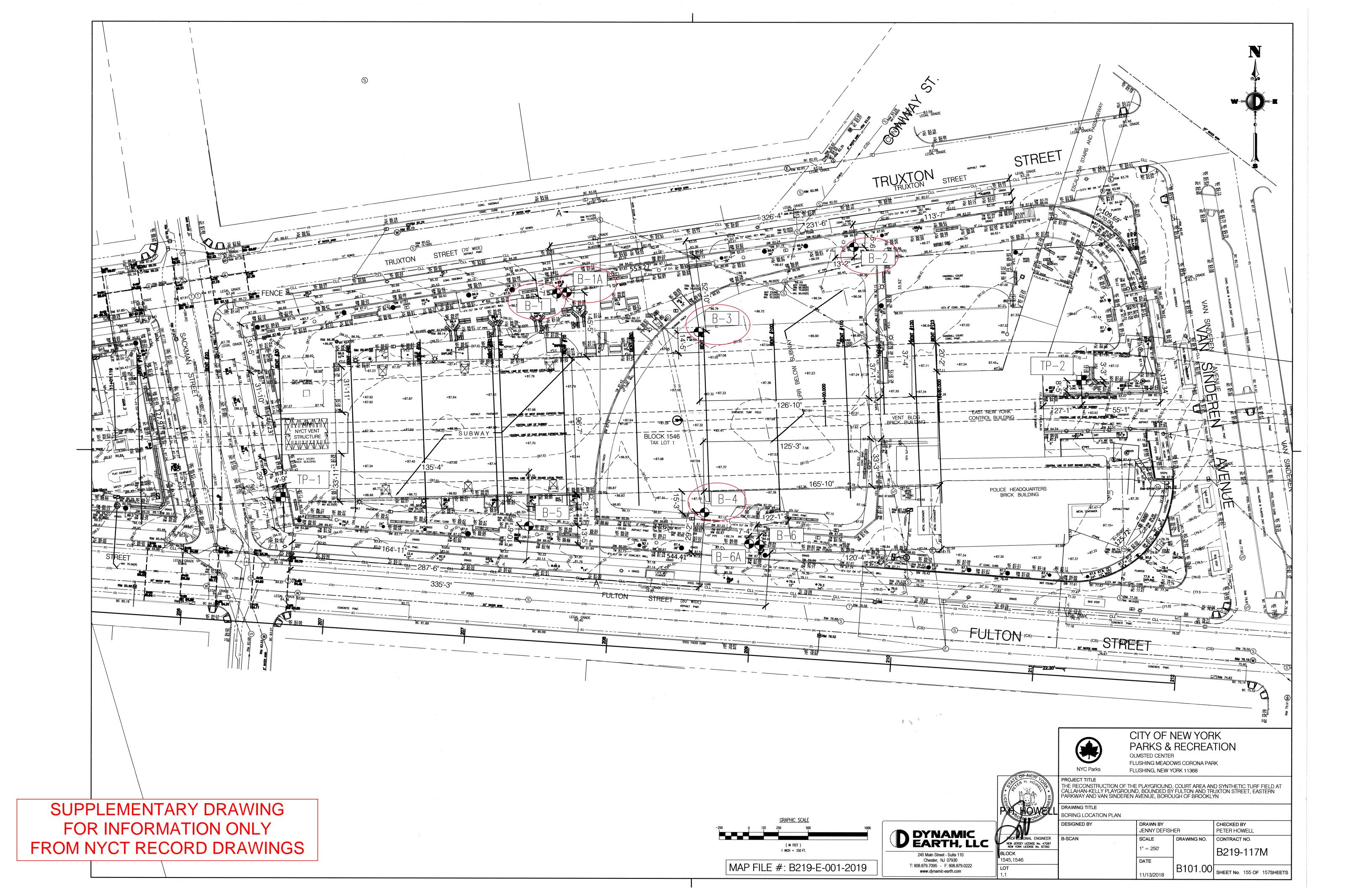
				7	<u> </u>								BORING	NUMBE	R: WSP-	11				
1 1			BORING LOG																	
• •		-	ı	_			D	UKI	ING	L	J									
													PROJEC	T NUMB	ER: 187 6	683T25				
													LOCATION				lton			
											n, N	Y			et SW Co	rner				
										JTA)						EESET.				
						est Doring	g Comj	pany, 1	nc.							ni oli.				
						did										r. Zone 31	104			
							h													
RIG TY	PE:	T	ruc	ck (CM	Œ-85, Aut	tomati	c Ham	mer				FINISH D	DATE: 5/2	23/22 T	IME: 12:1	10 pm			
			Ca	sing		Split Spoon			Pitcher					GROU						
Type/S	ymbo	ol 📙	Н	IW		S	U[PΩ	G		c⊟								
I.D.			4	.0"		1.5"							Date	Time						
O.D.			4	.5"		2.0"														
Length				5'		24"														
Hamm	er Wt	:. L	140) lbs		140 lbs	D	rill Rod S	Size		N	W								
Hamm	er Fa	II L	3	30"		30"		I.D. (O.D).)	1	.875"	(2.65")	55")							
				;	SAI	MPLE		SOIL	_(Blows/	6 in.)										
et)	GRAPHIC LOG	(#/g	H				- /-	2/12	12112	10/01	REC	:								
DEPTH (feet)		lows				et)	0/6	6/12	12/18	18/24			FLD CLAS	REMAR	KS					
I H	APF	G (B		ER.	Ы	۲ (fe		\	CORING											
	GR.	NIS	Ä	JMB	MB	:PT	RUN	REC.	REC.	L>4"	RQI	Depth								
		Ö	_	_	တ်		` '	` '	%	` '	%		T ()							
_			\int_{G}	1	X	0.0 - 1.7	G	R	A	В		4	Top 6' excav	ated by han	d excavation	n tools.	-			
Ļ]_			20.10		ъ									oarse			
L			₽ ^G	2	V	2.0 - 4.0	G	K	A	В			(SW-SM/Pos	ssible Fill)	giass magn	ients, moist	-			
-]_			10.00							G-2: Dark bi	rown, coarse	e fine SANI), some coar	rse to -			
5 5			16	3		4.0 - 6.0	G	K	A	В			fine Gravel,	trace Silt, til	e fragments Fill)	s, petroleum	odor, _			
					$/ \setminus$	60.00	90	76	01	(1	20"				ŕ	- 4- E CA	NID -			
5.6			1,	1		6.0 - 8.0	80	/6	91	01	20		some Silt, tra	ace fine Gra	vel, moist (S	SM/Possible	Fill) -			
5				2		00.05	70	16	100/6"		10"									
<u> </u>			13	2		8.0 - 9.3	70	40	100/6		18				`	,	_			
10			-	2		10.0 11.0	70	100/6"			0"		SAND, and	Silt, very de	nse, moist (SM)				
-			1	3		10.0 - 11.0	10	100/0			0		S-1B: (Botto SAND, some	m 14") Brov e medium to	wn to purple fine Gravel	e, coarse to f l. trace Silt. 1	fine rock -			
-			┨														_			
			1				· `						S-2: Brown t	to purple, co	parse to fine	SAND, sor	ne -			
			1												ice Silt, rock	fragments,	very _			
15			-	1		150, 170	20	3/1	3/1	53	16"						_			
}			1,	•		13.0 - 17.0	23	J+	J -1)))	10		Casing to 10				-			
-			-										S-3: Brown,	coarse to fir	ne SAND, a	nd medium	to -			
_			1										fine Gravel,							
-			1										S-4: Brown,							
20			\int_{S}^{∞}	5		20.0 - 22.0	30	32	32	40	15"		fine Gravel, dense, moist		irpie rock fi	ragments, ve	ery _			
<u> </u>			՝			20.0 - 22.0	30	32	22	70	13		S-5: Brown,		ne SAND a	nd coarse to	fine -			
_			┨										Gravel, trace							
<u></u>			1									\	(SW-SM)				_/ .			
_			+										22' End of E	Boring			-			
<u> </u>												Dec.	in a NI-	WCD 11	Cla a c	4 1	1			
												Bor	ing No	WSP-11	Shee	t 1 (of 1			

				7	<u> </u>								BORING	NUMBER	R: WSP-	12	
1 1			ı				R	AD	INIC	10	2		SHEET N	NUMBER	:1	of	1
• •		_	ı	_			D		IING	LC	JG						
									~ .								
											NIX	7	LOCATION				lton
											11, 17 1	L	COORD.		A D W CO	THE	
		PROJECT NUMBER: 187683T25 T: ADA Upgrade of Broadway Junction Station N: Broadway Junction Station, Borough of Brooklyn, NY MTA New York City Transit Authority (NYCTA) CTOR: Craig Test Boring Company, Inc. Sinick Beehler OR: Mabel Chedid SMETHOD: Rotary Wash Truck CME-85, Automatic Hammer Casing Split Spoon Shelby Tube Pitcher Grab Core Barrel BIOL HW S U U P G CE GROUNDWATER DATA CASING Split Spoon Shelby Tube Pitcher Grab Core Barrel STORE CORD. STN. NO.: OFFSET: SURFACE ELEV.: DATUM: Vert. NYCT; Hor. Zone 3104 START DATE: 5/23/22 TIME: 12:14 pm FINISH DATE: 5/23/22 TIME: 1:34 pm GROUNDWATER DATA Casing Split Spoon Shelby Tube Pitcher Grab Core Barrel STORE START DATE: 5/23/22 TIME: 1:34 pm Date Time (ft) (ft) (ft) Water Depth Depth (ft) (ft) A.5" 2.0" Date Time No.: OFFSET: SURFACE ELEV.: DATUM: Vert. NYCT; Hor. Zone 3104 START DATE: 5/23/22 TIME: 12:14 pm FINISH DATE: 5/23/22 TIME: 1:34 pm Date Time (ft) (ft) (ft) Water Depth Depth (ft) (ft) (ft) Water Depth (ft) (ft) (ft) Water Depth (ft) (ft) (ft) With 140 lbs 140 lbs Drill Rod Size NW															
		ADA Upgrade of Broadway Junction Station Broadway Junction Station, Borough of Brooklyn, NY TA New York City Transit Authority (NYCTA) TOR: Craig Test Boring Company, Inc. Sick Beether R. Mabel Chedid Casing Spit Spoon Shelby Tube Pitcher Grab Core Barel Datum Yerl. NYCT; Hor. Zone 3104 STARL DATE: \$23322 TimE: 12:14 pm FINISH DATE: \$23322 TimE: 134 pm F															
RIG TY								a IIam	***								-
KIG I I	FC.									Gra	h l	Core Barrel	FINISH	$\overline{}$			· pm
Type/S	vmbo	, -		<u>_</u>						-					Water	Casing	
I.D.	y e	` -							. П			• •	Date	Time			
O.D.			4	.5"		2.0"									(1.5)	(.,)	(11)
Length						24"											
Hamme	er Wt	. –	140	O lbs	;	140 lbs	D	rill Rod S	Size		NV	v					
Hamme	er Fa	II 🗀						I.D. (O.E	D.)	1	.875" (2.65")					
	(D				SAI	MPLE		SOII	L (Blows/6	6 in.)						•	
(feet)	007	vs/ft)	r				0/6	6/12	12/18	18/24							
DEPTH (feet)	PHIC	(Blov		æ	٦	(feet)			CORING		(111.)	- FI	ELD CLAS	SSIFICAT	ION AND	REMAR	KS
日	GR/	SING	닖	MBE	MBC	PTH	DLIN	DEC			POD	Donth					
		ర	+		S	DE	_	l .					<u> </u>				
-			G	1	X	0.3 - 2.0	G	R	A	В				ated by han	d excavation	n tools. GRA	VEL _
			G	2		2.0 - 4.0	G	R	A	В			G-1: Dark br	rown, coarse	to fine SA	ND, some co	parse
77/0			 -	2		10.60	G	D		D				i, trace siit,	moist (5 W	-SIVI/ F OSSIUT	-
5			1	3	X	4.0 - 0.0	J	K	A	ь			G-2: Dark br	own, coarse	to fine SA	ND, some co	oarse _
			s	1		6.0 - 6.5	100/6"				3"			-,,			_
- - -			1														
<u> </u>			S	2		8.0 - 10.0	43	40	45	49	13"				1		-
- 10			,	3		10.0 - 12.0	55	49	47	50	21"						EL, _
-			- - -		ı	10.0 12.0	33		.,	50			moist (GW-C		,	,	-
			1										Casing to 7'				-
7			-														
15			$\frac{1}{8}$	4		15.0 - 17.0	35	30	30	40	12"						i —
-			 	<u> </u>		17.5											
															e Siit, rock i	iragments, v	ery _
20			s	5		20.0 - 22.0	60	30	61	64	9"		dense, moist	(GW-GM)			_
													fine Sand, tra	ace Silt, rocl			
- -			1										22' End of Bo	oring			-
<u> </u>																	
												Bori	ing No.	WSP-12	Shee	t 1 c	of 1

				7	<u> </u>								BORING	NUMBE	R: WSP-	12A	
1 1			ı				D	ADI	NIC	1.	2		SHEET N	NUMBER	:1	of	1
• •		-	ı	_			D	JKI	ING	LC	JG						
													PROJEC	T NUMB	ER: 187 6	683T25	
						e of Broad							LOCATION			ce and Fu	lton
						unction St City Tra					n, NY		COORD.		et SW Co	rner	
						est Boring				JIA)			STN. NC			OFFSET:	
DRILLE				_	_	est Doring	, com	puily, I						E ELEV.			
INSPE	CTOF	R: M	ab	el C	he								DATUM:	Vert. NY	CT; Ho	r. Zone 31	104
DRILLI	NG N	1ETH	ЮІ	D:]	Ro	tary Was	h									TME: 7:4 0	
RIG TY	PE:	T				E-85, Au							FINISH E	_		IME: 8:10) am
		. -		sing		Split Spoon			Pitcher	Gra		ore Barrel		GROU	NDWATER Water		Hole
Type/S	ymbo) -		IW		S	U[P 🛛	G [<u> </u>	c目			Depth	Casing Depth	Depth
I.D.				.0"		1.5"				+			Date	Time	(ft)	(ft)	(ft)
O.D.				.5"		2.0"											
Length				5'		24"				-	4						
Hamme		_		0 lbs		140 lbs	_	rill Rod S			NW						
Hamme	er ⊦a ⊤		T 3	30"		30"		I.D. (O.D).)	1	.875" (2	.65")					
	ဖွ		L		SAI	MPLE		SOIL	_ (Blows/	6 in.)							
(feet	CLC	ws/ft				t)	0/6	6/12	12/18	18/24	REC. (in.)						1.0
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)		ER.	7	DEPTH (feet)			CORING				ELD CLAS	SSIFICAT	ION ANI) REMAR	KS
	GR.	SIN	TYPE	NUMBER	MB	:PT	RUN	REC.	REC.	L>4"	RQD	Depth					
		Ò	_	_	_		(in.)	(in.)	%	(in.)	% 11"	Elev.	C 1 D 1 1	. 11	1 .	C CAND	
-			S	1		0.0 - 1.7					11		S-1: Dark br some coarse	to fine Grav			
-			$\frac{1}{s}$	2		2.0 - 4.0			\		12"		loose, moist	(SM)			-
-			-l″	-		2.0 4.0					12		S-2: Dark br				
-			$\frac{1}{s}$	3		4.0 - 6.0	1	2	5	3	9"		some coarse loose, moist		ei, iittie Sii	t, very loose	-
<u></u>			┨.					7					S-3: Brown	to orange, co	oarse to fine	e SAND, littl	e fine —
- Le.			1										Gravel, trace	Silt, loose,	moist (SM))	
			1	Ì									6' End of Bo	ring			-
			1														-
			1														_
10																	_
			1														-
																	_
5.3																	_
 - 15																	
28 13 28 -			1														_
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5			h														-
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20			ľ														
<u> </u>			+														-
70			1														-
_			1														-
-			1														=

Boring No. WSP-12A Sheet 1 of 1





Project:	Callahan-K	elly Play	vgroun							•			Proj. No.:	1048-99-1	14EC	***************************************	
					Parkw	av & Va	n Si	ndern Ave	Borough of R	rooklyn K	Kings County, New York		Client:	Island Pump &			
Surface Ele- Termination	vation:	union o	87.	.0 mse	:	Date	te St	tarted:	10/2/	18	Groundwater Data	Depth (ft)	EI. (mse)	Additional Groundwater Data		EI.	
Proposed Lo	ocation:		R	Ramp A/SPT		Log	gged		S. Hun IP&T	me	While Drilling: ▼ At Completion: ▼	NE NE	(3350)		(11)	(III.oc	
Hammer Ty				tomatic		1	Тур		Diedri		The Company	1,					
		ample In		ion	- 								*************************************	 		<u></u>	
Depth (Feet)	Number	Type	Rec (in)	NYC Class	Blows pe or drill t (min/I	time N	1	Depth (ft)	Strata			TION OF (Classifica	F MATERIA ation)	LS	Rem	narks	
0-1				7					Surface Cover	2" Aspha	ltic Concrete					W-10-11-11-11-11-11-11-11-11-11-11-11-11-	
1-3	S-1	SS	4	7	13	34 64	4			Brown m	nedium to fine sand, little	e coarse to	fine gravel,	little silt, moist (FILL)	PID = 0.5 Very hard auger		
						10									advancen 1.5 to 4 fe	nent fr	
3-5	S-2	SS	12	7	5	4 22	2	5	Fill	As above	e, little debris (brick, asph	ıalt), moisi	t (FILL)		the groun PID = 24		
5-7	S-3	SS	14	7		5 12	2			Gray coa moist (FI	arse to fine sand, some de	ebris (glass	s, brick), little	e coarse to fine gravel,	PID = 10.4		
				7	-	5	-			ì	e, some debris (porcelin, l	brick), mo	oist (FILL)		PID = 6.5		
7-9	S-4	SS	14	3b	14	19 23	3	ļ. <u> </u>		Brown m dense (SN	•	e silt, little	e coarse to fir	ne gravel, moist, medium	PID = 0	,	
9-11	S-5	ss	8	3b		13	8	10		As above	edium dense (SM)	PID = 20 PID = 14					
			<u></u>		5	8		ı 1	Glacial Deposits							.0	
11-13									Deposits	As above	above, and silt, trace fine gravel, moist, medium dense (SM)					PID = 0.6	
					11	10		,									
13-13.3	S-7	SS	2	3a	50/3	3" 50/	/3"		<u> </u>	As above	e, very dense (SM)				PID = 0.6	6	

4D		A	R'		VIIC 1				BOI	RING LOG			Boring N		
Project:	Callahan-F	Celly Play	yground	1								Proj. No.:	1048-99-1	14EC	
Location:	Fulton & 7	ruxton S	Street, E	astern	Parkway &	k Van Si	ndern Ave			Lings County, New York		Client:	Island Pump &	Tank Corp) .
Surface Ele				0 mse		Date S		10/2/		Groundwater Data	Depth	El.	Additional Groundwater	Depth	El.
Terminatio				.5 feet			ompleted:			i	(ft)	(mse)	Data	(ft)	(mse)
Proposed L				amp	_	Logged	-	S. Hur		While Drilling:	NE				
Drill/Test				A/SPT		Contra		IP&7		At Completion:	NE			ļ	
Hammer T		ample Ir		omatic	2	Rig Ty	pe:	Diedri I	cn T						<u> </u>
Depth (Feet)	Number	Type II	Rec (in)	NYC G	Blows per 6" or drill time (min/ft)		Depth (ft)	Strata			TION OF (Classifica	MATERIA	LS	Ren	narks
***************************************						<u> </u>	<u> </u>	Surface Cover	2" Aspha	ltic Concrete					
								Fill	See Borir	ng B-1					
		de de la companya de					10	Glacial Deposits	See Borir	ng B-1					
***************************************							15		Boring B surface	-1A encountered refual a	t approxin	nately 13.5	feet below the ground		

Project:	Callahan-	Kelly Pla	ygroun	d				***************************************				Proj. No.:	1048-99-	114EC	
Location: Surface Ele		Truxton S		Eastern .0 mse		& Van Si Date S		e., Borough of B 10/4/		ings County, New Yor Groundwater Data	k Depth	Client: El.	Island Pump & Additional Groundwater	~~~~~). El.
Fermination Proposed La Drill/Test I Hammer Ty	ocation: Method:		Lig HS	.4 feet ht Pole A/SPT tomatic		Date C Logged Contra Rig Ty	ctor:	: 10/4/ S. Hui IP&' Geopre	me Γ	While Drilling: At Completion:	(ft) NE NE	(mse)	Data	(ft)	(mse
		Sample II	ıformat			18-3				<u> 1</u>					k
Depth (Feet)	Number	Type	Rec (in)	NYC Class	Blows per 6 or drill time (min/ft)		Depth (ft)	Strata		DESCRI	PTION OF (Classifica	MATERIA	LS'	Rem	arks
		1						Surface Cover	2" Synthe	tic Turf				<u> </u>	
									Gray coar	rse to fine gravel, and c	oarse to fir	e sand, mois	t (FILL)	1	
0-3		en en		7					Gray coar	rse gravel, dry (FILL)					
3-5	S-1	ss	3	7	2 2	3		Fill	Brown me	edium to fine sand, trac	e silt, moi	st (FILL)		PID = 4.5	5
5-7	S-2	ss	12	7	10 11	26	5		As above	(FILL)				PID = 7.4	1
					15 9				Gray coar	rse to fine gravel, moist	(FILL)				
7-9	S-3	ss	18	6	6 6	7			Brown me loose (SM	edium to fine sand, son	ne coarse to	o fine gravel,	little clayey silt, wet,	PID = 9.8	3
9-11	S-4	ss	12	6	6 3 3 4	- 6	10	Possible reworked Glacial Deposits	As above,	some clayey silt, little	coarse to f	ine gravel (S	м)		
11-13	S-5	. SS	14	6	2 3 3 6	- 6	************		As above	(SM)				And the second s	
13-15	S-6	SS	18	3b	11 8 12 19	- 20	15	Glacial Deposits	Brown me dense (SM		ne coarse to	o fine gravel,	little silt, wet, medium		
15-15.4	S-7	SS	2	3a	50/5"	50/5"		:	As above, Boring B- surface	very dense (SM) 3 encountered refusal a	t approxin	nately 15.4 fe	et below the ground		

1D		X	X	21	V 110				BOI	RING LOG					ig No.: B-2	
Project:	Callahan-K	elly Play	yground	d									Proj. No.:	1048-9	9-114EC	
Location:	Fulton & T		Street, E	3astern						Cings County, New Yo			Client:	Island Pump	& Tank Co	p.
Surface Ele				.5 mse		Date St		10/2/		Groundwater Dat		epth	El.	Additional Groundwa		El
Termination Proposed Le				.0 feet lamp		Logged	ompleted:	10/2/ S. Hu		While Drilling:		(ft) NE	(mse)	Data	(ft)	(ms
Drill/Test l				A/SPT	,	Contra		IP&		At Completion:		NE				
Hammer Ty		1 Y		tomatic		Rig Ty	pe:	Diedri	ch							
		ample Ir I	iormat		Blows per 6"	ŀ	Depth			DESCR	IPTIC	N OF	MATERIA	LS		
Depth (Feet)	Number	Type	Rec (in)	NYC Class	or drill time	N	(ft)	Strata				ssifica		-	Rei	narks
(= 000)	Ż	F	- K		(min/ft)	<u> </u>		Surface Co	511 A1	ltia Canarat -				***************************************		
0-1	75			7				Surface Cover	3" Aspha	inc Concrete						
				T	13 13				Brown 20	ad dark brown coarses	to fine	cand	little cilt lit	le fine gravel, trace del	ris	
1-3	S-1	SS	18	7		18				moist (FILL)	io iiiic	ounu,	anne Jii, ili	ac mic graver, trace tel	PID = 1.	1
					5 5				-	•						
				T	3 6	 	***************************************									
3-5	S-2	SS	10	7		12		Fill	As above	, some silt, moist (FII	L)				2	
					6 5		5									
	· ·			t	3 2											
5-7	S-3	SS	NR	7		5			No Reco	very					No PID	
					3 5					-						
				 	6 7											
7-9	S-4	SS	14	3b		15				m PID = 0 .	0					
					8 10		***************************************		dense (S)							
			<u> </u>	1	21 15										ŀ	
9-11	S-5	SS	18	3b		28	10		As above	(SM)					PID = 0.	0
					13 13					-						
					14 15											
11-13	S-6	SS	20	3a	11 13	30			As above	, some fractured rock,	dense	(SM)			PID = 0.	0
					15 16					,						
				1	10 11											
13-15	S-7	SS	22	3b	10 11	21		C11-1	As above	, medium dense (SM)					PID = 0.	0
					10 10		15	Glacial Deposits		. ,						
					6 9											
15-17	S-8	SS	20	3b		19			As above	(SM)						
					10 12					-						
									Brown coarse to fine sand, some coarse to fine gravel, little clayey silt, moist,							
19.5-21.5	S-9	SS	12	3b	9 8	28	_20									
	······································	<u> </u>	<u>.</u>						medium dense (SM)							
									Boring B-2 encountered refusal at approximately 22 feet below the ground surface							

SUPPLEMENTARY DRAWING

FOR INFORMATION ONLY

FROM NYCT RECORD DRAWINGS

40		Ai	RI		VIIC	<u> </u>			BOR	ING LOG			Boring Page			
Project:	Callahan-K	elly Play	ground	1								Proj. No.:	1048-99-1	14EC		
Location:	Fulton & T	ruxton S	treet, E	astern	Parkway &	ն Van Si	ndern Ave	., Borough of B	rooklyn, Kir	ngs County, New York		Client:	Island Pump &	Tank Corp),	
Surface Ele				0 mse		Date S		10/4/		Groundwater Data	Depth	El.	Additional Groundwater	Depth	El.	
Terminatio				0 feet			ompleted:				(ft)	(mse)	Data	(ft)	(mse)	
Proposed L				ht Pole		Logged	-	S. Hur		While Drilling: 🔻	NE					
Drill/Test				A/SPT		Contra		IP&1	· L	At Completion: T	NE					
Hammer T		omenio Ter		omatic		Rig Ty	pe:	Geopro	obe			L				
		ample In		_		r	Depth		ľ	DESCRIP	TION OF	MATERIA	16			
Depth (Feet)	Number	Туре	Rec (in)	NYC Class	Blows per 6" or drill time (min/ft)	N	(ft)	Strata		DESCRIF	Lio	Rem	arks			
0-1				7				Surface Cover	2" Syntheti	,						
0-1	***			'					Dark gray	moist (FILL)	PID = 0.0					
					12 16							DYD 0.0				
1-3	S-1	SS	12	7		29			I .	gray coarse to fine san	id, some c	oarse to fine	gravel, little-trace silt,	PID = 0.0)	
					13 12			Fill	moist (FIL	L)		*				
		 						LIII								
2.5	0.0	00		_	10 10	2.7			Dark brow	n coarse to fine gravel,	some coa	rse to fine sa	ind, trace silt, moist	PID = 0.0)	
3-5	S-2	SS	2	7	15 17	25			(FILL)	,			,			
					1.0 17		_ 5									
					12 16			-								
5-7	S-3	ss	20	3b		29					coarse to	fine gravel,	little clayey silt, moist,	PID = 0.0)	
					13 11			Glacial	medium de	ense (SM)						
					2 10			Deposits		little fine gravel, moist		PID = 0.0				
7-9	S-4	SS	2	3b		18				Auger ref						
					8 7											
							10		Boring B-4 encountered refusal at approximately 9 feet below the ground surfa					8.5 feet		



CITY OF NEW YORK PARKS & RECREATION

OLMSTED CENTER

FLUSHING MEADOWS CORONA PARK FLUSHING, NEW YORK 11368

DATE

PROFFESIONAL ENGINEER
NEW JERSEY LICENSE No. 47287
NEW YORK LICENSE No. 87392

THE RECONSTRUCTION OF THE PLAYGROUND, COURT AREA AND SYNTHETIC TURF FIELD AT CALLAHAN-KELLY PLAYGROUND, BOUNDED BY FULTON AND TRUXTON STREET, EASTERN PARKWAY AND VAN SINDEREN AVENUE, BOROUGH OF BROOKLYN

CHECKED BY PETER HOWELL JENNY DEFISHER DRAWING NO. CONTRACT NO.

MAP FILE #: B219-E-001-2019

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B219-117M B102.00 SHEET No. 156 OF 157SHEETS