



**PHASE 1A
ARCHEOLOGICAL SENSITIVITY ASSESSMENT
11 BROADWAY PROJECT
BROOKLYN, KINGS COUNTY, NEW YORK**

PREPARED FOR

11 BROADWAY OWNER, LLC
NEW YORK, NEW YORK

BY

JOHN MILNER ASSOCIATES, INC.
CROTON-ON-HUDSON, NEW YORK

JMA architects
archeologists
planners
John Milner Associates, Inc.

JULY 2010

PHASE 1A ARCHEOLOGICAL SENSITIVITY ASSESSMENT

11 BROADWAY PROJECT

BROOKLYN, KINGS COUNTY, NEW YORK

PREPARED FOR

11 BROADWAY OWNER, LLC

64 FULTON STREET SUITE 1001

NEW YORK, NEW YORK 10038

BY

T. ARRON KOTLENSKY, RPA

JOEL I. KLEIN, PH.D., RPA



JOHN MILNER ASSOCIATES, INC.

1 CROTON POINT AVENUE

CROTON-ON-HUDSON, NEW YORK 10520

JULY 2010

MANAGEMENT SUMMARY

SHPO Review Number:	10PR03721
Involved State and Federal Agencies:	Office of Parks, Recreation, and Historic Preservation (OPRHP)
Phase of Survey:	IA
Location Information:	
Location:	Project Area bounded by Broadway (south), Kent Avenue (west), South Sixth Street (north), and Dunham Place (east) (Block 2468)
Minor Civil Division:	Borough of Brooklyn, City of New York (MCD 047.01)
County:	Kings
Survey Area:	1.1 acres
USGS 7.5 Minute Quadrangle Map:	<i>Brooklyn, N.Y.</i>
Report Authors:	T. Arron Kotlensky, RPA Joel I. Klein, Ph.D., RPA
Date of Report:	July 2010

MANAGEMENT ABSTRACT

JMA (John Milner Associates, Inc.) conducted a Phase 1A archeological sensitivity assessment of a 1.1-acre land parcel (“11 Broadway,” the Project Area) along the East River waterfront, bordered by Broadway, Kent Avenue, South Sixth Street, and Dunham Place (Block 2468) in the Borough of Brooklyn, City of New York, Kings County, New York. The Phase 1A investigation was conducted on behalf of 11 Broadway Owner, LLC, in fulfillment of a request by the New York Office of Parks, Recreation, and Historic Preservation (NYOPRHP) for a Phase 1A archeological sensitivity assessment. The proposed project includes construction of a mixed commercial and residential development, featuring a thirteen-story residential tower. The purpose of the Phase 1A investigation is to identify previously recorded archaeological or historic sites that may be located within or adjacent to the property. The Phase 1A survey also evaluates the potential presence of previously unrecorded archaeological or historic resources within the property. The information and recommendations contained in this report are intended to assist in the review of the proposed project by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) in accordance with Section 14.09 of the Parks, Recreation, and Historic Preservation Law. JMA further understands that the project is not subject to review by the New York City Landmarks Preservation Commission.

There are no previously recorded archeological sites within one mile of the Project Area and there are no State/National Register of Historic Places (S/NRHP)-listed properties within or immediately adjacent to the Project Area. Historic maps reviewed for the project depict a succession of industrial, commercial, and residential structures occupying the Project Area from the 1880s to the present.

Recognizing the scope and depth of documented disturbance and the negligible probability of encountering intact archeological sites, features, and deposits of significant value within the Project Area, JMA does not recommend further archeological study of the 11 Broadway Project Area.

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1.0 INTRODUCTION

1.1 PURPOSE AND GOALS OF THE INVESTIGATION

JMA (John Milner Associates, Inc.) conducted a Phase 1A archeological sensitivity assessment of a 1.1-acre land parcel ("11 Broadway," the Project Area) along the East River waterfront, bordered by Broadway, Kent Avenue, South Sixth Street, and Dunham Place (Block 2468) in the Borough of Brooklyn, City of New York, Kings County, New York. The Phase 1A investigation was conducted on behalf of 11 Broadway Owner LLC. in fulfillment of a request by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) for a Phase 1A archeological sensitivity assessment. The proposed project includes construction of a mixed commercial and residential development, featuring a thirteen-story residential tower. The information and recommendations contained in this report are intended to assist in the review of the proposed project by OPRHP in accordance with Section 14.09 of the Parks, Recreation, and Historic Preservation Law. The project is not be subject to review by the New York City Landmarks Preservation Commission.

The purpose of the Phase 1A investigation is to identify previously recorded archaeological or historic sites that may be located within or adjacent to the property. The Phase 1A survey also evaluates the potential for there to be previously unrecorded archaeological or historic resources within the property. All research and report preparation were conducted in accordance with the New York Archaeological Council's *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections* (NYAC 1994), recommended for use by the NYS OPRHP.

1.2 PROJECT AREA LOCATION

The Project Area encompasses a 1.1-acre irregularly shaped parcel of previously developed but currently vacant urban land located just east of the East River waterfront, (Block 2468) in the Borough of Brooklyn, City of New York, Kings County, New York (Figures 1, 2). The Project Area is bordered by Broadway to the south, Kent Avenue to the west, South Sixth Street to the north, and Dunham Place to the east. The Project Area is vacant and is bounded by construction fencing and adjoining buildings on separate lots. Adjoining structures have not been evaluated in terms of their potential eligibility for listing on the S/NRHP.

2.0 BACKGROUND RESEARCH

2.1 GEOLOGY AND SOILS

The Project Area is located in Kings County, adjacent to the East River and near to the western tip of Long Island. The Project Area lies within the Embayed section of the Coastal Plain physiographic province of the Atlantic Plain division and is underlain by deep deposits of glacial and alluvial deposits (Fenneman and Johnson 1946). Surficial soils within the Project Area have been significantly altered for urban development and have been classified within Map Unit 101 of the New York City Reconnaissance Soil Survey (New York City Soil Survey Staff 2005). Naturally-occurring soils within this unit include a wet substratum of the LaGuardia-Ebbets complex, overlain by paved and built-up areas within 0 to 8 percent slopes. The soils are further described as:

Nearly level to gently sloping urbanized areas filled with a mixture of natural soil materials and construction debris over swamp, tidal marsh, or water; a mixture of anthropogenic soils which vary in coarse fragment content, with 50 to 80 percent of the surface covered by impervious pavement and buildings (2005:16).

Results of test borings completed within the Project Area provide more specific data regarding soils and stratigraphy. URS reported the results of test borings taken within the Project Area between 2003 and 2006 to establish geotechnical recommendations for the design and construction of the proposed 11 Broadway project (URS 2008:2-1 – 2-3). The test borings revealed that the Project Area contains two soil strata, with the upper stratum measuring 3 to 13 feet in depth below ground surface, containing a fill mixture of dark brown and black sand, gravel, concrete and brick rubble, and “cinder.” The lower stratum, ranging in depth from the base of the first stratum to the bottom of the test borings at around 40 to 100 feet below ground surface contains naturally-occurring soils that include brown coarse to fine sands, with traces of gravel and silt. A review of test boring logs revealed no buried A-horizon soils indicative of previous habitation surfaces (Appendix A).

2.2 PREVIOUSLY RECORDED CULTURAL RESOURCES

JMA reviewed the consolidated site files of the OPRHP and the New York State Museum (NYSM) to identify previously recorded archeological sites located within one mile of the Project Area. JMA identified no archeological sites within one mile of the Project Area.

JMA also reviewed the National Register of Historic Places (NRHP) and State Register of Historic Places (SRHP) to identify listed structures or properties located within or near the Project Area. JMA identified no S/NRHP-listed structures or properties within or adjacent to the Project Area. The Dunham and Broadway Historic District (includes 31-45 Broadway, 2-18 Dunham Place) lies within the block adjacent (directly east on opposite side of Dunham Place) to the Project Area and includes six properties that are eligible for listing on the S/NRHP. According to the NYOPRHP:

[The Dunham and Broadway Historic District] includes six buildings constructed prior to 1887. The focus of this enclave is the five-story, red brick, Romanesque Revival building at 31-35 Broadway/2-12 Dunham Place which was build for the Kings County Milling Company. The

other building at 37-35 Broadway are three- and four-story, red brick, Italianate structures. The district meets Criterion C for its association with the early commercial development of Williamsburg (OPRHP 2008a).

Two additional S/NRHP-eligible properties are near the Project Area. Sixteen Broadway, located on the opposite side of Broadway from the Project Area, is a “narrow, four-story sandstone-clad commercial building . . . built before 1887. It meets Criterion C as a distinctive example of Romanesque Revival design with a high degree of period integrity” (OPRHP 2008a, b; AKRF 2009:8-14). The second property is the Williamsburgh Bridge, completed in 1903 as the longest suspension bridge in the world at that time (OPRHP 2008a, b; AKRF 2009:8-14).

2.3 HISTORY OF THE PROJECT AREA

2.3.1 Cartographic Resources Review

JMA reviewed cartographic resources depicting the Project Area from the mid-nineteenth century to the recent past. This review aided in establishing a land use history of the Project Area and provided a method for assessing the potential presence of significant historic resources within the Project Area. The review includes 21 maps and historic aerial images, dating from 1829 to 2004 (Table 1, Figures 3-23). The two maps of Brooklyn (and Williamsburg) dating prior to 1869 do not detail structural footprints and are of less value for background research specific to the Project Area but depict the overall character of urban development in the general vicinity of the Project Area.

Land use within the Project Area changed between the mid-nineteenth century and present largely in accord with the prevailing development trends followed by property owners in Williamsburg and greater Brooklyn (see Historic Period Overview, below). Beginning in the mid-nineteenth century and closing with the interwar period of the 1920s and 1930s, heavy production industries dominated the Williamsburg waterfront along the East River. Proximity to the East River undoubtedly influenced the placement of a coal yard within the Project Area in the 1860s. Waterborne shipping continued to play a role in the development of the property in the 1880s as proprietors established a foundry and later a rolling mill within the central lots of the Project Area, with residential, commercial, and light industry properties fronting along Broadway and Dunham Place. The rolling mill, primarily under the ownership of F. W. Wurster¹, continued in operation into the 1920s or 1930s. During this period, proprietors continued to follow local economic trends by replacing many of the heavy industries that dominated the Project Area with light manufacturing and storage, including a galvanizing shop and warehouses by the 1950s. By the 1960s, the Project Area hosted no significant manufacturers, with the former galvanizing plant converted into a warehouse and later in the 1970s, as a truck rental and repair facility. Also, between the 1960s and 1980s, owners demolished adjoining buildings along Broadway and South Sixth Streets and converted the open lots for parking. The demolition of the former warehouse/truck rental and repair building (c. 2008) marks the latest significant change to the built environment of the Project Area.

¹ Frederick W. Wurster served as the last mayor of the City of Brooklyn before its incorporation into the City of New York in 1898 (Anon. 1904: 822).

Table 1. Cartographic Depictions of the Project Area, 1829 to 2004

Date(s)	Source/Title	Depiction of Project Area	Significant Changes From Previous Map	Figure
1829	D. H. Burr/ <i>Atlas of the State of New York</i>	Depicts basic location of Williamsburgh in relation to New York and Brooklyn	-	3
1845	Bache and Hassler/ <i>Map of New-York Bay and Harbor and environs</i>	Depicts street grid of Williamsburgh, including streets bounding the Project Area	Detailed street grid	4
1869	M. Dripps/ <i>Map of the City of Brooklyn</i>	~12 structures and lots, with a coal yard	Earliest map reviewed to depict structures	5
1874	H. Fulton/ <i>Map of the City of Brooklyn</i>	No structures depicted, only name of former land owner name associated with the Project Area, "David Dunham"	-	6
1880	G. W. Bromley/ <i>Atlas of the Entire City of Brooklyn</i>	~25 lots, including an "iron foundry"	-	7
1880	G. M. Hopkins/ <i>Detailed Estate and Old Farm Line Atlas</i>	~25 lots, including the "Peck Slip Iron Foundry"	Similar lot arrangement/use, building description	8
1886-1888	<i>Sanborn Insurance Map</i>	~12 residential/commercial lots; multi-faceted iron foundry	Similar lot arrangement/use	9
1898	H. Ullitz/ <i>Atlas of the Brooklyn Borough of the City of New York</i>	~12 residential/commercial lots; 14 lots associated with the "Wurster Rolling Mill"	Similar lot arrangement/presumably similar use	10
1904	<i>Sanborn Insurance Map</i>	6 residential/commercial lots; lots associated with multifaceted rolling mill	Rolling mill occupies most of Project Area, including lots along Dunham Place	11
1908	G. W. Bromley/ <i>Atlas of the Borough of Brooklyn</i>	6 residential/commercial lots; lots associated with multifaceted "Factory" and "Foundry"	"Factory" and "Foundry" probably rolling mill	12
1911	<i>Sanborn Insurance Map</i>	6 residential/commercial lots; lots associated with multifaceted "F. W. Wurster Co." rolling mill	No significant change	13
1916	E. B. Hyde/ <i>Atlas of the Borough of Brooklyn</i>	6 residential/commercial lots; lots associated with multifaceted "Factory" and "Iron Foundry"	No significant change	14
1915-1933	<i>Sanborn Insurance Map</i>	6 residential/commercial lots; lots associated with multifaceted "F. W. Wurster Co." rolling mill	No significant change	15

1915-1951	<i>Sanborn Insurance Map</i>	6 residential/commercial lots; galvanizing plant, paper converting, paper box warehouse	Rolling mill plant converted for galvanizing metal; other buildings used for light industry	16
1947-1950	<i>Sanborn Insurance Map</i>	6 residential/commercial lots; galvanizing plant, paper converting, paper box warehouse	No significant change	17
1954	Historic aerial image	~10 buildings	No significant change	18
1965	<i>Sanborn Insurance Map</i>	6 residential/commercial lots; warehouses; parking lot	Parking lot in northwest corner of Project Area; no longer an active industrial site	19
1966	Historic aerial image	6 residential/commercial lots; warehouses; parking lot	No significant change	20
1977	<i>Sanborn Insurance Map</i>	5 residential/commercial lots; truck rental/repair	Former warehouses now used for truck repair, storage	21
1980	Historic aerial image	Parking lots; truck rental/repair	Residential/commercial properties razed; additional truck parking added in southwest corner	22
2004	Historic aerial image	Former warehouse/truck storage building; vacant parking	Vacant parking	23

2.3.2 Prehistoric and Contact Period Overview

Although the earliest evidence for human occupation in New York State dates to the Paleoindian period 12,000 BP, no sites of this period have been identified on Long Island, with the closest Paleoindian site recorded on Staten Island (Eisenberg 1978; Funk 1977). The tempering of both terrestrial and marine environments during the Archaic period allowed populations to migrate into previously unexploited areas, such as those developing on Long Island as sea levels rose and stabilized. Significant evidence of prehistoric occupation of Long Island begins during the Terminal Archaic period (3000 to 2700 BP), with shell midden sites and burials dated to this period (Wyatt 1977; Ritchie 1980:164-165). Occupation of Long Island continued and expanded during the Woodland period from 2700 BP onwards, as the hunter gatherer subsistence strategies developed during the Archaic grew to include horticulture after 2000 BP, while emphasis on marine resources remained strong for groups occupying coastal regions. Seasonal migrations based on hunting game fell out of favor as emphasis continued to shift towards horticulture and led to the establishment of more sedentary culture among groups in the Mid-Atlantic. Evidence for this shift comes in the form of ceramics for food storage and year-long inhabited village sites. Although marine resources remained essential to native groups populating Long Island during the Woodland period, archaeological evidence points to habitation of inland areas as well, suggesting that a range of subsistence strategies had been adopted across the island (Lightfoot and Moore 1985).

At the time of European contact, the Canarsee occupied Long Island (Bolton 1922:132). The Canarsee and their associated groups on Long Island pursued a mixed subsistence strategy resembling that of many contact period groups residing on the coastal plain, relying on fresh and salt water fish and shellfish, along with cultivated crops

such as maize corn and tobacco. As contact with Europeans accelerated into the seventeenth century, the established subsistence strategies of groups local to Long Island changed with the introduction of novel goods and trading relationships. Conflict with the Dutch and later British, along with other native groups, combined with massive population loss due to disease, displaced most surviving members of native groups from Long Island.

2.3.3 *Historic Period Overview*

The Dutch West India Company purchased land encompassing the Project Area in 1638 from native groups and later chartered the Town of *Boswijck* in 1661, which includes the present Williamsburg section of Brooklyn. Anglicized “Bushwick” after 1664, the area remained primarily agricultural until the early nineteenth century. Land speculator Richard M. Woodhull, with the assistance of Colonel Jonathan Williams, an army engineer, laid out and began selling lots in 1802 in what Woodhull would name “Williamsburgh” (Manbeck 1998:207). As buyers purchased lots, a small commercial and residential core coalesced around the original lots offered for sale by Woodhull, who established a ferry between the new hamlet on the East River and Grand Street, on the opposite bank in Manhattan.

Williamsburgh grew large enough to qualify for a municipal charter as a village in 1827, within the Town of Bushwick (Habib et al. 2005:7-7). Despite the growth of the village, several nearby farms remained intact and extended to the East River. David Dunham, after which Dunham Place is named, probably owned one such farm which occupied the Project Area prior to the 1860s, according to the H. Fulton map of 1874 (Figure 6). Dunham also operated a steam-powered ferry between Williamsburgh and New York and oversaw the incorporation of Williamsburgh as a village (Manbeck 1998:207). An additional ferry was started between Williamsburgh at the foot of South Seventh Street near the Project Area and Peck Slip in Manhattan in 1836 (Stiles, ed. 1884:446). Period historians claim that this ferry aided in the growth of Williamsburgh more than any other because it catered to “the most respectable class of citizens, both mercantile and professional” (1884:446). As the population and commerce of Williamsburgh grew, additional streets were laid out, and by the 1840s, surveyors had established the streets bounding the Project Area. By the 1852, the state legislature granted Williamsburgh a city charter but three years later in 1855, Williamsburgh and Bushwick were consolidated into the city of Brooklyn. In the consolidation, the “h” was dropped from the spelling of Williamsburg.

In the 1830s and 1840s, proprietors began establishing a number of shipyards, storage yards and warehouses for raw materials and finished goods, sugar and rum distilleries, and several types of heavy production industries, clustered close to the East River waterfront (Manbeck 1998:207). A significant sector of heavy industry in Williamsburg focused on the production of steam engines, brass and iron foundry castings, metal and woodworking machinery, printing presses, and wrought and cast iron railing and fences (1884:678). Much of these industries focused on local demand but supplied more distant markets as well. The development of a foundry and subsequent rolling mill within the Project Area followed this overall emphasis on the production of finished durable goods during the period of the 1880s into the 1930s. Another landmark industrial enterprise established close to the East River waterfront would come to include the landmark Havemeyer and Elder Sugar Refinery (later Domino Sugar), that remains intact after closing in 2004 (Stiles, ed. 1884:671; AKRF 2009:8-8). As a result of prospering industry and commerce, the Williamsburg section of Brooklyn enjoyed an extended period of prosperity from the post-Civil War period into the 1920s, as successful shipping, industrial, and commercial firms buoyed wage-earner, managerial, and professional incomes. More affluent residents built several high-style homes across various neighborhoods and sponsored several public and private institutions. The completion of the Williamsburg Bridge in 1903 provided direct access across the East River. The neighborhoods of Williamsburg soon grew to accommodate the influx of

immigrants who moved from Manhattan, rapidly diversifying the cultural makeup of the formerly independent city (Manbeck 1998:209).

Heavy industries predominated along the East River shore in Williamsburg until the 1920s and 1930s, when several firms closed permanently due to the depressed economy of the period (Berck 1995:1264). Although manufacturing would remain important to Williamsburg through the 1950s, the loss of such a significant portion of the local economy blighted many neighborhoods as incomes fell and residents moved away. This local trend mirrored that of other regions, where smaller individually-owned companies focused on durable goods production often closed altogether or consolidated with more viable firms. In the post-World War II period, no significant industries wholly replaced those that had closed in the preceding decades in Williamsburg, leaving many properties vacant or underused. The former buildings of the F. W. Wurster Rolling Mill followed a similar arc, as successive owners adapted them for storage or demolished buildings for parking to maximize the value of their property.

2.4 EXISTING CONDITIONS

The Project Area is vacant and devoid of any standing structures or above ground features. Structures adjoining the Project Area within Block 2468 include: a two-story commercial red brick building in the northwest corner of the block at the corner of South Sixth Street and Dunham Place (Photograph 1); and two four-story and one three-story brick residential buildings with street level store fronts in the southeast corner of the Project Area block at the corner of Broadway and Dunham Place (Photograph 2). A locked construction fence runs the perimeter of the entire Project Area. No standing walls, foundational features, or footers were observed during pedestrian survey of the Project Area. Seasonal ground vegetation, maturing sumac trees, several piles of masonry rubble, and solid domestic refuse were observed scattered across the Project Area (Photographs 3-10). Review of test boring logs suggests that no former basements or shaft features remain intact within the Project Area (see Appendix A). Following the removal of the last standing structures between 2007 and 2008, the property was graded level with exposed soil and no significant paved areas remain. The exposed soil conforms to the Stratum I identified by URS during test borings conducted in the Project Area.

Views of the streets immediately adjacent to the Project Area are shown in Photographs 11-14.

3.0 ARCHEOLOGICAL SENSITIVITY ASSESSMENT

3.1 PRIOR GROUND DISTURBANCE

As discussed in Section 2.1, test borings demonstrate that an extensive stratum of mixed fill overlays deeply buried intact natural soil stratigraphy within the Project Area. An environmental assessment of the property notes that a gasoline station with up to twelve 550-gallon underground storage tanks was located on the property from 1957-1977 (Ecosystems Strategies 2010:11). “A Phase II environmental assessment of the property documented the widespread presence of fill on-site and identified degradation of subsurface soils and ground water typical of urban sites” (Ecosystems Strategies 2010:27). Sanborn insurance maps “also indicate the potential presence of a gasoline underground storage tank not associated with the gasoline station (1935-1965) and three fuel oil tanks (1935)” (Ecosystems Strategies 2010:28). This evidence, coupled with the review of cartographic resources, shows that the Project Area has been subjected to successive episodes of historic period disturbance through construction and demolition, beginning in the nineteenth century and continuing to the present. Furthermore, pedestrian survey of the Project Area did not reveal any intact above ground features related to past land uses of the Project Area. Given these observed conditions, there is little potential for pockets of intact upper stratum soils within the Project Area.

3.2 PREHISTORIC-PERIOD ARCHEOLOGICAL SENSITIVITY

There is little potential for the presence of an intact prehistoric-period archeological site within the current Project Area that contains significant interpretable data. However, given the favorable pre-contact environment of western Long Island adjacent to the East River, there is a moderate to high probability that evidence of an intact site existed within the Project Area prior to the disturbance of natural soils through the construction of masonry structures in the mid-nineteenth century.

3.3 HISTORIC-PERIOD ARCHEOLOGICAL SENSITIVITY

There is little potential for the presence of an intact historic-period archeological site within the current Project Area that contains significant interpretable data. Review of cartographic resources demonstrated that property owners built several buildings within the Project Area from the mid-nineteenth to the mid-twentieth century that if intact could have yielded archeological data on nineteenth century industry and urban culture. Pedestrian survey, review of soil boring logs, and the history of mid- to late-twentieth century on-site ground disturbance strongly suggests that the foundations for most of these structures have been removed or completely razed. At the same time, the most significant elements of the industries established within the Project Area (e.g., cupola furnaces, rolling mill stands) existed on or above ground surface and have long since been removed. Given their absence and the lack of any intact substantial foundations or other sub-surface features, the historic-period archeological sensitivity of the Project Area is negligible.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 SUMMARY AND CONCLUSIONS

JMA conducted a Phase 1A archeological sensitivity assessment of a 1.1-acre land parcel (“11 Broadway,” the Project Area) along the East River waterfront, bordered by Broadway, Kent Avenue, South Sixth Street, and Dunham Place (Block 2468) in the Borough of Brooklyn, City of New York, Kings County, New York. The Phase 1A investigation was conducted on behalf of 11 Broadway Owners, LLC in response to a request from OPRHP for a Phase 1A archeological sensitivity assessment. The proposed project includes construction of a mixed commercial and residential development, featuring a thirteen-story residential tower. The purpose of the Phase 1A investigation is to identify previously recorded archaeological or historic sites that may be located within or adjacent to the property. The Phase 1A survey evaluated the potential presence of previously unrecorded archaeological or historic resources within the property. The information and recommendations contained in this report are intended to assist in the review of the proposed project by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) in accordance with Section 14.09 of the Parks, Recreation, and Historic Preservation Law.

There are no previously recorded archeological sites within one mile of the Project Area and there are no S/NRHP-listed properties within or immediately adjacent to the Project Area. Historic maps reviewed for the project depict a succession of industrial, commercial, and residential structures occupying the Project Area from the 1880s to the present. There are no previously identified S/NRHP-listed properties located within or immediately adjacent to the Project Area. The Dunham and Broadway Historic District, 16 Broadway, and the Williamsburgh Bridge are located on blocks adjacent to the Project Area, and have been determined eligible for the S/NRHP by OPRHP.

4.2 RECOMMENDATIONS

Recognizing the scope and depth of documented disturbance and the negligible probability of encountering intact archeological sites, features, and deposits of significant value within the Project Area, JMA does not recommend further archeological investigation of the 11 Broadway Project Area.

5.0 REFERENCES CITED

AKRF, Inc. [AKRF]

- 2009 Domino Sugar Rezoning Draft Environmental Impact Statement, prepared by AKRF, Inc. for the City Planning Commission, City of New York.

Anon.

- 1904 Notes on the Industry. *American Manufacture and Iron World* 74(26): 822.

Beers, F.W.

- 1873 Atlas of Long Island, New York. Beers, Comstock and Cline, New York.

Belcher Hyde, E.

- 1916 Atlas of the Borough of Brooklyn, City of New York. E. Belcher Hyde Map Company, Inc., New York

- 1929 Desk Atlas, Borough of Brooklyn, City of New York. E. Belcher Hyde Map Company, Inc., New York

Berck, Judith

- 1995 Williamsburgh, in *The Encyclopedia of New York City*, Kenneth T. Jackson, ed., pp.1263-4. Yale University Press, New Haven.

Bolton, Reginald Pelham

- 1922 *Indian Paths in the Great Metropolis*. Museum of the American Indian, Heye Foundation, New York.

Bromley, G.W., and Co.

- 1880 Atlas of the Entire City of Brooklyn. Geo. W. Bromley and E. Robinson, New York.

- 1908 Atlas of the Borough of Brooklyn, City of New York. G.W. Bromley and Company, Philadelphia.

Dripps, M.

- 1869 Map of the City of Brooklyn, Being the Former Cities of Brooklyn and Williamsburgh. M. Dripps, New York.

Ecosystems Strategies, Inc.

- 2010 Combined Phase I And Phase II Environmental Site Assessment, 11 Broadway, Borough of Brooklyn, Kings County, New York, Block 2468, Lots 1, 6, 29, 30, 31, and 32. Prepared for New York City Housing Development Corporation.

Eisenberg, Leonard

- 1978 *Paleo-Indian Settlement Patterns in the Hudson and Delaware River Drainages*. Occasional Publications in Northeastern Anthropology 4. Franklin Pierce College, Rindge, New Hampshire.

Fenneman and Johnson

- 1946 *Physiographic Divisions of the Coterminous United States*. United States Geological Survey, Washington, DC.

Funk, Robert

- 1977 Early Cultures in the Hudson Drainage Basin. In *Amerinds and Their Paleoenvironments in the Northeast*, edited by W. Newman and B. Salwen. *Annals of the New York Academy of Sciences* 288:316-332.

- Habib, Philip, and Associates, AKRF, Inc., LMS Engineers LLP, Celia Bergoffen, and HydroQual, Inc.
2005 Greenpoint-Williamsburg, Final Environmental Impact Statement. Prepared for the City Planning Commission, City of New York.
- Hopkins, G.M.
1880 Detailed Estate and Old Farm Line Atlas of the City of Brooklyn. G.M. Hopkins, Philadelphia.
- Hyde and Company
1898 Atlas of the Brooklyn Borough of the City of New York. Hyde and Company, New York.
- Lightfoot and Moore
1985 Interior Resources Exploitation: A Woodland Settlement Model for Long Island, New York. *Anthropology* 8:15-40.
- Manbeck, John B.
2008 The Neighborhoods of Brooklyn, Yale University Press, New Haven.
- New York City Soil Survey Staff
2005 New York City Reconnaissance Soil Survey. United States Department of Agriculture, Natural Resources Conservation Service, Staten Island, NY.
- OPRHP [New York State Office of Parks, Recreation and Historic Preservation]
2008a Resource Evaluation prepared by Kathy Howe, December 17, 2008. Included in Appendix A (Historic Resources), Domino Sugar Rezoning Draft Environmental Impact Statement, prepared by AKRF, Inc. for the City Planning Commission, City of New York.
2008b Correspondence from Beth A. Cummings (OPRHP Historic Preservation Specialist) to Cara McAteer (AKRF), December 17, 2008. Included in Appendix A (Historic Resources), Domino Sugar Rezoning Draft Environmental Impact Statement, prepared by AKRF, Inc. for the City Planning Commission, City of New York.
- Ritchie, William
1980 *The Archaeology of New York State* (revised edition). Harbor Hill Books, Harrison, New York.
- Robinson, E.
1890 Atlas of Kings County. E. Robinson, New York.
- Sanborn Map and Publishing Company
1887 Insurance Maps, Brooklyn. Sanborn Map and Publishing Company, New York.
1904 Insurance Maps, Brooklyn. Sanborn Map and Publishing Company, New York.
1918 Insurance Maps, Brooklyn. Sanborn Map and Publishing Company, New York.
1947 Insurance Maps, Brooklyn. Sanborn Map and Publishing Company, New York.
1977 Insurance Maps, Brooklyn. Sanborn Map and Publishing Company, New York.
- Stiles, Henry R., ed.
1884 The Civil, Political, Professional, and Ecclesiastical History, and Commercial and Industrial Record of the County of Kings and the City of Brooklyn, 1683-1884. Joel W. Munsell and Co., New York.

URS

- 2008 Geotechnical Evaluation, 11 Broadway, Brooklyn, New York. Report prepared for L&M Development Partners, Inc., New York.

Wyatt, Ronald

- 1977 The Archaic on Long Island. In *Amerinds and Their Paleoenvironments in the Northeast*, edited by W. Newman and B. Salwen. *Annals of the New York Academy of Sciences* 288:401-409.

FIGURES

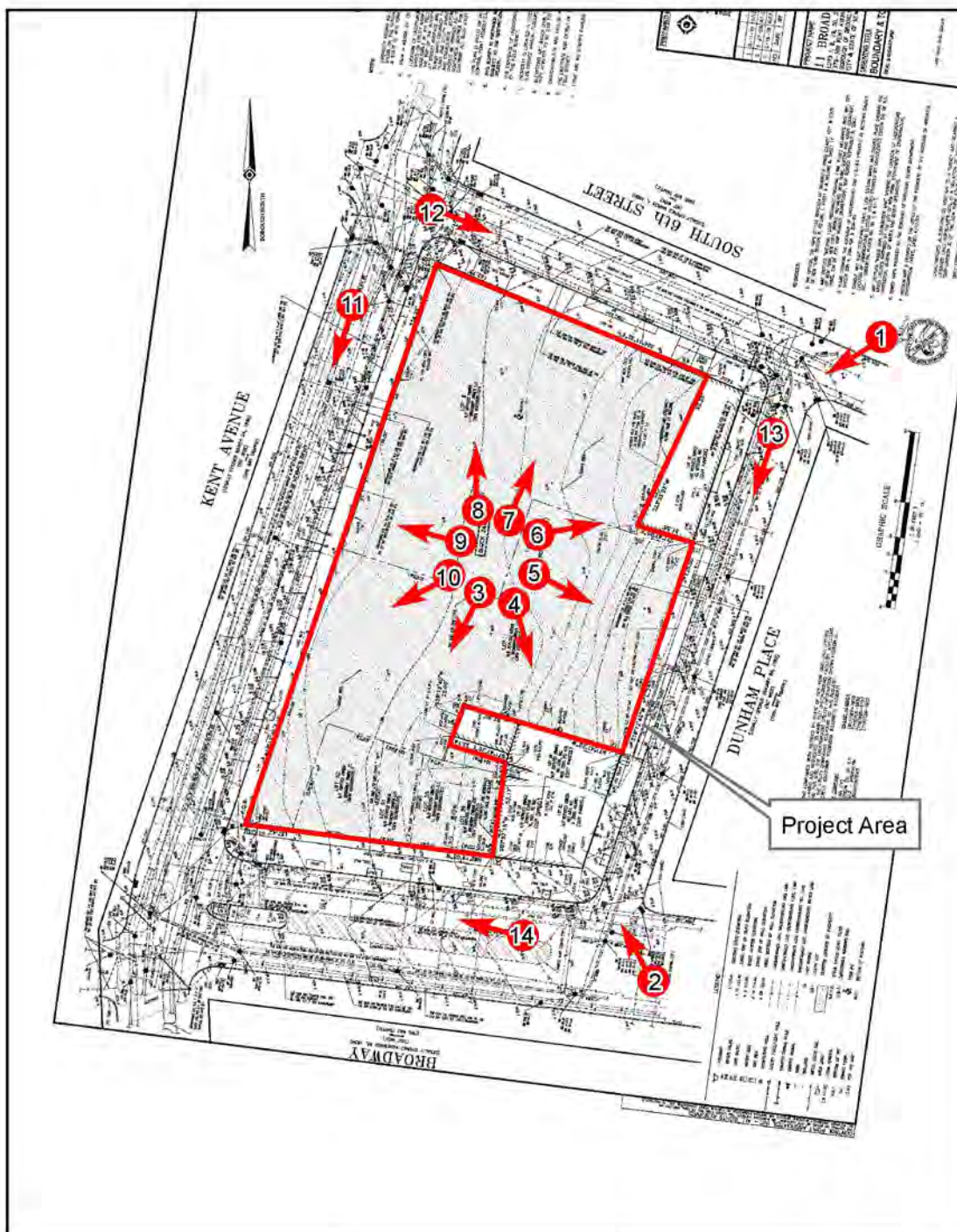


Figure 2. Boundary and topographic survey depicting existing conditions within the Project Area with the locations and orientation of photographic views referenced in the report (Control Point Associates, Inc. 2010).

0 100 Feet
0 25 Meters

July 2010

IMA
John Hittner Associates, Inc.

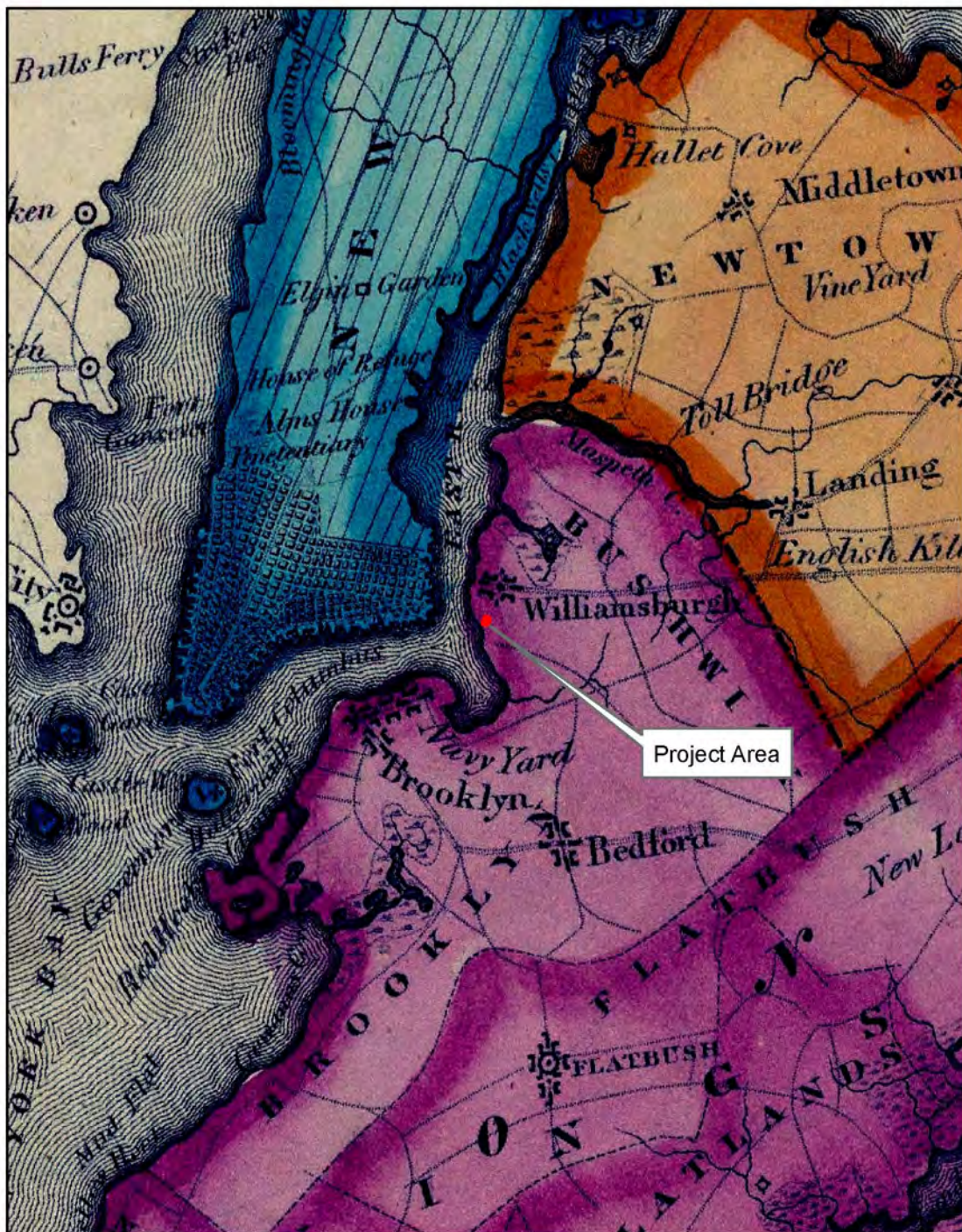


Figure 3. Detail of the 1829 D. H. Burr Atlas of the State of New York showing the location of the Project Area.

0 8,000 Feet
0 1,500 Meters



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JMA architects
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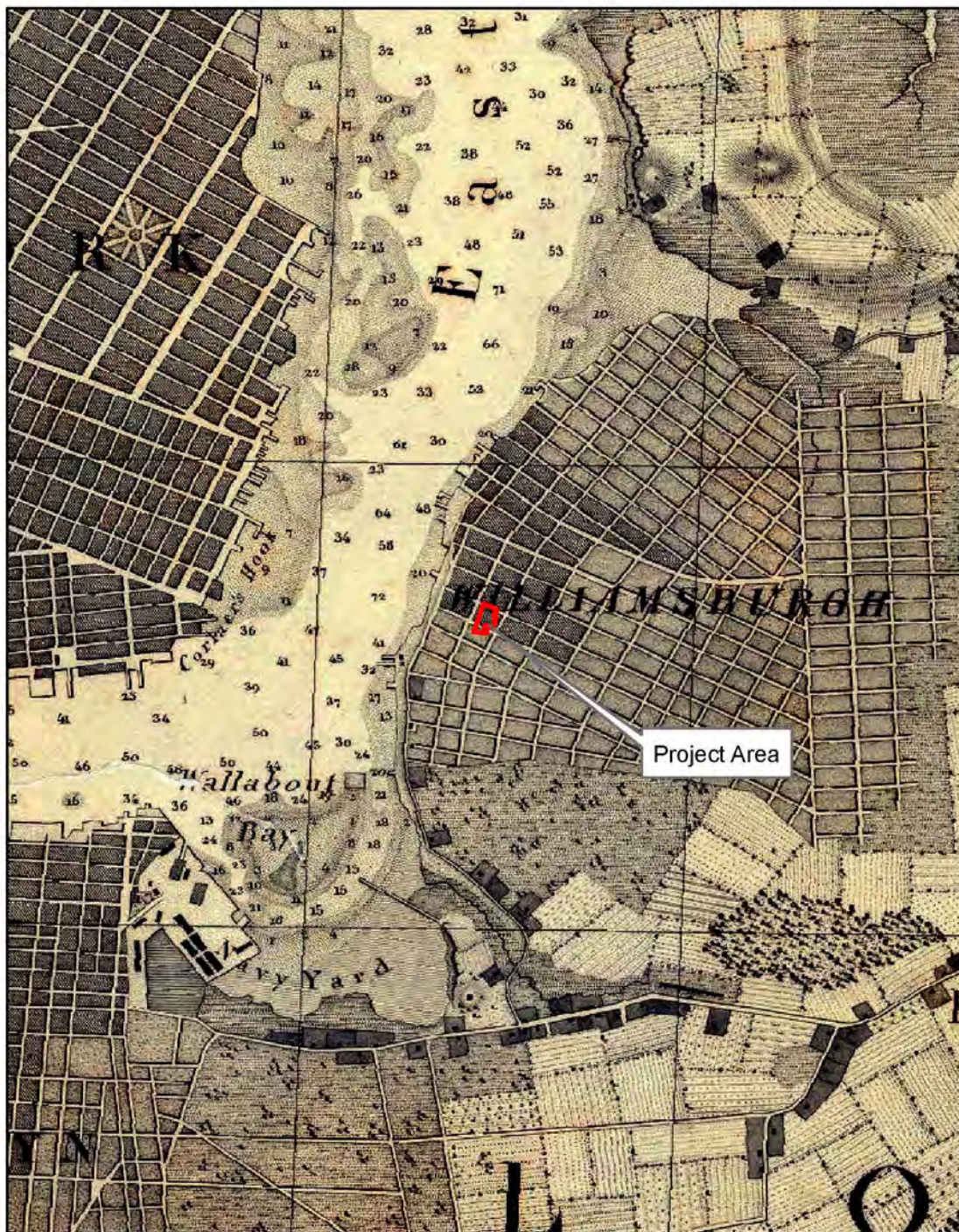


Figure 4. Detail of the 1845 Bache and Hassler Map of New-York Bay and Harbor and environs showing the location of the Project Area.

0 2,000 Feet
0 500 Meters



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planners
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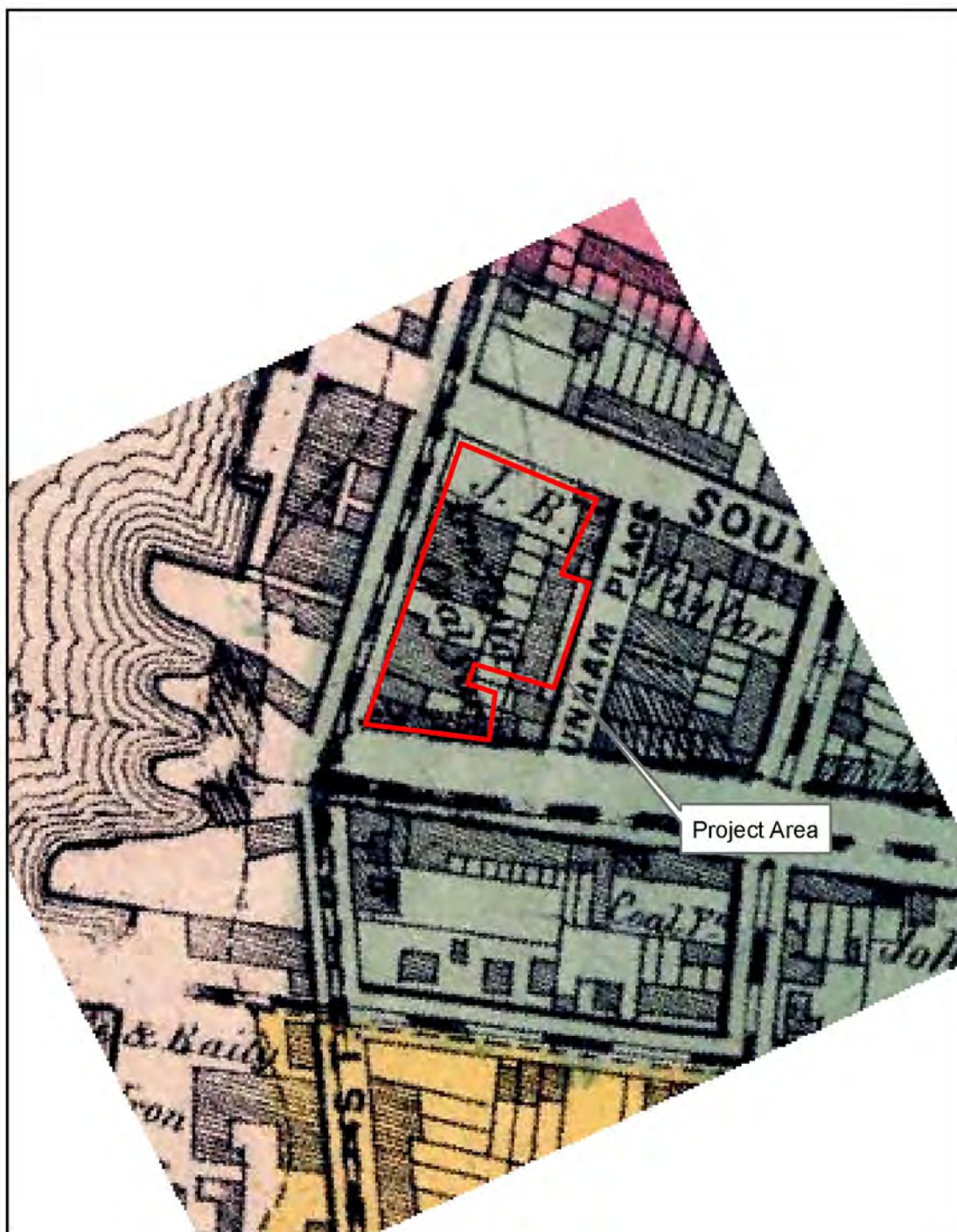


Figure 5. Detail of the 1869 M. Dripps Map of the City of Brooklyn showing the location of the Project Area.

0 200 Feet
0 40 Meters



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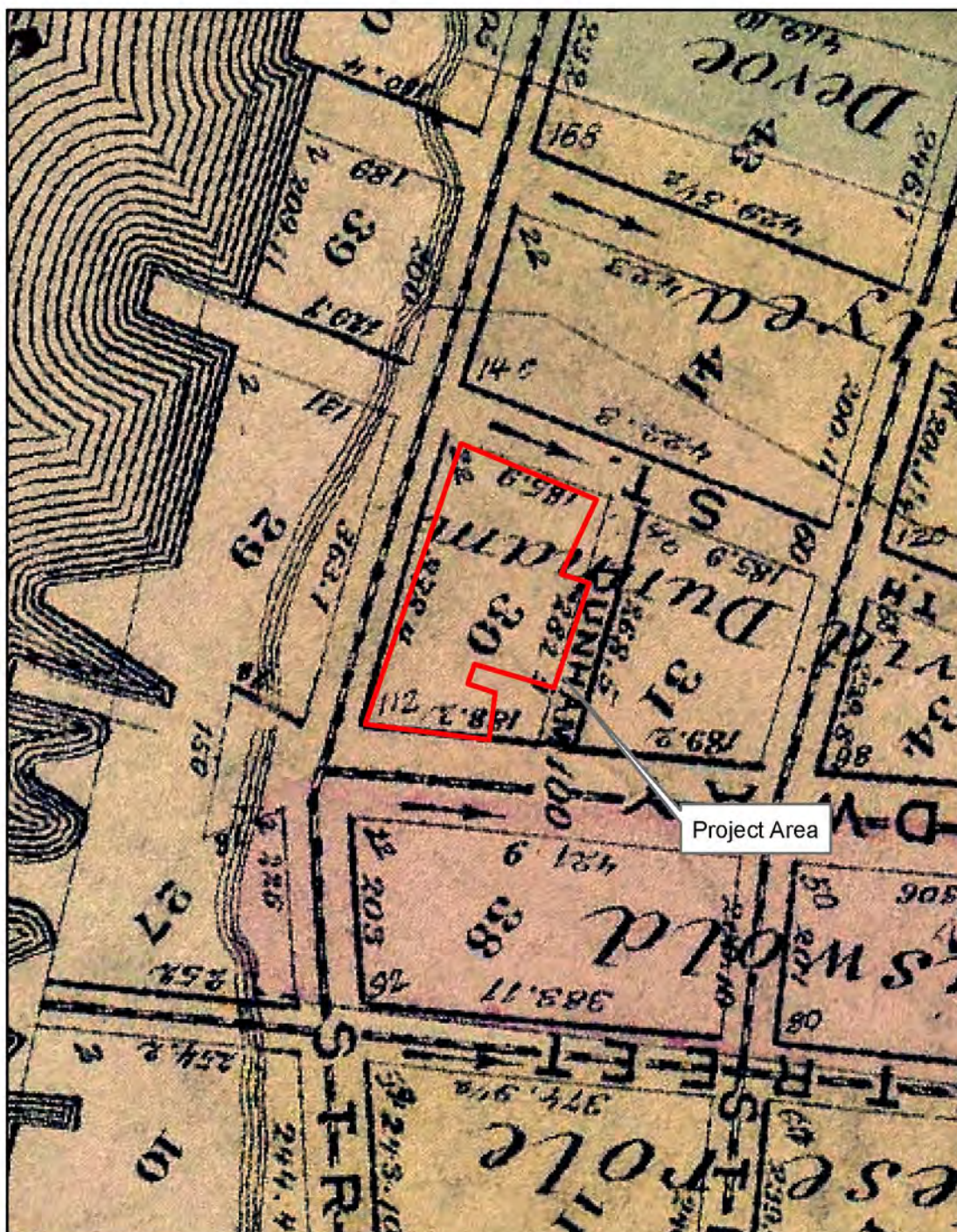


Figure 6. Detail of the 1874 H. Fulton Map of the City of Brooklyn showing the location of the Project Area.



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Figure 8. Detail of the 1880 G. M. Hopkins Detailed Estate and Old Farm Line Atlas showing the location of the Project Area.



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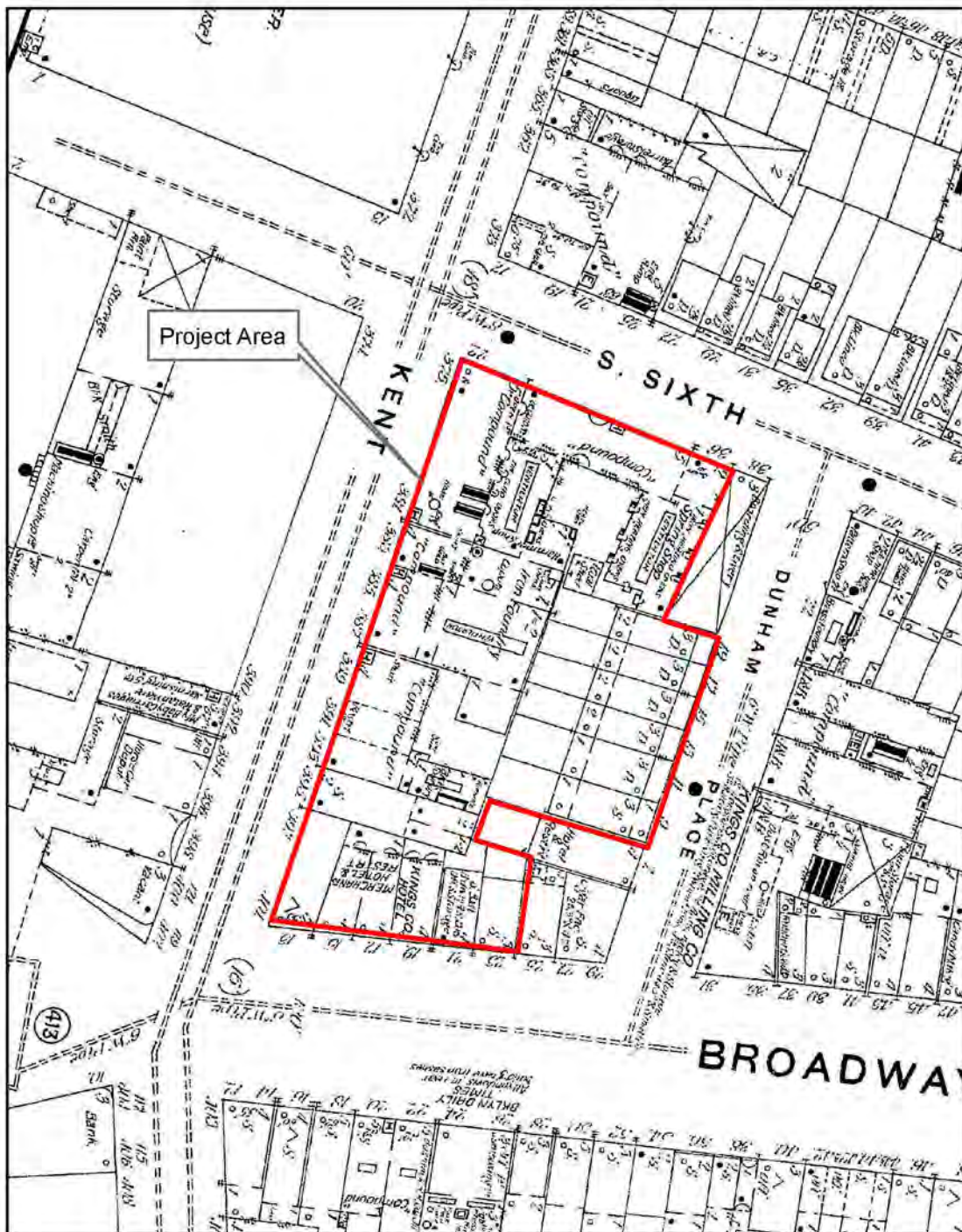
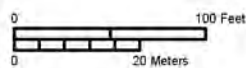


Figure 9. Detail of the 1886-1888 Sanborn Insurance Map showing the location of the Project Area.



July 2010



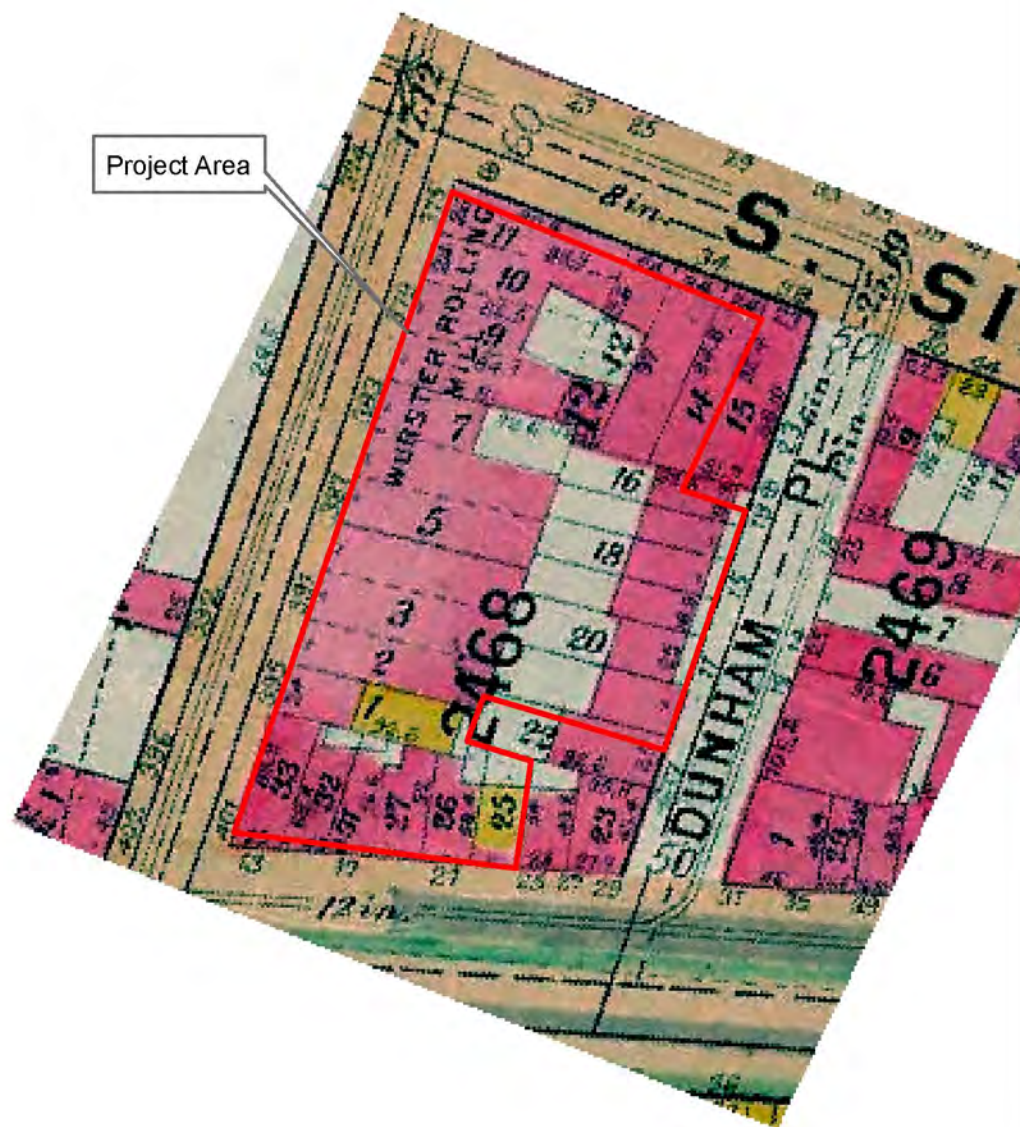


Figure 10. Detail of the 1898 H. Ullitz Atlas of the Brooklyn Borough of the City of New York showing the location of the Project Area.

0 100 Feet
0 20 Meters



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planners
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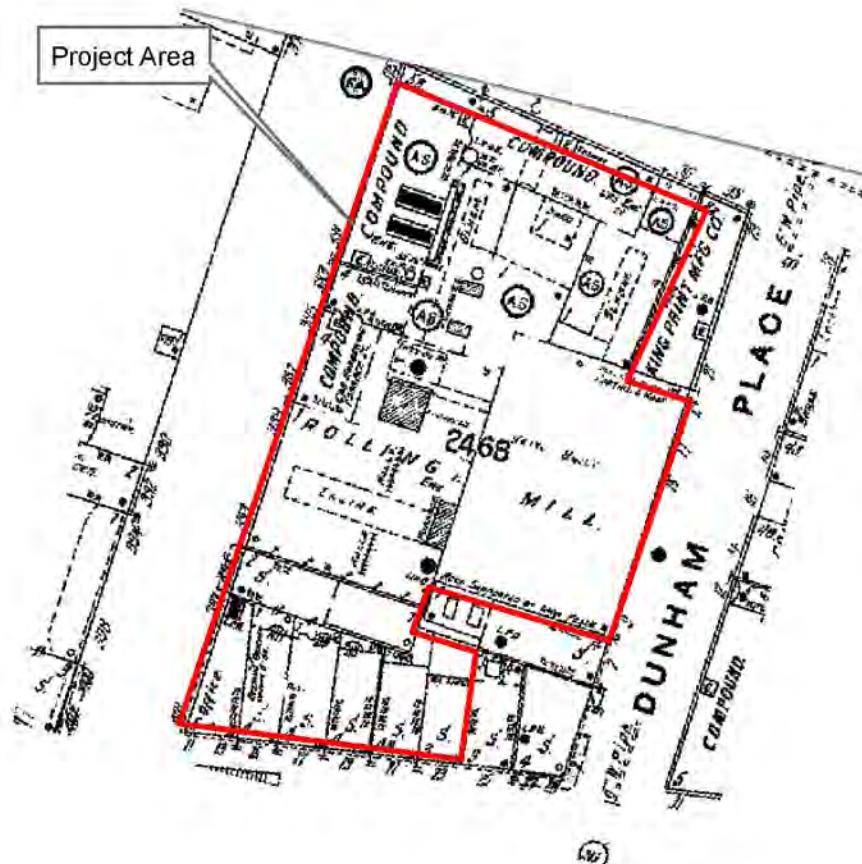


Figure 11. Detail of the 1904 Sanborn Insurance Map showing the location of the Project Area

0 100 Feet
0 20 Meters



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IMA
International Mine Association



Figure 12. Detail of the 1908 G. W. Bromley Atlas of the Borough of Brooklyn showing the location of the Project Area.

0 100 Feet
0 20 Meters



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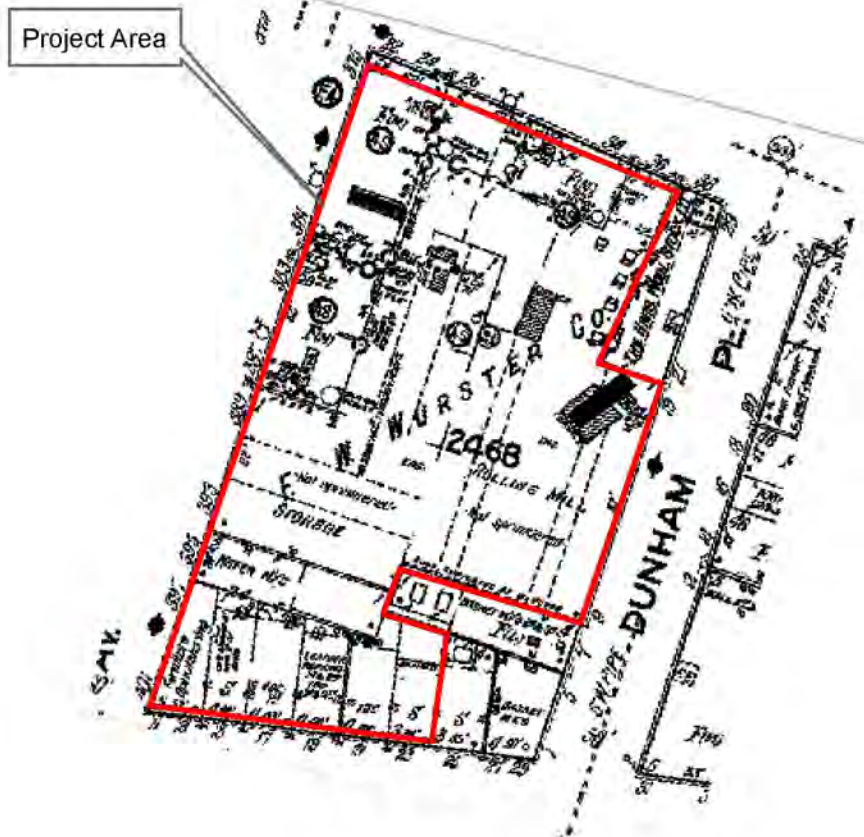


Figure 13. Detail of the 1911 Sanborn Insurance Map showing the location of the Project Area.

0 100 Feet
0 20 Meters



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IMA
International
Map Association, Inc.

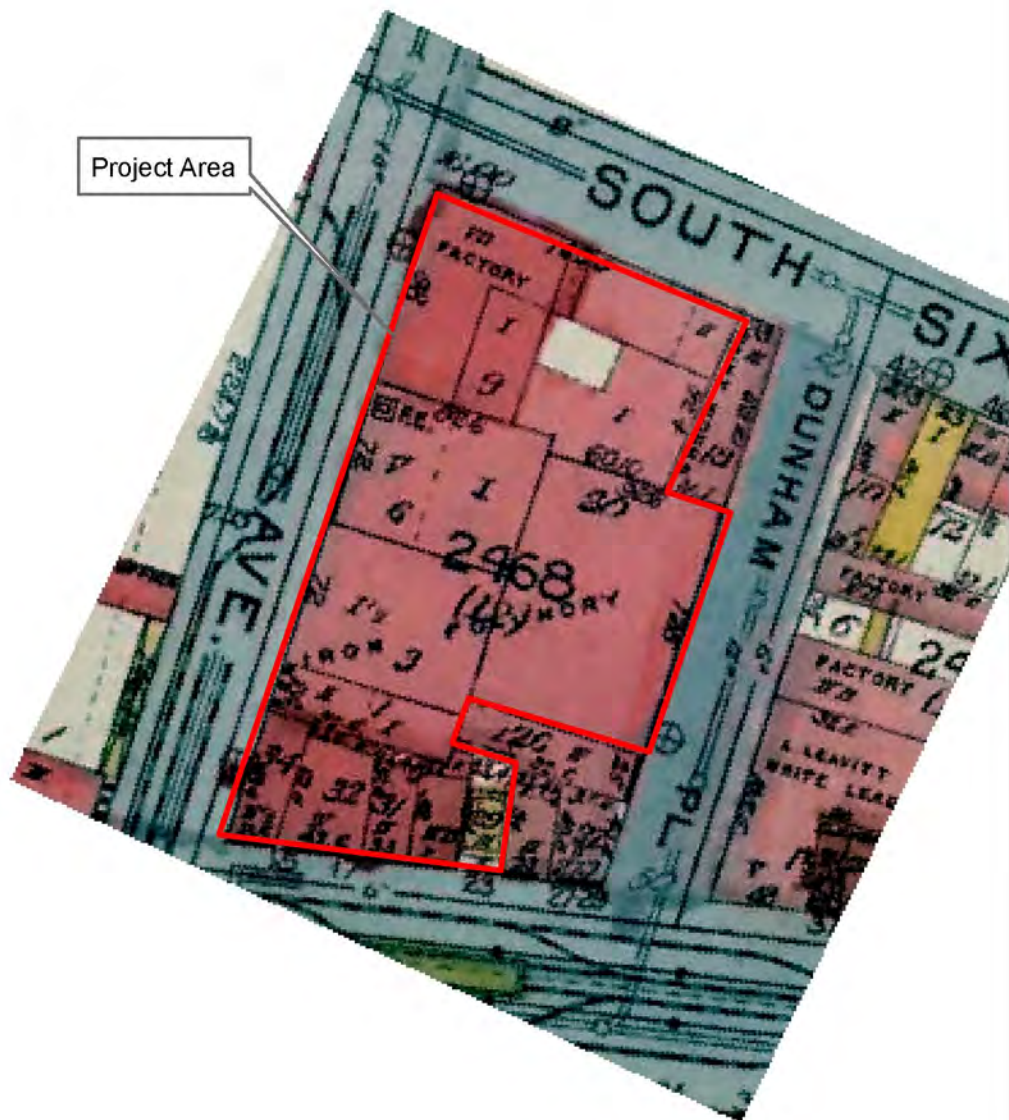


Figure 14. Detail of the 1916 E. B. Hyde Atlas of the Borough of Brooklyn showing the location of the Project Area.

0 100 Feet
0 20 Meters



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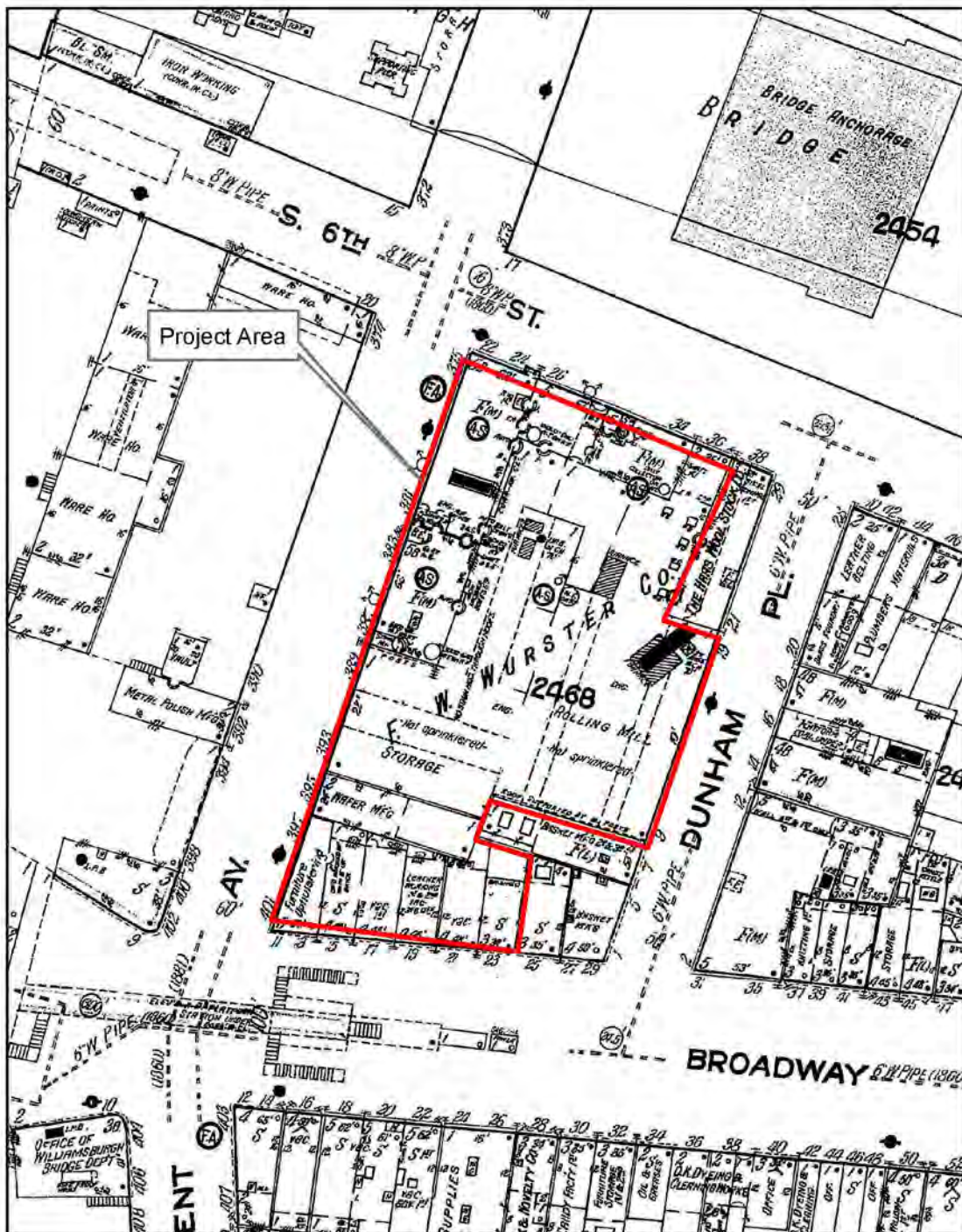
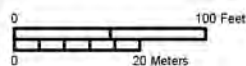


Figure 15. Detail of the 1915-1933 Sanborn Insurance Map showing the location of the Project Area.



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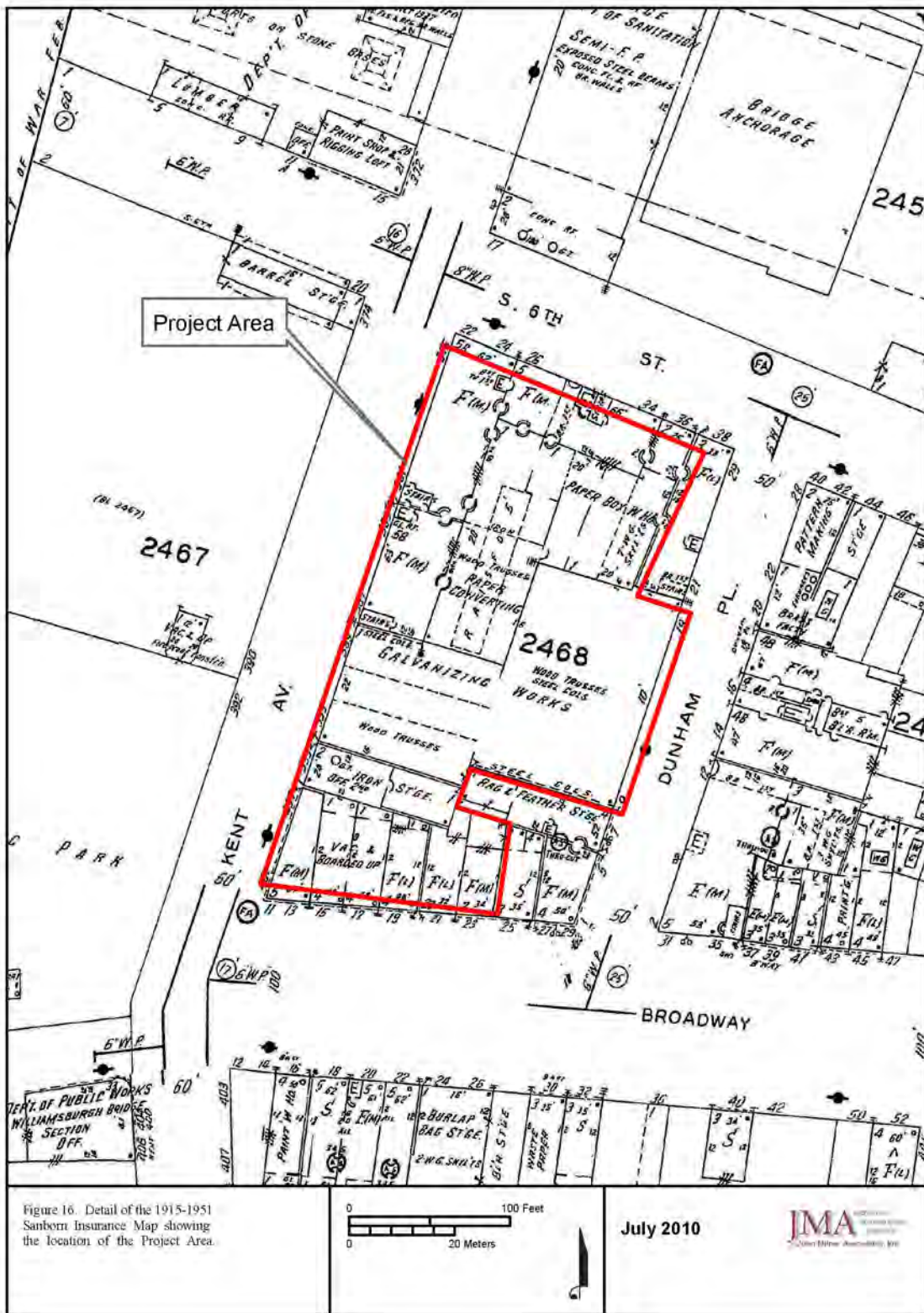




Figure 18. Detail of the 1954 historic aerial image showing the location of the Project Area.

0 100 Feet
0 20 Meters



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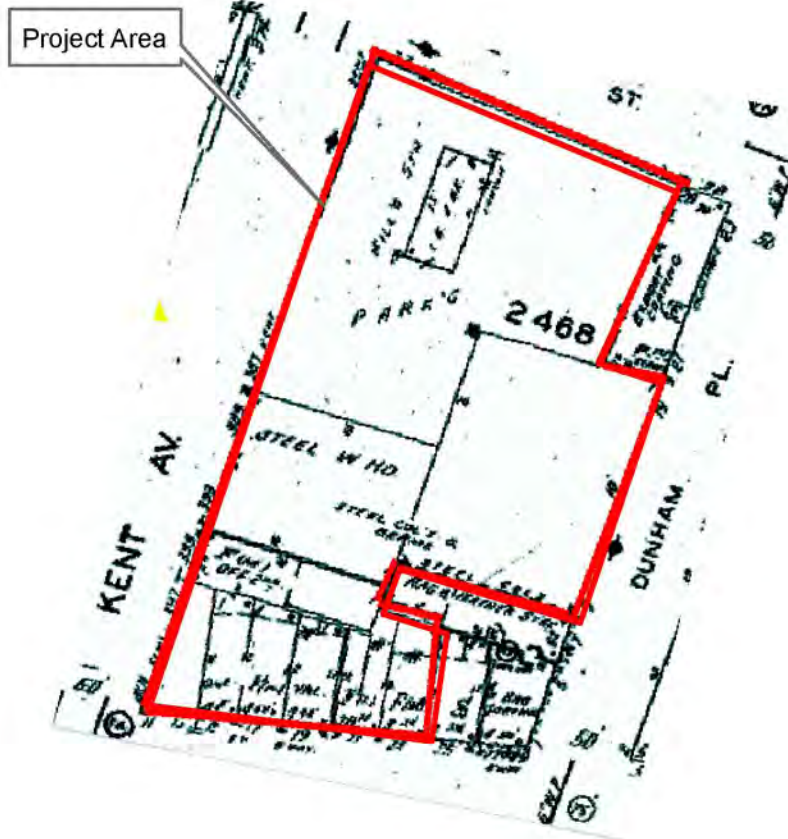


Figure 19. Detail of the 1965 Sanborn Insurance Map showing the location of the Project Area.

0 100 Feet
0 20 Meters



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Figure 20. Detail of the 1966 historic aerial image showing the location of the Project Area.

0 100 Feet
0 20 Meters



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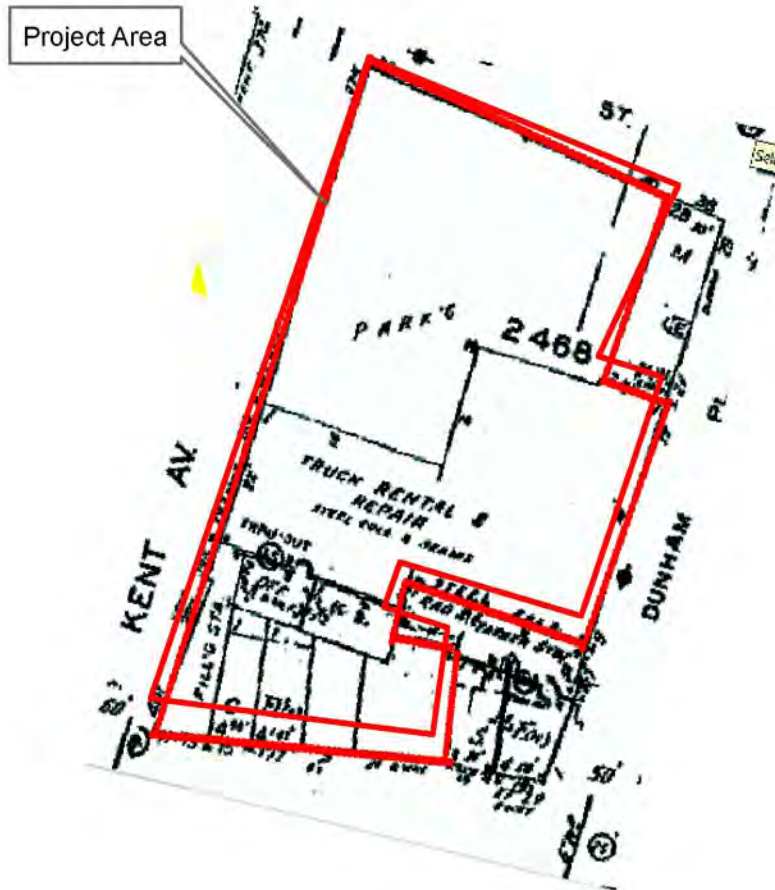


Figure 21. Detail of the 1977 Sanborn Insurance Map showing the location of the Project Area.



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Johannes Miller Associates, Inc.



Figure 22. Detail of the 1980 historic aerial image showing the location of the Project Area.

0 100 Feet
0 20 Meters



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Figure 23. Detail of the 2004 historic aerial image showing the location of the Project Area.

0 100 Feet
0 20 Meters



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PHOTOGRAPHS



Photograph 1. View of two-story commercial red brick building in the northwest corner of the Project Area block at the corner of South Sixth Street and Dunham Place. View to the southwest.



Photograph 2. View of two four-story and one three-story brick residential buildings with street level store fronts in the southeast corner of the Project Area block at the corner of Broadway and Dunham Place. View to the northwest.



Photograph 3. Conditions in south-central portion of the Project Area, with 16 Broadway (red sandstone Romanesque Revival design) in the center-right background. View to the south.



Photograph 4. Conditions in southeastern portion of the Project Area. View to the south.



Photograph 5. Conditions in eastern portion of the Project Area. View to the east.



Photograph 6. Conditions in northeastern portion of the Project Area. View to the northeast.



Photograph 7. Conditions in north-central portion of the Project Area, with the pier of the Williamsburg Bridge in the background. View to the north.



Photograph 8. Conditions in northwestern portion of the Project Area, with the Williamsburg Bridge in the background. View to the south.



Photograph 9. Conditions in western portion of the Project Area. View to the west.



Photograph 10. Conditions in southwestern portion of the Project Area. View to the southwest.



Photograph 11. View parallel to the western boundary of the Project Area, looking south along Kent Avenue. View to the south.



Photograph 12. View parallel to the northern boundary of the Project Area, looking east along South Sixth Street. View to the east.



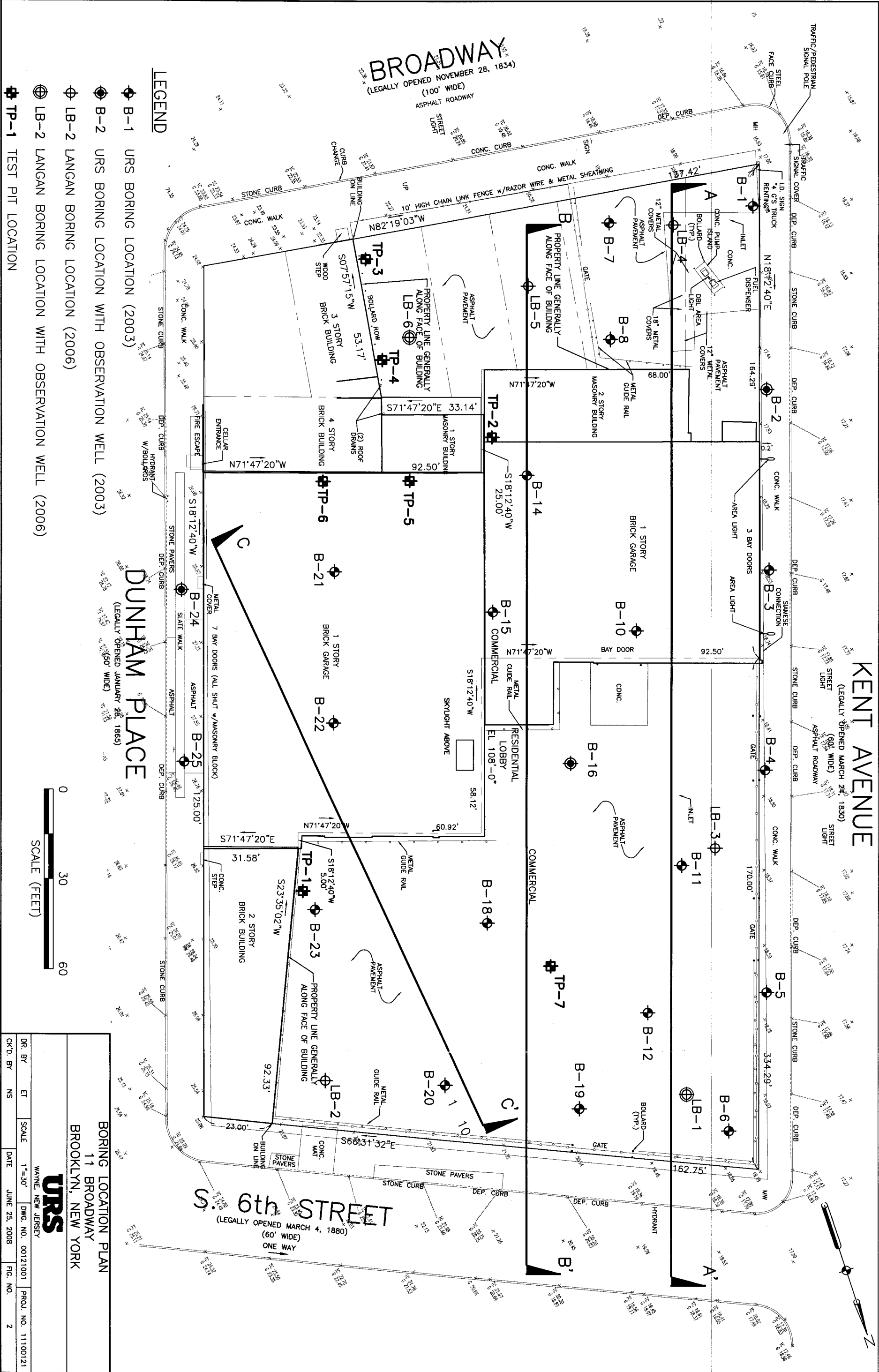
Photograph 13. View parallel to the eastern boundary of the Project Area, looking south along Dunham Place. View to the south.

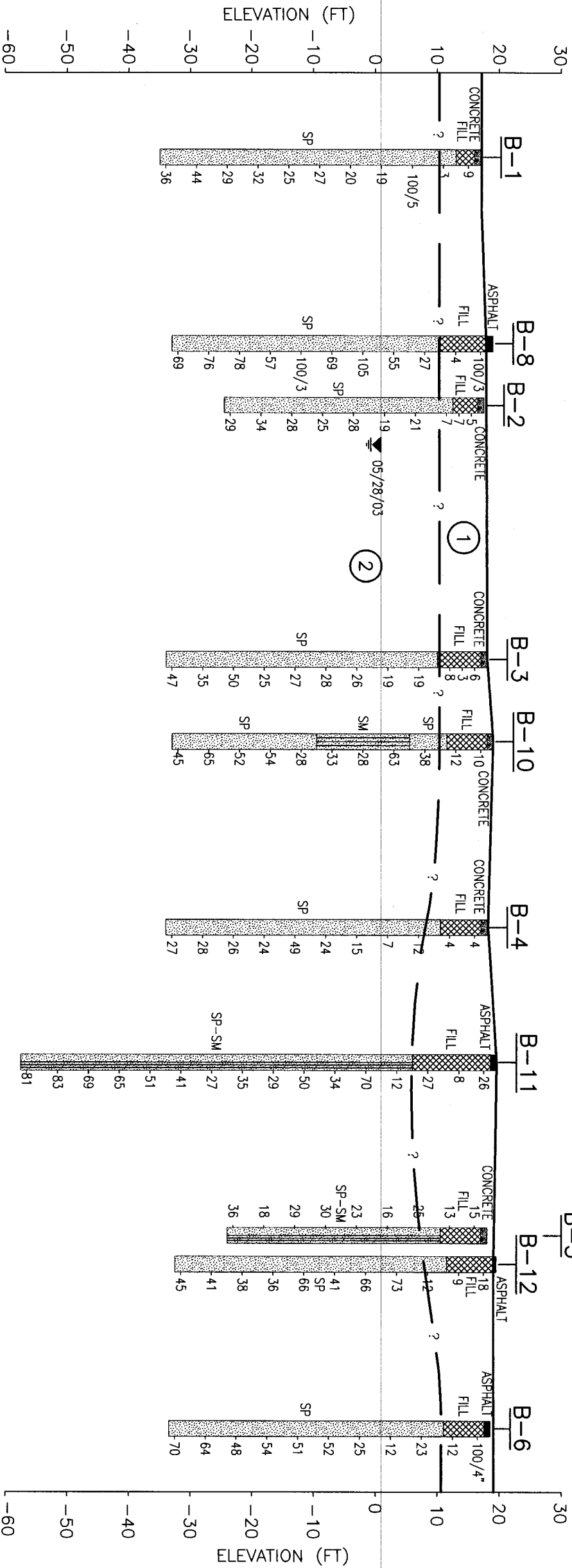


Photograph 14. View parallel to the southern boundary of the Project Area, looking west along Broadway. View to the west.

APPENDIX A

SOIL BORING DATA

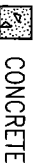




LEGEND

B-1

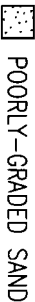
TEST BORING NUMBER



CONCRETE



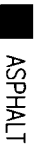
FILL



POORLY-GRADED SAND



SILTY SAND



ASPHALT



POORLY GRADED SAND WITH SILT



WATER LEVEL AND DATE MEASURED

APPROXIMATE INTERFACE BETWEEN SOIL STRATA

GENERALIZED SOIL CONDITIONS

1 MISCELLANEOUS FILL: DK. BROWN TO BROWN M-F SAND AND C-F GRAVEL, CONTAINING FRAGMENTS OF BRICK CONCRETE AND CINDERS.

2 SAND: BROWN C-F SAND WITH TRACE TO SOME GRAVEL AND SILT.

GENERAL NOTES:

1. MATERIAL DESCRIPTIONS ARE GENERALIZED AND INCLUDE SAMPLES WITH A NATURAL DEGREE OF VARIATION. SEE BORING LOGS FOR DESCRIPTION OF INDIVIDUAL SAMPLES.
2. DEPTH AND THICKNESSES OF SOIL STRATA BOUNDARIES ARE BASED ON INTERPRETATION OF BORINGS AND LABORATORY TEST RESULTS AND ARE SHOWN ONLY TO AID IN VISUALIZING GENERALIZED SUBSURFACE CONDITIONS. ACTUAL STRATA BOUNDARIES BETWEEN BORINGS MAY DIFFER FROM THE CONDITIONS SHOWN HERE.
3. ELEVATIONS REFER TO BROOKLYN HIGHWAY DATUM, WHICH IS 2.56 FT. ABOVE MEAN SEA LEVEL AT SANDY HOOK



HORIZ. SCALE (FEET)



VERT. SCALE (FEET)

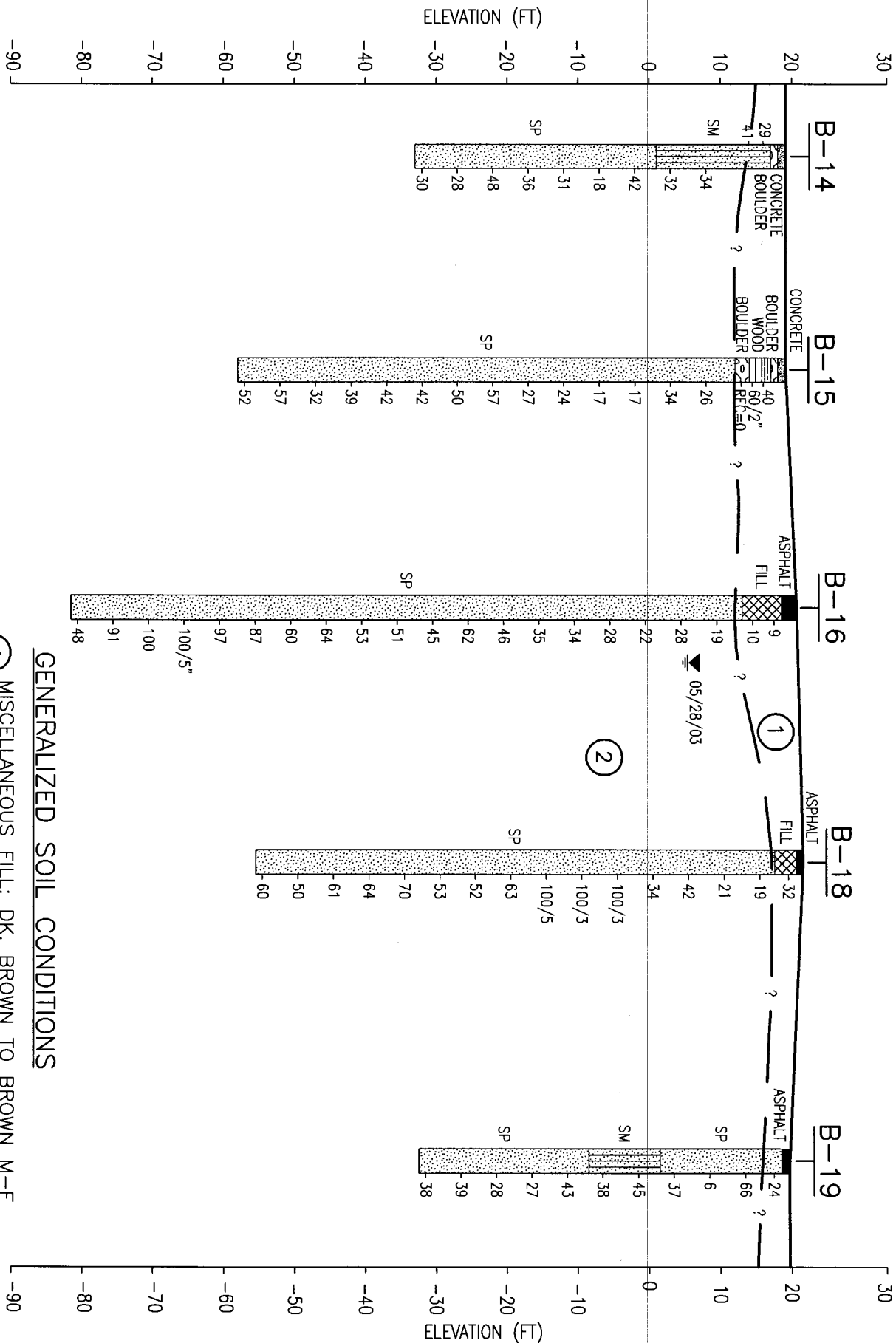
GENERALIZED SUBSURFACE PROFILE A-A'

11 BROADWAY
BROOKLYN, NEW YORK

URS

WAYNE, NEW JERSEY

DR. BY	KM	SCALE	AS SHOWN	DWG. NO.	00121002	PROJ. NO.	11100121
CHK'D. BY	NT	DATE	JUNE 25, 2008	FIG. NO.	3		



GENERALIZED SOIL CONDITIONS

- ① MISCELLANEOUS FILL: DK. BROWN TO BROWN M-F SAND AND C-F GRAVEL, CONTAINING FRAGMENTS OF BRICK CONCRETE AND CINDERS.
- ② SAND: BROWN C-F SAND WITH TRACE TO SOME GRAVEL AND SILT.

GENERAL NOTES:

1. MATERIAL DESCRIPTIONS ARE GENERALIZED AND INCLUDE SAMPLES WITH A NATURAL DEGREE OF VARIATION. SEE BORING LOGS FOR DESCRIPTION OF INDIVIDUAL SAMPLES.
2. DEPTH AND THICKNESSES OF SOIL STRATA BOUNDARIES ARE BASED ON INTERPRETATION OF BORINGS AND LABORATORY TEST RESULTS AND ARE SHOWN ONLY TO AID IN VISUALIZING GENERALIZED SUBSURFACE CONDITIONS. ACTUAL STRATA BOUNDARIES BETWEEN BORINGS MAY DIFFER FROM THE CONDITIONS SHOWN HERE.

3. ELEVATIONS REFER TO BROOKLYN HIGHWAY DATUM WHICH IS 2.56 FT. ABOVE MEAN SEA LEVEL AT SANDY HOOK

GENERALIZED SUBSURFACE PROFILE B-B
11 BROADWAY
BROOKLYN, NEW YORK

URS

WAYNE, NEW JERSEY

DR. BY	KM	SCALE	AS SHOWN	DWG. NO. 00121003	PROJ. NO. 11100121
CK'D. BY	NT	DATE	JUNE 25, 2008	FIG. NO.	4

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-1

Sheet 1 of 2


Date(s) Drilled	5/6/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)	17.0
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:
Casing Size/Type	4"	Drill Rig Operator	N. DelRe	Total Depth Drilled (feet)	52.0
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Rock Depth (feet)	n/a
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Sampler Type(s)	2" OD Split Spoon
Boring Location and Comments	See plan	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
				No. of Samples	Dist.: 11 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete sidewalk.					
	S-1	1.0	9 3 6 6					(SP) Loose, brown, m-f SAND, trace brick. (fill)					
5	S-2	0.8	4 1 2 1					(SP) Loose, brown, m-f SAND.					
10	S-3	0.4	6 100/5					(SP) Very dense, brown, m-f SAND, some c-f gravel.					Very hard.
15	S-4	0.8	10 7 12 13					(SP) Medium dense, brown m-f SAND. Black f. SAND in tip (fuel odor).					
20	S-5	0.8	9 8 12 15					(SP) Medium dense, brown, m. SAND, trace c. sand.					
25	S-6	0.6	9 15 12 15					(SP) Medium dense, brown, c-m SAND, trace f. gravel.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-1

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	0.8	12 11 14 18					(SP) Medium dense, brown, c-f SAND.					
35	S-8	0.8	13 13 19 21					Same.					
40	S-9	1.0	10 12 17 18					(SP) Medium dense, brown, m-f SAND.					
45	S-10	1.0	13 17 27 16					(SP) Very dense, brown, f. SAND.					
50	S-11	1.0	16 15 21 23					(SP) Dense, brown, m-f SAND, some f. gravel.					
55								Bottom of boring at 52 ft below ground surface.					
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-2

Sheet 1 of 2


Date(s) Drilled	5/9/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)	17.50
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	42.0
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Rock Depth (feet)	n/a
Groundwater Level and Date Measured	18 5/28/2003	Hammer Wt/Drop	140lb - 30in D	Sampler Type(s)	2" OD Split Spoon
Boring Location and Comments	See plan	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
				No. of Samples	Dist.: 10 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete sidewalk.					
	S-1	0.5	3 2 3 4					(SP) Loose, dk. brown, m-f SAND, trace brick. [fill]					
	S-2	0.5	3 3 4 7					Same.					
5	S-3	0.8	4 3 4 5					(SP) Loose, orange-brown, m-f SAND.					5/9/03, GW reading at 13 ft.
10	S-4	1.0	6 9 12 14					(SP) Medium dense, brown, m-f SAND.					5/28/03, 6:00 am, GW reading at 18 ft.
15	S-5	1.0	6 9 10 13					Same.					
20	S-6	1.0	8 11 17 18					Same.					
25	S-7	1.2	7 12 13 17					Same.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-2

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-8	1.0	8 14 14 17					Same.					
35	S-9	1.2	14 13 21 24					(SP) Medium dense, brown, m-f SAND, some c-f gravel.					
40	S-10	1.2	10 14 15 19					(SP) Medium dense, brown, m-f SAND, trace f. gravel.					
45								Bottom of boring at 42 ft below ground surface.					Installed 25 ft ground water monitoring well.
50													
55													
60													
65													

Project: One Park Place

Project Location: Brooklyn, New York

Project Number: 19684440

Log of Boring B-3

Sheet 1 of 2

Date(s) Drilled	5/7/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)	18.0
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	52.0
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Rock Depth (feet)	n/a
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Sampler Type(s)	2" OD Split Spoon
Boring Location and Comments	See plan	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
				No. of Samples	
				Dist.: 12	Undist.: 0
				Core (ft): 0	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete sidewalk.					
	S-1	0.6	6 4 2 2					(SP) Loose, black, m-f SAND, some brick and concrete. (fill)					
	S-2	1.2	2 1 2 3					Same.					
5	S-3	0.6	3 4 4 3					Same.					
10	S-4	1.0	6 12 7 9					(SP) Medium dense, brown, m-f SAND.					
15	S-5	0.8	10 8 11 14					(SP) Medium dense, brown, m-f SAND, trace f. gravel.					
20	S-6	0.8	9 13 13 12					(SP) Medium dense, brown m-f SAND.					
25	S-7	1.0	9 12 16 19					Same.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-3

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-8	0.8	9 12 15 12					(SP) Medium dense, brown, c-f SAND.					
35	S-9	1.2	11 11 14 19					(SP) Medium dense, brown m-f SAND.					
40	S-10	1.2	16 24 26 30					(SP) Very dense, brown m-f SAND, trace c. sand.					
45	S-11	1.8	16 18 17 20					(SP) Dense, brown, m-f SAND, some f. gravel.					
50	S-12	1.0	16 24 23 34					Same.					
55								Bottom of boring at 52 ft below ground surface.					
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-4

Sheet 1 of 2

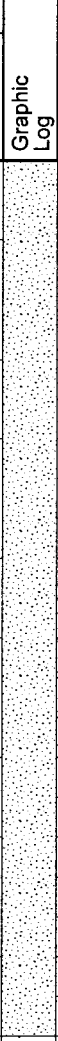
Date(s) Drilled	4/14/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)		18.0	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:		
Casing Size/Type	4"	Drill Rig Operator	J. Imparato	Total Depth Drilled (feet)	52.0	Rock Depth (feet)	n/a
Drill Rig Type	CME 75	Drill Bit Size/Type	3 7/8" Tricone	Sampler Type(s)	2" OD Split Spoon		
Groundwater Level and Date Measured		Hammer Wt/Drop	14 lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments	See plan			No. of Samples	Dist.: 11	Undist.: 0	Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete sidewalk.					
	S-1	0.1	4 2 2 3					(SP) Loose, black, c. SAND, some f. gravel. [fill]					
5	S-2	0.1	3 3 1 2					Rock fragments. [fill]					
10	S-3	1.8	4 6 6 9					(SP) Medium dense, brown, m-f. SAND, some f. gravel, tr. silt.					Casing to 10 ft.
15	S-4	1.5	4 4 3 12					Same.					
20	S-5	1.0	10 8 7 13					(SP) Medium dense, brown, m-f. SAND, tr. f. gravel.					Rig chatter. Probable boulder appx. 6".
25	S-6	0.4	11 15 9 15					(SP) Medium dense, brown f. SAND, some boulder fragments.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-4

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	1.0	14 16 33 24					(SP) Dense, brown, m-f. SAND.					
35	S-8	1.0	9 12 12 12					Same.					
40	S-9	1.0	10 12 14 16					Same.					
45	S-10	0.8	9 14 14 16					Same.					
50	S-11	1.0	12 16 11 11					(SP) Medium dense, brown, c-f. SAND.					
55								Bottom of boring at 52 ft. below ground surface.					
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-5

Sheet 1 of 2


Date(s) Drilled	4/14/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)		18.0	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates		North: East:	
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	42.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Sampler Type(s)		2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments		See plan		No. of Samples		Dist.: 9 Undist.: 0 Core (ft): 0	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete sidewalk.					
	S-1	0.8	6 5 10 10					(SP) Medium dense, black-brown c. SAND, some brick. [fill]					
5	S-2	0.5	6 6 7 9					(SP) Brick fragments, tr. grey, f. sand. [fill]					
10	S-3	1.0	8 13 12 9					(SP) Medium dense, brown, m-f. SAND, tr. f. gravel.					Casing to 10 ft.
15	S-4	1.2	4 8 8 8					(SM) Medium dense, orange-brown, f. SAND, some silt.					
20	S-5	0.2	5 9 14 7					(SM) Medium dense, brown, m-f. SAND.					
25	S-6	1.0	14 14 16 20					Same.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-5

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	1.2	13 13 16 17					Same.					
35	S-8	1.2	9 8 10 16					Same.					
40	S-9	1.0	13 17 19 23					Same.					
45								Bottom of boring at 42 ft. below ground surface.					
50													
55													
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-6

Sheet 1 of 2

Date(s) Drilled	4/14/03 - 4/15/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)		18.50	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:		
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	52.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Sampler Type(s)	2" OD Split Spoon		
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments	See plan			No. of Samples	Dist.: 11	Undist.: 0	Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Asphalt					
	S-1	0.5	10 100/4"					(SP) Very dense, black m. SAND, tr. brick. [fill]					Rig chatter. Offset 5 ft. north due to obstruction.
5	S-2	0.2	10 5 7 10					(SP) Medium dense, grey, m-f. SAND, some concrete. [fill].					
10	S-3	1.0	13 9 14 9					(SP) Medium dense, brown, m-f. SAND, some f. gravel, tr. silt.					rig chatter.
15	S-4	0.8	8 5 7 8					(SP) Medium dense, brown, m-f. SAND.					
20	S-5	0.8	8 14 11 19					(SP) Medium dense, brown, m-f. SAND, some f. gravel.					
25	S-6	1.0	22 26 26 25					(SP) Very dense, brown, m-f. SAND, some f. gravel.					Stop for the day. Resume 4/15/03
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-6

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	0.8	20 24 27 26					(SP) Very dense, brown, m. SAND.					
35	S-8	1.0	19 26 28 34					Same.					
40	S-9	1.0	16 20 28 37					Same.					
45	S-10	0.8	19 27 37 35					(SP) Very dense, brown, m. SAND, tr. f. gravel.					
50	S-11	0.8	24 34 36 33					(SW) Very dense, brown, c-f. SAND.					
55								Bottom of boring at 52 ft. below ground surface.					
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-7

Sheet 1 of 2


Date(s) Drilled	5/9/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)		19.0	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates		North: East:	
Casing Size/Type	4"	Drill Rig Operator	N. DelRe	Total Depth Drilled (feet)	42.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone		Sampler Type(s)	2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments				See plan		No. of Samples	Dist.: 9 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS	
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)								
0								Asphalt.						
	S-1	0.5	42 8 36 33					(SP) Dense, brown, m-f SAND, some f. gravel, some concrete. [fill]						
5														
	S-2	0.4	8 13 5 5					(SP) Medium dense, brown, m-f SAND, some brick, trace concrete. [fill]						
10														
	S-3	1.2	9 11 14 15					(SP) Medium dense, brown, m-f SAND, some c-f gravel.						
15														
	S-4	1.2	33 27 23 40					Same. Very dense.						
20														
	S-5	0.5	5 21 29 31					Same.						
														Rig chatter 22 to 25 ft.
25														
	S-6	0.1	9 25 30 30					Same. Piece of coarse gravel stuck in tip.						
30														

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-7

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	1.0	19 23 24 28					(SP) Very dense, brown, m-f SAND.					
35	S-8	0.8	24 22 19 10					Same.					
40	S-9	1.5	19 19 21 24					Same.					
45								Bottom of boring at 42 ft below ground surface.					
50													
55													
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-8

Sheet 1 of 2


Date(s) Drilled	5/7/03 - 5/8/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)	19.0
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:
Casing Size/Type	4"	Drill Rig Operator	N. DelRe	Total Depth Drilled (feet)	52.0
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Rock Depth (feet)	n/a
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Sampler Type(s)	2" OD Split Spoon
Boring Location and Comments	See plan	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
				No. of Samples	Dist.: 11 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Asphalt.					
S-1	0.2		100/3					(SP) Brown m-f SAND, very dense, some cinders trace concrete. [fill]					
S-2	0.3		4 2 2 2					(GP) Very loose, c-f GRAVEL. [fill]					
S-3	1.0		8 10 17 17					(SP) Brown, medium dense, m-f SAND.					
S-4	2.0		19 25 30 32					(SP) Orange-brown and gray, very dense, m-f SAND, some c-f gravel.					
S-5	1.8		67 28 77 28					(SP) Brown, very dense, m-f SAND, some c-f gravel.					
S-6	1.5		21 37 32 45					Same					22 ft: Rig chattering from 22 to 25 ft
													27 ft: Rig chattering from 27 to 28 ft

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-8

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	0.3	29 100/3					(GP) Brown, very dense, m-f sandy c-f GRAVEL.					30 ft: Casing was placed to 30 ft, but broken at tip, moved forward and redrill to 35 ft and continue.
35	S-8	1.0	43 24 33 34					(SP) Brown, very dense, m-f SAND.					Stop for the day. Resume 5/8/03
40	S-9	0.2	36 41 37 38					Same					40 ft: water pump blocked up.
45	S-10	0.8	36 29 47 47					(SP) Brown, very dense, m-f SAND, trace f. gravel.					
50	S-11	0.8	45 33 36 37					(SP) Brown, very dense, c-m SAND.					
55								Bottom of Boring at 52 ft. below ground surface.					
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-10

Sheet 1 of 2

Date(s) Drilled	5/21/03 - 5/22/03	Logged By	K. Chowdhury		Approximate Surface Elevation (feet)		19.0	
Drilling Method	Mud Rotary	Drilling Contractor	CMI		Coordinates		North: East:	
Casing Size/Type	4"	Drill Rig Operator	F. Navarro		Total Depth Drilled (feet)	52.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone		Sampler Type(s)		2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D		Core Barrel Size/Type	n/a
Boring Location and Comments		See plan			No. of Samples		Dist.: 11 Undist.: 0 Core (ft): 0	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete Slab					
	S-1	0.5	10 6 4 4					(SM)- Loose, brown to dark gray, silty m-f SAND, some f. gravel. [fill]					
5	S-2	0.7	5 7 5 10					(SP)- medium dense, dark gray, f. gravelly m-f SAND, trace silt. [fill]					
													casing driving difficult from 7-10 ft
10	S-3	1.5	16 20 18 16					(SP)- Dense, light gray, m-f SAND, trace silt.					
15	S-4	1.2	22 30 33 44					(SM)- Very Dense, dark gray/black, silty m-f SAND. (odor of motor oil)					casing to 15 ft
													16 ft: dark color of S-4 is apparently due to oil.
20	S-5	1.2	13 13 15 19					(SM)- Medium Dense, light gray, m-f SAND, trace silt, c. sand.					17 ft: Cuttings became cleaner
25	S-6	1.2	23 15 18 24					(SM-ML)- Dense, Brown silty f. SAND, some f. gravel. (silt is cohesive)					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-10

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	0.0	18 13 15 31					No recovery					End of work. Resume 5/22/03
													32ft: Rig chatter, probable gravel zone.
35	S-8	1.3	23 20 34 26					(SP)- Very dense, brown, c-f SAND, some c-f gravel, trace silt.					
													37 ft: Roller bit clogged
40	S-9	1.0	22 22 30 30					(SP)- Very Dense, brown, c-f SAND, trace f. gravel, silt.					
45	S-10	0.8	21 31 34 32					(SP)- Very dense, brown c-f SAND, trace f. gravel, silt.					
50	S-11	0.8	21 21 24					same as above					
								Bottom of boring at 52 ft. below ground surface.					
55													
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-11

Sheet 1 of 3

Date(s) Drilled	4/15/03 - 5/5/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)		19.50	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates		North: East:	
Casing Size/Type	4"	Drill Rig Operator	M. McErlean	Total Depth Drilled (feet)	77.0	Rock Depth (feet)	n/a
Drill Rig Type	CME 75	Drill Bit Size/Type	3 7/8" Tricone		Sampler Type(s)	2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments	See plan			No. of Samples		Dist.: 16 Undist.: 0 Core (ft): 0	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Asphalt.					
	S-1	1.0	35 15 11 13					(SP) Medium dense, brown, m-f. SAND, some brick. [fill]					
5	S-2	0.4	3 4 4 5					Brick fragments. [fill]					Unable to drive casing. Offset 2 ft. north and continued.
10	S-3	0.2	8 12 15 17					(SP) Medium dense, brown, c-m. SAND, some brick. [fill]					Casing placed to 10 ft.
15	S-4	1.0	6 6 6 7					(SM) Medium dense, brown, f. SAND, some silt.					
20	S-5	1.5	10 15 55 32					(SM) Very dense, brown m-f. SAND, some silt, some c-f. gravel.					Rig chatter 25 to 28 ft.
25	S-6	1.8	12 13 21 25					Same.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-11


Sheet 2 of 3

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	0.8	21 28 22 20					(SP) Very dense, brown, m. SAND, some c-f. gravel.					Stop for the day. Resume 4/16/03 Hole was not staying open, placed more casing to 20 ft. Placed casing, flush, and stop for the day. Resume work 5/2/03. Moved Boring Hole 5 ft south, redrill to 35 ft and continue sampling.
35	S-8	1.0	20 13 16 18					(SP) Brown, medium dense, m-f SAND.					
40	S-9	0.8	14 16 19 20					Same					
45	S-10	1.5	8 11 16 16					Same					Stop for the day. Resume work 5/5/03
50	S-11	1.2	15 19 22 23					Same					
55	S-12	1.2	17 25 26 25					(SP) Brown, very dense, c-m SAND, some f. gravel.					
60	S-13	1.0	27 28 37 42					(SP) Brown, very dense, m-f SAND, trace c. sand.					
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-11

Sheet 3 of 3

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
65	S-14	1.0	25 29 40 36					Same					
70	S-15	0.8	20 33 50 54					Same					
75	S-16	1.0	14 31 50 61					(SP) Brown, very dense, m-f SAND.					
80								Bottom of boring at 77 ft. below ground surface.					
85													
90													
95													
100													

Project: One Park Place
Project Location: Brooklyn, New York
Project Number: 19684440

Log of Boring B-12

Sheet 1 of 2


Date(s) Drilled	5/5/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)		19.50	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:		
Casing Size/Type	4"	Drill Rig Operator	N. DelRe	Total Depth Drilled (feet)	52.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Sampler Type(s)	2" OD Split Spoon		
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments	See plan			No. of Samples	Dist.: 11	Undist.: 0	Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	0.6	14 9 9 10					(SP) Dark brown, medium dense, m-f SAND, some concrete, brick. [fill]					
5													
	S-2	0.4	4 4 5 4					Same					
10													
	S-3	1.2	4 6 6 7					(SM) Brown, medium dense, silty f. SAND.					
15													
	S-4	1.8	21 30 43 30					(SP) Reddish-brown, very dense, m-f SAND, some c-f gravel.					Rig chatter from 14 to 15 ft.
20													
	S-5	1.0	22 31 35 31					Same					
25													
	S-6	0.8	22 17 24 21					(SP) Brown, dense, c-m SAND, trace c-f gravel, f. sand.					Rig chatter from 22 to 25 ft
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-12

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	0.0	30 38 28 22					No recovery					Stop for the day. Resume 5/6/03
35	S-8	0.8	24 18 18 20					(SP) Brown, dense, m-f SAND, trace c. gravel.					
40	S-9	1.2	16 16 22 19					(SP) Brown, dense, m-f SAND, trace f. gravel.					
45	S-10	1.0	17 16 25 27					(SP) Brown, dense, m-f SAND.					
50	S-11	0.8	17 19 26 48					Same					
55								Bottom of boring at 52 ft below ground surface.					
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-14

Sheet 1 of 2

Date(s) Drilled	5/23/03 - 5/27/03	Logged By	K. Chowdhury	Approximate Surface Elevation (feet)	19.0	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:	
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	52.0	Rock Depth (feet) n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Sampler Type(s)	2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type n/a
Boring Location and Comments	See plan			No. of Samples	Dist.: 11	Undist.: 0
					Core (ft): 0	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete slab					
								Boulder (probably)					No casing placed
	S-1	1.0	10 14 15 19					(SM)- Medium dense, brown, silty m-f SAND.					
5	S-2	1.2	15 19 22 26					(SM)- Dense, brown silty f. SAND, trace f. gravel.					
10	S-3	1.2	9 15 19 23					(SM)- Medium dense, brown, silty c-f SAND, trace silt.					
15	S-4	1.2	13 16 16 17					(SM)- Dense, black, silty m-f SAND. (Strong odor of motor oil)					
20	S-5	2.0	12 19 23 22					(SP)-Dense, brown, c-f SAND, trace silt.					
25	S-6	1.7	11 7 11 14					(SP)- Medium dense, tannish brown, m-f SAND, trace silt, c. sand.					End of day. Resume 5/27/03
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-14

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)		REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)						% Fines	
30	S-7	1.0	12 16 15 15					(SP)- Dense, tannish brown, m-f SAND, trace silt, c. sand.					
35	S-8	0.3	10 16 20 24					(SM)- Dense, tannish brown m-f SAND, some silt, trace m. gravel.					
													38 ft: Rig chatter a little.
40	S-9	2.0	10 18 30 23					(SP)- Dense, tannish brown to brown c-f SAND.					40 -50 ft: Used 15/16" roller bit
45	S-10	1.5	12 13 15 17					(SP)-Medium Dense brown, c-f SAND.					
													47 ft: Lost some water
50	S-11	1.5	13 15 15 17					(SP) Medium dense, brown m-f SAND.					
								Bottom of boring at 52 ft. below ground surface.					
55													
60													
65													

Project: One Park Place
Project Location: Brooklyn, New York
Project Number: 19684440

Log of Boring B-15

Sheet 1 of 3


Date(s) Drilled	5/27/03 - 5/28/03	Logged By	K. Chowdhury		Approximate Surface Elevation (feet)		19.0	
Drilling Method	Mud Rotary	Drilling Contractor	CMI		Coordinates		North: East:	
Casing Size/Type	4"	Drill Rig Operator	F. Navarro		Total Depth Drilled (feet)	77.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone		Sampler Type(s)		2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type		n/a
Boring Location and Comments		See plan			No. of Samples		Dist.: 16 Undist.: 0 Core (ft): 0	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete Slab					
								Boulder (probably)					cuttings smell very strong chemical, rig chattering.
	S-1	0.7	22 27 13 7					Dark decomposed WOOD					
	S-2	0.1	60/2"					WOOD and a piece of BOULDER					4 ft: from 4-7 ft rig chattering a lot.
5				R-1	0			BOULDER					Placed casing to 5 ft
													Cored from 5-7 ft, very slow penetration, smells very strong chemical, lost water
10	S-3	1.0	13 13 13 13					(SP)- Medium dense, brown, moist, f. SAND, trace m. sand. (strong chemical odor)					
15	S-4	2.0	12 16 18 22					(SP)- Dense, yellowish brown, saturated, f. SAND, trace silt, m. sand. (Very strong chemical odor)					
20	S-5	1.0	10 8 9 9					(SP)- Medium dense, brown, saturated, m-f SAND, trace silt. (very strong chemical odor)					
													22 ft: Very strong chemical odor
25	S-6	1.5	8 8 9 12					same as above					
30													

Project: One Park Place
Project Location: Brooklyn, New York
Project Number: 19684440

Log of Boring B-15

Sheet 2 of 3

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	1.3	11 12 12 16					(SM)- Medium dense, light brown, very stiff, silty c-f SAND.					
35	S-8	1.0	12 13 14 22					(SP)- Medium dense, tannish brown c-f SAND, trace silt, f. gravel.					
40	S-9	2.0	25 32 25 29					(SP)- Dense, brown m-f SAND.					
45	S-10	1.6	22 27 23 32					(SP)-Dense, brown m-f SAND, some c. sand.					
50	S-11	1.0	20 17 25 30					same as above					
55	S-12	0.7	14 20 22 28					(SP)- Dense, brown c-f SAND, trace m-f gravel.					
60	S-13	0.7	18 19 20 21					same as above					
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-15

Sheet 3 of 3

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
65	S-14	0.5	19 16 16 27					(SP)- Dense, brown m-f SAND, trace c. sand.					
70	S-15	0.5	21 27 30 37					same as above					
75	S-16	0.6	24 22 30 34					same as above					
80								Bottom of Boring at 77 ft below ground surface.					
85													
90													
95													
100													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-16

Sheet 1 of 4

Date(s) Drilled	4/15/03 - 4/16/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)	20.50
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	102.0
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Rock Depth (feet)	n/a
Groundwater Level and Date Measured	23 5/28/2003	Hammer Wt/Drop	140lb - 30in D	Sampler Type(s)	2" OD Split Spoon
Boring Location and Comments	See plan	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
				No. of Samples	Dist.: 21 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Asphalt followed by concrete.					
	S-1	0.6	8 4 5 5					(SW) Loose, brown, c-f. SAND, some white floor absorbant. [fill]					
5	S-2	0.6	6 4 6 4					(SP) Loose, black-brown, m-f. SAND, some brick, tr. white floor absorbant. [fill]					4/16/3, GW reading at 19 ft.
													5/1/3, GW reading at 18 ft.
10	S-3	1.2	7 9 10 11					(SP) Medium dense, brown, m- f. SAND.					5/6/3, GW reading at 18 ft.
													5/28/3, GW reading at 15 ft.
15	S-4	1.2	10 14 14 12					(SP) Medium dense, brown, m-f. SAND, some silt in the tip.					casing to 15 ft.
20	S-5	1.0	7 10 12 15					(SP) Medium dense, brown, m-f. SAND.					
25	S-6	1.2	13 12 16 20					Same.					
30													

Project: One Park Place

Project Location: Brooklyn, New York

Project Number: 19684440

Log of Boring B-16

Sheet 2 of 4

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	1.5	9 16 18 24					(SM) Dense, brown, f. SAND, some silt, tr. f. gravel.					
35	S-8	2.0	11 12 23 28					(SP) Dense, brown, f. SAND, some silt, tr. f. gravel, some cemented red f. sand in the tip.					Rig chatter to 38 ft.
40	S-9	1.0	27 21 25 22					(SP) Dense, brown, m. SAND, tr. f. sand, tr. f. gravel.					
45	S-10	1.0	19 29 33 29					(SP) Very dense, brown, m-f. SAND, tr. f. gravel.					
50	S-11	0.8	15 21 24 22					(SP) Dense, brown, c-m. SAND, tr. f. gravel.					
55	S-12	1.0	12 18 33 35					(SP) Very dense, brown, m. SAND.					
60	S-13	0.6	16 21 32 34					(SP) Very dense, brown, m-f. SAND.					
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-16


Sheet 3 of 4

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
65	S-14	1.0	21 29 35 35					(SP) Very dense, brown, m. SAND, tr. f. gravel.					
70	S-15	0.8	26 23 37 42					(SP) Very dense, brown, m. SAND, tr. c. gravel.					
75	S-16	0.8	22 37 50 100/1"					(SP) Very dense, brown, m-f. SAND, tr. f. gravel.					
80	S-17	1.0	23 42 55 63					(SM) Very dense, brown, silty, f. SAND.					Stop for the day. Resume 4/16/03
85	S-18	0.5	39 100/5"					Same.					
90	S-19	1.0	29 50 50 100/1"					(SM) Very dense, grey, m-f. SAND, some silt.					
95	S-20	0.8	27 37 54 100/1"					(SP) Very dense, grey, c-f. SAND.					
100													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-16

Sheet 4 of 4

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)		REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)					% Fines		
	S-21	1.0	18 23 25 26					(SC) Dense, white, clayey, m-f. SAND, tr. silt.					
105								Bottom of boring at 102 ft. below ground surface.					Installed 25 ft. GW monitoring well. GW reading 19 ft.
110													
115													
120													
125													
130													
135													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-18

Sheet 1 of 3

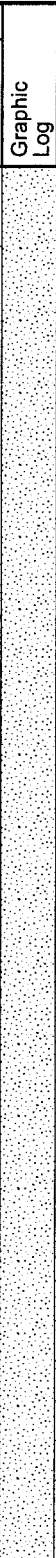
Date(s) Drilled	5/1/03	Logged By	K. O'Hara		Approximate Surface Elevation (feet)		21.50	
Drilling Method	Mud Rotary	Drilling Contractor	CMI		Coordinates		North: East:	
Casing Size/Type	4"	Drill Rig Operator	N. DelRe		Total Depth Drilled (feet)	77.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone		Sampler Type(s)		2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type		n/a
Boring Location and Comments		See plan			No. of Samples		Dist.: 16 Undist.: 0 Core (ft): 0	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	1.5	17 14 18 25					(SP) Brown, dense, m-f SAND, trace concrete, brick. [fill]					
5													
	S-2	1.0	8 9 10 9					(SP) Brown, medium dense, m-f SAND.					
10													
	S-3	1.2	9 9 12 14					(SM)- Brown, medium dense, m-f SAND, some silt.					
15													
	S-4	1.0	15 17 25 25					(SP) Brown, dense, m-f SAND.					
20													
	S-5	1.2	13 15 19 22					Same					
25													
	S-6	0.0	100/3					No recovery					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-18


Sheet 2 of 3

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	1.0	19 65 100/3					(SP) Brown, very dense, m-f SAND, some c-f gravel. [till]					Rig chatter from 29 to 34 ft.
35	S-8	0.5	43 100/5					(SP) Orange brown c-m SAND, trace c-f gravel.					
40	S-9	1.0	21 27 36 36					(SP) Brown, very dense, c-m SAND.					Rig chatter from 38 to 40 ft.
45	S-10	0.8	14 25 27 32					(SP) Brown, dense, m-f SAND.					
50	S-11	1.0	19 22 31 31					Same					
55	S-12	1.2	25 32 38 44					Same					
60	S-13	1.0	23 28 36 38					Same					Stop for the day. Resume 5/2/03
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-18

Sheet 3 of 3

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
65	S-14	0.4	35 32 29 27					(SP) Brown, very dense, m-f SAND, trace f. gravel.					
70	S-15	1.0	20 23 27 28					(SP) Brown, dense, m-f SAND.					
75	S-16	0.8	23 28 32 38					same					
80								Bottom of boring at 77 ft below ground surface.					
85													
90													
95													
100													

Project: One Park Place
Project Location: Brooklyn, New York
Project Number: 19684440

Log of Boring B-19

Sheet 1 of 2

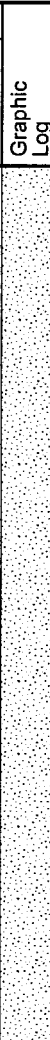
Date(s) Drilled	4/14/03 - 4/15/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)		19.50	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates		North: East:	
Casing Size/Type	4"	Drill Rig Operator	M. McErlan	Total Depth Drilled (feet)	52.0	Rock Depth (feet)	n/a
Drill Rig Type	CME 75	Drill Bit Size/Type	3 7/8" Tricone	Sampler Type(s)		2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140 lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments	See plan			No. of Samples		Dist.: 11 Undist.: 0 Core (ft): 0	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Asphalt.					
	S-1	1.0	3 10 14 16					(SP) Medium dense, brown, m-f. SAND, some c-f. gravel, tr. silt.					
5	S-2	0.8	14 16 50 100/3"					(SP) Very dense, brown, m-f. SAND, some c-f. gravel, tr. silt.					
													Stop for the day. Resume 4/15/03.
10	S-3	1.0	4 3 3 4					(SP) Loose, brown, m. SAND, tr. f. sand.					Casing to 10 ft.
15	S-4	0.8	10 20 17 22					(SP) Dense, brown, m-f. SAND, some c-f. gravel, tr. silt.					
20	S-5	1.2	10 12 33 35					(SM) Very Dense, brown m-f. SAND, some silt, some c-f. gravel.					
25	S-6	1.2	17 19 19 21					Same.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-19

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	1.0	12 22 21 15					(SP) Dense, brown, m-f. SAND, tr. c-f gravel.					
35	S-8	1.2	12 15 12 12					Same.					
40	S-9	1.2	10 13 15 13					(SP) Medium dense, brown, m-f. SAND, tr. c. sand.					
45	S-10	1.4	12 21 18 20					(SW) Dense, brown, c-f. SAND.					
50	S-11	1.0	12 18 20 18					Same.					
55								Bottom of boring at 52 ft. below ground surface.					
60													
65													

Project: One Park Place
Project Location: Brooklyn, New York
Project Number: 19684440

Log of Boring B-20

Sheet 1 of 2


Date(s) Drilled	4/16/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)		21.80	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates		North: East:	
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	52.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone		Sampler Type(s)	2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments		See plan			No. of Samples		
					Dist.: 11		Undist.: 0
							Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Asphalt					
	S-1	0.8	50 37 31 39					(SP) Very dense, reddish-brown m-f. SAND, some f-c. gravel, tr. cinders. [fill]					
5	S-2	1.0	7 13 15 18					(SM) Medium dense, brown, silty, m-f. SAND, some f-c. gravel.					
													Rig chatter 8 to 10 ft.
10	S-3	1.8	14 21 19 19					(SM) Dense, brown, silty, f. SAND, tr. c-f gravel.					
15	S-4	1.5	10 5 7 14					(SM) Loose, brown, silty, f. SAND.					
20	S-5	1.0	46 28 34 18					(SM) Very dense, brown, m-f. SAND, some f-c. gravel, some silt.					
													Probable boulder appx. 14".
25	S-6	0.0	100/1"					No recovery.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-20

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	0.8	50 52 41 45					(SP) Very dense, reddish-brown, m-f. SAND, some c-f. gravel, tr. brown c. sand.					
35	S-8	1.2	35 53 52 55					(SP) Very dense, brown, m-f. SAND.					
40	S-9	0.8	51 28 30 36					Same.					
45	S-10	0.8	23 29 35 35					Same.					
50	S-11	1.0	21 33 36 36					Same.					
55								Bottom of boring at 52 ft. below ground surface.					
60													
65													

Project: One Park Place

Project Location: Brooklyn, New York

Project Number: 19684440

Log of Boring B-21

Sheet 1 of 2


Date(s) Drilled	5/23/03	Logged By	K. Chowdhury	Approximate Surface Elevation (feet)		19.0	
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates		North:	
				East:			
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	42.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Sampler Type(s)		2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments		See plan		No. of Samples			
				Dist.: 9		Undist.:	Core (ft):

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	1.0	3 10 15 16					(SM) Gray to yellow brown, medium dense, silty f. SAND, little f. gravel.					
5	S-2	1.5	20 37 23 54					(SM) Blue-green to brown, very dense, silty m-f SAND.					S-2: Blue-green color does not appear natural
													No casing was installed
10	S-3	1.5	12 20 26 32					(SM) Light gray to brown, dense, silty m-f SAND.					
15	S-4	1.5	15 24 26 28					(SM) Brown, very dense, silty m-f SAND, little f. gravel.					
20	S-5	0.0	39 50 72 50/1"					No recovery					
25	S-6	1.5	25 30 23 32					(SM) Brown, very dense, silty m-f SAND, little c-f gravel.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-21

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	1.5	30 40 32 32					(SP) Brown, very dense, c-f SAND, little c-f gravel, trace silt.					
35	S-8	1.0	21 28 28 32					(SP) Brown, very dense, m-f SAND, trace f. gravel, silt.					
40	S-9	1.2	21 22 23 31					(SP) Brown, dense, c-f SAND, trace f. gravel, silt.					
45								Bottom of boring at 42 ft. below ground surface.					
50													
55													
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-22

Sheet 1 of 1

Date(s) Drilled	5/22/03	Logged By	K. Chowdhury		Approximate Surface Elevation (feet)		19.0	
Drilling Method	Mud Rotary	Drilling Contractor	CMI		Coordinates		North: East:	
Casing Size/Type	4"	Drill Rig Operator	F. Navarro		Total Depth Drilled (feet)	27.0	Rock Depth (feet)	n/a
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone		Sampler Type(s)		2" OD Split Spoon	
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Casing Hammer Wt/Drop	300lb - 24in D		Core Barrel Size/Type	n/a
Boring Location and Comments		See plan			No. of Samples		Dist.: 6 Undist.: 0 Core (ft): 0	





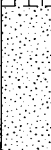

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete slab (approx. 1.5 ft)					
	S-1	0.8	10 5 6 6					(SM) Reddish- brown, medium dense, silty f. SAND, trace f. gravel.					
5													
	S-2	1.5	4 7 12 20					(ML) Orange-brown, very stiff, SILT, trace f. sand, clay.					
10													
	S-3	1.5	39 33 20 18					(ML) Light gray, hard, f. sandy SILT, trace clay. (thin laminations are present)					
15													
	S-4	1.0	43 100/3"					(SM) Brown, very dense, silty f. SAND, some c-f gravel.					
20													
	S-5	1.8	22 77 38 34					(SM) Brown, very dense, silty f. SAND, trace to little f. gravel.					
25													
	S-6	0.0	50/0"					No recovery					One Boulder from 24.5 to 26.5 ft. and another at 27 ft. where roller bit was lost w/ adaptor.
								Bottom of boring at 27 ft. below ground surface.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-23

Sheet 1 of 2


Date(s) Drilled	4/30/03 - 5/1/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)	23.0
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:
Casing Size/Type	4"	Drill Rig Operator	N. DelRe	Total Depth Drilled (feet)	52.0
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Rock Depth (feet)	n/a
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Sampler Type(s)	2" OD Split Spoon
Boring Location and Comments	See plan	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
				No. of Samples	Dist.: 11 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0													
	S-1	1.5	18 23 12 11					(SP) Brown, dense, m-f SAND, some brick, concrete. [fill]					
5	S-2	1.0	9 6 8 8					(SP) Brown, medium dense, m-f SAND.					
10	S-3	1.2	9 9 13 13					Same					
15	S-4	2.0	10 11 18 19					(ML) Brown, very stiff, SILT, slight plasticity, trace m-f sand.					Rig chattering at 13 ft. Casing placed to 15 ft.
20	S-5	1.5	24 31 25 21					(SP) Brown, very dense, m-f SAND, some f. gravel, trace silt.					20 ft: Till
25	S-6	1.2	25 31 38 42					Same					Stop for the day. Resume 5/1/03
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-23

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-7	0.0	100/3					No recovery					30 ft. Spoon bouncing, probably a Boulder
35	S-8	1.0	24 28 41 48					(SP) Brown, very dense, m-f SAND, trace c-f gravel.					
40	S-9	1.2	20 34 45 65					(SP) Brown, very dense, m-f SAND.					
45	S-10	1.0	25 37 51 52					Same					
50	S-11	1.0	22 29 40 44					Same					
55								Bottom of Boring at 52 ft. below ground surface.					
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-24

Sheet 1 of 2


Date(s) Drilled	5/8/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)	26.0
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	52.0
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Rock Depth (feet)	n/a
Groundwater Level and Date Measured	23 5/28/03	Hammer Wt/Drop	140lb - 30in D	Sampler Type(s)	2" OD Split Spoon
Boring Location and Comments	See plan	Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
				No. of Samples	Dist.: 12 Undist.: 0 Core (ft): 0

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete sidewalk					
	S-1	0.5	4 4 3 3					(SP) Brown m-f SAND, loose, some f. gravel, concrete. [fill]					
	S-2	0.5	2 2 2 3					Same					
5	S-3	0.8	2 2 3 18					(SP) Light brown, loose, m-f SAND.					5/8/3, GW reading 25 ft.
													5/9/3, GW reading 25 ft.
10	S-4	1.8	9 13 12 11					(SP) Orange-light brown, medium dense, m-f SAND.					5/28/03, 6:00 am, GW reading at 23 ft.
15	S-5	1.8	9 15 16 23					(SM) Brown, dense, m-f SAND, some silt.					
20	S-6	0.8	120 100/5					(SP) Brown, very dense, m-f SAND, some c-f gravel.					
25	S-7	0.5	44 67 61 80					(SP) Brown, very dense, m-f SAND, some c-f gravel.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-24

Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-8	1.8	28 25 26 25					(SP) Brown, dense, m-f SAND.					
35	S-9	1.2	21 28 59 30					Same					
40	S-10	1.5	17 23 25 29					(SP) Brown, dense, m-f SAND, trace c. sand.					
45	S-11	1.5	20 29 28 26					Same					
50	s-12	0.1	38 37 49 43					Piece of GRAVEL in tip of the spoon.					
55								Bottom of boring at 52 ft. below ground surface.					Installed 30 ft GW Monitoring Well. GW reading approx. 25 ft.
60													
65													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-25

Sheet 1 of 2


Date(s) Drilled	5/8/03	Logged By	K. O'Hara	Approximate Surface Elevation (feet)	26.0
Drilling Method	Mud Rotary	Drilling Contractor	CMI	Coordinates	North: East:
Casing Size/Type	4"	Drill Rig Operator	F. Navarro	Total Depth Drilled (feet)	52.0
Drill Rig Type	Mobile B-56	Drill Bit Size/Type	3 7/8" Tricone	Rock Depth (feet)	n/a
Groundwater Level and Date Measured		Hammer Wt/Drop	140lb - 30in D	Sampler Type(s)	2" OD Split Spoon
		Casing Hammer Wt/Drop	300lb - 24in D	Core Barrel Size/Type	n/a
Boring Location and Comments	See plan			No. of Samples	
				Dist.: 12	Undist.: 0
				Core (ft): 0	

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type, Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
0								Concrete sidewalk					
	S-1	1.0	4 5 6 12					(SP) Brown, medium dense, m-f SAND, trace brick and concrete. [fill]					
	S-2	0.8	15 6 5 5					(SP) Brown, medium dense, m-f SAND.					
5	S-3	1.2	6 5 12 10					Same					
10	S-4	1.0	8 15 12 14					Same					
15	S-5	1.0	10 14 15 14					Same					
20	S-6	1.8	11 16 16 20					(ML) Brown, hard, SILT					
25	S-7	2.0	25 35 38 38					(SP) Brown, very dense, m-f SAND.					
30													

Project: One Park Place
 Project Location: Brooklyn, New York
 Project Number: 19684440

Log of Boring B-25

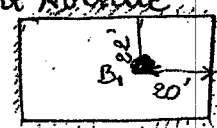
Sheet 2 of 2

Depth, feet	Soil Samples			Rock Coring			Graphic Log	MATERIAL DESCRIPTION	Liquid Limit	Plastic Limit	Water Cont. (%)	% Fines	REMARKS/ OTHER TESTS
	Type Number	Recov. (ft)	Pen. Resist. (blows/6 in)	Run Number	Recov. (%)	RQD (%)							
30	S-8	2.0	27 22 35 45					(SP) Brown, very dense, m-f SAND, some f. gravel.					
35	S-9	0.8	29 92 100/1					Same					
40	S-10	1.8	24 33 30 31					(SP) Brown, very dense, m-f SAND, trace f. gravel.					
45	S-11	2.0	26 34 35 47					(SP) Brown, very dense, m-f SAND.					
50	s-12	1.8	40 52 52 54					Same					
55								Bottom of boring at 52 ft. below ground surface.					
60													
65													

Rig chatter probable
 Boulder from 38 to 39
 ft.

PROJECT 11 BROADWAY				PROJECT NO. 5764100			
LOCATION 11 Broadway Brooklyn NY				ELEVATION AND DATUM 9.14 (BPRD)			
DRILLING AGENCY CRAIG TEST BORING				DATE STARTED 12/14/06		DATE FINISHED 12/15/06	
DRILLING EQUIPMENT Truck Mounted Rig				COMPLETION DEPTH 100 feet		ROCK DEPTH	
SIZE AND TYPE OF BIT 3 7/8" Tricone Roller Bit				NO. SAMPLES 24		DIST. UNDIST. CORE	
CASING 4" Steel Casing				WATER LEVEL FIRST 6' 2"		COMPL 6' 3" 24 HR.	
CASING HAMMER Auto WEIGHT 140 Lbs DROP 30 in				FOREMAN Caesar			
SAMPLER 2" OD Split Spoon				INSPECTOR ABRAHAMANE COULIBALY			
SAMPLER HAMMER Safety WEIGHT 140 Lbs DROP 30 in							

NYC BC	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	RECOVER. FT.	PENETR. RESIST. BL/8 IN.	
1-65	Sand	Med dense Red-black mF Sand, some Fill, little gravel, Trace of silt moist [SP], fill	1	S1	SS	15"	9	S1 Kent Avenue
			2	S2	SS	15"	10	S2
			3	S3	SS	15"	14	S3
6-65	Sand + Gravel	Med dense Black F-C Sand Little F-C gravel, Trace silt, moist [SP], Trace fill	4	S4	SS	13"	6	S4
			5	S5	SS	6"	5	S5
			6	S6	SS	6"	5	S6
7-65	Sand	Loose gray F-C Gravel, some F-C Sand, Trace silt, moist [GP], [SP]	7	S7	SS	13"	4	S7
			8	S8	SS	13"	2	S8
			9	S9	SS	15"	10	S9
			10	S10	SS	15"	7	S10
			11	S11	SS	15"	11	S11
			12	S12	SS	15"	8	S12
Took almost an hour to drill from 12'-14' because of presence of a rock.								



JOB NO. 5764 100

DATE 12/14/06

LOG OF BORING NO. B1(OW)

SHEET 2 OF 6

NO. C&S	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST BL/6 IN.	
		Med dense Brown m.F Sand Trace of silt moist [SP]	15				6	Take S9
			16	S9	SS	15"	9	
			17				11	
			18				10	drill to 20'
			19					
		Very dense Brown m-F Sand Trace Gravel, Trace silt Wet [SP]	20				5	Take S9
			21	S8	SS	15"	25	
			22				62	
			23				15	Drill to 25'
			24					
		Med dense Brown F-C Sand little gravel m.F, Trace silt Wet [SP]	25				12	Take S9
			26	S9	SS	15"	15	
			27				10	
			28				13	Drill to 30'
			29					
		Med dense Brown F-C Sand Trace gravel, Wet [SP]	30				11	Take S10
			31	S10	SS	15"	9	
							11	
							15	

7-65

Sand

JOB NO. 5764100

DATE 12/14/06

LOG OF BORING NO. B-1(OW)

SHEET 3 OF 6

NYCB	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOG.	TYPE	RECOVER. FT.	PENETR. RESIST. BLU IN.	
			32					Drill to 35'
			33					
			34					
		Med dense Brown FC Sand Little gravel, wet [SP]	35				10	Take S11
			36	S11	SS	14"	12	
			37				10	Drill to 40'
			38					
			39					
		Med dense Brown FC Sand Little gravel wet [SP]	40				10	Take S12
			41	S12	SS	15"	10	
			42				12	Drill To 45'
			43					
			44					
		Med dense Brown gray FC Sand, Trace gravel wet [SP]	45				7	Take S13
			46	S13	SS	15"	8	
			47				9	Drill to 50'
			48					
			49					

7-65

Sand

JOB NO. 5764100

DATE 12/14/06

LOG OF BORING NO. B-1(OW)

SHEET 4 OF 6

MYCOC	SYMBOLS	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOG.	TYPE	RECOVER, FT.	PENETR. RESIST. BLU IN.	
		Dense Brown-gray F-C Sand Trace gravel Wet [SP]	50					
			51	514	SS	15"	17	Take S14
			52				21	
			53				20	
			54				21	Drill to 55'
			55					
		Dense Brown-gray m-F Sand Trace gravel, Wet [SP]	56	515	SS	15"	13	Take S15
			57				16	
			58				17	
			59				14	Drill to 60'
			60					
		Med Dense Brown gray FC Sand little m-F gravel Wet [SP]	61	516	SS		14	Take S16
			62				14	
			63				16	
			64				15	Drill to 65'
			65					
		Dense Brown-gray FC Sand Little m-F gravel; Wet [SP]	66	517	SS		15	Take S17
			67				16	
							20	
							16	Drill 70'

7-65
Sand

JOB NO. 5764100

DATE 12/14/06 - 12/15/06

LOG OF BORING NO. B-1 (CON)

SHEET 5 OF 6

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	REC'D. FT.	PENETR. RESIST. BL'G IN.	
Dense Brown Gray F-C Sand, little gravel wet [SP.]	68					
	69					
	70					Take S 18
	71	S 19	SS	14"	16	
	72				18	Drill to 75'
	73					
	74					
	75					Take S 19
Dense Brown - gray m-F Sand Trace gravel wet [SP.]	76	S 19	SS	5"	16	
	77				20	Drill to 80'
	78					
	79					
Med dense Brown Gray m-F Sand, Trace gravel wet [SP.]	80					Take S 20
	81	S 20	SS	15"	16	
	82				20	Drill to 85
	83					
Dense Brown - gray FC Sand Trace gravel, wet [SP.]	84					
	85					Take S 21
		S 21	SS	15"	16	
					17	

1-65 Sand

JOB NO. 5764100

DATE 12/15/06

LOG OF BORING NO. B-1(COW)

SHEET 6 OF 8

NYCB	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	RECOVER. FT.	PENETR. RESIST BLU IN.	
			86					
			87					Drill to 90'
			88					
			89					
			90					Take S22
		Med dense gray, Clay, Trace of sand, Moist [CL]	91	S22	SS	14	6	
			92			7		Drill to 95
			93				12	
			94					
			95					Take S23
		Med dense gray, Clay, Trace of sand, Moist [CL]	96	S23	SS	8	8	
			97			9		Drill to 100'
			98				19	
			99					
			100					Take S24
		Dense gray, Clay, Trace sand, Moist [CL]	101	S24	SS	12	15	
			102			21		
			103				31	
								Boring completed @ 10.00AM on 12/15/06

9-65
Clay + Clay soils

PROJECT 11 BROADWAY		PROJECT NO. 5764100	
LOCATION 11 Broadway Brooklyn NY		ELEVATION AND DATUM 23.14 (BPPD)	
DRILLING AGENCY CRAIG Test BORING		DATE STARTED 12/15/06	DATE FINISHED 12/18/06
DRILLING EQUIPMENT Truck Mounted Rig		COMPLETION DEPTH 60 feet	ROCK DEPTH
SIZE AND TYPE OF BIT 3 7/8" TriCone Roller Bit		NO. SAMPLES 16	DIST.
CASING 4" Steel Casing		WATER LEVEL	FIRST
CASING HAMMER Auto	WEIGHT 140 lbs	DROP 30 in	COMPL.
SAMPLER 2" OD Split Spoon		FOREMAN Cesar	
SAMPLER HAMMER Auto		INSPECTOR ABDRAHMANE COULIBALY	
		WEIGHT 140 lbs	
		DROP 30 in	

NYC SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOC.	TYPE	RECOVER. FT.	PENETR. RESIST. BLG IN.	
Sand 1-65	Med/dense Black to gray Sand F-C 1/4" Gravel & c. Fill Moist Trace silt [SP]	1	S1	SS	14	10	
		2			7	12	
	Loose gray - brown m.F. Sand little gravel, Trace silt, fill moist [SP]	3	S2	SS	4	3	
		4			3	6	
	Loose - No Recovery	5	S3	SS	4	5	
		6			4	13	
	Med - dense Brown m.F. Sand Trace gravel, Trace silt moist [SP]	7	S4	SS	8	9	
		8			11	6	
	Med den Brown m.F. Sand Trace gravel, Trace silt moist [SP]	9	S5	SS	12	11	
		10			12	14	
	Med Dense m-F Sand Little gravel, Trace silt moist [SP]	11	S6	SS	13	14	
		12			13	14	

JOB NO. 5764100

DATE 12/15/00

LOG OF BORING NO. B2

SHEET 2 OF 4

	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/8 IN.	
7-65 Sand	Med dense, Brown F Sand little gravel, Trace silt wet [SP]	15				10	Take S7
		16	S7	SS	15"	9	Drill to 20'
		17				15	
		18				24	
		19					
	Very dense Brown F.C Sand little gravel, Trace silt wet [SP]	20				10	Take S8
		21	S8	SS	15"	9	Drill to 26'
		22				15	
		23					
		24					
	Dense Brown FC Sand little gravel, Trace silt wet [SP]	25				14	Take S9
		26	S9	SS	15"	15	Drill to 30'
		27				18	
		28				22	
		29					
	Med dense Brown - gray FC Sand, some FC gravel, wet [SP] [GP]	30				10	Take S10
		31	S10	SS	15"	12	

JOB NO. 57641.00

DATE 12/5/06

LOG OF BORING NO. B2

SHEET 3 OF 4

SAMPLE DESCRIPTION	DEPTH SCALE 32	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOG.	TYPE	RECOV. FT.	PENETR. RESIST BLU/IN.	
	32					Drill to 35'
	33					
	34					
	35					Take S11
Med dense Brown gray FC Sand, some FC gravel, wet [SP] [GP]	36	S11	SS	13"	11 14	
	37				13 21	Drill to 40'
	38					
	39					
	40					Take S12
Med dense Brown FC Sand little gravel, wet [SP]	41	S12	SS	14"	20 14	
	42				16 15	Drill to 45'
	43					
	44					
	45					Take S13
Dense Brown FC Sand some gravel, wet [SP]	46	S13	SS	15"	17 16	
	47				17	Drill to 50'
	48					
	49					

7-65

Sand

JOB NO. 5764100
 DATE 12/15/06

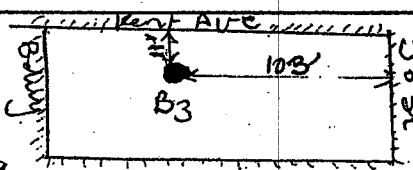
LOG OF BORING NO. B2

SHEET 4 OF 4

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOG.	TYPE	RECOV. FT.	PENETR. RESIST BLU IN.	
Dense Brown, FC Sand Trace gravel, wet [SP]	50					
	51	S14	SS	17	15	Take S14
	52			13	16	Drill to 55'
	53				20	
	54					
Dense Brown-gray FC Sand Trace gravel, wet [SP]	55					Take S15
	56	S15	SS	21	16	Drill To 60'
	57			15	24	
	58				30	
	59					
Dense, Brown-gray FC Sand Trace gravel, wet [SP]	60					Take S16
	61	S16	SS	15	22	
	62			21	34	
						Boring Completed on 12/18/06 @ 9:00AM

7-65
Sand

PROJECT <u>11 BROADWAY</u>		PROJECT NO. <u>5964100</u>	
LOCATION <u>11 Broadway Brooklyn NY</u>		ELEVATION AND DATUM <u>11.87 (BPBD)</u>	
DRILLING AGENCY <u>CRAIG Test Boring</u>		DATE STARTED <u>12/18/06</u>	DATE FINISHED <u>12/18/06</u>
DRILLING EQUIPMENT <u>Truck Mounted Rig</u>		COMPLETION DEPTH <u>60 Feet</u>	ROCK DEPTH <u>—</u>
SIZE AND TYPE OF BIT <u>3 7/8" TriCone Roller Bit</u>		NO. SAMPLES	DIST. UNDIST. CORE
CASING <u>4" Steel Casing</u>		WATER LEVEL	FIRST COMPL. 24 HR.
CASING HAMMER <u>Auto</u>	WEIGHT <u>140 Lbs</u>	DROP <u>80 in</u>	
SAMPLER <u>2" OD Split Spoon</u>		FOREMAN <u>Cesar</u>	
SAMPLER HAMMER <u>Safety</u>	WEIGHT <u>140 Lbs</u>	DROP <u>30 in</u>	
		INSPECTOR <u>ABRAHAMANE COULIBALY</u>	

NO. OF S/BOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOG.	TYPE	REC'D. FT.	PENETR. RESIST BLU/IN.	
Sand 7-65	Med-dense, Red-Black Sand FC, some gravel, fill, dry [SP], Trace Silt	1	81	SS	26	14	
					14	27	
	Red dense, Red-black, FC Sand, little gravel, fill Moist [SP] Trace Silt.	2	82	SS	13	10	
		3			7	7	
	Loose Red-brown, FC Sand some Gravel, Trace Silt Moist [SP] [GP]	4	83	SS	10	7	
		5			3	3	
	Loose Red-brown some FC Sand, some Gravel, Trace Silt Moist [SP] [GP]	6	84	SS	5	4	
		7			3	3	
	Loose Brown-black some FC Sand, some Gravel, Fill, Moist [SP] [GP]	8	85	SS	4	3	
		9			5	10	
	Loose Brown MF Sand Trace gravel, Moist [SP]	10	86	SS	1	3	
		11			3	3	
		12				3	
		13					
		14					

JOB NO. 5764100

DATE 12/18/06

LOG OF BORING NO. B3

SHEET 2 OF 4

NYC BC	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE 15	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOG.	TYPE	RECOV. FT.	PENETR. RESIST BL/6 IN.	
Sand	7-65	Med dense, Brown m-F Sand Trace gravel, Trace silt moist [SP].	15				6	Take S7
			16	59	SS	15"	6	
			17				8	Drill to 20'
			18				10	
			19					
			20					Take S8
		Loose, Brown - Gray FC Sand Trace gravel, wet [SP]	21	58	SS	15"	3	
			22				3	Drill to 25'
			23				5	
			24				11	
		Loose, Brown-gray FC Sand little gravel, wet [SP]	25					Take S9
			26	59	SS	15"	4	
			27				3	Drill to 30'
			28				5	
			29				4	
			30					Take S10
		Loose, Brown FC Sand little gravel, wet [SP]	31	510	SS	15"	5	
			32				3	
			33				3	
			34				8	Drill to 35'

JOB NO. 5764100

DATE 12/17/06

LOG OF BORING NO. B3

SHEET 3 OF 4

N/CBC	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOG.	TYPE	RECOV. FT.	PENETR. RESIST. BLU 6 IN.	
			33					
			34					
			35					
			36					
			37					
			38					
			39					
			40					
			41					
			42					
			43					
			44					
			45					
			46					
			47					
			48					
			49					
			50					
			51					

Med dense, Brown - gray Fc Sand, some Fc gravel, Wet [SP] [GP]

Take S 11

Drill to 40'

Med dense Brown-gray Fc Sand Some Fc gravel, Wet [SP] [GP]

Take S 12

Drill to 45'

Med dense - Brown-gray Fc Sand Trace gravel, Wet [SP]

Take S 13

Drill to 50'

Med dense Brown-gray Fc Sand Trace gravel Wet [SP]

Take S 14

Sand + Gravel
6-65

Sand
7-65

JOB NO. 5764100

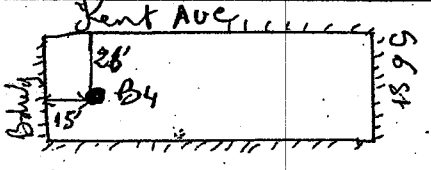
LOG OF BORING NO. B3

DATE 12/18/06

SHEET 4 OF 4

MYC	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE 52	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	REC'D. FT.	PENETR. RESIST. BLU IN.	
Sand	7-65	Med dense Brown-gray FC Sand little gravel wet [SP]	53					Drill to 55'
			54					
			55					
			56	S15	SS	10"	8	
			57				9	
			58					Drill to 60'
		Med dense, Brown-gray FC Sand, little gravel wet [SP]	59					
			60					
			61	S16	SS	10"	10	
			62				15	
							19	
								Boring completed on 12/18/06 @ 1230

PROJECT 11 BROADWAY		PROJECT NO. 596410.0	
LOCATION 11 Broadway Brooklyn NY		ELEVATION AND DATUM 22.3 BPBD	
DRILLING AGENCY CRAIG Test Boring		DATE STARTED 12/18/06	DATE FINISHED 12/19/06
DRILLING EQUIPMENT Truck Mounted Rig		COMPLETION DEPTH 100 feet	ROCK DEPTH —
SIZE AND TYPE OF BIT 37/8" Tricone Roller Bit		NO. SAMPLES 24	DIST. —
CASING 4" Steel Casing		WATER LEVEL FIRST	UNDIST. —
CASING HAMMER Auto	WEIGHT 140 lbs	DROP 30 in	FOREMAN Cesar
SAMPLER 2 1/2" Split Spoon			
SAMPLER HAMMER Safety			
WEIGHT 140 LB			INSPECTOR ABDRAHMANE COULIBALY
DROP 30 in			

NYCBO SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOG.	TYPE	REC'D. FT.	PENETR. RESIST.	BLU IN.	
Fill 11-65	Dense - Brown-gray ^{FC} Sand, Some gravel, Fill, Trace silt [SP], Dry	1	51	SS	16"	11	82	
	Loose, gray Fill, little sand Moist	2	52	SS	3	13	16	
	Loose, Red-gray, FC Sand, little gravel, moist [SP], Trace silt, Fill	3	53	SS	6"	3	3	
	Loose Red & gray, Fill, some silt, little sand, little gravel moist	4	54	SS	6"	4	5	
	Red dense Brown to gray FC Sand, Trace gravel, Trace silt moist [SP]	5	55	SS	8"	1	2	
	Red dense Brown Brown-gray FC sand, Little gravel, trace silt wet [SP]	6	56	SS	14"	9	10	
Sand 7-65		7						
		8						
		9						
		10						
		11						
		12						
		13						
		14						

JOB NO. 5764100

DATE 12/18/06

LOG OF BORING NO. 84

SHEET 2 OF 6

N/C	Symbol	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST BLU IN.	
		Loose Brown - gray F.C Sand Little gravel, Wet [SP]	15				8	S7
			16	S7	SS	13"	5	
			17				5	
			18				10	Drill to 20'
			19					
			20					
		Med dense Brown - gray F.C Sand, some F.C gravel, Wet [SP] [GP]	21	S8	SS	17"	7	S8
			22				7	
			23				10	Drill to 25'
			24					
			25					
		Med dense Brown, F.C Sand Little gravel, Wet [SP]	26	S9	SS	14"	7	S9 12/13/06
			27				5	
			28				7	
			29				6	Drill to 30'
			30					
		Med dense Brown-gray F.C Sand, little gravel, Wet [SP]	31	S10	SS	14"	6	
			32				7	
							9	Drill to 35'

Sand
7-65

JOB NO. 5764100

DATE 12/18/06

LOG OF BORING NO. B₄

SHEET 3 OF 6

P/C	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOG.	TYPE	RECOVER, FT.	PENETR. RESIST. BL/S IN.	
			33					
			34					
			35					S11
		Med dense Brown-gray Fc	36	811	SS	15"	8	
		Sand, little gravel, wet	37				9	
		[SP]					7	Drill to 40'
			38					
			39					
			40					S12
		Med dense Brown-gray Fc	41	812	SS	14"	7	
		Sand little gravel, wet	42				8	
		[SP]						Drill to 45'
			43					
			44					
			45					S13
		Med dense Brown gray Fc	46	813	SS	17"	11	
		Sand, little gravel, wet	47				12	
		[SP]					12	Drill to 50'
			48					
			49					
			50					S14
		Med dense Brown-gray Fc Sand		114	SS	18"	11	
		little gravel, wet [SP]					12	

Sand
7-65

JOB NO. 5764100

DATE 12/19/06

LOG OF BORING NO. B4

SHEET 4 OF 6

M/CBC	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE 5)	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOG.	TYPE	RECOV. FT.	PENETR. RESIST BLU'S IN.	
Sand	7-65	Med dense Brown-gray Fc Sand, little gravel, wet [SP]	52					Drill to 55'
			53					
			54					
			55					
			56	S15	SS	17"	9	
		Med dense Brown gray Fc Sand, little gravel, wet [SP]	57				10	Drill to 60'
			58				12	
			59					
			60					
			61	S16	SS	17"	8	
		Med dense, Brown gray m.F Sand, trace gravel, wet [SP]	62				10	Drill to 65'
			63					
			64					
			65					
			66	S17	SS	17"	8	
			67				9	Drill to 70'
			68					
			69					

JOB NO. 5764100

DATE 12/19/08

LOG OF BORING NO. B₄

SHEET 5 OF 6

NYC BC	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST BL/6 IN.	
Sand	9-65	Med dense Brown-gray F.C. Sand Trace gravel, Wet [SP]	70					
			71	S18	SS	14"	9	S18
			72				13	
			73				14	
			74					
		Med dense Brown-gray m.F. Trace Clay, Wet [SP]	75					
			76	S19	SS	17"	8	S19
			77				4	
			78					
			79					
Clay	9-65	Med dense, Brown-gray m.F. Sand, Trace clay, Wet [SP]	80					
			81	S20	SS	19"	7	S20
			82				6	
			83				13	
			84				16	
		Med dense, gray clay Trace sand, Wet [CL]	85					
			86	S21	SS		11	S21
			87				15	
			88				14	
			89					

Drill to 75'

Drill to 80'

Drill to 85'

Drill to 90'

JOB NO. 5764100

DATE 12/19/06

LOG OF BORING NO. B-4

SHEET 6 OF 6

SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOG.	TYPE	RECOVER. FT.	PENETR. RESIST. BL/6 IN.	
9-65	Med dense gray clay Trace sand, wet [CL]	90					
		91	522	SS	16"	13	S22
		92				10	
		93				15	
		94				14	Drill to 95'
	Med dense gray clay Trace sand, wet [CL]	95					
		96	523	SS	16"	10	S23
		97				13	
		98				11	
		99				17	Drill to 100'
	Dense gray clay, Trace sand, wet [CL]	100					
		101	524	SS	16"	28	S24
		102				23	
						26	
						28	
							Boring completed on 12/19/06 @ 1130AM

PROJECT 11 BROADWAY			PROJECT NO. 5764100		
LOCATION 11 Broadway Brooklyn NY			ELEVATION AND DATUM +21.31 (BPBD)		
DRILLING AGENCY Craig Test Boring			DATE STARTED 12/19/06		DATE FINISHED 12/19/06
DRILLING EQUIPMENT Truck Mounted Rig			COMPLETION DEPTH 60 feet		ROCK DEPTH
SIZE AND TYPE OF BIT 3 7/8" Tricone Roller Bit			NO. SAMPLES 16		DIST.
CASING 4" Steel Casing			WATER LEVEL		FIRST
CASING HAMMER Auto WEIGHT 140 Lbs DROP 30 in			FOREMAN Ceaser		UNDIST.
SAMPLER 2" ID Split Spoon			INSPECTOR ABRAHAM COULBARY		COMPL.
SAMPLER HAMMER Safety WEIGHT 140 Lbs DROP 30 in					24 HR.

NYCBC	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOG.	TYPE	REC'D. FT.	PENETR. RESIST.	BLW IN.	
Fill	11-65	Med dense Brown - gray F-C sand, little gravel, trace silt [SP], moist fill	1	51	SS	15"	10	6	
			2				18	21	
		Dense Brown-gray FC Sand Little gravel, trace silt moist, fill [SP]	3	52	SS	15"	21	23	
			4				20	28	
		Med dense Brown-gray FC sand, some gravel, trace silt moist fill [SP]	5	53	SS	12"	7	7	
			6				8	9	
		Med dense Brown-gray FC sand, some gravel, moist fill [SP]	7	54	SS	12"	10	15	
			8				13	18	
		Very dense Brown gray FC sand some gravel, moist fill [SP]	9	55	SS	13	20	23	
			10				28	23	
Sand	7-65	Loose Brown FC sand, trace silt moist [SP]	11	56	SS	15"	8	4	
			12				6	8	
			13						
			14						

JOB NO. 5764100

DATE 12/19/06

LOG OF BORING NO. B5

SHEET 2 OF 4

NYCB	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)	
			NO. LOC.	TYPE	REC'D. FT.	PENETR. RESIST BLU/IN.		
Sand 7-65	Loose Brown m.F. Sand Trace silt moist [SP]	15						
		16	57	SS	17"	7 4 5 6	57	
		17						Drill to 20'
		18						
	Loose Brown, m.F. Sand Trace gravel, wet [SP]	19						
		20						
		21	58	SS	17"	7 5 5 8	58	
		22						Drill to 25'
	Loose Brown, m-F Sand, Trace gravel, wet [SP]	23						
		24						
		25						
		26	59	SS	19"	5 4 5 6	59	
	Med dense Brown-gray f.c. Sand, Trace gravel, wet [SP]	27						Drill to 30'
		28						
		29						
		30						
	31	510	SS	17"	8 5 15	510		
	32							
	33						Drill to 35	

It took almost 1 hour and 1/2
drilling to 30' because of presence
of rock

JOB NO. 5764100

LOG OF BORING NO. B5

DATE 12/19/06

SHEET 4 OF 4

NYCB	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	REC'D. FT.	PENETR. RESIST. BL/6 IN.	
			34					
			35					
			36					
			37					
			38					
			39					
			40					
			41					
			42					
			43					
			44					
			45					
			46					
			47					
			48					
			49					
			50					
			51					
			52					
			53					
			54					
			55					
			56					
			57					
			58					
			59					
			60					

Red dense Brown-gray, Fc
Sand, little gravel, wet
[SP]

S11
Drill to 40'

Red dense Brown-gray, Fc
sand, trace gravel wet
[SP]

S12
Drill to 45'

Red dense Brown gray Fc
sand, trace gravel, wet
[SP]

S13
Drill to 50'

Red dense Brown gray Fc
sand, trace gravel, wet
[SP]

S14
Drill to 60'

Sand
7-65

JOB NO. 5764100
DATE 12/19/06

LOG OF BORING NO. B5

SHEET 4 OF 4

NYCB	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST BL/S IN.	
			53					
			54					
			55					
		Med dense Brown gray Fc Sand, little gravel, wet [SP]	56	S15	SS	17"	8	S15
			57				7	
			58				5	
			59				8	Drill to 60'
			60					
		Med dense Brown gray Fc Sand, some gravel, wet [SP]	61	S16	SS	14"	9	
			62				6	
							9	
							8	
								Boring Completed on 12/19/06 @ 1430

Sand
7-65

PROJECT 11 BROADWAY		PROJECT NO. 5764100	
LOCATION 11 Broadway Brooklyn NY		ELEVATION AND DATUM +19.3 (BPBD)	
DRILLING AGENCY CRAIG TEST BORING		DATE STARTED 12/20/06	DATE FINISHED 12/20/06
DRILLING EQUIPMENT Truck mounted Rig		COMPLETION DEPTH 100'	ROCK DEPTH
SIZE AND TYPE OF BIT 3 7/8" Tricone Roller Bit		NO. SAMPLES 24	DIST.
CASING 4" Steel Casing		WATER LEVEL	FIRST
CASING HAMMER AUT	WEIGHT 140 lbs	DROP 30 in	FOREMAN Cesar
SAMPLER 2" ID Split Spoon			INSPECTOR ABDRAHMANE COULIBALY
SAMPLER HAMMER Safety	WEIGHT 140 lbs	DROP 30 in	

N/CBL	SYNCH	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	REC. FT.	PENETR. RESIST. BLU/IN.		
Fill	11-65	Med dense Red-Brown-gray Some Sand, some gravel Trace silt, fill moist	1	8'	SS	16"	13	51	
			2				11		
			3				6		
Gravel	6-65	Med dense Red-Brown gray Some Sand, some gravel, Trace silt, fill moist	4	52'	SS	13"	10	52	
			5				9		
			6				5		
Fill	11-65	Loose gray, Gravel Dry [GP]	7	53'	SS	9"	5	53	
			8				4		
			9				3		
Sand	7-65	Loose Red-Brown-gray, some Sand, some gravel, Trace silt moist	10	54'	SS	16"	4	34	
			11				5		
			12				3		
		Loose Brown m-F Sand Trace silt moist [SP]	13	55'	SS	17"	5	55	
			14				4		
			15				5		
		Med dense m-F Sand Trace silt moist [SP]	16	56'	SS	17"	7	56	
			17				8		
			18				10		

JOB NO. 5764100

DATE 12/30/06

LOG OF BORING NO. B-6 (OW.)

SHEET 2 OF 6

NCE	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOG.	TYPE	RECOV. FT.	PENETR. RESIST BL/6 IN.	
Sand	7-65	Red dense, Brown mF Sand, Trace salt moist [SP]	15				9	S7
			16	S7	SS	17"	11	
			17				10	
			18				"	
			19					
		Med-dense gray-Brown mF Sand, Trace gravel wet [SP]	20				9	S8
			21	S8	SS	16"	9	
			22				10	
			23					
			24					
		Med-dense Brown gray mF Sand, Trace gravel wet [SP]	25				9	S9
			26	S9	SS	11"	8	
			27				9	
			28					
			29					
		Med-dense Brown-gray F.C Sand, Some gravel, wet [SP]	30				5	S10
			31	S10	SS	14"	7	
			32				8	

Drill to 20'

Drill to 25'

Drill to 30'

It took 2 hours Drilling to 30' because of rock presence

Drill to 35'

JOB NO. 5764100
DATE 12/20/06

LOG OF BORING NO. B6(CW)

SHEET 3 OF 6

M/CBC	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	RECOVER. FT.	PENETR. RESIST. BLU/IN.	
			34					
			35					
		Med dense Brown-gray FC sand, some gravel, wet [SP]	36	S11	SS	17"	9	S11
			37				10	
			38				13	
			39				17	Drill to 40'
			40					
		Med dense Brown-gray FC Sand, some gravel, wet [SP] [GP]	41	S12	SS	16"	9	S12
			42				11	
			43				14	
			44				10	Drill to 45'
			45					
		Med. dense Brown-gray FC Sand, little gravel wet [SP]	46	S13	SS	17"	6	S13
			47				8	
			48				6	
			49				7	Drill to 50
			50					
		Med dense Brown-gray F-C Sand, little gravel, wet [SP]	51	S14	SS	16"	7	S14
			52				8	
			53				9	
			54					Drill to 55'

Sand
7-65

JOB NO. 5766100
DATE 12/20/06

LOG OF BORING NO. B-6 (OW)

SHEET 4 OF 6

NYCS	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	RECOVER. FT.	PENETR. RESIST BLU/IN.		
			53						
			54						
			55						
		Med dense, Brown-gray FC sand, some gravel wet [SP]	56	S15	SS	17"	9	8	S15
			57				7	8	Drill to 60'
			58						
			59						
			60						
		Med dense Brown-gray FC Sand, some gravel wet [SP]	61	S16	SS	16"	8	8	S16
			62				7	8	Drill to 65'
			63						
			64						
			65						
		Med Dense Brown-gray FC Sand, little gravel wet [SP]	66	S17	SS	17"	7	10	S17
			67				12	9	Drill to 70'
			68						
			69						
			70						
		Med dense Brown-gray FC Sand Trace gravel wet [SP]	71	S18	SS	17"	9	10	S18

Sand
7-65

JOB NO. 5764/00

DATE 12/20/06

LOG OF BORING NO. B6 (BW)

SHEET 5 OF 6

M/CBC	SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
				NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST BLU IN.	
			72					Drill to 75'
			73					
			74					
			75				12	S19
		Dense Brown-gray Fc Sand	76	S19	SS	19"	15	
		Trace gravel wet [SP]	77				16	
			78				22	Drill to 80'
			79					
			80					
		Dense Brown-gray Fc Sand	81	S20	SS	16"	11	S20
		Trace gravel wet [SP]	82				13	
			83				19	Drill to 85'
			84					
			85					
		Dense Brown gray Fc Sand	86	S21	SS	17"	21	S21
		Trace gravel wet [SP]	87				21	
			88				18	Drill to 90'
			89					
			90					

Sand
17-65

JOB NO. 5764100

DATE 12/20/06

LOG OF BORING NO. B6 (CW)

SHEET 6 OF 6

NYC BC		SYMBOL	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
					NO. LOG.	TYPE	RECOVER. FT.	PENETR. RESIST. BL/6 IN.	
Sand	9-65		Dense Brown-gray F-C Sand Trace gravel, wet, [SP]	90				20	S22 Drill to 95'
				91	920	SS	17"	18	
				92				20	
				93					
				94					
	9-65		Red dense gray clay, Trace sand [CL]	95					S23 Drill to 100
				96	523	SS		9	
				97				8	
				98				14	
				99				19	
			Dense gray clay Trace sand [CL]	100					S24 Boring completed on 12/19/06 @ 1430
				101	524	SS		11	
				102				14	