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

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Prepared For:

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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

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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

FIGURES

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).[1] 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.

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).

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 half-mile 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 1A 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 Lot 14 (1873) Lot 8 (1887)	None in 1887 2486 Fulton (1898) 2474 Fulton (1908)	ca. 1871-1929	NW portion of block
Block 1555 Lot 16 (1873) Lot 9 (1887)	None in 1887 2488 Fulton (1898) 2476 Fulton; 2, 4, 6, 8 Williams Place (1908)	ca. 1871-1929	NW portion of block

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 hook-up 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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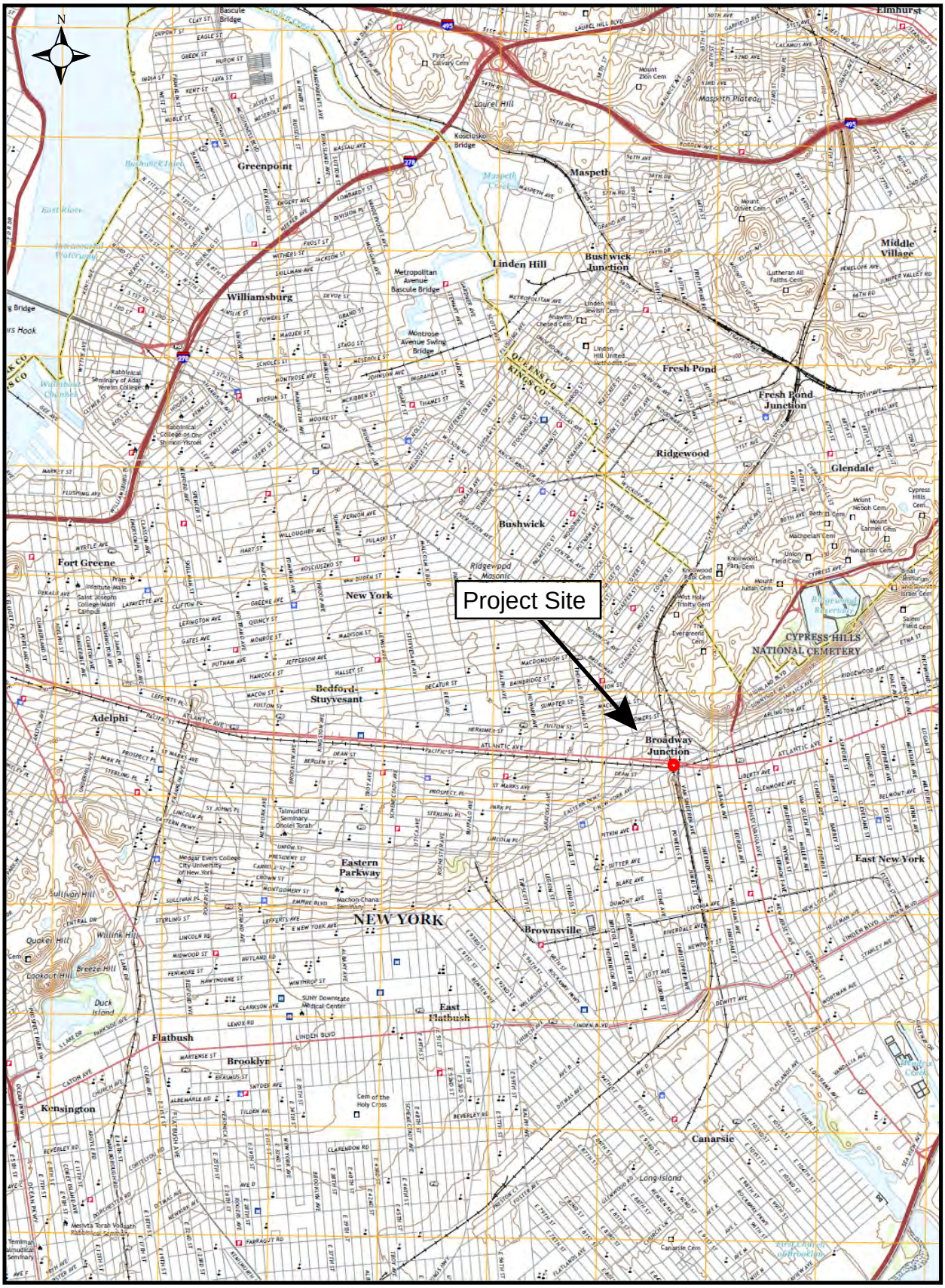
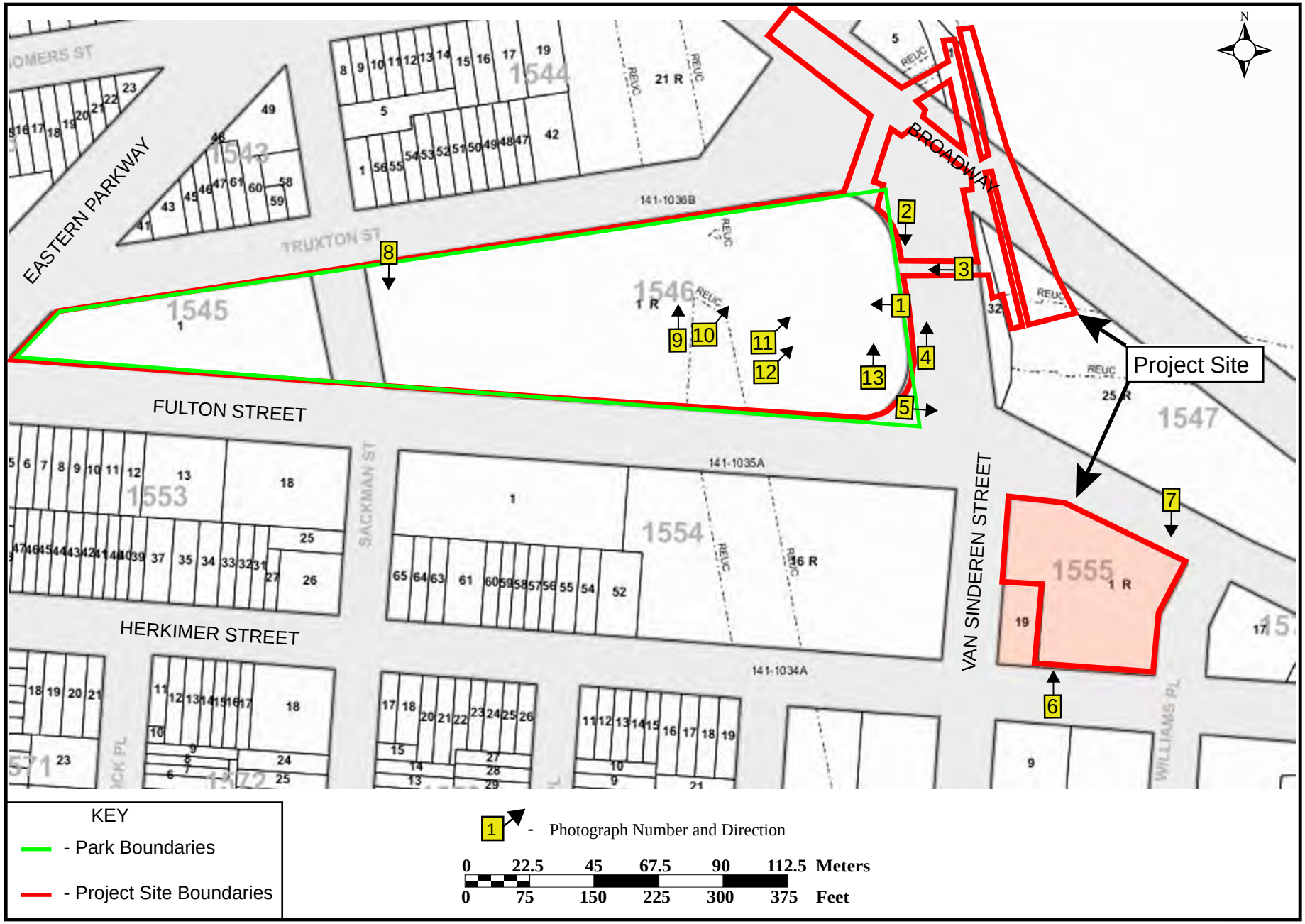


Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

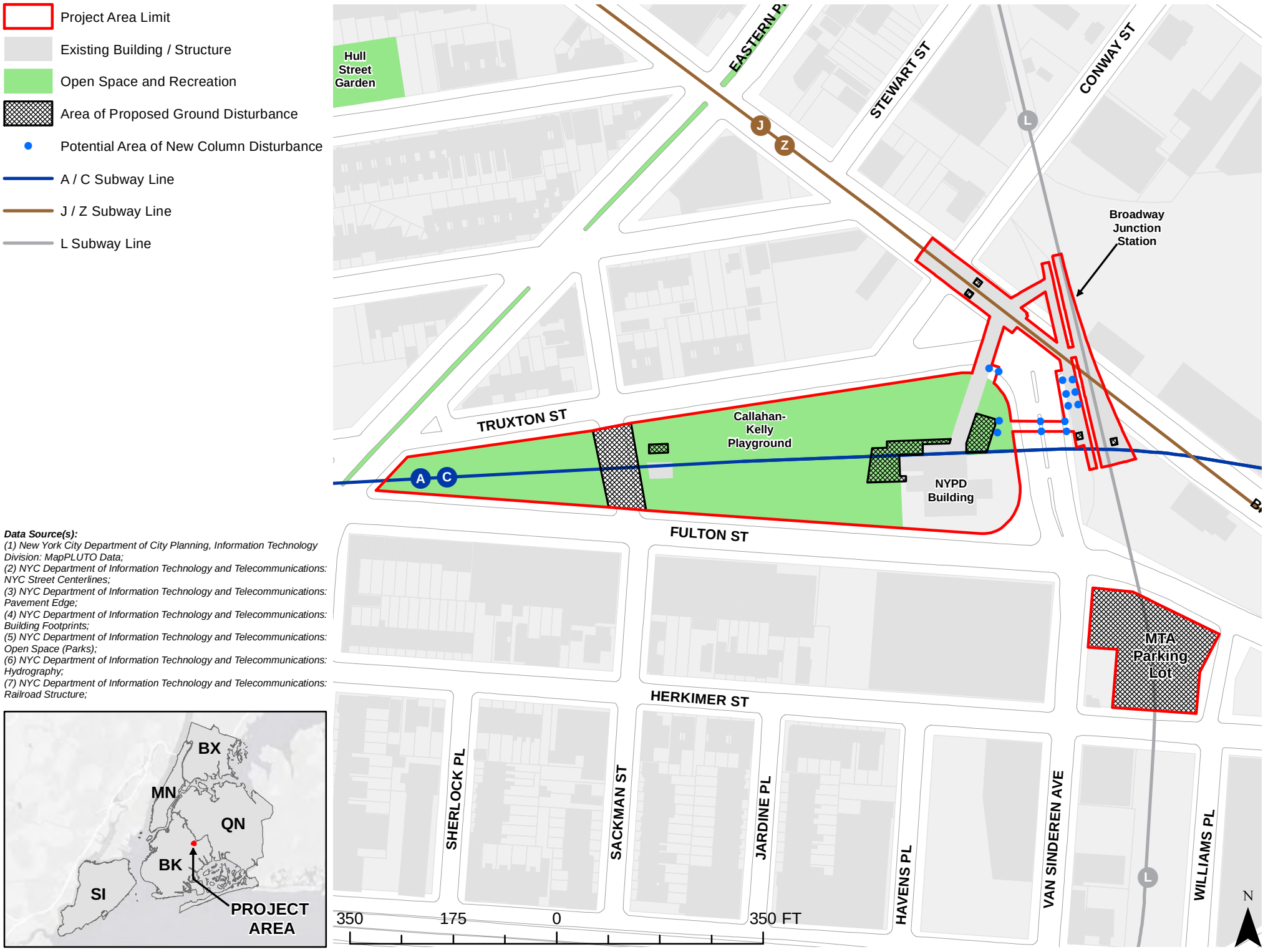
0 500 1000 1500 2000 2500 Meters
0 1640 3280 4920 6560 8202 Feet

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

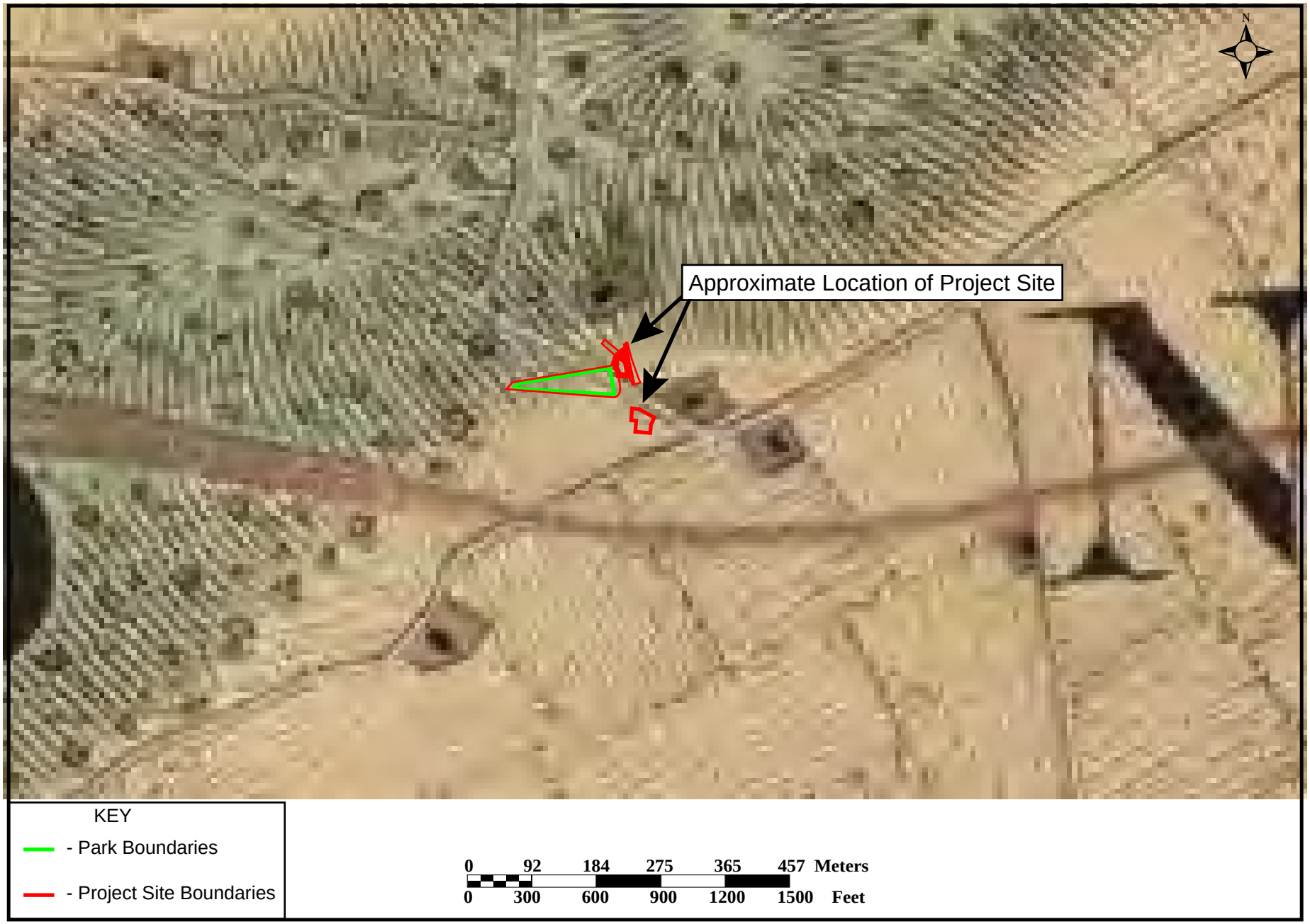


Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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

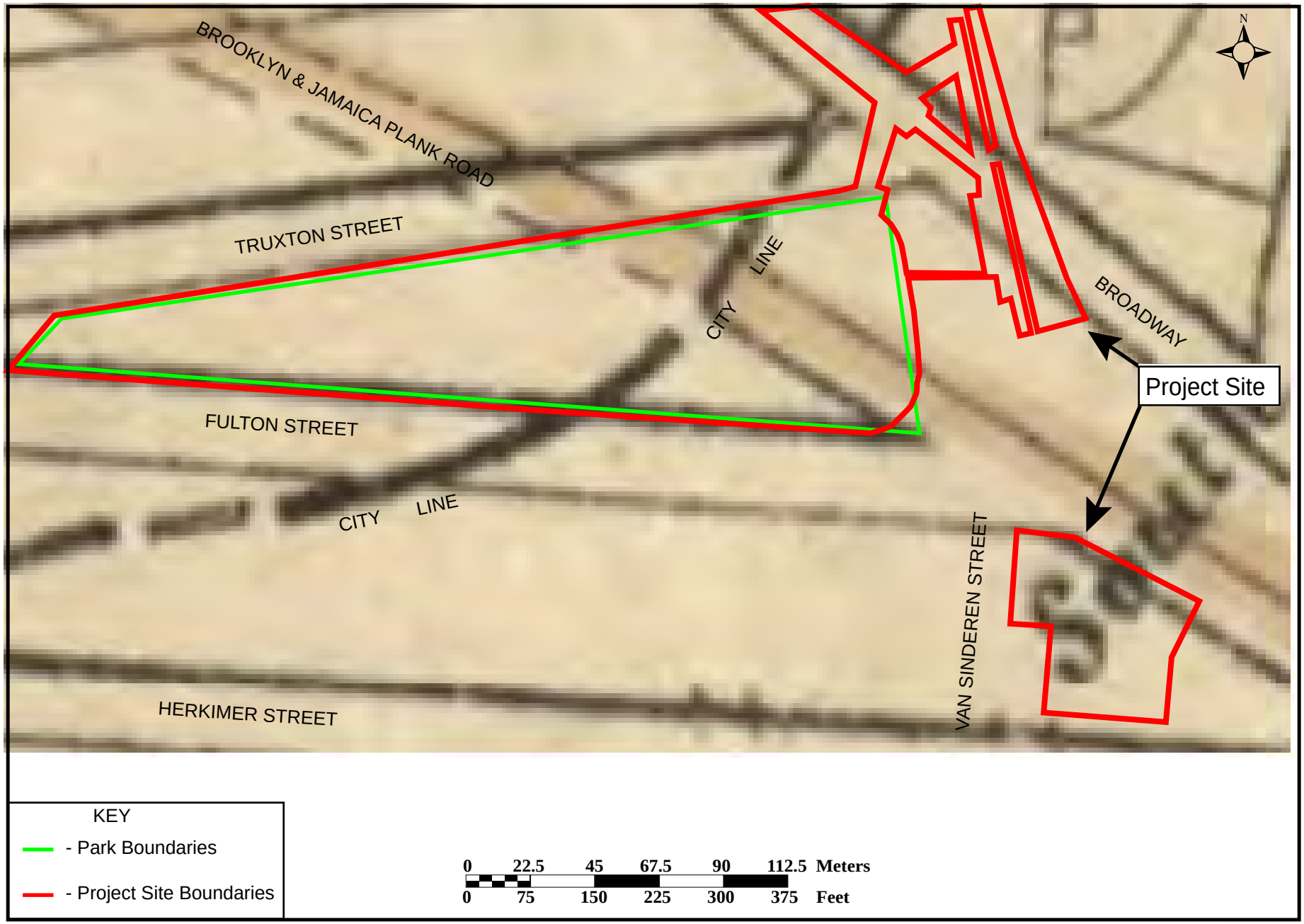


Data Source(s):
(1) New York City Department of City Planning, Information Technology Division: MapPLUTO Data;
(2) NYC Department of Information Technology and Telecommunications: NYC Street Centerlines;
(3) NYC Department of Information Technology and Telecommunications: Pavement Edge;
(4) NYC Department of Information Technology and Telecommunications: Building Footprints;
(5) NYC Department of Information Technology and Telecommunications: Open Space (Parks);
(6) NYC Department of Information Technology and Telecommunications: Hydrography;
(7) NYC Department of Information Technology and Telecommunications: Railroad Structure;



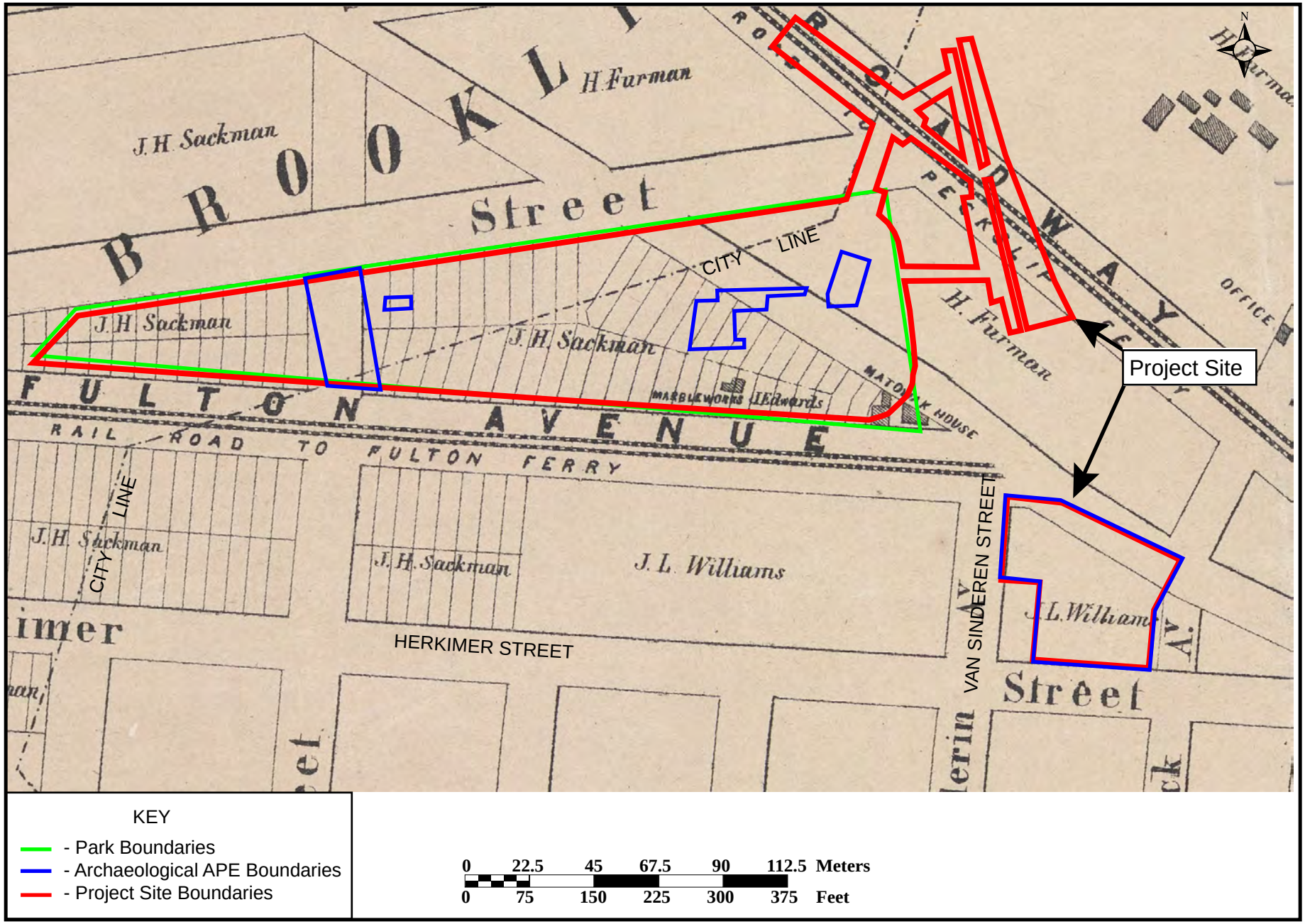
Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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



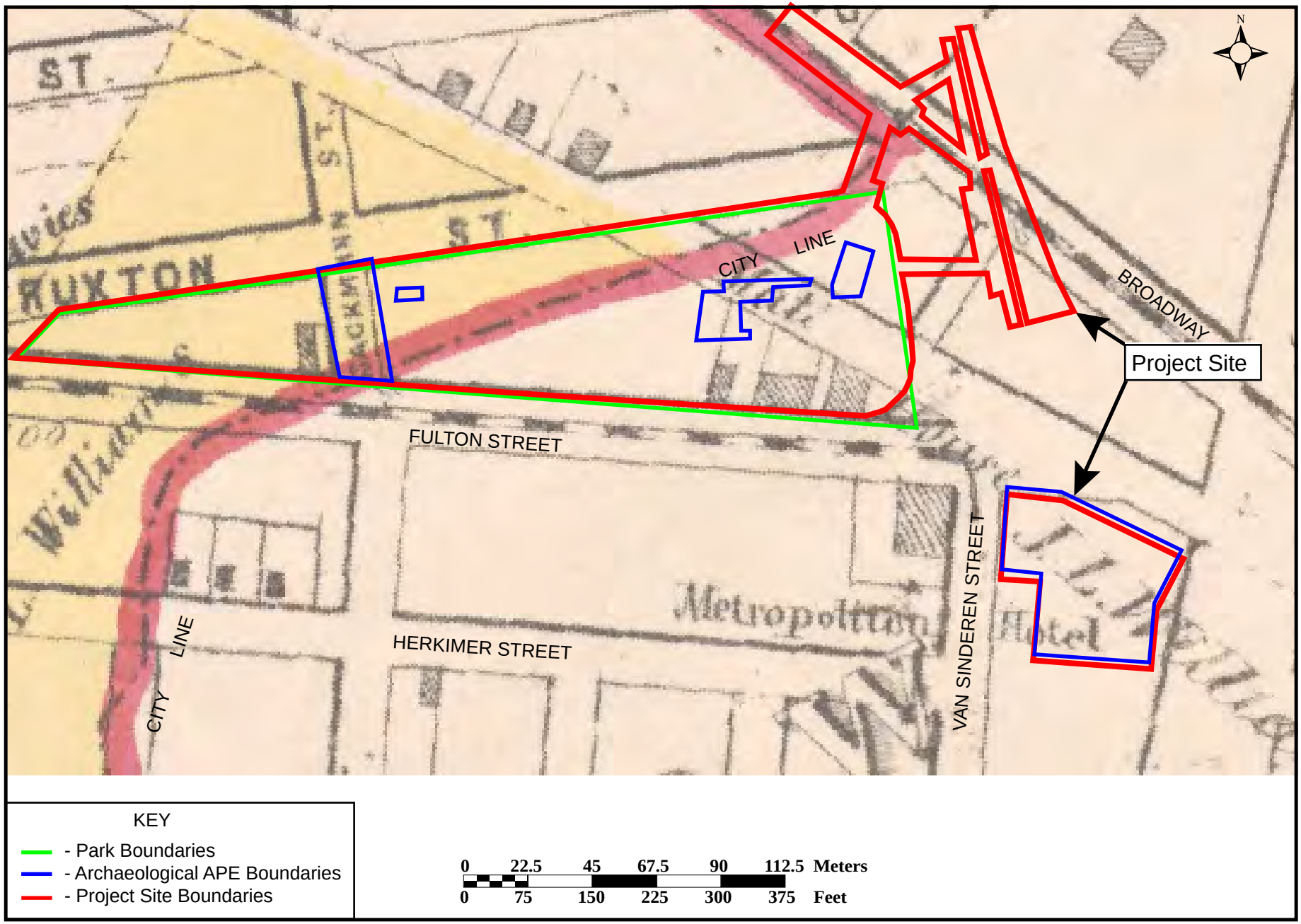
Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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



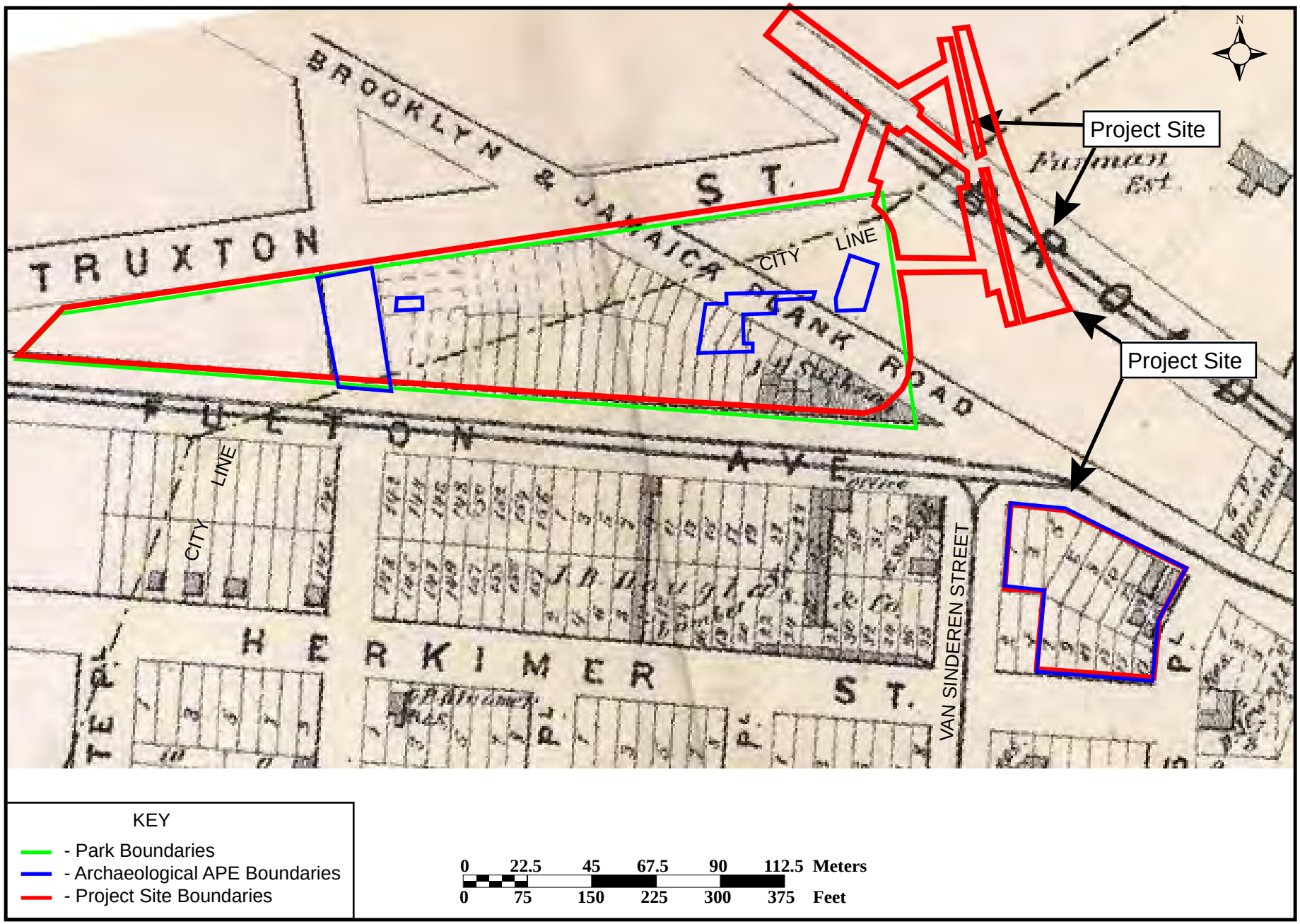
Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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



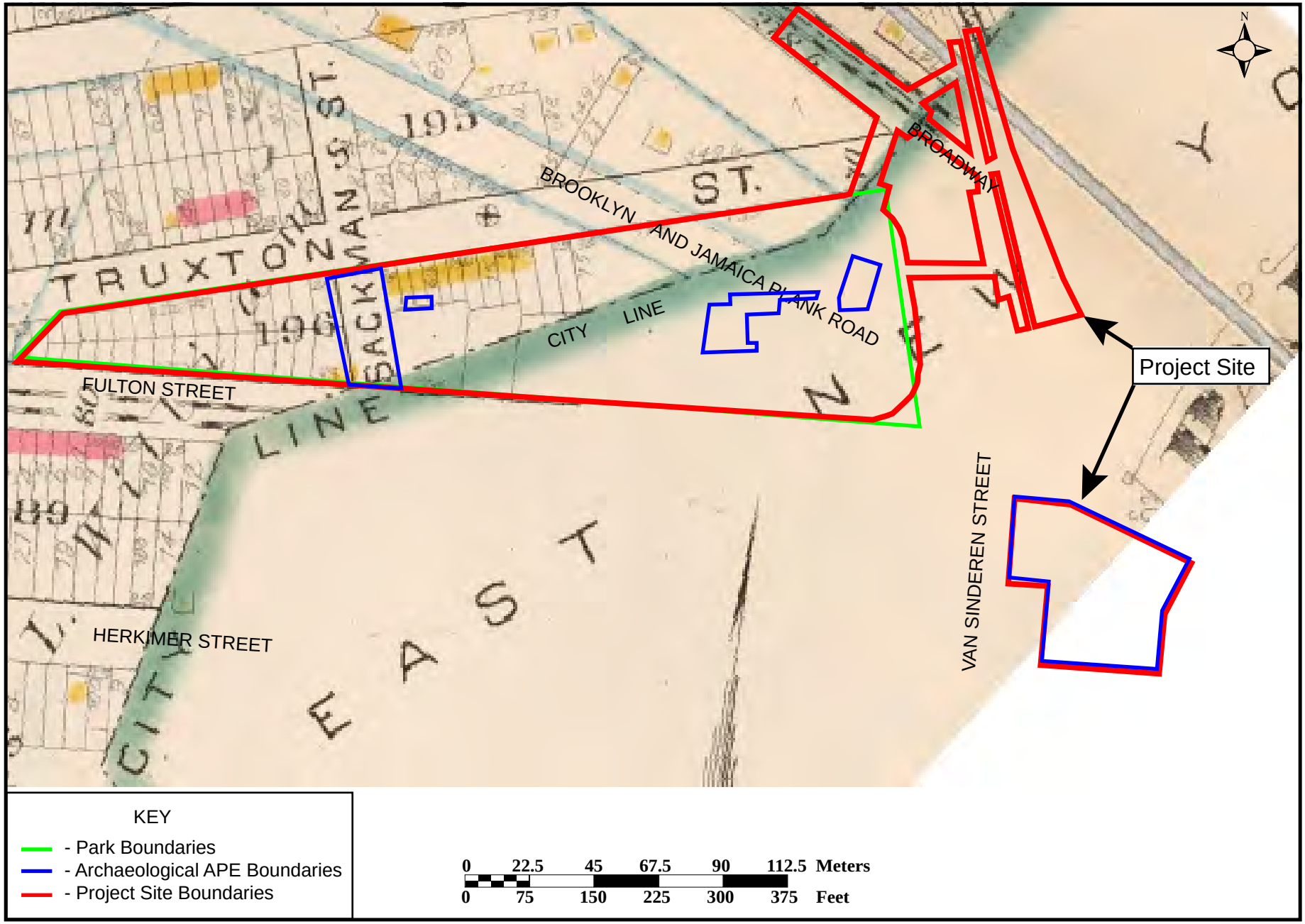
Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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



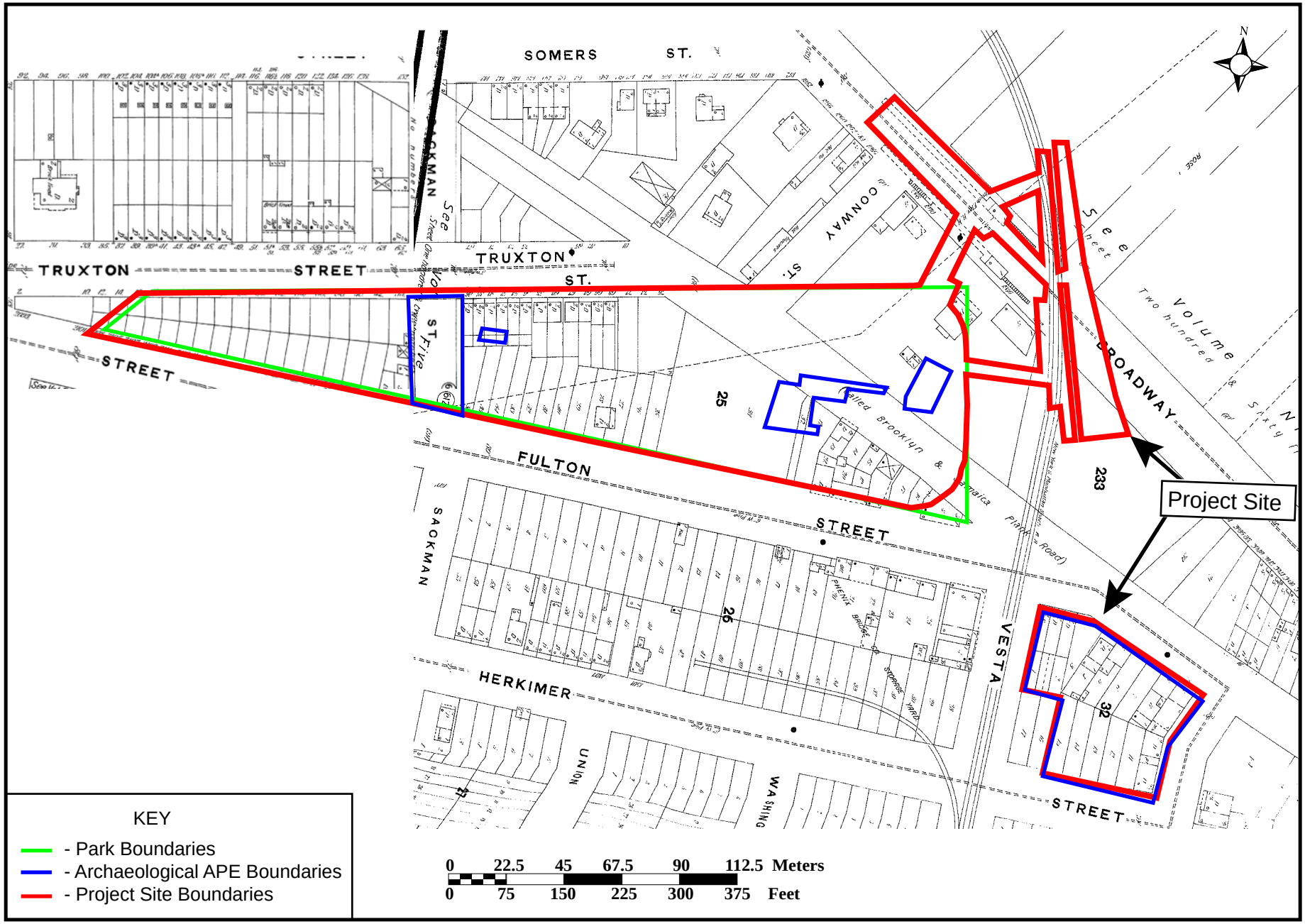
Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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



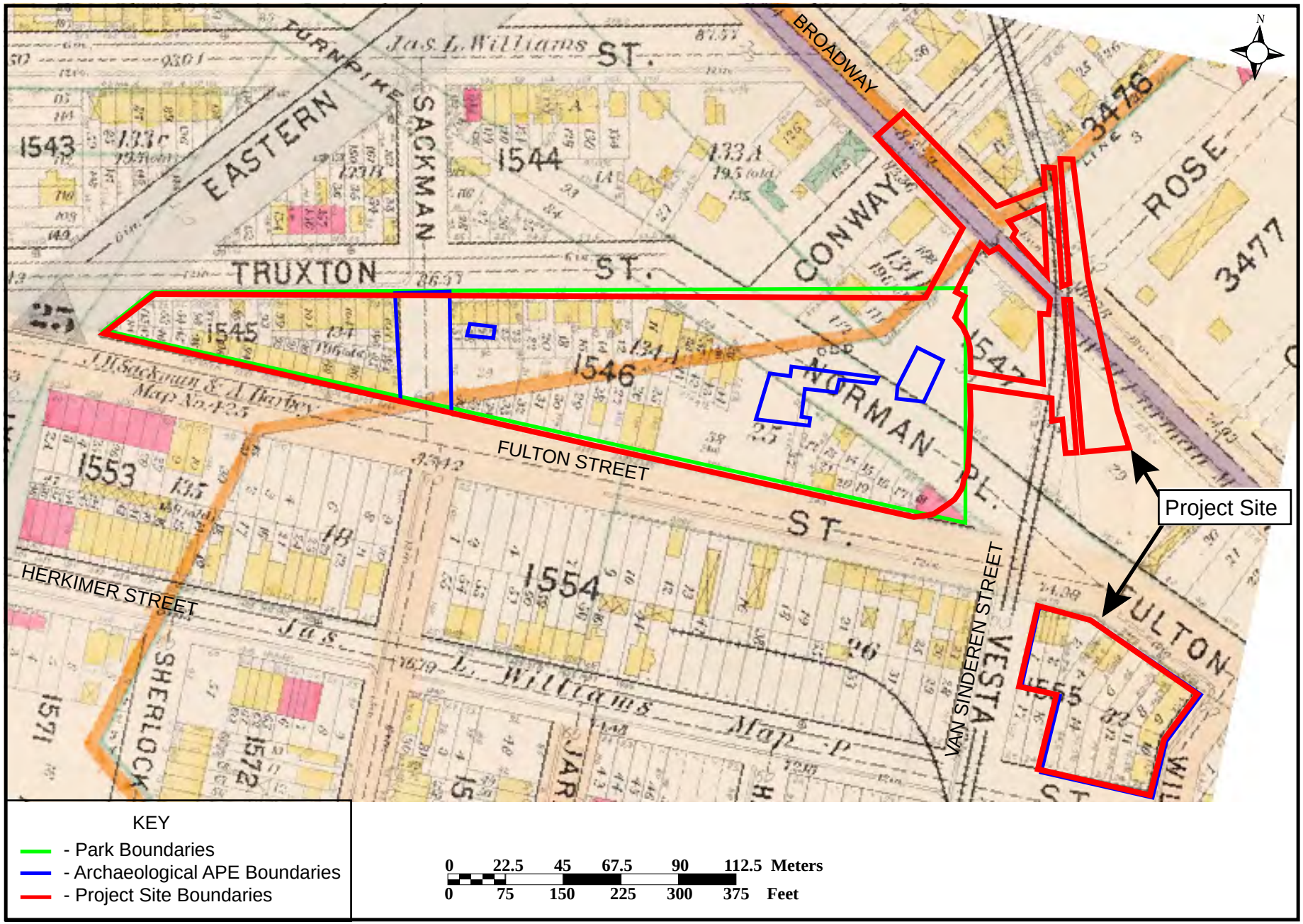
Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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



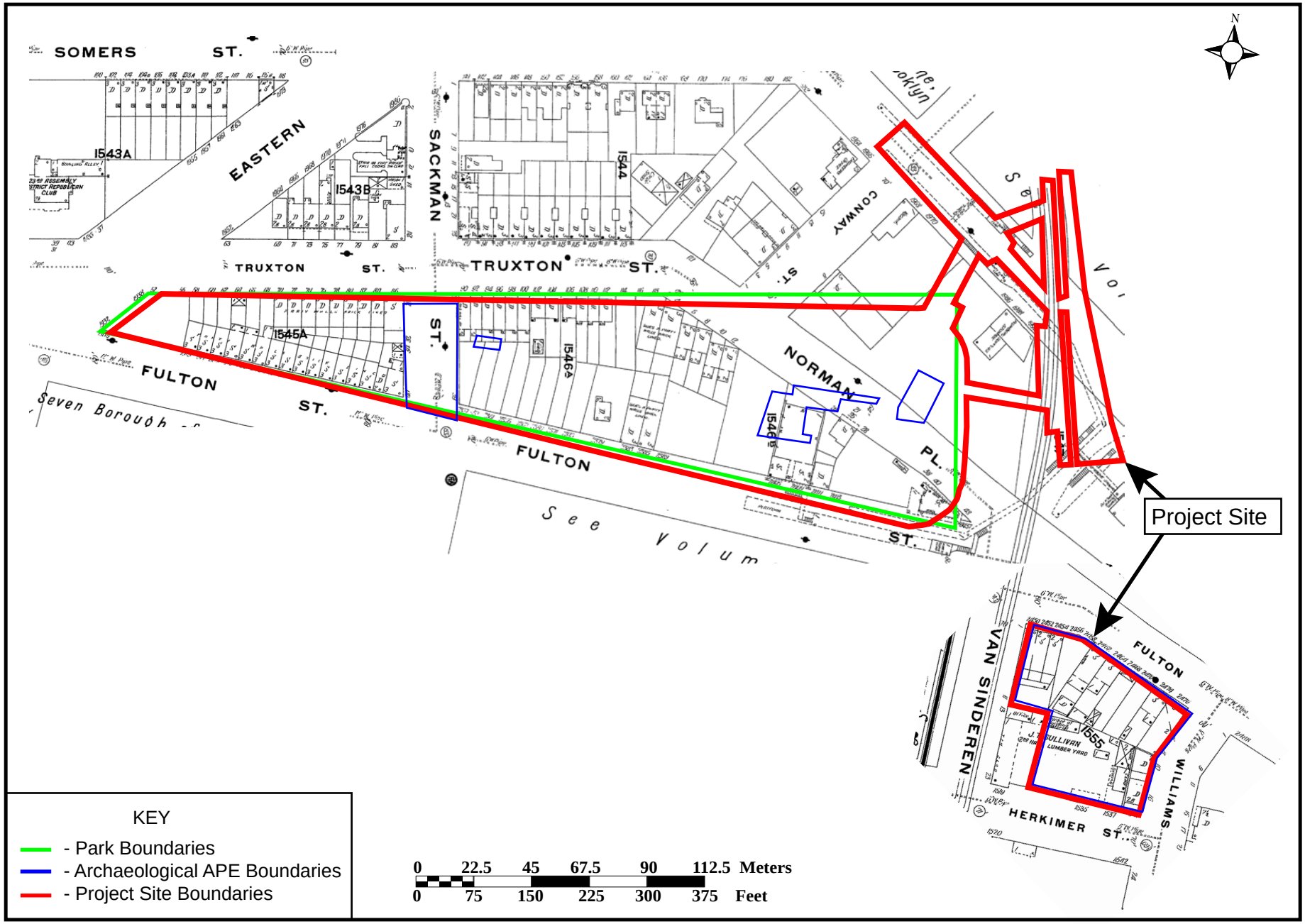
Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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



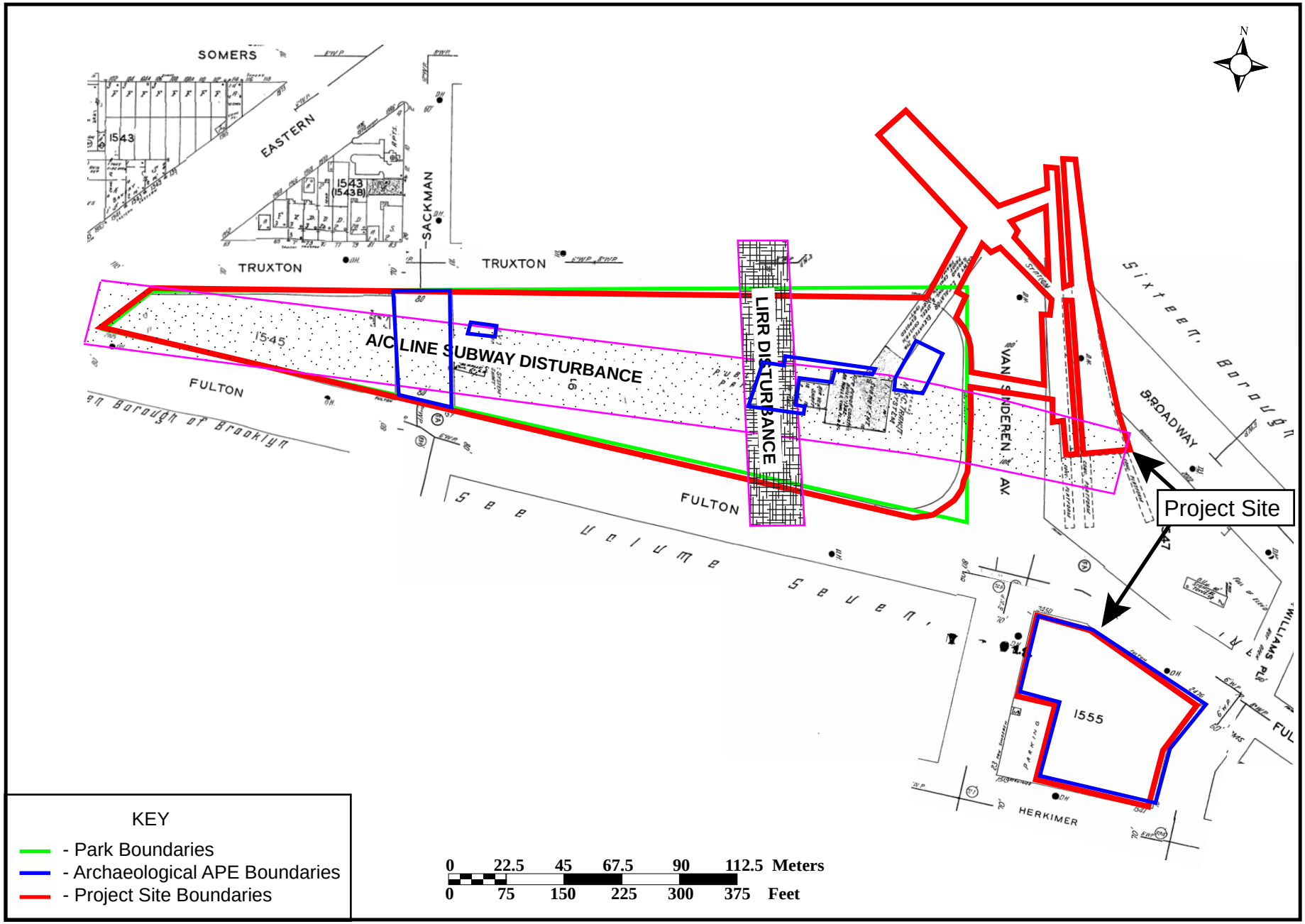
Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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



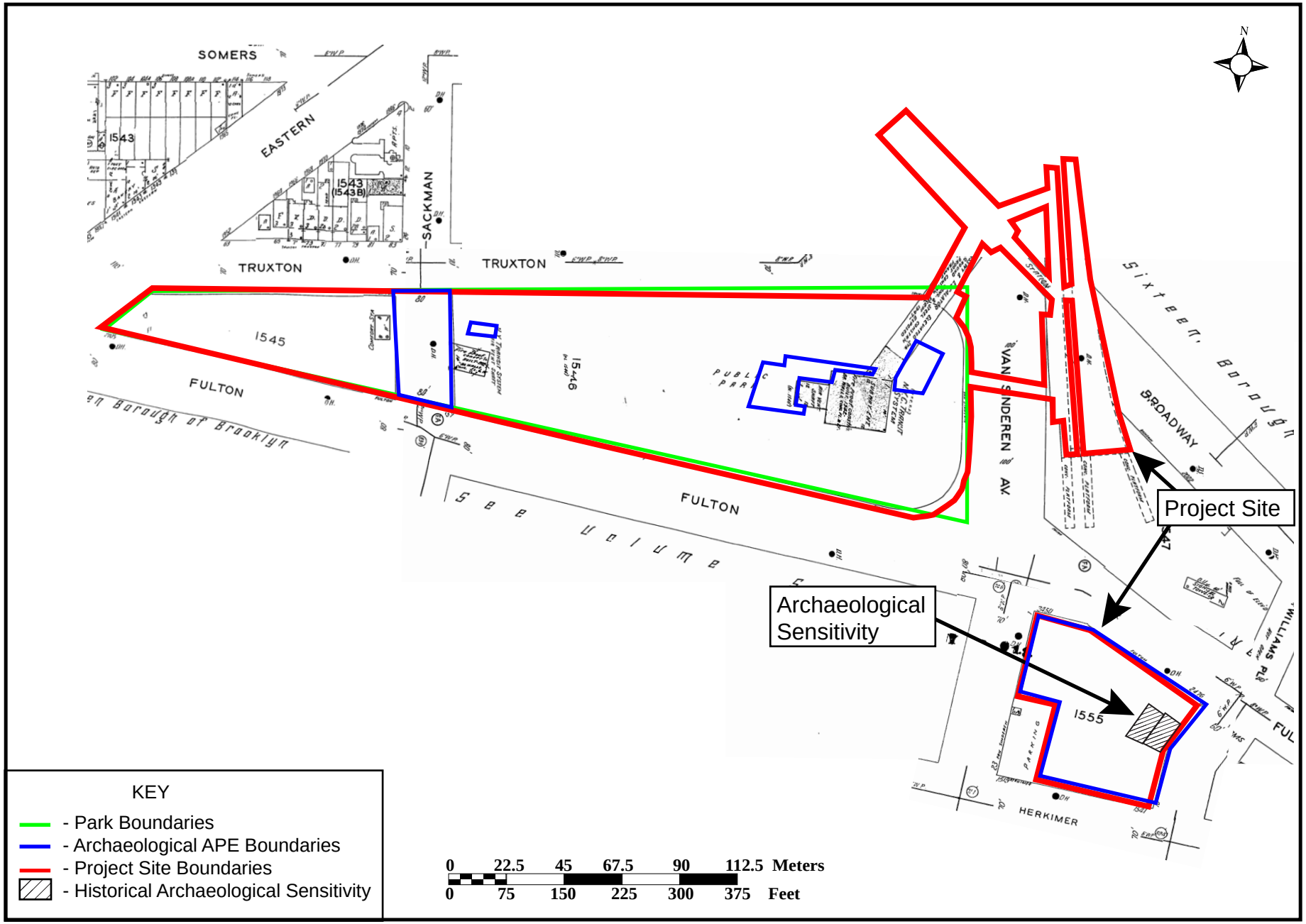
Phase IA Archaeological Documentary Study
NYCT Broadway Junction Station Upgrades
Brooklyn, Kings County, New York

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



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

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



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

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 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.

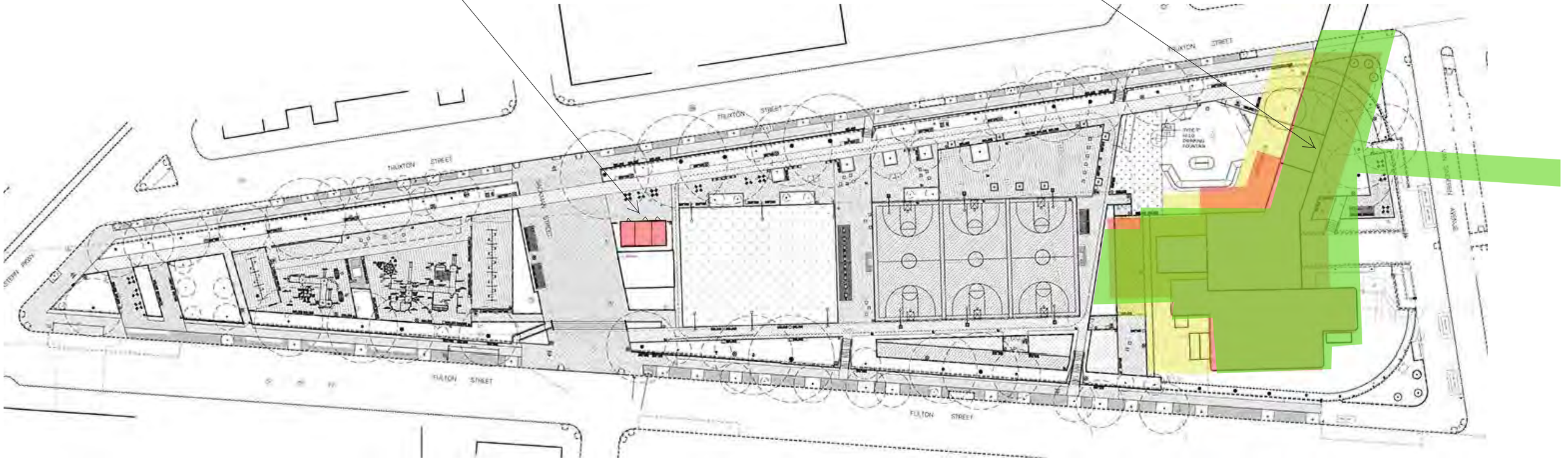
Photograph 12: Facing northeast from the Callahan-Kelly Playground to the Control House and the location of the proposed A/C Station Expansion West in foreground.

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.

APPENDIX A: PROPOSED PLANS

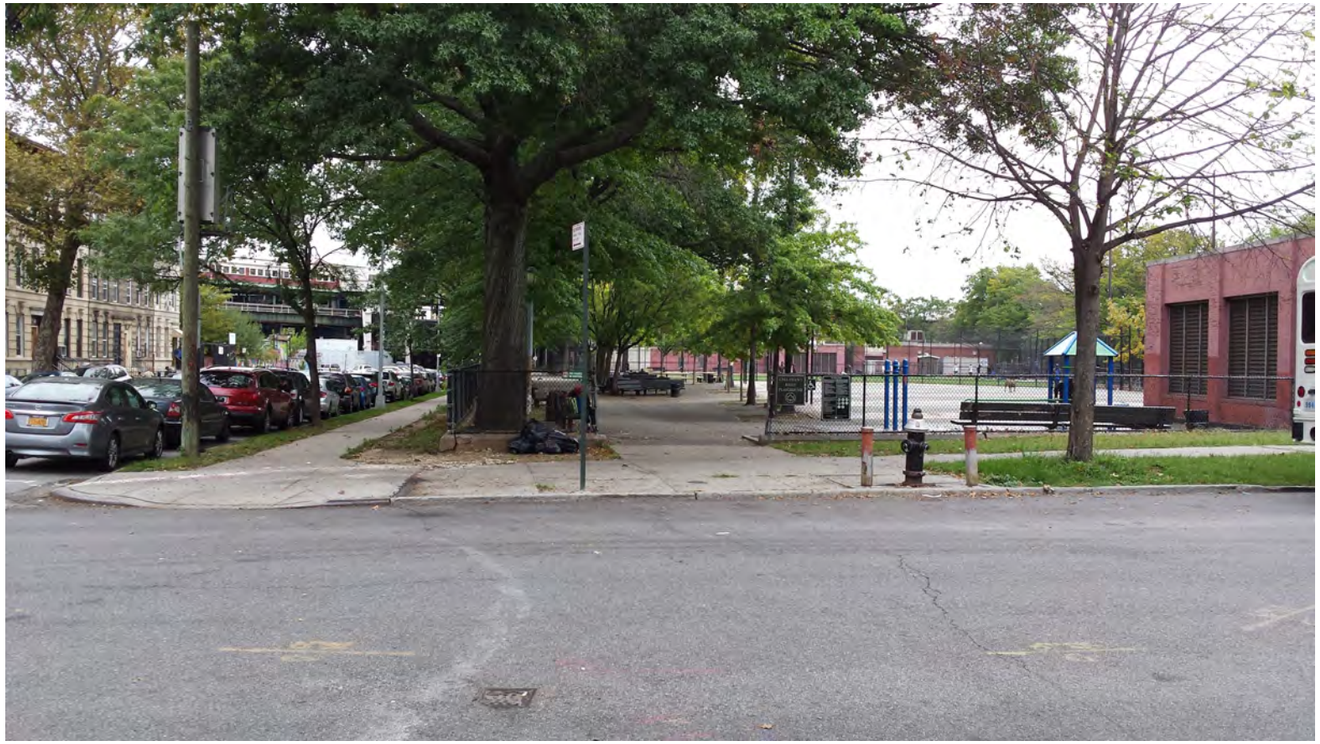
Comfort Station Location

New MTA Expansion Footprint in Green



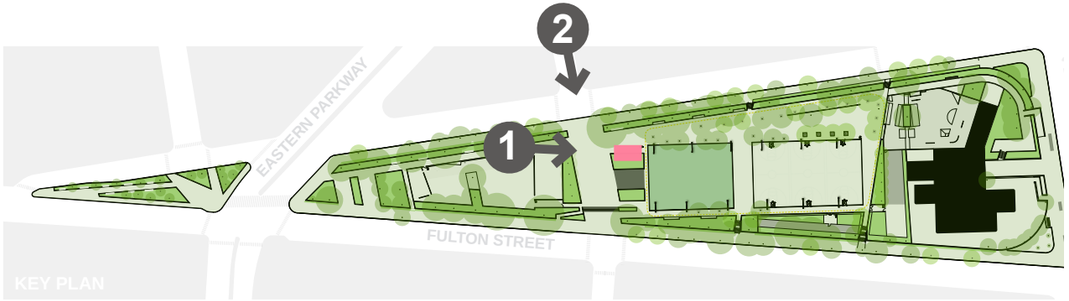
NYC Parks

CALLAHAN-KELLY PLAYGROUND | Proposed Comfort Station Location & MTA Footprint Overlay 12/16/21



1 - View looking east

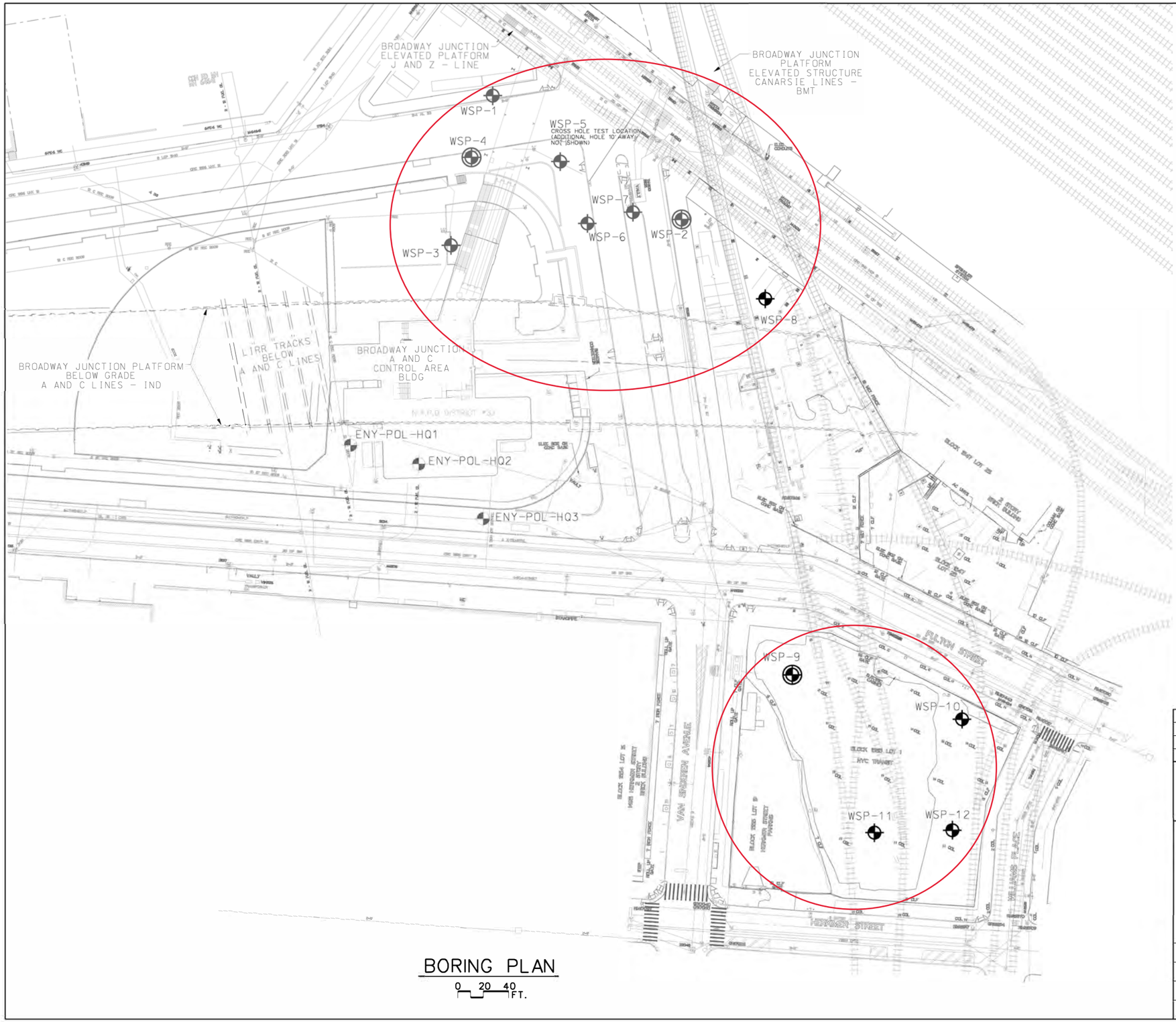
2 - View looking south



NYC Parks

CALLAHAN-KELLY PLAYGROUND | Photos of Proposed Comfort Station Location

APPENDIX B: SOIL BORING PLANS AND LOGS



BORING PLAN

0 20 40 FT.

LEGEND

PROPERTY LINE (PL):

BORING LOCATION:

BORING LOCATION & MONITORING WELL:

EX. BORING LOCATION:

REVISION	DESCRIPTION	DATE

IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. THE ALTERING ENGINEER SHALL AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND THE DATE OF ALTERATION.

New York City Transit Authority

CONTRACT A-187683T25

ADA ACCESSIBILITY AND INCREASED CAPACITY AT BROADWAY JUNCTION STATION - BMT AND IND TRAINS BOROUGH OF BROOKLYN

WSP
1 Penn Plaza, 2nd Fl.
New York, NY 10119
GEOTECHNICAL ENGINEERING

BORING LOCATION PLAN

DRAWN BY	C. CERMA		DATE : FEB. 09, 2022
DESIGNED BY	B. BUSI P.E.		DRAWING NO. GT-002
CHECKED BY	B. IMAMOGLU P.E.		
APPROVED BY			REVISION

BORING LOG

BORING NUMBER: **WSP-1**
SHEET NUMBER: **1** of **4**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Raqib Caesar**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Truck CME-85; Automatic Hammer**

LOCATION: **Van Sinderen Avenue and Truxton Street NW Corner**
COORD. **N: 186,633.9** **E: 1,010,907.6**
STN. NO.: OFFSET:
SURFACE ELEV.: **182.0 feet**
DATUM: **NYCT**
START DATE: **11/7/19** TIME: **7:00 am**
FINISH DATE: **11/7/19** TIME: **3:00 pm**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.375"				
O.D.	4.5"	2.0"				
Length	N/A	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		2.25" (2.625")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
																		Top 6' excavated by hand excavation tools. Asphalt Paving
			G	1	☒	1.0 - 2.0	G	R	A	B								G-1: Brown, coarse to fine SAND, coarse to fine Gravel, little Silt, dry (SM/Fill)
			G	2	☒	2.0 - 4.0	G	R	A	B								G-2: Brown, coarse to fine SAND, and coarse to fine Gravel, little Silt, brick debris, dry (SM/Fill)
			G	3	☒	4.0 - 6.0	G	R	A	B								G-3: Brown, coarse to fine GRAVEL, and coarse to fine Sand, little Silt, brick debris, dry (SM/Fill)
5			S	1	■	6.0 - 8.0	12	20	24	19	9							S-1: Brown, coarse to fine Sand, some coarse to fine Gravel, some Silt, dense, brick debris, dry (SM/Fill)
			S	2	■	8.0 - 10.0	24	20	22	15	9							S-2: Brown, coarse to fine Sand, and coarse to fine Gravel, little Silt, dense, dry (SM)
10			S	3	■	10.0 - 12.0	10	22	10	8	12							S-3: Brown, coarse to fine SAND, little medium to fine Gravel, little Silt, dense, dry (SM)
15			S	4	■	15.0 - 17.0	10	15	18	13	8							S-4: Brown, coarse to fine GRAVEL, little coarse to fine Sand, little Silt, dense, moist (GM)
20			S	5	■	20.0 - 22.0	22	31	36	20	20							S-5: Brown, coarse to fine SAND, and coarse to fine Gravel, little Silt, very dense, moist (SM)

BORING LOG
(continued)

BORING NUMBER: **WSP-1**
SHEET NUMBER: **2** of **4**
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: **Raqib Caesar**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	6		25.0 - 27.0	14	15	18	12	15							S-6: Brown, coarse to fine SAND, some medium to fine Gravel, little Silt, 6" Clay pocket, dense, moist (SM)
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 LOG
(continued)

BORING NUMBER: **WSP-1**
SHEET NUMBER: **3** of **4**
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: **Raqib Caesar**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	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 fine Gravel, trace Silt, very dense, moist (SP)
70			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)
80			S	17		80.0 - 82.0	20	22	20	22	10							S-17: Brown, coarse to fine SAND, little medium to fine Gravel, little Silt, dense, moist (SM)
85			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)
90			S	19		90.0 - 92.0	15	12	14	8	16							S-19: Brown, coarse to fine SAND, little medium to fine Gravel, little Silt, medium dense, moist (SM)

BORING LOG
(continued)

BORING NUMBER: **WSP-1**
SHEET NUMBER: **4** of **4**
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: **Raqib Caesar**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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)
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)
																		102' End of Boring
105																		
110																		
115																		
120																		
125																		

BORING LOG

BORING NUMBER: **WSP-2**
SHEET NUMBER: **1** of **4**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Raqib Caesar**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Truck CME-85; Automatic Hammer**

LOCATION: **Van Sinderen Avenue and Truxton Street SE Corner**
COORD. **N: 186,536.3** **E: 1,011,056.3**
STN. NO.: OFFSET:
SURFACE ELEV.: **181.0 feet**
DATUM: **NYCT**
START DATE: **11/6/19** TIME: **7:00 am**
FINISH DATE: **11/6/19** TIME: **3:00 pm**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.375"				
O.D.	4.5"	2.0"				
Length	N/A	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		2.25" (2.625")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)
12/26/2019	5:00 PM	16	40	102
1/30/2020	1:00 PM	15.9	40	102
8/21/2020	7:15 AM		40	102
9/1/2020	8:40 AM		40	102

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1		1.0 - 6.0	G	R	A	B								Top 6' excavated by hand excavation tools. Concrete Sidewalk G-1: Brown, coarse to fine SAND, and coarse to fine Gravel, little Silt, dry (SM/FILL)
5			S	1	■	6.0 - 8.0	12	13	10	12	20							S-1: Brown, coarse to fine SAND, some Silt, trace medium to fine Gravel, medium dense, dry (SM)
			S	2	■	8.0 - 10.0	16	14	12	10	24							S-2: Brown, SILT, and coarse to fine SAND, trace fine Gravel, very Stiff, dry (ML)
10			S	3	■	10.0 - 10.8	25	100/3"			6							S-3: Brown, coarse to fine Sand, some coarse to fine Gravel, some Silt, very dense, dry (SM)
15			S	4	■	15.0 - 17.0	17	29	40	30	16							S-4: Brown, coarse to fine GRAVEL, some coarse to fine Sand, little Silt, very dense, moist (GM)
20			S	5	■	20.0 - 22.0	60/3"				3							S-5: Brown, coarse to fine GRAVEL, some coarse to fine Sand, some Silt, very dense, moist (GM)

BORING LOG
(continued)

BORING NUMBER: **WSP-2**
SHEET NUMBER: **2** of **4**
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: **Raqib Caesar**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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)
30			S	7		30.0 - 32.0	22	26	33	25	12							S-7: Brown, coarse to fine SAND, some coarse to fine Gravel, little Silt, very dense, moist (SM)
35			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)
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)
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)
50			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 medium to fine Gravel, very dense, moist (SM)

BORING LOG
(continued)

BORING NUMBER: **WSP-2**
SHEET NUMBER: **3** of **4**
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: **Raqib Caesar**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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)
75			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)
80			S	17		80.0 - 82.0	22	17	22	18	12							S-17: Brown, coarse to fine SAND, little medium to 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)

BORING LOG
(continued)

BORING NUMBER: **WSP-2**
SHEET NUMBER: **4** of **4**
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: **Raqib Caesar**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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)
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)
																		End of Boring at 102'
105																		
110																		
115																		
120																		
125																		

BORING LOG

BORING NUMBER: **WSP-3**
SHEET NUMBER: **1** of **4**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Raqib Caesar**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Truck CME-85; Automatic Hammer**

LOCATION: **Callahan-Kelly Playground**
COORD. **N: 186,516.0** **E: 1,010,874.7**
STN. NO.: OFFSET:
SURFACE ELEV.: **185.5 feet**
DATUM: **NYCT**
START DATE: **11/4/19** TIME: **7:00 am**
FINISH DATE: **11/5/19** TIME: **3:00 pm**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.375"				
O.D.	4.5"	2.0"				
Length	N/A	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		2.25" (2.625")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1		0.5 - 3.0	G	R	A	B								Top 6' excavated by hand excavation tools. 6" Topsoil G-1: Brown, coarse to fine SAND, some Silt, little coarse to fine Gravel, dry (SM/FILL)
			G	2		3.0 - 3.5	G	R	A	B								G-2: Brown, coarse to fine Sand, and Silt, little coarse to fine Gravel, dry (SM-ML/FILL)
			G	3		3.5 - 4.5	G	R	A	B								
5			G	4		4.5 - 6.0	G	R	A	B								G-3: Brown, coarse to fine Sand, and coarse to fine Gravel, trace Silt, debris, bricks, steel wire (SW/FILL)
			S	1		6.0 - 8.0	10	12	48	15	14							G-4: Brown, coarse to fine Sand, and Silt, little coarse to fine Gravel, dry (SM-ML/FILL) S-1: Brown, coarse to fine SAND, some Silt, little coarse to fine Gravel, very dense, dry (SM)
			S	2		8.0 - 10.0	20	18	19	32	19							S-2: Brown, coarse to fine SAND, little fine Gravel, little Silt, dense (SM)
10			S	3		10.0 - 12.0	22	34	31	19	12							S-3: Brown, coarse to fine Gravel, and coarse to medium Sand, trace Silt, very dense (GP)
15			S	4		15.0 - 17.0	15	15	38	25	7							S-4: Brown, coarse to fine SAND, some coarse to fine Gravel, little Silt, very dense (SM)
20			S	5		20.0 - 21.3	31	65	100/3"		11							S-5: Brown, coarse to fine GRAVEL, little coarse to fine Sand, little Silt, very dense, moist (GP)

BORING LOG
(continued)

BORING NUMBER: **WSP-3**
SHEET NUMBER: **2** of **4**
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: **Raqib Caesar**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	6		25.0 - 26.3	34	44	100/3"		12							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 fine Sand, trace Silt, very dense, moist (GW)
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)
40			S	9		40.0 - 42.0	27	42	46	34	16							S-9: Brown, coarse to fine SAND, little fine Gravel, trace Silt, very dense, moist (SP)
45			S	10		45.0 - 47.0	28	64	78	75	24							S-10: Brown, coarse to fine Gravel, and coarse to fine Sand, trace Silt, very dense, moist (GW)
50			S	11		50.0 - 52.0	80/3"				3							S-11: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, very dense, moist (SP)
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 LOG
(continued)

BORING NUMBER: **WSP-3**
SHEET NUMBER: **3** of **4**
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: **Raqib Caesar**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	13		60.0 - 62.0	26	36	50	33	13							S-13: Brown, coarse to fine SAND, little coarse to fine Gravel, trace Silt, very dense, moist (SP)
65			S	14		65.0 - 67.0	27	28	30	34	20							S-14: Brown, coarse to fine SAND, little medium to fine Gravel, trace Silt, very dense, moist (SP)
70			S	15		70.0 - 72.0	28	30	36	40	10							S-15: Brown, coarse to fine SAND, little Silt, trace fine Gravel, very dense, moist (SM)
75			S	16		75.0 - 77.0	18	24	20	18	14							S-16: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, dense, moist (SP)
80			S	17		80.0 - 82.0	68	69	80	70	17							S-17: Brown, coarse to fine SAND, little medium to fine Gravel, trace Silt, very dense, moist (SP)
85			S	18		85.0 - 87.0	25	20	18	15	12							S-18: Brown, coarse to fine SAND, some fine Gravel, trace Silt, dense, moist (SP)
90			S	19		90.0 - 92.0	21	20	38	26	12							S-19: Brown, coarse to fine SAND, some medium to fine Gravel, trace Silt, very dense, moist (SP)

BORING LOG
(continued)

BORING NUMBER: **WSP-3**
SHEET NUMBER: **4** of **4**
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: **Raqib Caesar**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	FIELD CLASSIFICATION AND REMARKS
			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)
100			S	21		100.0 - 102.0	26	28	44	36	20						S-21: Brown, coarse to fine SAND, little medium to fine Gravel, trace Silt, very dense, wet (SP)
																	102' End of Boring
105																	
110																	
115																	
120																	
125																	

Depth Elev.

BORING LOG

BORING NUMBER: **WSP-4**
SHEET NUMBER: **1** of **4**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Gayani Gunarathna**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Track Rig CME-55; Automatic Hammer**

LOCATION: **Van Sinderen Avenue and Truxton Street SW Corner**
COORD. **N: 186,584.8** **E: 1,010,890.8**
STN. NO.: OFFSET:
SURFACE ELEV.: **182.0 feet**
DATUM: **NYCT**
START DATE: **8/14/20** TIME: **7:30 am**
FINISH DATE: **8/17/20** TIME: **1:30 am**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.375"				
O.D.	4.5"	2.0"				
Length	15'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		2.25" (2.625")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)
8/21/2020	7:15 AM		50	102
9/1/2020	8:40 AM		50	102

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1		0.3 - 2.0	G	R	A	B								Top 6' excavated by hand excavation tools. Concrete Slab (4")
			G	2		2.0 - 4.0	G	R	A	B								G-1: Brown, coarse to fine SAND, some Silt, little medium to fine Gravel, slightly micaceous, moist (SM)
			G	3		4.0 - 6.0	G	R	A	B								G-2: Brown, coarse to fine SAND, trace medium to fine Gravel, trace Silt, slightly micaceous, moist (SM)
5																		Cobble at approx. 3 ft
			S	1		6.0 - 8.0	25	42	31	19	12							G-3: Brown to red to gray, coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, trace quartz fragments, slightly micaceous, dry (GM-SM)
			S	2		8.0 - 10.0	25	32	43	36	19							S-1: Brown to white, coarse to fine GRAVEL, little+ coarse to fine Sand, trace Silt, trace quartz, very dense, dry (SM)
10			S	3		10.0 - 12.0	4	5	13	13	12							S-2: Brown to white to gray, coarse to fine SAND, some coarse to fine Gravel, trace Silt, quartz, slightly micaceous, very dense, dry (SM-GM)
																		S-3A: (Top 6") Brown to gray, coarse to fine Sand, and medium to fine Gravel, little Silt, medium dense, moist (SM-GM)
																		S-3B: (Bottom 6") Gray, coarse to fine GRAVEL, trace coarse to fine Sand, trace Silt, medium dense, moist (GM)
15			S	4		15.0 - 17.0	18	16	23	18	8							S-4: Brown, coarse to fine Sand, and coarse to fine Gravel, trace Silt, slightly micaceous, dense, moist (SM-GM)
20			S	5		20.0 - 20.2	100/2"				2							S-5: Gray, coarse to fine GRAVEL, trace coarse to fine Sand, trace Silt, slightly micaceous, very dense, moist (GM)

BORING LOG
(continued)

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

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	6		25.0 - 27.0	24	22	21	80	12							S-6: Brown, coarse to fine GRAVEL, trace coarse to fine Sand, trace Silt, dense, moist (GM-SM)
30			S	7		30.0 - 32.0	30	27	21	23	11							S-7: Brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, dense, moist (SM)
35			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
40			S	9		40.0 - 40.8	30	100/3"			9							S-9: Brown to gray, coarse to fine SAND, little+ coarse to fine Gravel, trace Silt, very dense, moist (SM)
45			S	10		45.0 - 45.8	51	100/4"			10							S-10: Brown, coarse to fine SAND, and medium to fine Gravel, trace Silt, very dense, moist (SM-GM)
50			S	11		50.0 - 52.0	39	38	56	40	16							S-11: Brown to dark gray, coarse to medium SAND, little coarse to fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
55			S	12		55.0 - 57.0	21	28	38	25	16							S-12: Brown to dark gray, coarse to medium SAND, trace medium to fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)

BORING LOG
(continued)

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

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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 Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
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, very dense, moist (SM)
80			S	17		80.0 - 82.0	18	16	22	17	12							S-17: Brown to gray, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, dense, moist (SM)
85			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)
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 (SM)

BORING LOG
(continued)

BORING NUMBER: **WSP-4**
SHEET NUMBER: **4** of **4**
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**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	FIELD CLASSIFICATION AND REMARKS (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																	
110																	
115																	
120																	
125																	

BORING LOG

BORING NUMBER: **WSP-5**
SHEET NUMBER: **1** of **4**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Xin Ma/ Gayani Gunarathna**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Track Rig CME-55; Automatic Hammer**

LOCATION: **Van Sinderen Avenue and Truxton Street SW Corner**
COORD. **N: 186,582.3** **E: 1,010,960.8**
STN. NO.: OFFSET:
SURFACE ELEV.: **182.5 feet**
DATUM: **NYCT**
START DATE: **8/5/20** TIME: **10:30 am**
FINISH DATE: **8/6/20** TIME: **1:00 pm**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.375"				
O.D.	4.5"	2.0"				
Length	18'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		2.25" (2.625")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1		0.3 - 2.0	G	R	A	B								Top 6' excavated by hand excavation tools. Concrete Slab (4")
			G	2		2.0 - 4.0	G	R	A	B								G-1: Dark brown, coarse to fine SAND, little coarse to fine Gravel, little Silt, moist (SW-SM)
			G	3		4.0 - 6.0	G	R	A	B								G-2: Dark brown, coarse to fine SAND, some medium to fine Gravel, trace Silt, occasional brick fragments, dry (SW)
5																		Approx. 7" wide cobble at approx. 2 ft depth.
			S	1		6.0 - 8.0	10	21	22	14	22							G-3: Dark brown, coarse to fine SAND, little coarse to fine Gravel, little Silt, moist (SW)
																		Rotary drilling started.
			S	2		8.0 - 9.2	11	16	50/2"		5							S-1: Dark brown to brown to red, coarse to fine SAND, some coarse to fine Gravel, trace Silt, dense, dry (SW-SM)
10			S	3		10.0 - 12.0	9	12	50	35	20							S-2: Brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, very dense, dry (SW-SM)
																		S-3A: (Top 17") Brown to red, coarse to fine SAND, little medium to fine Gravel, little Silt, slightly micaceous, very dense, moist (SW-SM)
																		S-3B: (Bottom 3") Dark gray, coarse to medium Gravel, and coarse to fine Sand, trace Silt, very dense, moist (GP-SM)
																		Rig chattering at 12 ft.
15			S	4		15.0 - 17.0	5	38	35	29	12							S-4: Brown to red to dark-gray, coarse to fine Sand, and coarse to fine Gravel, little Silt, very dense, moist (SM/GM)
20			S	5		20.0 - 22.0	13	21	23	27	12							S-5: Dark brown, coarse to fine SAND, trace medium Gravel, little Silt, slightly micaceous, dense, moist (SP-SM)

BORING LOG
(continued)

BORING NUMBER: **WSP-5**
SHEET NUMBER: **2** of **4**
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: **Xin Ma/ Gayani Gunarathna**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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
30			S	7		30.0 - 32.0	41	85	77	36	17							S-7: Brown to dark gray, coarse to fine SAND, some coarse to fine Gravel, little+ Silt, very dense, moist (SM)
35			S	8		35.0 - 37.0	15	22	24	23	19							S-8: Brown, coarse to fine SAND, little coarse to fine Gravel, trace Silt, dense, moist (SW)
40			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, moist (SW)
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 dense, moist (SW)
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)
55			S	12		55.0 - 57.0	20	15	27	27	14							S-12: Brown, coarse to fine SAND, trace medium Gravel, trace Silt, dense, moist (SW) Bottom 3" dry

BORING LOG
(continued)

BORING NUMBER: **WSP-5**
SHEET NUMBER: **3** of **4**
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: **Xin Ma/ Gayani Gunarathna**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	13		60.0 - 62.0	26	34	40	31	15							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)

BORING LOG
(continued)

BORING NUMBER: **WSP-5**
SHEET NUMBER: **4** of **4**
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: **Xin Ma/ Gayani Gunarathna**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	20		95.0 - 97.0	22	26	29	32	24							S-20: Yellow to brown to dark gray, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, wet (SW)
100			S	21		100.0 - 102.0	21	27	37	31	18							S-21: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, wet (SW)
105			S	22		105.0 - 107.0	25	27	34	27	18							S-22: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, wet (SW)
110			S	23		110.0 - 112.0	31	40	44	41	21							S-23: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, wet (SW)
																		112' End of Boring
115																		
120																		
125																		

BORING LOG

BORING NUMBER: **WSP-6**
SHEET NUMBER: **1** of **4**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Gayani Gunarathna**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Track Rig CME-55; Automatic Hammer**

LOCATION: **Van Sinderen Avenue and Truxton Street SW Corner**
COORD. **N: 186,533.3** **E: 1,010,982.0**
STN. NO.: OFFSET:
SURFACE ELEV.: **182.0 feet**
DATUM: **NYCT**
START DATE: **8/18/20** TIME: **9:30 am**
FINISH DATE: **8/20/20** TIME: **8:45 am**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.375"				
O.D.	4.5"	2.0"				
Length	10'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		2.25" (2.625")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1		0.3 - 2.0	G	R	A	B								Top 6' excavated by hand excavation tools. Concrete Slab (4")
			G	2		2.0 - 4.0	G	R	A	B								G-1: Brown to black, coarse to fine SAND, some-Silt, little coarse to fine Gravel, mild odor, moist (SM)
			G	3		4.0 - 6.0	G	R	A	B								G-2: Brown to gray, coarse to fine SAND, and Silt, trace coarse to fine Gravel, moist (SM)
5																		G-3: Brown, coarse to fine Sand, and Silt, little medium to fine Gravel, moist (SM)
			S	1		6.0 - 8.0	7	7	8	8	24							S-1: Brown, medium to fine Sand, and Silt, trace medium to fine Gravel, slightly micaceous, medium dense, dry (SM)
			S	2		8.0 - 10.0	11	11	11	18	24							S-2: Brown, fine Sand, and Silt, trace medium to fine Gravel, micaceous, medium dense, dry (SM)
10			S	3		10.0 - 12.0	16	14	10	7	19							S-3: Brown, coarse to fine SAND, and Silt, little medium to fine Gravel, slightly micaceous, medium dense, moist (SM)
15			S	4		15.0 - 17.0	31	37	38	27	14							S-4: Brown to gray, coarse to fine Gravel, and coarse to fine Sand, trace Silt, quartz fragments, very dense, moist (GM-SM)
20			S	5		20.0 - 22.0	26	40	46	36	14							S-5: Brown to gray, coarse to fine GRAVEL, some+ coarse to fine Sand, trace Silt, very dense, moist (GM-SM)

BORING LOG
(continued)

BORING NUMBER: **WSP-6**
SHEET NUMBER: **2** of **4**
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**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	6		25.0 - 25.4	100/5"									5		S-6: Brown to gray, coarse to fine GRAVEL, some-coarse to fine Sand, trace Silt, very dense, moist (GM-SM)
30			S	7		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)
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)
40			S	9		40.0 - 40.7	66	100/2"								8		S-9: Brown to gray, coarse to fine GRAVEL, some-coarse to fine Sand, trace Silt, very dense, moist (GM-SM)
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, moist (SM-GM) S-10B: (Top 7") Brown, coarse to fine GRAVEL, little- coarse to fine Sand, trace Silt, very dense, moist (GM)
50			S	11		50.0 - 52.0	23	24	30	31						18		S-11: Brown, coarse to fine SAND, little coarse to fine Gravel, trace Silt, slightly micaceous, very dense, 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 LOG
(continued)

BORING NUMBER: **WSP-6**
SHEET NUMBER: **3** of **4**
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**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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)
65			S	14		65.0 - 67.0	23	31	39	41	22							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	40	72	68	67	22							S-15: Brown to red, coarse to fine SAND, little coarse to fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
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, moist (SM)
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, moist (SM)
85			S	18		85.0 - 87.0	14	24	28	25	23							S-18: Brown, coarse to fine SAND, little medium to fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
90			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)

BORING LOG
(continued)

BORING NUMBER: **WSP-6**
SHEET NUMBER: **4** of **4**
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**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	20		95.0 - 97.0	27	35	32	38	17							S-20: Brown, coarse to fine SAND, trace medium to fine Gravel, trace Silt, slightly micaceous, very dense, wet (SM)
100			S	21		100.0 - 102.0	23	27	42	45	19							S-21: Brown, coarse to fine SAND, trace medium to fine Gravel, trace Silt, slightly micaceous, very dense, wet (SM)
																		102' End of Boring
105																		
110																		
115																		
120																		
125																		

BORING LOG

BORING NUMBER: **WSP-7**
SHEET NUMBER: **1** of **4**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Gayani Gunarathna**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Track Rig CME-55; Automatic Hammer**

LOCATION: **Van Sinderen Avenue and Broadway SW Corner**
COORD. **N: 186,542.4** **E: 1,011,017.7**
STN. NO.: OFFSET:
SURFACE ELEV.: **182.0 feet**
DATUM: **NYCT**
START DATE: **8/20/20** TIME: **9:15 am**
FINISH DATE: **8/20/20** TIME: **2:00 pm**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.375"				
O.D.	4.5"	2.0"				
Length	10'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		2.25" (2.625")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1		0.3 - 2.0	G	R	A	B								Top 6' excavated by hand excavation tools. Concrete Slab (4") G-1: Gray, coarse to fine Sand, and coarse to fine Gravel, trace Silt, trace cement, dry (GM-SM/Fill) G-2: Brown to red, coarse to fine SAND, some-coarse to fine Gravel, trace Silt, brick fragments, moist (SM-GM/Fill) G-3: Brown to yellow, coarse to fine SAND, some Silt, trace fine Gravel, moist (SM)
			G	2		2.0 - 4.0	G	R	A	B								
5			G	3		4.0 - 6.0	G	R	A	B								
			S	1		6.0 - 8.0	8	8	10	7	23							S-1: Brown to yellow to gray, coarse to fine SAND, some- Silt, trace coarse to fine Gravel, medium dense, dry (SM)
			S	2		8.0 - 10.0	11	11	12	11	24							S-2: Brown to yellow to gray, coarse to fine SAND, some- Silt, trace coarse to fine Gravel, medium dense, dry (SM)
10			S	3		10.0 - 12.0	5	7	8	20	16							S-3A: (Top 12") Brown, coarse to fine SAND, some-Silt, trace fine Gravel, medium dense, moist (SM) S-3B: (Bottom 4") Brown to white, coarse to fine GRAVEL, trace coarse to fine Sand, trace Silt, quartz pieces, micaceous, medium dense, moist (GW)
15			S	4		15.0 - 17.0	14	15	18	30	12							S-4: Brown to white, coarse to fine Sand, and coarse to fine Gravel, trace Silt, quartz fragments, slightly micaceous, dense, moist (SM-GM)
20			S	5		20.0 - 20.6	18	100/1"			7							S-5: Brown to gray, coarse to fine GRAVEL, little coarse to fine Sand, trace Silt, very dense, moist (GM)

BORING LOG
(continued)

BORING NUMBER: **WSP-7**
SHEET NUMBER: **2** of **4**
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**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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 micaceous, 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 dense, moist (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 dense, moist (SM)
40			S	9		40.0 - 42.0	46	48	59	79	15							S-9: Brown to gray to white, coarse to fine Sand, and coarse to fine Gravel, trace Silt, quartz fragments, very dense, moist (GM-SM)
45			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 dense, 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)

BORING LOG
(continued)

BORING NUMBER: **WSP-7**
SHEET NUMBER: **3** of **4**
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**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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, trace Silt, slightly micaceous, very dense, moist (SM)
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, moist (SM) Approx. 1.5" red quartz fragment in the bottom
75			S	16		75.0 - 77.0	26	41	37	38	14							S-16: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, very dense, moist (SM)
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, moist (SM)
85			S	18		85.0 - 87.0	21	24	21	21	15							S-18: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, slightly micaceous, dense, moist (SM)
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)

BORING LOG
(continued)

BORING NUMBER: **WSP-7**
SHEET NUMBER: **4** of **4**
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**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	20		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)
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)
																		102' End of Boring
105																		
110																		
115																		
120																		
125																		

BORING LOG

BORING NUMBER: **WSP-8**
SHEET NUMBER: **1** of **4**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Mabel Chedid**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Track CME-55, Automatic Hammer**

LOCATION: **Van Sinderen Avenue and Broadway SE Corner**
COORD.
STN. NO.: OFFSET:
SURFACE ELEV.:
DATUM: **Vert. NYCT; Hor. Zone 3104**
START DATE: **5/24/22** TIME: **11:10 am**
FINISH DATE: **5/25/22** TIME: **10:24 am**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▨	G ⊠	C ⊟
I.D.	4.0"	1.5"				
O.D.	4.5"	2.0"				
Length	5'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		1.875" (2.65")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1		0.3 - 2.0	G	R	A	B								Top 6' excavated by hand excavation tools. Asphalt (Top 4")
			G	2		2.0 - 4.0	G	R	A	B								G-1: Black to grey, coarse to fine GRAVEL, and coarse to fine Sand, trace Silt, dry (GW-GM)
			G	3		4.0 - 6.0	G	R	A	B								G-2: Brown, coarse to fine SAND, some medium to fine Gravel, trace Silt, moist (SW-SM)
5			S	1		5.0 - 7.0	1	3	2	3	10"							Casing to 5', falling head test at 5'
			S	2		7.0 - 9.0	7	58	48	100/6"	22"							S-1: Brown, coarse to fine SAND, trace fine Gravel, some Silt, loose, moist (SM)
10			S	3		10.0 - 12.0	50	32	33	27	12"							S-2A: (Top 18") Brown, medium to fine GRAVEL, little Sand, trace Silt (GW-GM) S-2B: (Bottom 4") Brown, coarse to fine SAND, some Silty Clay, trace Gravel, very dense, moist (SM)
																		Casing to 10'
15			S	4		15.0 - 17.0	44	51	50	54	14"							Falling head test at 10' S-3: Brown and black, coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, very dense, moist (GW-GM)
																		S-4: Brown and black, coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, very dense, moist (GW-GM)
20			S	5		20.0 - 20.8	34	100/3"			6"							Casing 14' S-5: Brown, coarse to fine GRAVEL, little coarse to fine Sand, trace Silt, rock fragments, very dense, moist (GW)

BORING LOG
(continued)

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

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			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 fine Gravel, trace Silt, very dense, moist (SW-SM)
35			S	8		35.0 - 37.0	53	86	65	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 **4**
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**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	FIELD CLASSIFICATION AND REMARKS
							CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.
			S	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			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, trace Silt, dense, moist (SW)
80			S	17		80.0 - 82.0	13	14	18	23	18"	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)
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)

BORING LOG
(continued)

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

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	20		95.0 - 97.0	23	27	26	27	16"							S-20: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, very dense, wet (SW)
			S	21		97.0 - 99.0	26	28	35	52	24"							S-21: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, very dense, wet (SW)
100																		99' End of Boring
105																		
110																		
115																		
120																		
125																		

BORING LOG

BORING NUMBER: **WSP-9**
SHEET NUMBER: **1** of **4**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Mabel Chedid**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Track CME-55, Automatic Hammer**

LOCATION: **Fulton Street and Van Sinderen Avenue SE Corner**
COORD.
STN. NO.: OFFSET:
SURFACE ELEV.:
DATUM: **Vert. NYCT; Hor. Zone 3104**
START DATE: **5/20/22** TIME: **9:30 am**
FINISH DATE: **5/23/22** TIME: **8:25 am**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.5"				
O.D.	4.5"	2.0"				
Length	5'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		1.875" (2.65")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1	▒	0.0 - 1.7	G	R	A	B								Top 6' excavated by hand excavation tools.
			G	2	▒	2.0 - 4.0	G	R	A	B								G-1: Dark brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, slightly micaceous, moist (SW-SM/Possible Fill)
			G	3	▒	4.0 - 6.0	G	R	A	B								G-2: Dark brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, shell fragments, slightly micaceous, moist (SW-SM/Possible Fill)
5			S	1	■	6.0 - 6.6	10	50/1"			7"							G-3: Dark brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, shell fragments, Cobbles, Boulder at 5.5', moist (SW-SM/Possible Fill)
			S	2	■	8.0 - 8.4	100/5"				5"							S-1: Brown to white, coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, shell fragments, white substance, brick fragments, very dense, moist (GW-GM/Possible Fill)
10			S	3	■	10.0 - 12.0	7	26	36	49	13"							S-2: Brown, coarse to fine GRAVEL, little coarse to fine Sand, trace Silt, quartz fragments, very dense, moist (GW)
																		Casing to 10'
15			S	4	■	15.0 - 17.0	79	24	52	62	13"							S-3: Red to brown, coarse to fine GRAVEL, little coarse to fine Sand, trace Silt, siltstone fragments, very dense, moist (GW)
																		Casing to 15'
20			S	5	■	20.0 - 22.0	43	62	50	65	15"							S-4: Brown to pink and white, coarse to fine GRAVEL, some coarse to fine Sand, little Silt, quartz fragments, micaceous, very dense, moist (GM)
																		S-5: Brown to orange, and ash coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, quartz fragments, very dense, moist (GW)

BORING LOG
(continued)

BORING NUMBER: **WSP-9**
SHEET NUMBER: **2** of **4**
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**

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	6		25.0 - 27.0	40	48	61	34	14"							Casing to 20' 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, slightly micaceous, very dense, moist (GW)
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)

BORING LOG
(continued)

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

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	FIELD CLASSIFICATION AND REMARKS
							CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.
			S	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"	S-14: Brown, coarse to fine SAND, little medium to fine Gravel, trace Silt, very dense, moist (SW)
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"	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"	S-18: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, medium dense, wet (SW-SM)
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)

BORING LOG
(continued)

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

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	20		95.0 - 97.0	20	22	23	21	17"							S-20: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, dense, wet (SW-SM)
100			S	21		100.0 - 102.0	16	19	25	20	16'							S-21: Brown, coarse to fine SAND, trace fine Gravel, trace Silt, dense, wet (SW)
																		102' End of Boring
105																		
110																		
115																		
120																		
125																		

BORING LOG

BORING NUMBER: **WSP-10**
SHEET NUMBER: **1** of **1**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Mabel Chedid**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Truck CME-85, Automatic Hammer**

LOCATION: **Williams Place and Fulton Street SW Corner**
COORD.
STN. NO.: OFFSET:
SURFACE ELEV.:
DATUM: **Vert. NYCT; Hor. Zone 3104**
START DATE: **5/24/22** TIME: **8:30 am**
FINISH DATE: **5/24/22** TIME: **10:39 am**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.5"				
O.D.	4.5"	2.0"				
Length	5'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		1.875" (2.65")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	1	■	0.0 - 1.7	5	10	6	4	15"							Top 6' excavated by hand excavation tools.
			S	2	■	2.0 - 4.0	4	1	1	3	14"							S-1: Dark Brown, coarse to fine SAND, some medium to fine Gravel, trace Silt, moist (SM)
																		S-2: Brown coarse to fine SAND, little fine Gravel, trace Silt, very loose, moist (SM)
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 Test at 5'
																		S-3: Brown medium to fine GRAVEL, and coarse to fine Sand, trace Silt, rock fragments, very dense, moist (GM)
10			S	5	■	10.0 - 12.0	48	42	35	34	14"							S-4: Brown medium to fine GRAVEL, some coarse to fine Sand, little Silt, very dense, moist (GM)
																		Casing to 10'
																		Falling Head Test at 10'
15			S	6	■	15.0 - 17.0	14	40	48	45	13"							S-5: Brown coarse to fine GRAVEL, and coarse to fine Sand, trace Silt, black rock fragments, slightly micaceous, very dense, moist (GW-GM)
																		S-6: Brown to black coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, rock fragments, slightly micaceous, very dense, moist (GW-GM)
20			S	7	■	20.0 - 20.5	100/6"											S-7: Brown to dark grey medium to fine GRAVEL, some coarse to fine Sand, trace Silt, rock fragments (GW-GM)
																		20.5' End of Boring

BORING LOG

BORING NUMBER: **WSP-11**
SHEET NUMBER: **1** of **1**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Mabel Chedid**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Truck CME-85, Automatic Hammer**

LOCATION: **Williams Place and Fulton Street SW Corner**
COORD.
STN. NO.: OFFSET:
SURFACE ELEV.:
DATUM: **Vert. NYCT; Hor. Zone 3104**
START DATE: **5/23/22** TIME: **10:04 am**
FINISH DATE: **5/23/22** TIME: **12:10 pm**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.5"				
O.D.	4.5"	2.0"				
Length	5'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		1.875" (2.65")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1		0.0 - 1.7	G	R	A	B								Top 6' excavated by hand excavation tools.
			G	2		2.0 - 4.0	G	R	A	B								G-1: Dark brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, glass fragments, moist (SW-SM/Possible Fill)
			G	3		4.0 - 6.0	G	R	A	B								G-2: Dark brown, coarse fine SAND, some coarse to fine Gravel, trace Silt, tile fragments, petroleum odor, moist (SW-SM/Possible Fill)
5			S	1	■	6.0 - 8.0	80	76	91	61	20"							G-3A: (Top 12") Dark brown, coarse to fine SAND, some Silt, trace fine Gravel, moist (SM/Possible Fill) G-3B: (Bottom 12") Light brown to orange, medium to fine SAND, and Silt, moist (SM/Possible Fill)
			S	2	■	8.0 - 9.5	70	46	100/6"		18"							S-1A: (Top 6") Brown to orange, medium to fine SAND, and Silt, very dense, moist (SM) S-1B: (Bottom 14") Brown to purple, coarse to fine SAND, some medium to fine Gravel, trace Silt, rock fragments (granite), very dense, dry (SW)
10			S	3	■	10.0 - 11.0	78	100/6"			8"							S-2: Brown to purple, coarse to fine SAND, some coarse to fine Gravel, trace Silt, rock fragments, very dense, moist (SW-SM)
																		Casing to 10'
15			S	4	■	15.0 - 17.0	29	34	34	53	16"							S-3: Brown, coarse to fine SAND, and medium to fine Gravel, trace Silt, very dense, moist (SW-SM)
																		S-4: Brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, purple rock fragments, very dense, moist (SM)
20			S	5	■	20.0 - 22.0	30	32	32	40	15"							S-5: Brown, coarse to fine SAND, and coarse to fine Gravel, trace Silt, rock fragments, very dense, moist (SW-SM)
																		22' End of Boring

BORING LOG

BORING NUMBER: **WSP-12**
SHEET NUMBER: **1** of **1**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Mabel Chedid**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Truck CME-85, Automatic Hammer**

LOCATION: **Williams Place and Fulton Street SW Corner**
COORD.
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**

	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.5"				
O.D.	4.5"	2.0"				
Length	5'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		1.875" (2.65")	

GROUNDWATER DATA

Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			G	1		0.3 - 2.0	G	R	A	B								Top 6' excavated by hand excavation tools. GRAVEL (4")
			G	2		2.0 - 4.0	G	R	A	B								G-1: Dark brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, moist (SW-SM/Possible Fill)
			G	3		4.0 - 6.0	G	R	A	B								G-2: Dark brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, moist (SW-SM/Possible Fill)
5			S	1	■	6.0 - 6.5	100/6"				3"							G-3: Dark brown, coarse to fine SAND, some coarse to fine Gravel, trace Silt, asphalt fragments, moist (SW-SM/Possible Fill)
			S	2	■	8.0 - 10.0	43	40	45	49	13"							S-1: Dark brown to black, coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, very dense, moist (GW-GM)
10			S	3	■	10.0 - 12.0	55	49	47	50	21"							Casing to 7'
																		S-2: Brown to dark red, coarse to fine GRAVEL, and coarse to fine Sand, little Silt, black, maroon and grey rock fragments, very dense, moist (GM)
15			S	4	■	15.0 - 17.0	35	30	30	40	12"							S-3: Brown to black, coarse to fine GRAVEL, some coarse to fine Sand, trace Silt, rock fragments, very dense, moist (GM)
																		S-4: Brown to maroon, coarse to fine GRAVEL, and coarse to fine Sand, trace Silt, rock fragments, very dense, moist (GW-GM)
20			S	5	■	20.0 - 22.0	60	30	61	64	9"							S-5: Brown, coarse to fine GRAVEL, and coarse to fine Sand, trace Silt, rock fragments, very dense, moist (GW-GM)
																		22' End of Boring

BORING LOG

BORING NUMBER: **WSP-12A**
SHEET NUMBER: **1** of **1**
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 Company, Inc.**
DRILLER: **Nick Beehler**
INSPECTOR: **Mabel Chedid**
DRILLING METHOD: **Rotary Wash**
RIG TYPE: **Truck CME-85, Automatic Hammer**

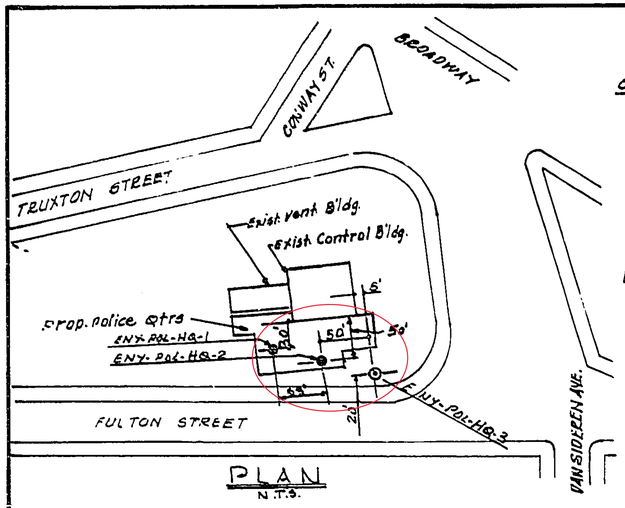
LOCATION: **Williams Place and Fulton Street SW Corner**
COORD.
STN. NO.: OFFSET:
SURFACE ELEV.:
DATUM: **Vert. NYCT; Hor. Zone 3104**
START DATE: **5/24/22** TIME: **7:40 am**
FINISH DATE: **5/24/22** TIME: **8:10 am**

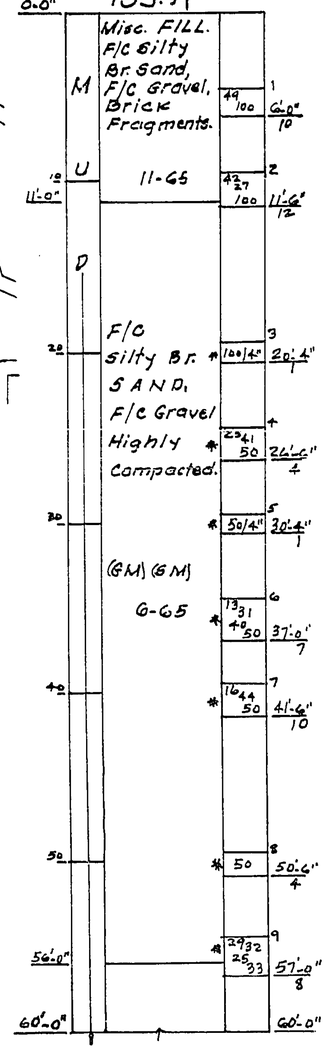
	Casing	Split Spoon	Shelby Tube	Pitcher	Grab	Core Barrel
Type/Symbol	HW	S ■	U ▯	P ▯	G ☒	C ⊟
I.D.	4.0"	1.5"				
O.D.	4.5"	2.0"				
Length	5'	24"				
Hammer Wt.	140 lbs	140 lbs	Drill Rod Size		NW	
Hammer Fall	30"	30"	I.D. (O.D.)		1.875" (2.65")	

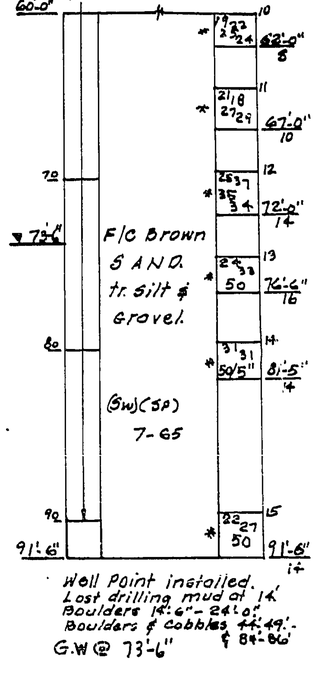
GROUNDWATER DATA

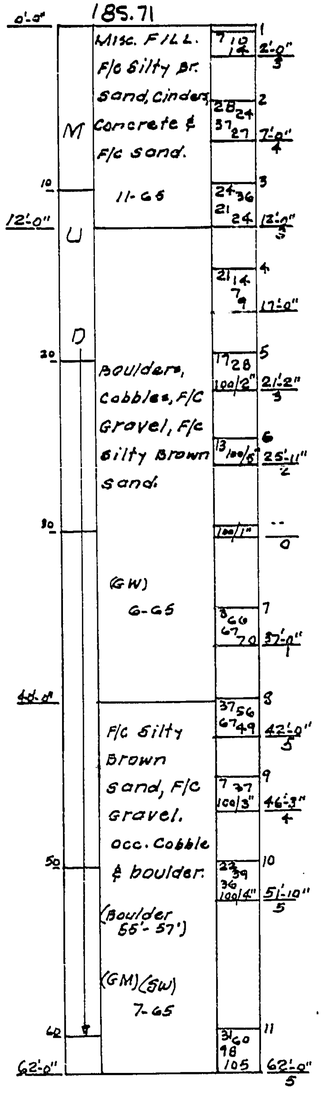
Date	Time	Water Depth (ft)	Casing Depth (ft)	Hole Depth (ft)

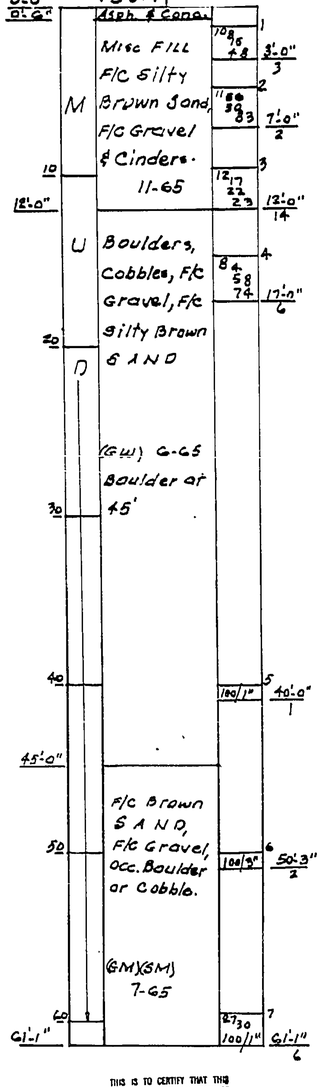
DEPTH (feet)	GRAPHIC LOG	CASING (Blows/ft)	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE SYMBOL	SAMPLE DEPTH (feet)	SOIL (Blows/6 in.) 0/6	6/12	12/18	18/24	REC. (in.)	CORING RUN (in.)	CORING REC. (in.)	CORING REC. %	CORING L>4" (in.)	CORING RQD %	Depth Elev.	FIELD CLASSIFICATION AND REMARKS
			S	1	■	0.0 - 1.7										11"		S-1: Dark brown to black, coarse to fine SAND, some coarse to fine Gravel, little Silt, very loose to loose, moist (SM)
			S	2	■	2.0 - 4.0										12"		S-2: Dark brown to black, coarse to fine SAND, some coarse to fine Gravel, little Silt, very loose to loose, moist (SM)
5			S	3	■	4.0 - 6.0	1	2					5		3	9"		S-3: Brown to orange, coarse to fine SAND, little fine Gravel, trace Silt, loose, moist (SM)
																		6' End of Boring
10																		
15																		
20																		







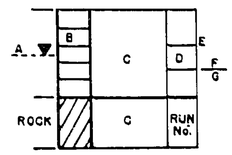




THIS IS TO CERTIFY THAT THIS DRAWING IS A COMPILATION OF INFORMATION OBTAINED FROM THE FIELD BORING LOGS.

LICENSED PROFESSIONAL ENGINEER JULIUS D. EASTMAN 39338 STATE OF NEW JERSEY

LEGEND



A - WATER READING AND DATE TAKEN.

B - NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18 INCHES REQUIRED TO DRIVE A 4" CASING (UNLESS OTHERWISE NOTED) EACH 12 INCHES.

C - STRATA DESCRIPTION.

D - NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30 INCHES REQUIRED TO DRIVE A 2 INCH SPLIT SPOON 6 INCHES.

E - SAMPLE NUMBER.

F - DEPTH AT END OF SAMPLE DRIVE.

G - SAMPLE RECOVERY.

GENERAL NOTES

1.- ALL ELEVATIONS (UNLESS OTHERWISE NOTED) SHALL BE REFERRED TO THE TRANSIT AUTHORITY DATUM WHERE ELEV. 100.00 IS 2.653' ABOVE MEAN SEA LEVEL AT SANDY HOOK, N.J., U.S.C. & G. SURVEY DATUM.

2.- LOCATION OF BORING SHOWN THUS.

3.- LOCATION OF BORING WITH WELL POINT INSTALLED SHOWN THUS

4.- M/F, C/F ETC. DENOTES "MEDIUM TO FINE," "COARSE TO---".

5.- RB DENOTES ROLLER BIT.

6.- O.E.S. DENOTES OPEN END SAMPLE.

7.- 4" CASING USED (OR OTHERWISE NOTED).

8.- ——— CORE BIT USED (OR OTHERWISE NOTED).

9.- R.Q.D. DENOTES "ROCK QUALITY DESIGNATION" WHICH IS THE TOTAL LENGTH OF PIECES OVER FOUR INCHES IN A GIVEN RUN DIVIDED BY THE LENGTH OF THE GIVEN RUN.

10.- II-65, 7-65 ETC. REFER TO CLASS OF MATERIAL DESCRIBED IN C26-1103.4, TABLE II-2 OF THE BUILDING CODE OF THE CITY OF NEW YORK.

11.- (SP), (ML), ETC. REFER TO THE UNIFIED SOIL CLASSIFICATION SYSTEM DESCRIBED IN C26-1103.1, TABLE II-1 OF THE BUILDING CODE OF THE CITY OF NEW YORK.

12.- W.O.R. DENOTES WEIGHT OF ROD(S).

13. UD DENOTES UNDISTURBED SAMPLE, 30" LONG, 3"O BRASS TUBE.

14. ℞ DENOTES 300 LB HAMMER

WARREN GEORGE, INC.
JERSEY CITY, N.J.

BORING PLAN & SECTIONS

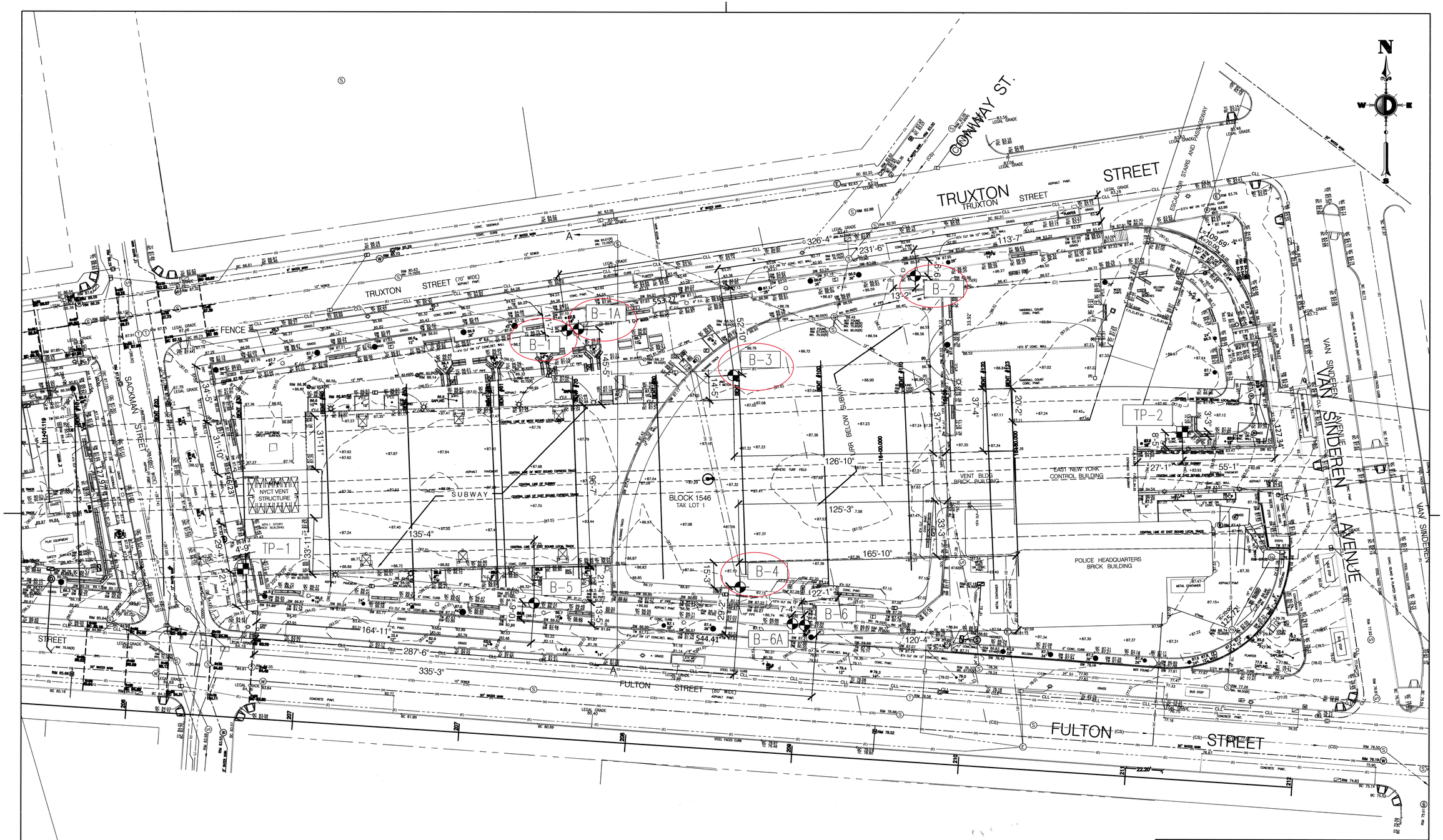
NEW YORK CITY TRANSIT SYSTEM
NEW POLICE QUARTERS DISTRICT OFFICE No. 33
BROADWAY-EAST NEW YORK STATION
BOROUGH OF Brooklyn

DRWN BY: H.V. | CHECKED BY: J.E. | SCALE As Noted | DATE Jan 1983

SUPPLEMENTARY DRAWING
FOR INFORMATION ONLY
FROM NYCT RECORD DRAWINGS

24-82

1 of 1



SUPPLEMENTARY DRAWING
FOR INFORMATION ONLY
FROM NYCT RECORD DRAWINGS

GRAPHIC SCALE
-250 0 125 250 500 1000
(IN FEET)
1 INCH = 250 FT.

MAP FILE #: B219-E-001-2019

DYNAMIC EARTH, LLC
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BLOCK 1545,1546

LOT 1,1

NYC Parks

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

PROJECT TITLE
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

DRAWING TITLE
BORING LOCATION PLAN

DESIGNED BY	DRAWN BY	CHECKED BY
B-SCAN	JENNY DEFISHER	PETER HOWELL
	SCALE: 1" = 250'	CONTRACT NO.: B219-117M
	DATE: 11/13/2018	DRAWING NO.: B101.00
		SHEET No. 155 OF 157SHEETS

BORING LOG

Boring No.: B-1

Page 1 of 1

Project:	Callahan-Kelly Playground	**Proj. No.:**	1048-99-114EC
Location:	Fulton & Truxton Street, Eastern Parkway & Van Sindern Ave., Borough of Brooklyn, Kings County, New York	**Client:**	Island Pump & Tank Corp.
Surface Elevation:	87.0 mse	**Date Started:**	10/2/18
Termination Depth:	13.3 feet	**Date Completed:**	10/2/18
Proposed Location:	Ramp	**Logged by:**	S. Hume
Drill/Test Method:	HSA/SPT	**Contractor:**	IP&T
Hammer Type:	Automatic	**Rig Type:**	Diedrich

Groundwater Data	Depth (ft)	El. (mse)	Additional Groundwater Data	Depth (ft)	El. (mse)
While Drilling: ▽	NE				
At Completion: ▼	NE				

Sample Information: Depth (Feet)	Number	Type	Rec (in)	NYC Class	Blows per 6" or drill time (min/ft)	N	Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
								Surface Cover	2" Asphaltic Concrete	
0-1	--	--	--	7	--	--				
1-3	S-1	SS	4	7	13 34	64		Fill	Brown medium to fine sand, little coarse to fine gravel, little silt, moist (FILL)	PID = 0.5
					30 10					Very hard auger advancement from 1.5 to 4 feet below the ground surface
3-5	S-2	SS	12	7	18 17	22			As above, little debris (brick, asphalt), moist (FILL)	PID = 24.8
					5 4		5			
5-7	S-3	SS	14	7	5 5	12			Gray coarse to fine sand, some debris (glass, brick), little coarse to fine gravel, moist (FILL)	PID = 10.4
					7 5					
7-9	S-4	SS	14	7	9 8	23			As above, some debris (porcelin, brick), moist (FILL)	PID = 6.5
				3b	14 19			Glacial Deposits	Brown medium to fine sand, some silt, little coarse to fine gravel, moist, medium dense (SM)	
9-11	S-5	SS	8	3b	6 13	18	10			PID = 20.0
					5 8				As above, some coarse to fine gravel, little silt, moist, medium dense (SM)	PID = 14.0
11-13	S-6	SS	14	3b	15 13	24			As 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"	50/3"			As above, very dense (SM)	PID = 0.6
							15		Boring B-1 encountered refusal at approximately 13.3 feet below the ground surface	

BORING LOG

Boring No.: B-1A

Page 1 of 1

Project:	Callahan-Kelly Playground	**Proj. No.:**	1048-99-114EC
Location:	Fulton & Truxton Street, Eastern Parkway & Van Sindern Ave., Borough of Brooklyn, Kings County, New York	**Client:**	Island Pump & Tank Corp.
Surface Elevation:	87.0 mse	**Date Started:**	10/2/18
Termination Depth:	13.5 feet	**Date Completed:**	10/2/18
Proposed Location:	Ramp	**Logged by:**	S. Hume
Drill/Test Method:	HSA/SPT	**Contractor:**	IP&T
Hammer Type:	Automatic	**Rig Type:**	Diedrich

Groundwater Data	Depth (ft)	El. (mse)	Additional Groundwater Data	Depth (ft)	El. (mse)
While Drilling: ▽	NE				
At Completion: ▼	NE				

Sample Information: Depth (Feet)	Number	Type	Rec (in)	NYC Class	Blows per 6" or drill time (min/ft)	N	Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
								Surface Cover	2" Asphaltic Concrete	
								Fill	See Boring B-1	
							5			
								Glacial Deposits	See Boring B-1	
							10			
									Boring B-1A encountered refusal at approximately 13.5 feet below the ground surface	
							15			

BORING LOG

Boring No.: B-3

Page 1 of 1

Project:	Callahan-Kelly Playground	**Proj. No.:**	1048-99-114EC
Location:	Fulton & Truxton Street, Eastern Parkway & Van Sindern Ave., Borough of Brooklyn, Kings County, New York	**Client:**	Island Pump & Tank Corp.
Surface Elevation:	87.0 mse	**Date Started:**	10/4/18
Termination Depth:	15.4 feet	**Date Completed:**	10/4/18
Proposed Location:	Light Pole	**Logged by:**	S. Hume
Drill/Test Method:	HSA/SPT	**Contractor:**	IP&T
Hammer Type:	Automatic	**Rig Type:**	Geoprobe

Groundwater Data	Depth (ft)	El. (mse)	Additional Groundwater Data	Depth (ft)	El. (mse)
While Drilling: ▽	NE				
At Completion: ▼	NE				

Sample Information: Depth (Feet)	Number	Type	Rec (in)	NYC Class	Blows per 6" or drill time (min/ft)	N	Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
								Surface Cover	2" Synthetic Turf	
0-3	--	--	--	7	--	--			Gray coarse to fine gravel, and coarse to fine sand, moist (FILL)	
									Gray coarse gravel, dry (FILL)	
3-5	S-1	SS	3	7	2 2	3		Fill	Brown medium to fine sand, trace silt, moist (FILL)	PID = 4.5
					1 4		5			
5-7	S-2	SS	12	7	10 11	26			As above (FILL)	PID = 7.4
					15 9				Gray coarse to fine gravel, moist (FILL)	
7-9	S-3	SS	18	6	6 6	7			Brown medium to fine sand, some coarse to fine gravel, little clayey silt, wet, loose (SM)	PID = 9.8
					1 2			Possible reworked Glacial Deposits		
9-11	S-4	SS	12	6	6 3	6	10		As above, some clayey silt, little coarse to fine gravel (SM)	
					3 4					
11-13	S-5	SS	14	6	2 3	6			As above (SM)	
					3 6					
13-15	S-6	SS	18	3b	11 8	20		Glacial Deposits	Brown medium to fine sand, some coarse to fine gravel, little silt, wet, medium dense (SM)	
					12 19		15			
15-15.4	S-7	SS	2	3a	50/5"	50/5"			As above, very dense (SM)	
									Boring B-3 encountered refusal at approximately 15.4 feet below the ground surface	

BORING LOG

Boring No.: B-2

Page 1 of 1

Project:	Callahan-Kelly Playground	**Proj. No.:**	1048-99-114EC
Location:	Fulton & Truxton Street, Eastern Parkway & Van Sindern Ave., Borough of Brooklyn, Kings County, New York	**Client:**	Island Pump & Tank Corp.
Surface Elevation:	86.5 mse	**Date Started:**	10/2/18
Termination Depth:	22.0 feet	**Date Completed:**	10/2/18
Proposed Location:	Ramp	**Logged by:**	S. Hume
Drill/Test Method:	HSA/SPT	**Contractor:**	IP&T
Hammer Type:	Automatic	**Rig Type:**	Diedrich

Groundwater Data	Depth (ft)	El. (mse)	Additional Groundwater Data	Depth (ft)	El. (mse)
While Drilling: ▽	NE				
At Completion: ▼	NE				

Sample Information: Depth (Feet)	Number	Type	Rec (in)	NYC Class	Blows per 6" or drill time (min/ft)	N	Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
								Surface Cover	5" Asphaltic Concrete	
0-1	--	--	--	7	--	--				
1-3	S-1	SS	18	7	13 13	18		Fill	Brown and dark brown coarse to fine sand, little silt, little fine gravel, trace debris (asphalt), moist (FILL)	PID = 1.1
					5 5					
3-5	S-2	SS	10	7	3 6	12			As above, some silt, moist (FILL)	PID = 0.2
					6 5		5			
5-7	S-3	SS	NR	7	3 2	5			No Recovery	No PID
					3 5					
7-9	S-4	SS	14	3b	6 7	15		Glacial Deposits	Brown medium to fine sand, some coarse to fine gravel, little silt, moist, medium dense (SM)	PID = 0.0
					8 10					
9-11	S-5	SS	18	3b	21 15	28	10		As above (SM)	PID = 0.0
					13 13					
11-13	S-6	SS	20	3a	14 15	30			As above, some fractured rock, dense (SM)	PID = 0.0
					15 16					
13-15	S-7	SS	22	3b	10 11	21			As above, medium dense (SM)	PID = 0.0
					10 10		15			
15-17	S-8	SS	20	3b	6 9	19			As above (SM)	
					10 12					
19.5-21.5	S-9	SS	12	3b	9 8	28	20		Brown coarse to fine sand, some coarse to fine gravel, little clayey silt, moist, medium dense (SM)	
									Boring B-2 encountered refusal at approximately 22 feet below the ground surface	

BORING LOG

Boring No.: B-4

Page 1 of 1

Project:	Callahan-Kelly Playground	**Proj. No.:**	1048-99-114EC
Location:	Fulton & Truxton Street, Eastern Parkway & Van Sindern Ave., Borough of Brooklyn, Kings County, New York	**Client:**	Island Pump & Tank Corp.
Surface Elevation:	87.0 mse	**Date Started:**	10/4/18
Termination Depth:	9.0 feet	**Date Completed:**	10/4/18
Proposed Location:	Light Pole	**Logged by:**	S. Hume
Drill/Test Method:	HSA/SPT	**Contractor:**	IP&T
Hammer Type:	Automatic	**Rig Type:**	Geoprobe

Groundwater Data	Depth (ft)	El. (mse)	Additional Groundwater Data	Depth (ft)	El. (mse)
While Drilling: ▽	NE				
At Completion: ▼	NE				

Sample Information: Depth (Feet)	Number	Type	Rec (in)	NYC Class	Blows per 6" or drill time (min/ft)	N	Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
								Surface Cover	2" Synthetic Turf	
0-1	--	--	--	7	--	--			Dark gray coarse to fine gravel, and coarse to fine sand, moist (FILL)	PID = 0.0 ,
1-3	S-1	SS	12	7	12 16	29		Fill	Brown and gray coarse to fine sand, some coarse to fine gravel, little-trace silt, moist (FILL)	PID = 0.0
					13 12					
3-5	S-2	SS	2	7	10 10	25			Dark brown coarse to fine gravel, some coarse to fine sand, trace silt, moist (FILL)	PID = 0.0
					15 17		5			
5-7	S-3	SS	20	3b	12 16	29		Glacial Deposits	Brown medium to fine sand, little coarse to fine gravel, little clayey silt, moist, medium dense (SM)	PID = 0.0
					13 11					
7-9	S-4	SS	2	3b	2 10	18			As above, little fine gravel, moist (SM)	PID = 0.0 Auger refusal at 8.5 feet
					8 7					
							10		Boring B-4 encountered refusal at approximately 9 feet below the ground surface	

SUPPLEMENTARY DRAWING
FOR INFORMATION ONLY
FROM NYCT RECORD DRAWINGS

MAP FILE #: B219-E-001-2019

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CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

PROJECT TITLE
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

DRAWING TITLE
BORING LOGS

DESIGNED BY	DRAWN BY	CHECKED BY
	JENNY DEFISHER	PETER HOWELL

PROFESSIONAL ENGINEER	SCALE	DRAWING NO.	CONTRACT NO.
B-SCAN	NA	B102.00	B219-117M
BLOCK 1545,1546	DATE 11/13/2018		SHEET No. 156 OF 157SHEETS
LOT 1,1			

STATE OF NEW YORK · PETER H. HOWELL · LICENSED PROFESSIONAL ENGINEER
P.H. HOWELL