Appendix E

Phase 1A Archaeological Documentary Study and Related New York State Office of Parks, Recreation, and Historic Preservation Correspondence

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NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

March 14, 2016

Ms. Rachel Shatz
VP, Planning & Environmental Review
Empire State Development
633 Third Avenue
New York, NY 10017-6754

Re: ESDC
Brooklyn Development Center Sites A & B, 888 Fountain Ave. Proposed new housing
888 Fountain Ave, Brooklyn, NY
14PR03284

Dear Ms. Shatz:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6NYCRR Part 617).

OPRHP has received information regarding a change in this project's vertical Area of Potential Effects (APE) (letter from Cece Saunders, Historical Perspectives, 3 March 2016). Based on this and previously submitted information, this office continues to recommend that the proposed project will have **No Impact** on cultural resources listed or eligible for listing on the State and National Registers of Historic Places. This recommendation pertains only to the Area of Potential Effects (APE) examined during the above-referenced investigation. It is not applicable to any other portion of the project property. Should the project design be changed OPRHP recommends further consultation with this office.

If you have any questions please don't hesitate to contact me.

Sincerely,

Philip A. Perazio, Historic Preservation Program Analyst - Archaeology Unit
Phone: 518-268-2175
e-mail: philip.perazio@parks.ny.gov via email only

HISTORICAL PERSPECTIVES INC.

March 3, 2016

Philip A. Perazio
Historic Preservation Program Analyst – Archaeologist
Division for Historic Preservation
New York State Parks, Recreation & Historic Preservation
Peebles Island State Park, P.O. Box 189, Waterford, NY 12188-0189

Re: 14PR03284: Brooklyn Development Center Sites A & B, 888 Fountain Ave

Dear Mr. Perazio:

On December 3, 2015, you issued a notice of No Impact for the above project, based on a letter from Historical Perspectives, Inc. (HPI) dated December 2, 2015 describing depths of project impacts compared with subsurface conditions from soil borings, and coupled with data from a Phase IA Archaeological Documentary Study for the project in 2014 that indicated moderate precontact period potential for the property beneath the modern landfill.

The December 2, 2015 letter from HPI indicated that project depths at that time were to extend 11 feet below grade, but that in the southeastern corner of Site A, that depth would affect 2 feet of natural soils below the water table. HPI noted that archaeological testing in the southeastern quadrant of Site A would be logistically difficult due to the amount of fill that would need to be removed (in excess of 9 feet) and the presence of the water table, which could cause instability in potential trenches and require additional measures such as shoring, pumping and water screening. The likelihood of recovering significant precontact period archaeological resources in the ca. 2 feet of waterlogged soil that would need to be excavated beneath the fill is low. Therefore, HPI recommended no archaeological testing for Sites A and B of the 888 Fountain Avenue project site. Your letter of December 3, 2015 concurred with this finding.

Updated plans for Site A now indicate that excavations will extend a total of 14 feet below grade, in order to construct a subsurface parking garage in the proposed residential building. The overall excavation will extend 12 feet below grade, and pile caps will extend another 2 feet below grade. The recent plans are attached to this letter. As such, the additional 3 feet of soil to be removed (again, all beneath the existing water table) will be within natural soils and not landfill. A plan of Site A comparing depths of landfill with results from the soil borings is attached.

P.O. Box 529 • Westport • Connecticut • 06881
www.historicalperspectives.org

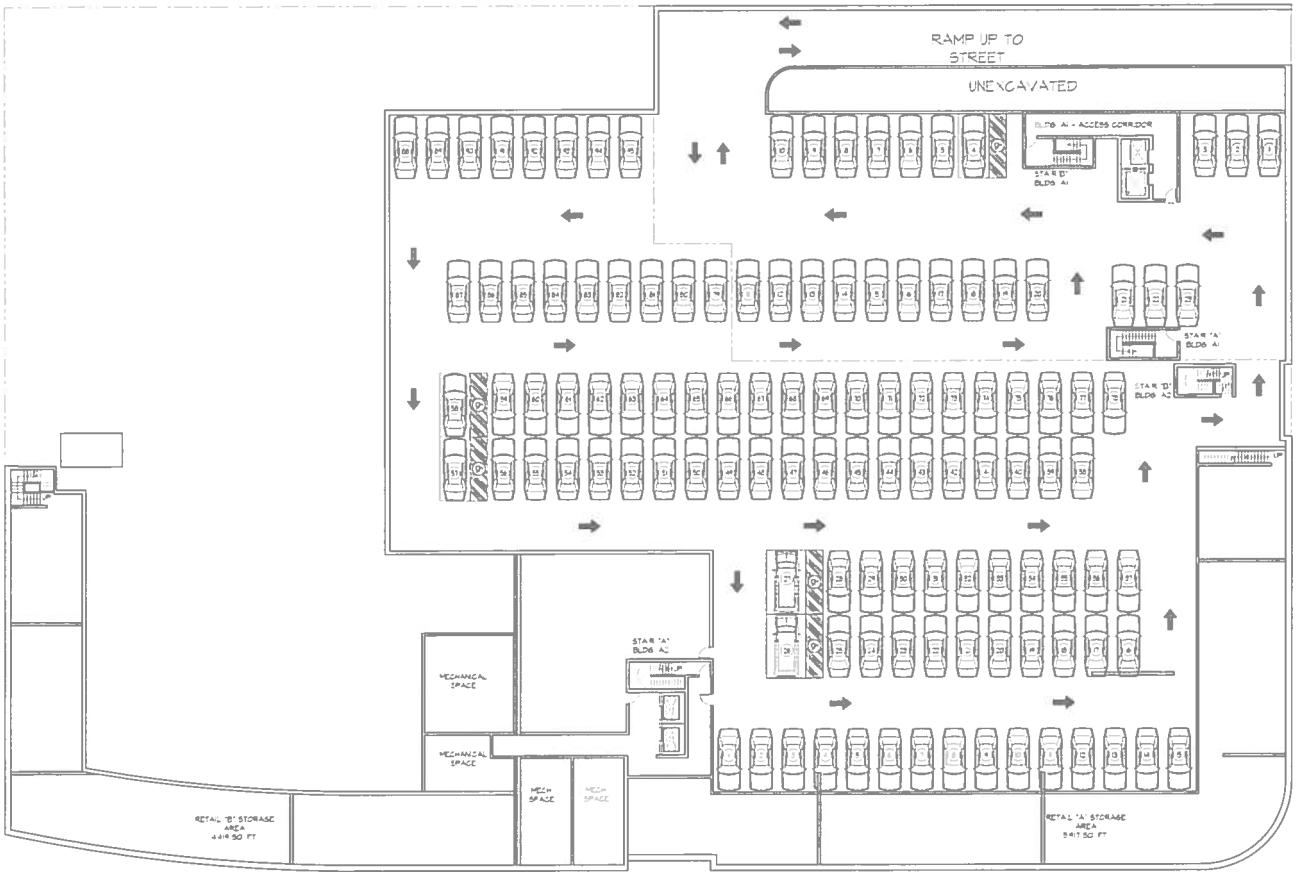
HPI continues to conclude that archaeological testing in the southern half of Site A would be logistically difficult due to the amount of fill that would need to be removed (now in excess of 11 feet) and the presence of the water table 3-5 feet above the depth of proposed excavation. HPI believes that the likelihood of recovering significant precontact period archaeological resources in the ca. 3-5 feet of waterlogged soil that would need to be excavated beneath the fill is low. Therefore, HPI continues to recommend no archaeological testing for Sites A and B of the 888 Fountain Avenue project site.

Thank you.

Sincerely,

Cece Saunders
Historical Perspectives

P.O. Box 529 • Westport • Connecticut • 06881
www.historicalperspectives.org



CELLAR RESIDENTIAL PARKING
118 PARKING SPACES
(117 REQUIRED)
5 ACCESSIBLE SPACES
PROVIDED
41727 SQ. FT.

BICYCLE PARKING AREA FOR BLDG A2
21748 SQ. FT.

267 UNITS/2 = 133.5
133.5 X 15 SQ. FT.= 2002.5 SQ. FT.
REQUIRED

BUILDING A1 65 UNITS
35% OF 65 = 23 CARS REQUIRED

BUILDING A2 267 UNITS
35% OF 267 = 94 CARS REQUIRED

TOTAL CARS REQUIRED = 117
117 CARS X 320 SQ. FT. PER CAR = 37,440 SQ. FT.

PLAN NORTH

CELLAR PLAN
SCALE 1/16" = 1'-0"

PROPOSED NEW DEVELOPMENT FOR:

FOUNTAINS III

BROOKLYN, NY

BLOCK: 4588 LOT: 500

ARCHITECT:

DEVELOPER:

STRUCTURAL ENGINEER:

MEP ENGINEER:

AUFGANG ARCHITECTS

SHEET TITLE

CELLAR PLAN

SEAL & SIGNATURE

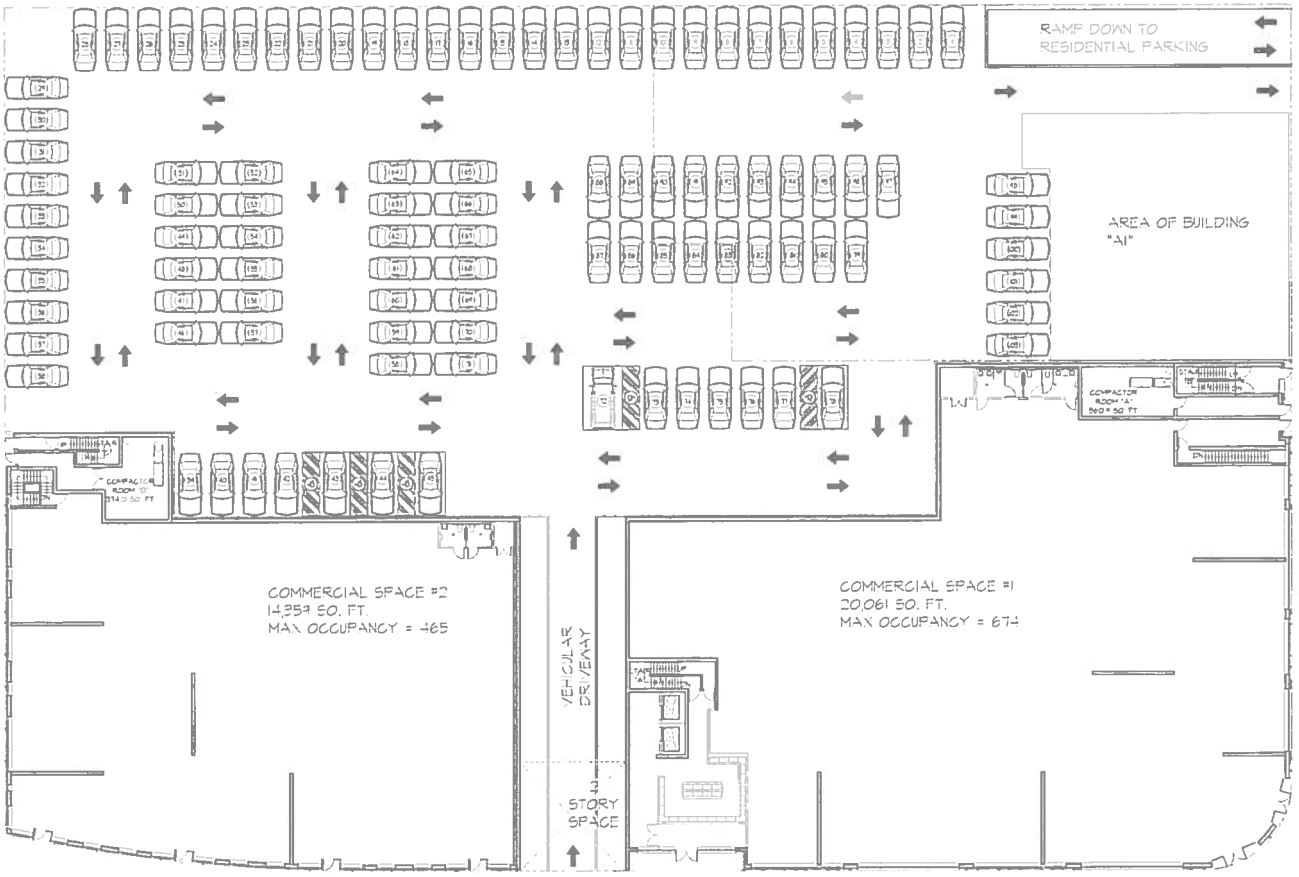
ISSUE DATE PROJECT NO #1510

DRAWN BY DW CHECKED BY SV

SCALE 1/16"=1'-0" SHEET NO

DRAWING NO A-100.00

NYC DOB NUMBER



SEA VIEW AVENUE

EXTERIOR COMMERCIAL PARKING
103 PARKING SPACES
(103 REQUIRED)
5 ACCESSIBLE SPACES PROVIDED
41,111 SQ FT

ERSKINE STREET

RETAIL AREA "A" 20,061 SQ. FT.
RETAIL AREA "B" 14,359 SQ. FT.

TOTAL RETAIL AREA = 34,420.41 SQ. FT. SQ FT.

34,420.413 SQ. FT. SQ. FT / 1000 SQ. FT \ 3 = 103 CARS REQUIRED

1ST FLOOR PLAN
SCALE: 1/16" = 1'-0"

PROPOSED NEW
DEVELOPMENT FOR:

FOUNDATIONS III

BROOKLYN, NY

BLOCK: 4686 LOT: 600

ARCHITECT:

DEVELOPER:

STRUCTURAL ENGINEER:

MEP ENGINEER:

AUFGANG ARCHITECTS

SHEET TITLE

1ST FLOOR

SEAL & SIGNATURE

ISSUE DATE

PROJECT NO #1510

DRAWN BY DW CHECKED BY SV

SCALE 1/16"=1'-0" SHEET NO

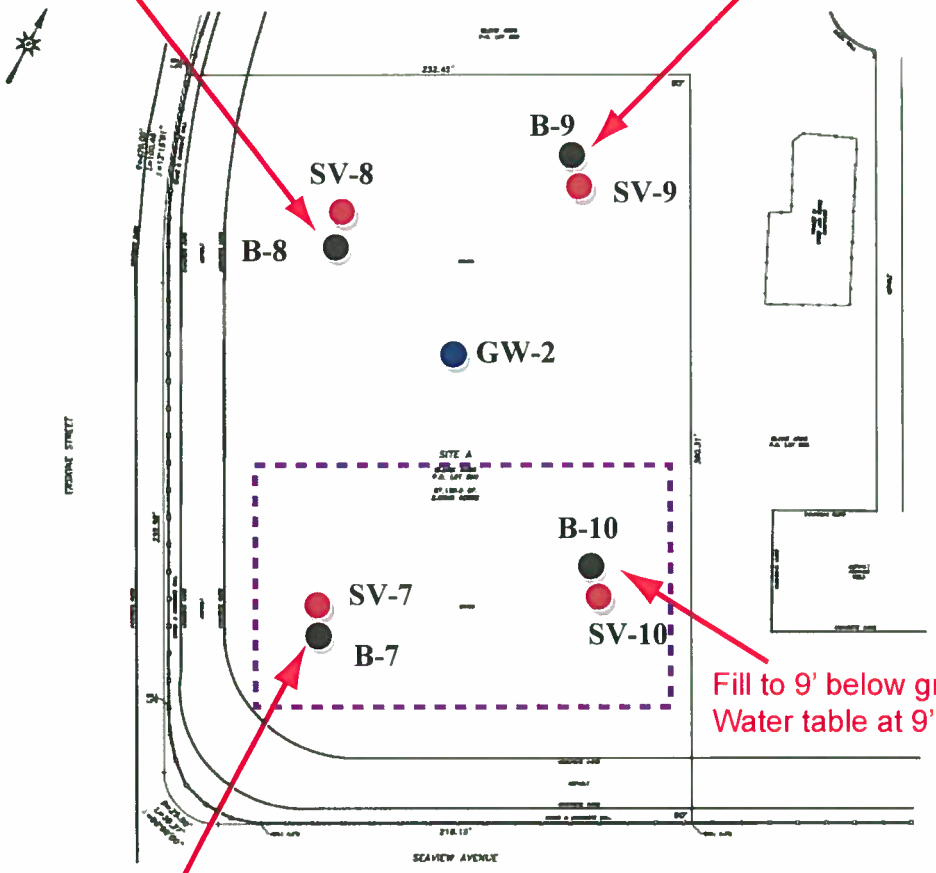
DRAWING NO A-101.00

NYC DOB NUMBER

Approximate locations where proposed impacts (to 14' below grade) will extend below fill

Fill to 17' below grade
Water table at 8' below grade

Fill to 17' below grade
Water table at 9' below grade



Fill to 9' below grade
Water table at 9' below grade

Fill to 11' below grade
Water table at 11' below grade

Scale: 1in. = 80ft

Soil Boring | GW Sample | SV Sample

Figure 3

EDPSCO

Property Located at:
888 Fountain Avenue
Brooklyn , New York

Sampling Collection Locations
Site A

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

December 03, 2015

Ms. Rachel Shatz
VP, Planning & Environmental Review
Empire State Development
633 Third Avenue
New York, NY 10017-6754

Re: ESDC
Brooklyn Development Center Sites A & B, 888 Fountain Ave. Proposed new housing
888 Fountain Ave
14PR03284

Dear Ms. Shatz:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6NYCRR Part 617).

OPRHP has reviewed additional information regarding this project (Historical Perspectives, Inc., 2 December 2015). Based this and the previously submitted Phase IA report, OPRHP recommends that the planned project will have **No Impact** on cultural resources listed or eligible for listing on the State or National Register of Historic Places. This recommendation pertains only to the Area of Potential Effects (APE) examined during the above-referenced investigation. It is not applicable to any other portion of the project property. Should the project design be changed OPRHP recommends further consultation with this office.

If you have any questions please don't hesitate to contact me.

Sincerely,

Philip A. Perazio, Historic Preservation Program Analyst - Archaeology Unit
Phone: 518-268-2175
e-mail: philip.perazio@parks.ny.gov via email only

HISTORICAL PERSPECTIVES INC.

December 2, 2015

Philip A. Perazio
Historic Preservation Program Analyst – Archaeologist
Division for Historic Preservation
New York State Parks, Recreation & Historic Preservation
Peebles Island State Park, P.O. Box 189, Waterford, NY 12188-0189

Re: 14PR03284: Brooklyn Development Center Sites A & B, 888 Fountain Ave

Dear Mr. Perazio:

In 2014, Historical Perspectives, Inc. (HPI) completed a Phase IA Archaeological Documentary Study for the above project, which was submitted to and accepted by SHPO. The project site consists of two vacant and discontinuous parcels (Sites A and B) slated for future development. Both parcels formerly were marshland and were landfilled during the mid-twentieth century to bring them up to their current, generally level elevations. The parcels were part of the Milford Street landfill, which accepted refuse. Today, both parcels are about 10 feet above sea level, with some slight variations in elevation within each parcel.

The Phase IA Archaeological Documentary Study concluded that there could be moderate precontact period archaeological sensitivity in both parcels, depending on subsurface conditions, which were unknown at the time the report was submitted. Additionally, proposed project impacts were not available at the time that the archaeological report was submitted.

Since that time, soil borings for both parcels have been completed as part of a Phase II Environmental Site Assessment (EDPSCO 2014). The soil borings have been uploaded to the project files in CRIS. Project impacts also have been clarified: excavations will extend to 9 feet below grade on both parcels for new basement construction, and an additional 2 feet (for a total of 11 feet below grade) for pile cap construction.

The purpose of this letter is to summarize the results of the soil borings and compare them to the depths of the proposed project construction, to determine whether there are any areas that could still retain precontact period archaeological sensitivity.

Site A is located at the southwestern corner of the overall block. There were four soil borings completed on this parcel (Borings B-7 through B-10; see the accompanying figure). The northern two borings (B-8 and B-9) indicated an upper stratum of mixed fill to 17 feet below grade, with the water table recorded at 8 and 9 feet below grade, respectively. The southwestern boring (B-7) recorded an upper stratum of mixed fill to 11 feet below grade, which was the same depth as the recorded water table. The southeastern boring (B-10) recorded an upper stratum of fill to 9 feet below grade, which was the same depth as the water table.

Below the upper stratum of fill were layers of natural soils. In the northern two borings, which had 17 feet of fill, the next stratum was a brown colored peat bog layer, followed by layers of sandy soils. The peat layer was not present in the southern two borings, where the soils under the fill were described as fine sands with trace shell fragments.

The only location within Site A where 11-foot deep construction impacts are slated to penetrate the fill on the parcel is in the southeast corner, surrounding Boring B-10, which had 9 feet of fill. However, the water table was recorded at the base of the fill, meaning that any potential excavations below the fill and within natural soils will be waterlogged.

Site B is located at the northeastern corner of the overall block. There were six soil borings completed on this parcel (Borings B-1 through B-6). All of these borings recorded a very thick upper stratum of fill, ranging from 17 to 27 feet below grade. The water table was recorded at 8-12.5 feet below grade. None of the planned construction impacts will penetrate the depth of the fill on this parcel.

Based on the results of the soil borings compared with the construction impacts, HPI concludes that the only location on the two project parcels that could affect natural soils is the southeastern quadrant of Site A. Here, fill was recorded to 9 feet below grade but project excavations are slated for 11 feet below grade. However, because the water table also was recorded at 9 feet below grade, all natural soils are presumed to be waterlogged.

It is HPI's recommendation that archaeological testing in the southeastern quadrant of Site A would be logistically difficult due to the amount of fill that would need to be removed (in excess of 9 feet) and the presence of the water table, which could cause instability in potential trenches and require additional measures such as shoring, pumping and water screening. The likelihood of recovering significant precontact period archaeological resources in the ca. 2 feet of waterlogged soil that would need to be excavated beneath the fill is low. Therefore, HPI recommends no archaeological testing for Sites A and B of the 888 Fountain Avenue project site.

Thank you.

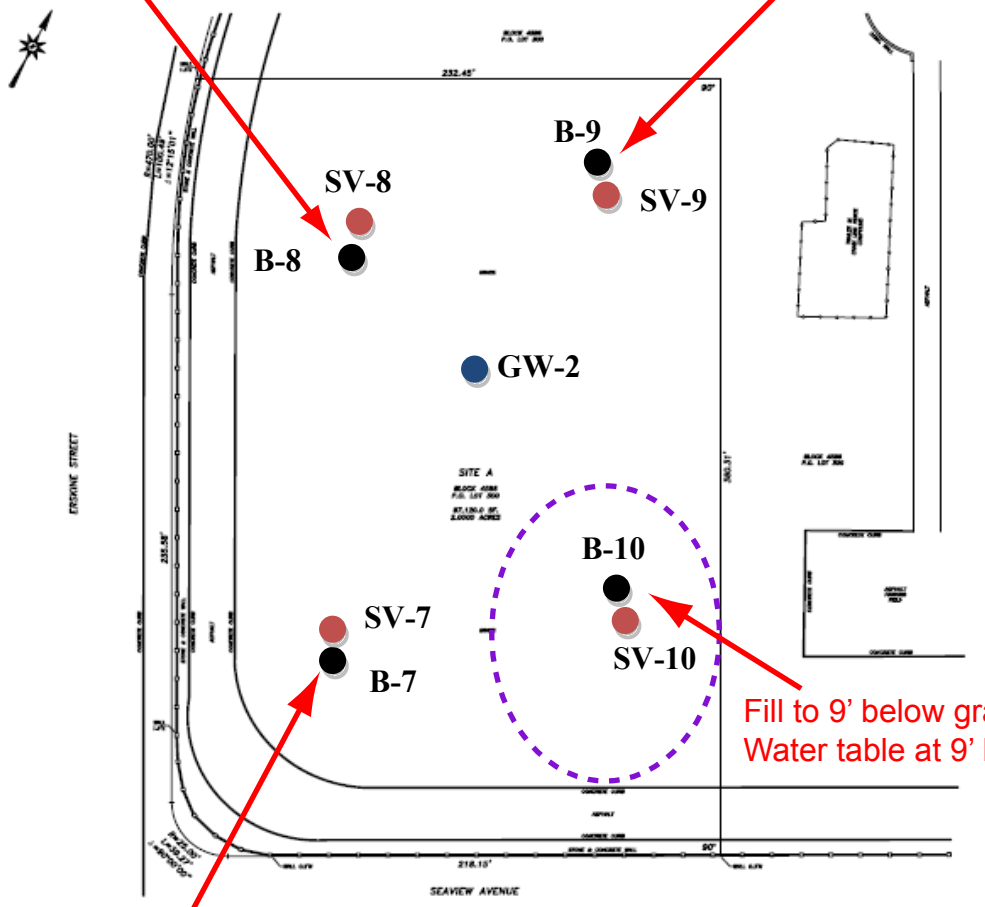
Sincerely,

Cece Saunders
Historical Perspectives

Approximate locations where proposed impacts (to 11' below grade) will extend below fill

Fill to 17' below grade
Water table at 8' below grade

Fill to 17' below grade
Water table at 9' below grade



Fill to 9' below grade
Water table at 9' below grade

Fill to 11' below grade
Water table at 11' below grade

Scale: 1in. = 80ft

Soil Boring GW Sample SV Sample

Figure 3

EDPSCO

Property Located at:
888 Fountain Avenue
Brooklyn , New York

Sampling Collection Locations
Site A

HISTORICAL PERSPECTIVES INC.

Phase IA Archaeological Documentary Study
Brooklyn Development Center Sites A and B
888 Fountain Avenue
Block 4586, Part of Lot 300
Brooklyn, Kings County, New York

Phase IA Archaeological Documentary Study
Brooklyn Development Center Sites A and B
888 Fountain Avenue
Block 4586, Part of Lot 300
Brooklyn, Kings County, New York

Prepared For:

STV, Inc.
225 Park Avenue South
New York, NY 10003

Prepared By:

Historical Perspectives, Inc.
P.O. Box 529
Westport, CT 06881

Authors:
Julie Abell Horn, M.A., R.P.A.
Luc Litwinionek, Ph.D., R.P.A.

July 2014

MANAGEMENT SUMMARY

SHPO Project Review Number (if available):

Involved State and Federal Agencies: **Empire State Development (ESD), Dormitory Authority of the State of New York (DASNY)**

Phase of Survey: **Phase IA Archaeological Documentary Study**

Location Information

Location: **Block 4586, Part of Lot 300, Brooklyn, New York.**
Minor Civil Division: **04701**
County: **Kings**

Survey Area

Length: **Site A measures approximately 360 feet long and Site B measures approximately 740 feet long**
Width: **Site A measures approximately 230 feet wide and Site B measures approximately 250 feet wide**
Number of Acres Surveyed: **Site A measures ca. 2 acres, Site B measures ca. 4.7 acres**

USGS 7.5 Minute Quadrangle Map: **Jamaica**

Archaeological Survey Overview

Number & Interval of Shovel Tests: **N/A**
Number & Size of Units: **N/A**
Width of Plowed Strips: **N/A**
Surface Survey Transect Interval: **N/A, urban area**

Results of Archaeological Survey

Number & name of precontact sites identified: **None**
Number & name of historic sites identified: **None**
Number & name of sites recommended for Phase II/Avoidance: **None**

Report Authors(s): **Julie Abell Horn, M.A., R.P.A. and Luc Litwinionek, Ph.D., R.P.A., Historical Perspectives, Inc.**

Date of Report: **July 2014**

EXECUTIVE SUMMARY

The New York State Urban Development Corporation d/b/a Empire State Development (ESD) has proposed the development of two parcels of non-contiguous, vacant undeveloped land totaling 291,852 square feet within the Brooklyn Developmental Center (BDC) at 888 Fountain Avenue in Brooklyn, Kings County, New York (Figures 1 and 2). The BDC consists of six buildings totaling 512,000 square feet on a 35-acre lot owned by the State. The two parcels, referred to as Site A and Site B, are within the BDC property, on part of Block 4586, Lot 300, in the Spring Creek area of Brooklyn's northern shoreline of Jamaica Bay. Site A contains a total of 2.0 acres and is located on the northeast corner of Seaview Avenue and Erskine Street; Site B contains a total of 4.7 acres and is located along the south block-front of Vandalia Avenue between Erskine Street and Fountain Avenue. ESD's primary development goal for the combined sites is for a high quality residential development with affordable and supportive housing components that include a set-aside of supportive housing units for people with intellectual and developmental disabilities. The Area of Potential Effect (APE) is the area that could be affected by project development. The APE for the property includes the entirety of the Site A and Site B parcels. Preliminary plans by the Arker Companies propose two to four two-story buildings with basements on each site, separated by courtyards, and with indoor and outdoor recreation areas, laundry rooms, and parking areas. The depths of the basement and foundation construction have not been determined as of this writing.

As an "Unlisted Action" in connection with the sale and development of State owned property, this ESD project will undergo an environmental review pursuant to the State Environmental Quality Review Act (SEQRA). ESD has requested that a Phase IA Archaeological Documentary Study be completed for the project site. Historical Perspectives, Inc. (HPI) has prepared this requested Phase IA Archaeological Documentary Study to satisfy the requirements of SEQRA, and to comply with the standards of the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) (New York Archaeological Council 1994; NYSOPRHP 2005). According to NYSOPRHP standards, a Phase IA archaeological survey should include evaluation of both precontact and historic period archaeological potential.

From what is known of precontact period settlement patterns in New York City, most habitation and processing sites are found in sheltered, elevated sites close to wetland features, major waterways, and with nearby sources of fresh water. Prior to landfilling in the area, the project site parcels were situated within a large marshy area bordering Betts Creek (which may have crossed the northeast corner of Site B) and Mud Creek, located southeast of Site A. Native Americans would have been drawn to these creeks and marshlands for their aquatic life, wild game, and vegetation. As well, wetlands provided peat that could be used for fuel and a number of plants that served as materials for clothing, basketry and weaving. As importantly, the use of certain aquatic plants for medicinal purposes is ethnographically documented (Herrick 1995).

Precontact period sites, primarily from the Woodland Period, have been documented along the Jamaica Bay shoreline in proximity to the marshlands. In some cases, extensive shell middens extended into the marshlands, the equivalent of precontact garbage dumps. Defined as deposits of shells, gravel, sand and silt and in some cases other cultural remains, they occur either as distinct cultural events or in association with habitation sites (Wells 2001). Along some areas of Jamaica Bay, these shell middens have been found under layers of modern fill, but on top of marshland soils (Pickman 1987:4). Additionally, prior to the creation of Jamaica Bay and its marshlands after the last Ice Age, the project site parcels would have been dry land. It is possible that precontact period archaeological sites from this period, dating from the Paleo Indian period through the parts of the Archaic period, could remain capped by later marshland soils that accrued after the sea level rise, ca. 2000-4000 B.P.

At present and until soil borings are completed on the project site parcels, the characteristics of the underlying soil column can only be estimated. For example, based on the current site elevations of ca. 10 feet above mean sea level, it is assumed that there is about 10-12 feet of introduced fill, likely including refuse, beneath the existing ground surface, since the area formerly was at sea level. Beneath the fill, if not disturbed during placement of the fill, may be layers of marshland soils, possibly including layers of peat or organic silts under the water table. Peat in particular can act as a preservation agent, allowing soils under the peat to remain intact. Without peat layers, it is often, but not always, the case that repeated tidal actions (or marine transgressions) have destroyed any potential buried surfaces that could contain ancient precontact period archaeological resources. It is important to note though that the identification of sediment types and attendant faunal remains in these deposits could provide valuable information on the evolution of coastal landscapes that were used by precontact groups occupying the area.

At this time HPI assigns a moderate precontact period archaeological sensitivity to the project site parcels, due to the potential for the sites to contain archaeological resources but the unknown degree of disturbance to the natural soil column. It is possible that results of the pending soil borings could lessen or eliminate that sensitivity if the marshland soils beneath the fill are shown to be disturbed or if no peat or silty layers are shown to survive.

The project site parcels were covered with marshland until being landfilled in the 1960s and brought up to their present elevation. All the soil within the parcels consists of introduced fill, likely including refuse, dating to the 1950s and 1960s. The parcels have never been developed. There is no historic period archaeological sensitivity for either project site parcel.

Based on the results of the Phase IA Archaeological Documentary Study research, HPI recommends that planned soil borings for the project site parcels be reviewed by an archaeologist when they are completed to see whether intact strata that could have supported precontact occupation exist beneath the deep fill that is expected to be found on the sites. Such evidence includes the presence/absence of a thick peat lens, organic or silty deposits, a shell midden, or other precontact period cultural remains. These results, combined with a review of final project impacts (including the depths of new building basements, foundations, and other supporting structures such as pilings), will eliminate, narrow, or more clearly define any areas of precontact period archaeological sensitivity. There is no historic period archaeological sensitivity for the project site parcels and HPI recommends no further consideration for this period.

TABLE OF CONTENTS

MANAGEMENT SUMMARY i

EXECUTIVE SUMMARY ii

TABLE OF CONTENTS iv

I. INTRODUCTION 1
II. METHODOLOGY 1
III. CURRENT CONDITIONS AND ENVIRONMENTAL SETTING 2
A. CURRENT CONDITIONS 2
B. TOPOGRAPHY AND HYDROLOGY 2
C. GEOLOGY 2
D. SOILS 3
IV. BACKGROUND RESEARCH/HISTORICAL OVERVIEW 3
A. PRECONTACT PERIOD SUMMARY 3
B. PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES AND SURVEYS 3
C. HISTORIC PERIOD SUMMARY 4
V. CONCLUSIONS 5
A. PRECONTACT SENSITIVITY AND DISTURBANCE RECORD 5
B. HISTORIC PERIOD SENSITIVITY AND DISTURBANCE RECORD 6
VI. RECOMMENDATIONS 6
VII. REFERENCES 7

FIGURES

PHOTOGRAPHS

FIGURES

1. Project site on *Jamaica*, NY 7.5 Minute Quadrangle (U.S.G.S. 1979).

2. Project site and photograph locations on modern aerial photograph (Bing 2014).

3. *New York City Reconnaissance Soil Survey* (USDA 2006).

4. Project site on *Map of Kings and Part of Queens Counties, Long Island, New York* (Conner 1852).

5. Project site on *Atlas of Long Island, New York* (Beers 1873).

6. Project site on *Atlas of the Metropolitan District and adjacent country*... (Bien and Vermeule 1891).

7. Project site on *Atlas of the Borough of Brooklyn, City of New York* (Hyde 1905).

8. Project site on Sectional aerial maps of the City of New York (Bureau of Engineering 1924).

9. Project site on *Jamaica*, NY 7.5 Minute Quadrangle (U.S.G.S. 1966).

PHOTOGRAPHS
(Locations and orientations shown on Figure 2)

1. Entrance to Brooklyn Development Center (BDC) on Fountain Avenue. View looking south.

2. High wall and gate on Fountain Avenue. View looking northwest.

3. Perimeter BDC roadway on interior of complex with utility poles. View looking northwest.

4. Site A showing perimeter BDC roadway and grassy area. Intersection of Erskine Street and Seaview Avenue is in background. View looking southwest.

5. Site A main area with perimeter road and BDC complex wall in background. View looking southwest with Erskine Street beyond wall.

6. Site A showing change in topography at northwest end. Trailer and parking lots within BDC complex in background. View looking southeast.

7. Site B showing perimeter BDC roadway and parking lot at northwest end. Intersection of Vandalia Avenue and Erskine Street is in background. View looking northwest.

8. Site B showing trailer and metal storage containers at northeast end. Vandalia Avenue is in background. View looking northwest.

9. Site B grassy area with chain link fence and trees on left. View looking southwest toward Erskine Street in background.

10. Site B grassy area with chain link fence and trees on right. View looking northeast toward trailer. Vandalia Avenue is on left and Fountain Avenue is in background.

I. INTRODUCTION

The New York State Urban Development Corporation d/b/a Empire State Development (ESD) has proposed the development of two parcels of non-contiguous, vacant undeveloped land totaling 291,852 square feet within the Brooklyn Developmental Center (BDC) at 888 Fountain Avenue in Brooklyn, Kings County, New York (Figures 1 and 2). The BDC consists of six buildings totaling 512,000 square feet on a 35-acre lot owned by the State. The two parcels, referred to as Site A and Site B, are within the BDC property, on part of Block 4586, Lot 300, in the Spring Creek area of Brooklyn's northern shoreline of Jamaica Bay. Site A contains a total of 2.0 acres and is located on the northeast corner of Seaview Avenue and Erskine Street; Site B contains a total of 4.7 acres and is located along the south block-front of Vandalia Avenue between Erskine Street and Fountain Avenue. ESD's primary development goal for the combined sites is for a high quality residential development with affordable and supportive housing components that include a set-aside of supportive housing units for people with intellectual and developmental disabilities. The Area of Potential Effect (APE) is the area that could be affected by project development. The APE for the property includes the entirety of the Site A and Site B parcels. Preliminary plans by the Arker Companies propose two to four two-story buildings with basements on each site, separated by courtyards, and with indoor and outdoor recreation areas, laundry rooms, and parking areas. The depths of the basement and foundation construction have not been determined as of this writing.

As an "Unlisted Action" in connection with the sale and development of State owned property, this ESD project will undergo an environmental review pursuant to the State Environmental Quality Review Act (SEQRA). ESD has requested that a Phase IA Archaeological Documentary Study be completed for the project site. Historical Perspectives, Inc. (HPI) has prepared this requested Phase IA Archaeological Documentary Study to satisfy the requirements of SEQRA, and to comply with the standards of the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) (New York Archaeological Council 1994; NYSOPRHP 2005). According to NYSOPRHP standards, a Phase IA archaeological survey should include evaluation of both precontact and historic period archaeological potential. The HPI project team consisted of Julie Abell Horn, M.A., R.P.A., who conducted the research, wrote the report and prepared the graphics; Luc Litwinionek, Ph.D., R.P.A., who assisted with the research and report preparation; and Cece Saunders, M.A., R.P.A. who managed the project and provided editorial and interpretive assistance. Richard Schaefer, Ph.D., an author of several previous HPI reports in this area, contributed research expertise and documents.

II. METHODOLOGY

The present study entailed review of various resources.

- Primary and secondary sources concerning the general precontact period and history of eastern Brooklyn and western Queens and specific events associated with the project site and vicinity were reviewed using resources from the Brooklyn Historical Society, the Archives at Queens Library, the New York Public Library, the library of HPI, and using online resources.
- Historic maps and photographs were reviewed using resources at the New York Public Library, the library of HPI, and using various online websites. These maps and photographs provided an overview of the topography and a chronology of land usage for the project site. A selection of these maps has been reproduced for this report.
- As described below, the project site consisted of marshland and waterways abutting Jamaica Bay until the mid-twentieth century. Because the area was not developed during the historic period, standard resources normally reviewed for a Phase IA Archaeological Documentary Study were not relevant, including land conveyances, tax assessment records, census records, city directories, and Department of Buildings data.
- Information about previously recorded archaeological sites and surveys in the area was compiled from data available at the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP), the LPC, and the library of HPI.
- A Phase I Environmental Site Assessment (ESA) was provided by ESD (STV 2014).
- Last, a site visit was conducted on June 17, 2014 to assess any obvious or unrecorded subsurface disturbance (Photographs 1-10; Figure 2).

III. CURRENT CONDITIONS AND ENVIRONMENTAL SETTING

A. CURRENT CONDITIONS

The project site parcels are part of the Brooklyn Development Center (BDC) overall property, which has an address of 888 Fountain Avenue and is bounded by Fountain Avenue on the northeast, Seaview Avenue on the southwest, Erskine Street on the northwest, and Vandalia Avenue on the northeast. The BDC is enclosed by a high stone faced concrete wall. The entrances to the complex, which is located in the central part of the property, are on Fountain Avenue (Photographs 1 and 2). There is an asphalt paved perimeter roadway that is located on the interior of the high wall enclosing the complex (Photograph 3). Along the roadway there are underground water pipes and hydrants, stormwater pipes and catch basins, and light poles serviced by underground electric lines.

Site A

Site A is located at the southwest corner of the BDC complex. It measures approximately 360 feet along Erskine Street and approximately 230 feet along Seaview Avenue. The asphalt paved perimeter roadway runs along both of these streets just inside the high wall (Photograph 4). The remainder of the parcel contains grass and a few small trees (Photograph 5). There is a rise in elevation in the center of the parcel (Photograph 6). Surface parking lots and trailers enclosed by a chain link fence are located to the northeast of this parcel.

Site B

Site B is located at the northeast side of the BDC complex. It measures approximately 740 feet along Vandalia Avenue and approximately 250 feet along both Fountain Avenue and Erskine Street. The asphalt paved perimeter roadway runs along all three of these streets just inside the high wall. In addition, the parcel includes a portion of an asphalt paved surface parking lot on the Erskine Street side (Photograph 7). A trailer belonging to DASNY is located nearer the Fountain Avenue side, and is accessed by a concrete walkway leading from another surface parking lot to the south of the parcel (Photograph 8). There are four large, rectangular metal storage containers near the trailer. The parcel also includes the northern extent of a chain link fence enclosing part of the BDC complex (Photograph 9). The parcel is covered with grass and some trees, most that appear to have been recently planted but a few that are several decades old. The topography is generally level, with a slight drop in elevation moving south towards the BDC buildings (Photograph 10).

B. TOPOGRAPHY AND HYDROLOGY

In their natural state, the project site parcels were within marshlands surrounding local waterways that drained south and southeast into Jamaica Bay. One of these drainages, known historically as Betts Creek, was located along the north and northeast sides of Site B. Site A is northeast of the former channel of Mud Creek. Both parcels were landfilled during the mid-twentieth century to bring them up to their current, generally level elevations. The parcels were part of the Milford Street landfill, which accepted refuse. Today, both parcels are about 10 feet above sea level, with some slight variations in elevation within each parcel.

C. GEOLOGY

Long Island is the top of a Coastal Plain ridge formation that is covered with glacial drift, in reality an elevated sea bottom demonstrating low topographic relief and extensive marshy tracts. In the last million years, as glaciers advanced and receded three times, the surficial geology of the island, including the project site, was profoundly altered. "The glacier was an effective agent of erosion, altering the landscape wherever it passed. Tons of soil and stone were carried forward, carving and planing the land surface. At the margins of the ice sheet massive accumulations of glacial debris were deposited, forming a series of low hills or terminal moraines" (Eisenberg 1978). Circa 18,000 years ago, the last ice sheet reached its southern limit, creating the Harbor Hill moraine that traverses the length of Long Island. The moraine lies several miles north of the project site. The complex rising and subsidence of the coastal plain, relieved of its glacial burden, and the rising sea level, caused by the volume of melting ice, created the coastline of embayed rivers and estuaries, with extensive marsh tracts, which stabilized approximately 3,000 years ago (Schuberth 1968).

D. SOILS

According to the soil survey for New York City the project site is mapped as "Laguardia-Ebbets-Pavement & buildings, wet substratum complex, 0 to 8 percent slopes." This mapping unit is described as:

> Nearly level to gently sloping 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 more than 15 percent impervious pavement and buildings covering the surface (USDA 2008:11).

Figure 3 illustrates the location of the project site on the soil survey map for New York City.

No soil borings have been completed on the project site, although the soil column is expected to consist of twentieth century refuse and landfill overlying marshland soils. The project site parcels are approximately 10 feet above sea level today, but historically were at about sea level, or zero elevation. Hence the refuse and landfill overburden should be about 10-12 feet thick, with the natural water table at about zero elevation. It is unclear whether original marshland soils, including possible peat layers, have been disturbed by subsequent grading and filling.

III. BACKGROUND RESEARCH/HISTORICAL OVERVIEW

A. PRECONTACT PERIOD SUMMARY

For this report, the word precontact is used to describe the period prior to the use of formal written records. In the western hemisphere, the precontact period also refers to the time before European exploration and settlement of the New World. Archaeologists and historians gain their knowledge and understanding of precontact Native Americans in the greater metropolitan New York area from three sources: ethnographic reports, Native American artifact collections, and archaeological investigations.

Based on data from these sources, a precontact cultural chronology has been devised for the New York City area. Scholars generally divide the precontact era into three main periods, the Paleo-Indian (c. 14,000-9,500 years ago), the Archaic (c. 9,500-3,000 years ago), and the Woodland (c. 3,000-500 years ago). The Archaic and Woodland periods are further divided into Early, Middle, and Late substages. The Woodland was followed by the Contact Period (c. 500-300 years ago). Artifacts, settlement, subsistence, and cultural systems changed through time with each of these stages. Characteristics of these temporal periods have been well documented elsewhere, and in keeping with guidelines issued by the NYSOPRHP (2005), will not be fully reiterated here.

Scholars often characterize precontact sites by their close proximity to a water source, fresh game, and exploitable natural resources (i.e., plants, raw materials for stone tools, clay veins, etc.). These sites are often separated into three categories: primary (campsites or villages), secondary (tool manufacturing, food processing), and isolated finds (a single or very few artifacts either lost or discarded). Primary sites are often situated in locales that are easily defended against both nature (weather) and enemies. Secondary sites are often found in the location of exploitable resources (e.g., shell fish, lithic raw materials).

B. PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES AND SURVEYS

Records on file at the NYSOPRHP, the NYSM indicate that there are two precontact archaeological sites within one mile of the project site. These sites are summarized in the table, below.

Site #	Distance from APE	Time Period	Site Type
NYSM 3607	ca. 500 feet west, vaguely mapped	Unknown precontact	Shell or kitchen midden
NYSM 3609	ca. 4000 feet west	Unknown precontact	Village

Both of these NYSM sites are part of the large Canarsee Native American occupation that once existed surrounding the head of Fresh Creek approximately one mile to the southwest of the project site. Shell middens, which were said to be immense, were located in proximity to the main occupied area, and likely extended into the marshlands.

The project site vicinity also has had a number of archaeological surveys completed. Immediately abutting the project site parcels, the Gateway Estates project included land bounded by Flatlands Avenue, Schenck Avenue, the Belt Parkway, and portions of Fountain Avenue. Pre-development conditions within the Gateway Estates property were very similar to the present project site. The Phase IA Archaeological Assessment for that project concluded that former marshlands, now covered with refuse and landfill, had a low precontact archaeological sensitivity, but that a small area of firm land that once extended into the marshland retained precontact archaeological sensitivity if underlying landforms had not been disturbed (HPI 1993). Phase IB archaeological testing of this former hummock was completed in 2009. The archaeological testing revealed the remnants of the original ground surface and intact subsoils beneath 10 to 12 feet of modern fill. However, this ground surface had been heavily disturbed and mixed with overlying fills. No precontact period archaeological materials or features were found and no further archaeological testing was recommended (AKRF 2009).

Additional archaeological studies have been conducted at two sites along Spring Creek straddling Brooklyn and Queens (HPI 1988, Ricciardi and Davis n.d.). At both sites, conditions were similar to the present property in that the area was formerly marshland that had later been used as a municipal landfill. In both cases archaeologists concluded that there was little to no precontact period archaeological sensitivity due to a lack of high ground on the parcels as well as the degree of disturbance to the land from later earthmoving associated with landfilling. Soil borings at one site showed no evidence of shell middens beneath the extensive fill.

Finally, there has been considerable archaeological study associated with twelve project sites within the large Jamaica Bay Ecosystem Restoration project (Panamerican 2003, 2004, 2006). Prior to landfilling, Jamaica Bay was immediately south of the project site parcels. Several of the twelve sites were subjected to Phase IB archaeological testing, but no precontact period remains were found.

C. HISTORIC PERIOD SUMMARY

The project site parcels are within the original colonial Town of Flatbush, which was one of five Dutch towns established in Kings County. Within Flatbush, the project site parcels were within the area known as New Lots, which included the current neighborhoods of Brownsville, Cypress Hills, East New York and New Lots. New Lots was settled in the 1650s by a group of about twenty families from the Netherlands and a few Germans from the Palatine region (Armbruster n.d.).

New Lots included both woodland and meadow land, or marshland. The meadow lots were divided into several sections, separated by the three main creeks draining into Jamaica Bay. Fresh Creek was the first one and Spring Creek was the third one, with a creek known as "Second Creek" between them. As shown on the 1905 Hyde map (see Figure 7), Site A was in the middle of a northwest-southeast oriented tract that had a frontage on Jamaica Bay. Site B overlapped several narrower meadow lots that ran southwest-northeast and had a small frontage on Spring Creek. Each of these individual meadow lots was assigned to a landowner within New Lots, who would have owned a town lot or "plantation" as well. It is likely that the first land transactions for the meadow lots occurred from ca. 1677-1680 (Landesman 1977). As the 1905 map shows, the orientation of these meadow lots remained largely unchanged over the centuries. The meadow lots were used for the harvest of salt hay for winter forage, sedge grass for thatch, dried seaweed or eel grass for stuffing mattresses and both the sedge and eel grass for fertilizer (Stiles 1884:442). A long fence was constructed in 1799 in the general area of Wortman or Stanley Avenues, several blocks north of the project site, to keep livestock out of the marshland, with any animal that breached the fence allowed to be seized by the poundmaster or fence viewer for payment (Landesman 1977:33).

The main New Lots settlement remained far inland from the project site parcels, generally along what is now New Lots Avenue between Van Sinderen and Fountain Avenues, about seven blocks northwest of the project site. New Lots was a farming village, and the population grew slowly during the seventeenth, eighteenth, and nineteenth centuries. The farms grew a variety of crops and maintained numerous livestock. Farm products were either shipped to New York City or sold to consumers in Kings and Queens Counties (Landesman 1977:76). New Lots families included the Van Wicklens, the Vanderveers, the Rapeljes, the Schencks, the Duryeas, the Hegemans, the Cozines, the Van Sickelens, the Wyckoffs, and the Stoothoffs, to name but a few. Many of the streets in New Lots were named after these early landowners.

The closest development to the project site parcels during this period was the tidal grist mill at the foot of modern Crescent Street, several hundred feet to the northeast. Constructed in ca. 1770, it was called Old Mill, and later Van Wicklen's Mill, after the family that purchased it and rebuilt it in 1810. The mill stood until 1934. The area near the mill was called Forbell's Landing during the mid-nineteenth century. The landing and mill are depicted on the 1844-45 U.S.C.S. map, the 1852 Conner map (Figure 4) and the 1873 Beers map (Figure 5), with the project site parcels clearly within the marshland. There was no change to the project site parcels through the end of the nineteenth century (Bien and Vermeule 1891, Figure 6).

It was not until the first decades of the twentieth century that the project site vicinity began to experience any change. After Greater New York had been created in 1898, the marshlands surrounding Jamaica Bay began to be seen as an area to be developed. In 1905, the City Comptroller issued a report calling for landfilling large sections of the marshlands and bay with city ash and refuse, leaving shipping lanes open at intervals between the landfills. However, only portions of this extensive plan were implemented, including the construction of Mill Basin and Paerdegat Basin (HPI 1988). A 1924 aerial photograph of the project site vicinity shows that a linear channel south of the present location of Seaview Avenue had been constructed into the marshland by this time, and was bordered by small structures, although the project site parcels themselves remained marshland (Figure 8). After 1930, under Parks Commissioner Robert Moses, much of the earlier development plan was overturned and the bay was promoted as a zone for recreation and residential development. During the late 1930s the Shore Parkway (now the Belt Parkway) was built south of the project site, opening for traffic in 1940.

As early as 1954 the marshland to the northeast of the project site parcels was being filled with residue from the city's South Shore Incinerator. The project site parcels were further landfilled in the late 1960s as part of the city's 1967 urban renewal efforts. The modem street grid was established when the city's new street plan for the area was adopted, ca.1970. The project site parcels eventually were filled to the newly established street grade likely in part with refuse, as part of the Milford Street Landfill Project, and also with municipal solid waste (Lockwood, Kessler & Bartlett, Inc. 1986, HPI 1988). Figure 9 illustrates the project site parcels during the 1960s, when landfilling was occurring (U.S.G.S. 1966). The buildings for the Brooklyn Development Center on Block 4586 were constructed during the early 1970s.

V. CONCLUSIONS

A. PRECONTACT SENSITIVITY AND DISTURBANCE RECORD

From what is known of precontact period settlement patterns in New York City, most habitation and processing sites are found in sheltered, elevated sites close to wetland features, major waterways, and with nearby sources of fresh water. Prior to landfilling in the area, the project site parcels were situated within a large marshy area bordering Betts Creek (which may have crossed the northeast corner of Site B) and Mud Creek, located southeast of Site A. Native Americans would have been drawn to these creeks and marshlands for their aquatic life, wild game, and vegetation. As well, wetlands provided peat that could be used for fuel and a number of plants that served as materials for clothing, basketry and weaving. As importantly, the use of certain aquatic plants for medicinal purposes is ethnographically documented (Herrick 1995).

Precontact period sites, primarily from the Woodland Period, have been documented along the Jamaica Bay shoreline in proximity to the marshlands. In some cases, extensive shell middens extended into the marshlands, the equivalent of precontact garbage dumps. Defined as deposits of shells, gravel, sand and silt and in some cases other cultural remains, they occur either as distinct cultural events or in association with habitation sites (Wells 2001). Along some areas of Jamaica Bay, these shell middens have been found under layers of modern fill, but on top of marshland soils (Pickman 1987:4). Additionally, prior to the creation of Jamaica Bay and its marshlands after the last Ice Age, the project site parcels would have been dry land. It is possible that precontact period archaeological sites from this period, dating from the Paleo Indian period through the parts of the Archaic period, could remain capped by later marshland soils that accrued after the sea level rise, ca. 2000-4000 B.P.

At present and until soil borings are completed on the project site parcels, the characteristics of the underlying soil column can only be estimated. For example, based on the current site elevations of ca. 10 feet above mean sea level, it is assumed that there is about 10-12 feet of introduced fill, likely including refuse, beneath the existing ground surface, since the area formerly was at sea level. Beneath the fill, if not disturbed during placement of the fill, may

be layers of marshland soils, possibly including layers of peat or organic silts under the water table. Peat in particular can act as a preservation agent, allowing soils under the peat to remain intact. Without peat layers, it is often, but not always, the case that repeated tidal actions (or marine transgressions) have destroyed any potential buried surfaces that could contain ancient precontact period archaeological resources. It is important to note though that the identification of sediment types and attendant faunal remains in these deposits could provide valuable information on the evolution of coastal landscapes that were used by precontact groups occupying the area.

At this time HPI assigns a moderate precontact period archaeological sensitivity to the project site parcels, due to the potential for the sites to contain archaeological resources but the unknown degree of disturbance to the natural soil column. It is possible that results of the pending soil borings could lessen or eliminate that sensitivity if the marshland soils beneath the fill are shown to be disturbed or if no peat or silty layers are shown to survive.

B. HISTORIC PERIOD SENSITIVITY AND DISTURBANCE RECORD

The project site parcels were covered with marshland until being landfilled in the 1960s and brought up to their present elevation. All the soil within the parcels consists of introduced fill, likely including refuse, dating to the 1950s and 1960s. The parcels have never been developed. There is no historic period archaeological sensitivity for either project site parcel.

VI. RECOMMENDATIONS

Based on the results of the Phase IA Archaeological Documentary Study research, HPI recommends that planned soil borings for the project site parcels be reviewed by an archaeologist when they are completed to see whether intact strata that could have supported precontact occupation exist beneath the deep fill that is expected to be found on the sites. Such evidence includes the presence/absence of a thick peat lens, organic or silty deposits, a shell midden, or other precontact period cultural remains. These results, combined with a review of final project impacts (including the depths of new building basements, foundations, and other supporting structures such as pilings), will eliminate, narrow, or more clearly define any areas of precontact period archaeological sensitivity. There is no historic period archaeological sensitivity for the project site parcels and HPI recommends no further consideration for this period.

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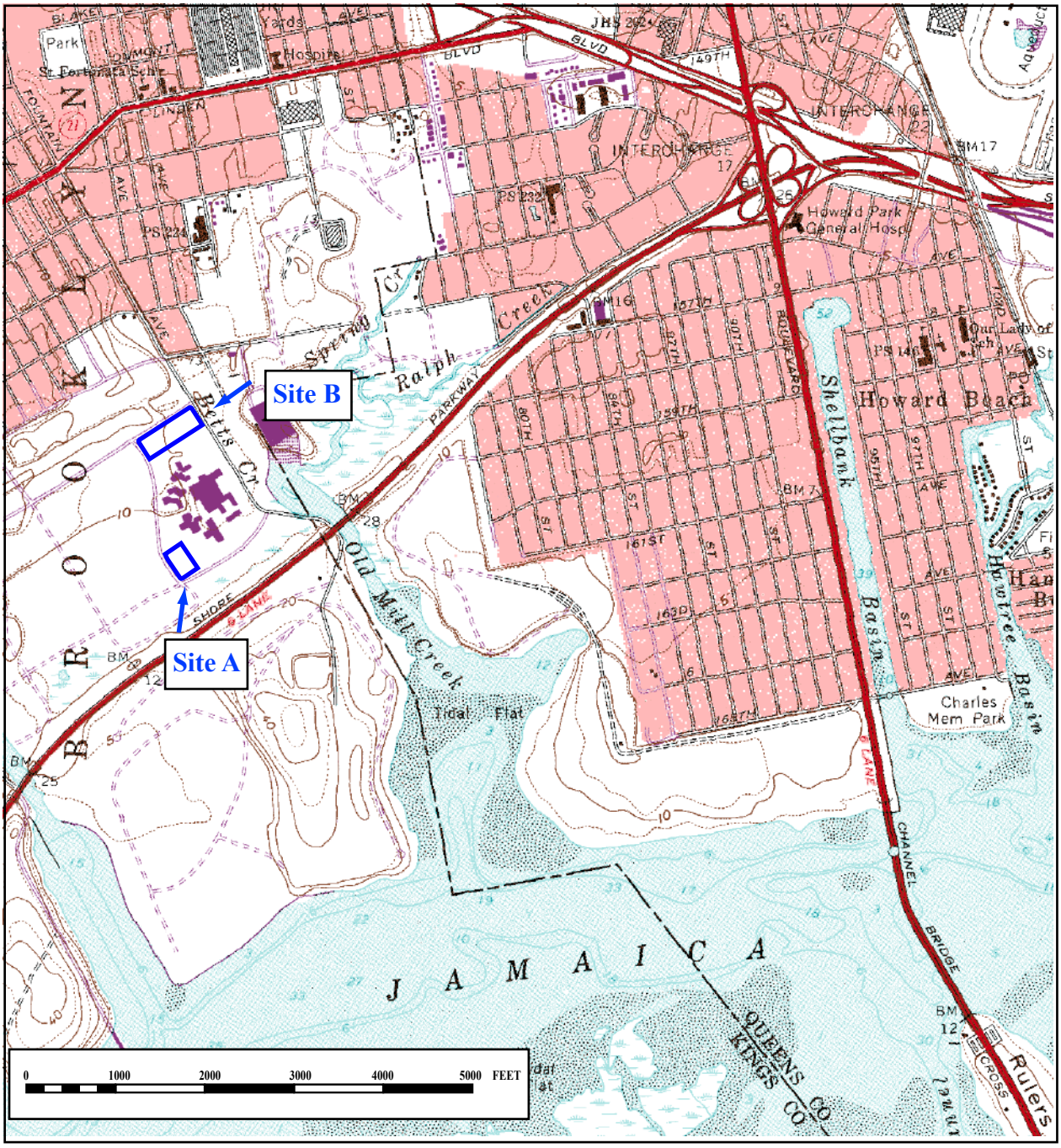

Phase IA Archaeological Documentary Study
Brooklyn Development Center Sites A and B
888 Fountain Avenue
Brooklyn, Kings County, New York
Part of Block 4586, Lot 300

N

Figure 1: Project site on *Jamaica, New York* 7.5 Minute Quadrangle (U.S.G.S. 1979).

Phase IA Archaeological Documentary Study
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888 Fountain Avenue
Brooklyn, Kings County, New York
Part of Block 4586, Lot 300

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Figure 2: Project site and photograph locations on modern aerial photograph (Bing 2014).

0 250 500 750 1000 1250 FEET

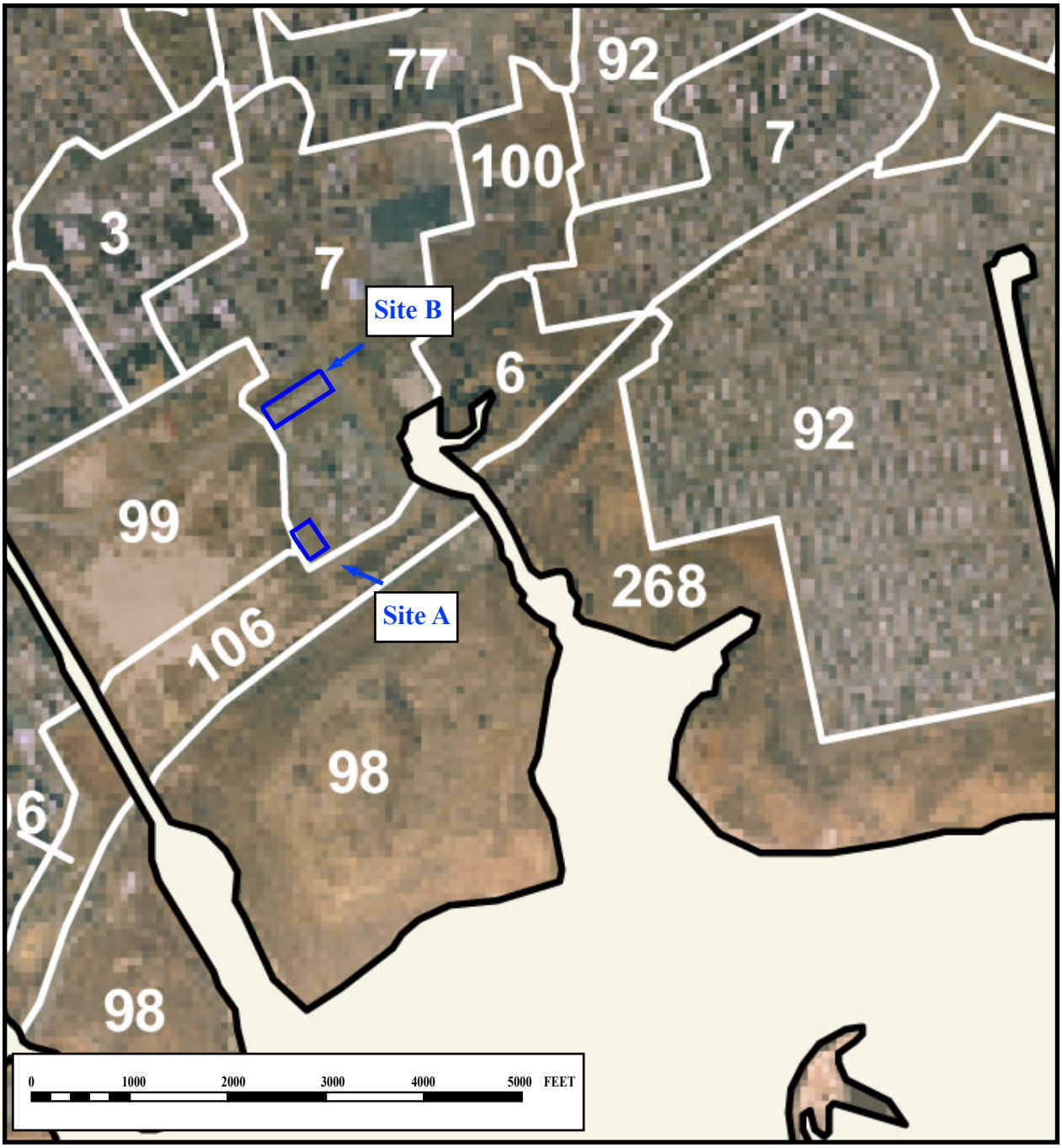

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Figure 3: Project site on *New York City Reconnaissance Soil Survey* (U.S.D.A. 2006).

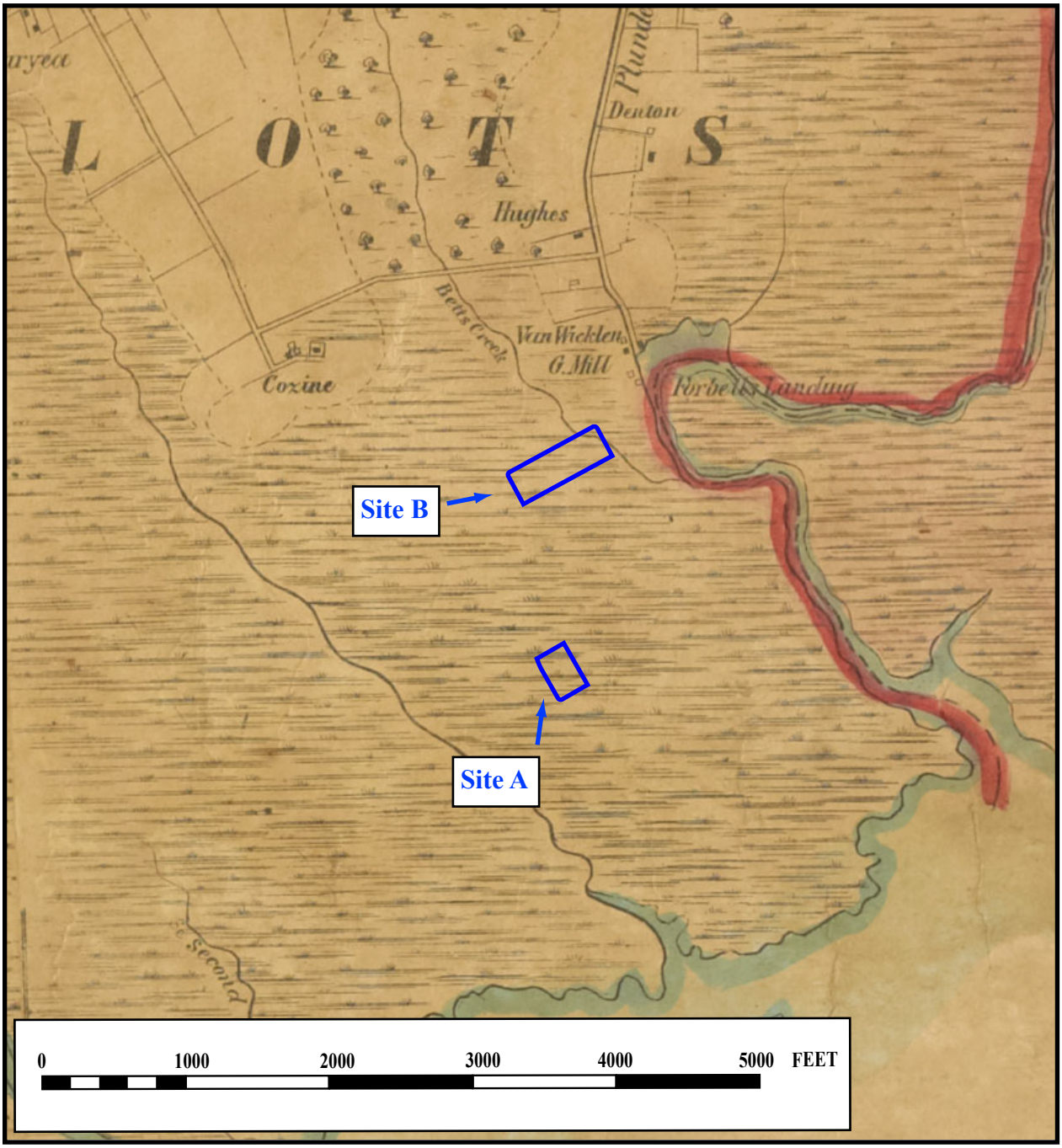

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Figure 4: Project site on *Map of Kings and Part of Queens Counties, Long Island, New York* (Conner 1852).

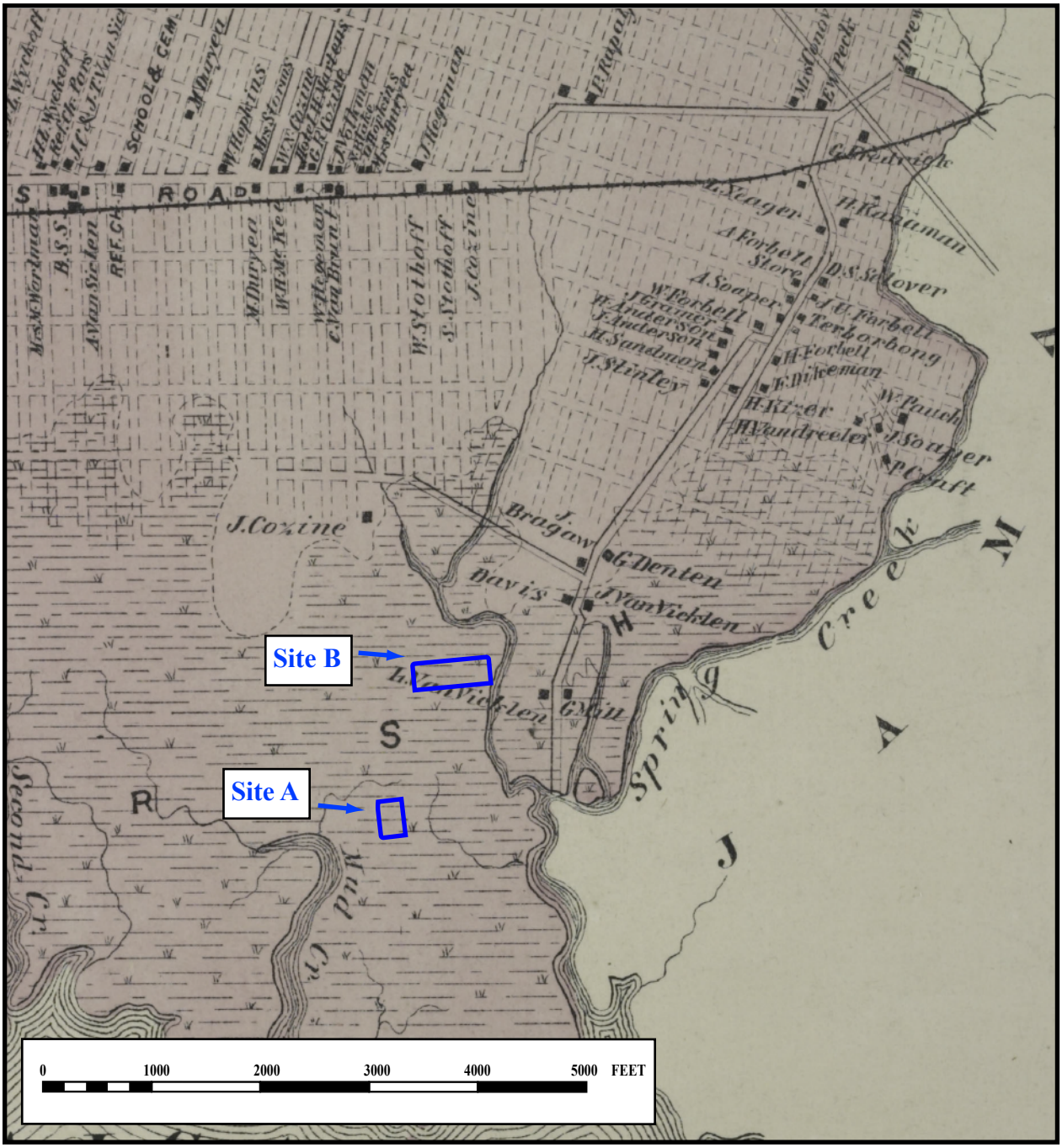

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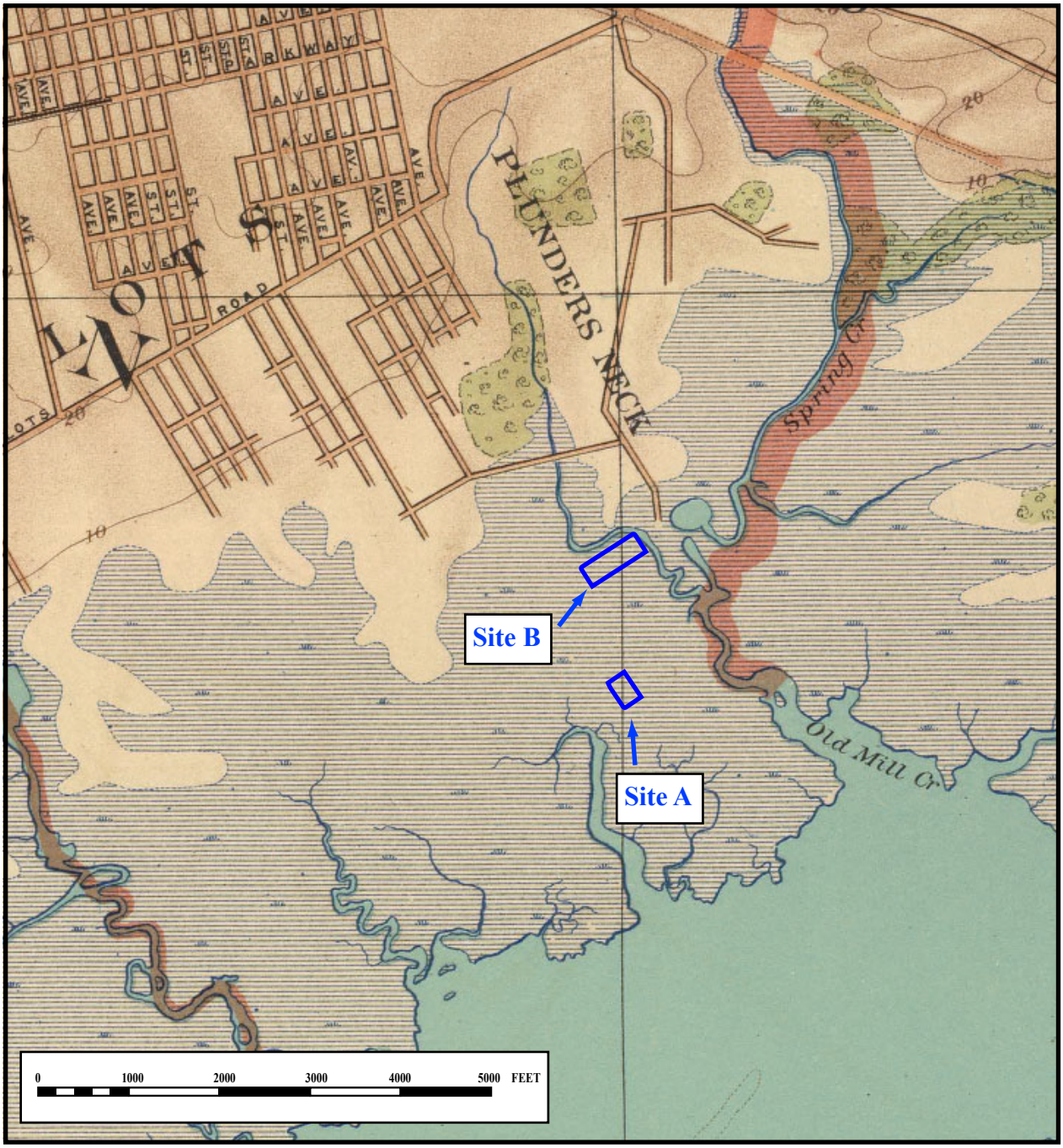
Figure 5: Project site on *Atlas of Long Island, New York* (Beers 1873).



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Brooklyn Development Center Sites A and B
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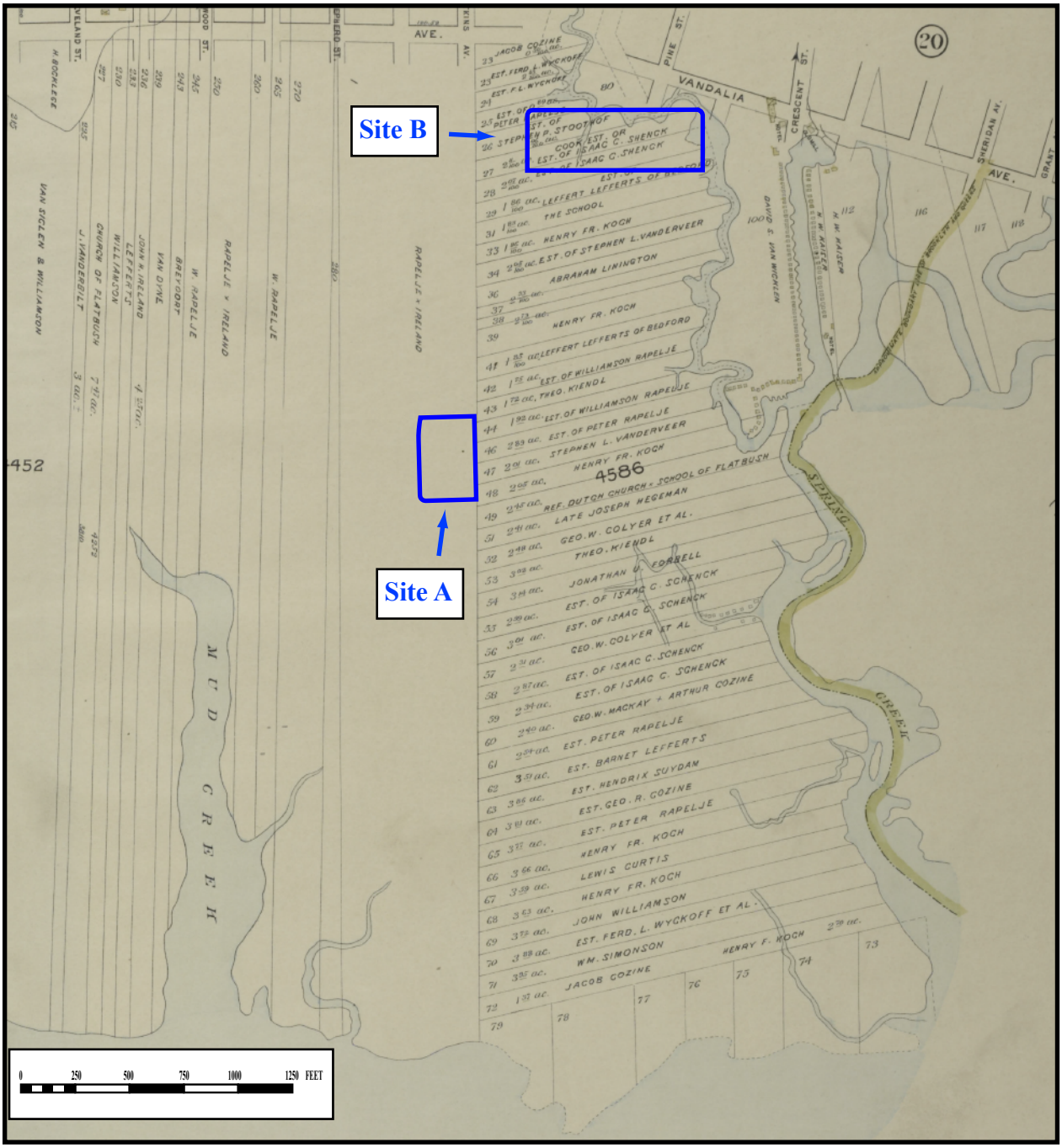
Figure 6: Project site on *Atlas of the Metropolitan District and adjacent country...* (Bien and Vermeule 1891).



Phase IA Archaeological Documentary Study
Brooklyn Development Center Sites A and B
888 Fountain Avenue
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Part of Block 4586, Lot 300

Figure 7: Project site on *Atlas of the Borough of Brooklyn, City of New York* (Hyde 1905).

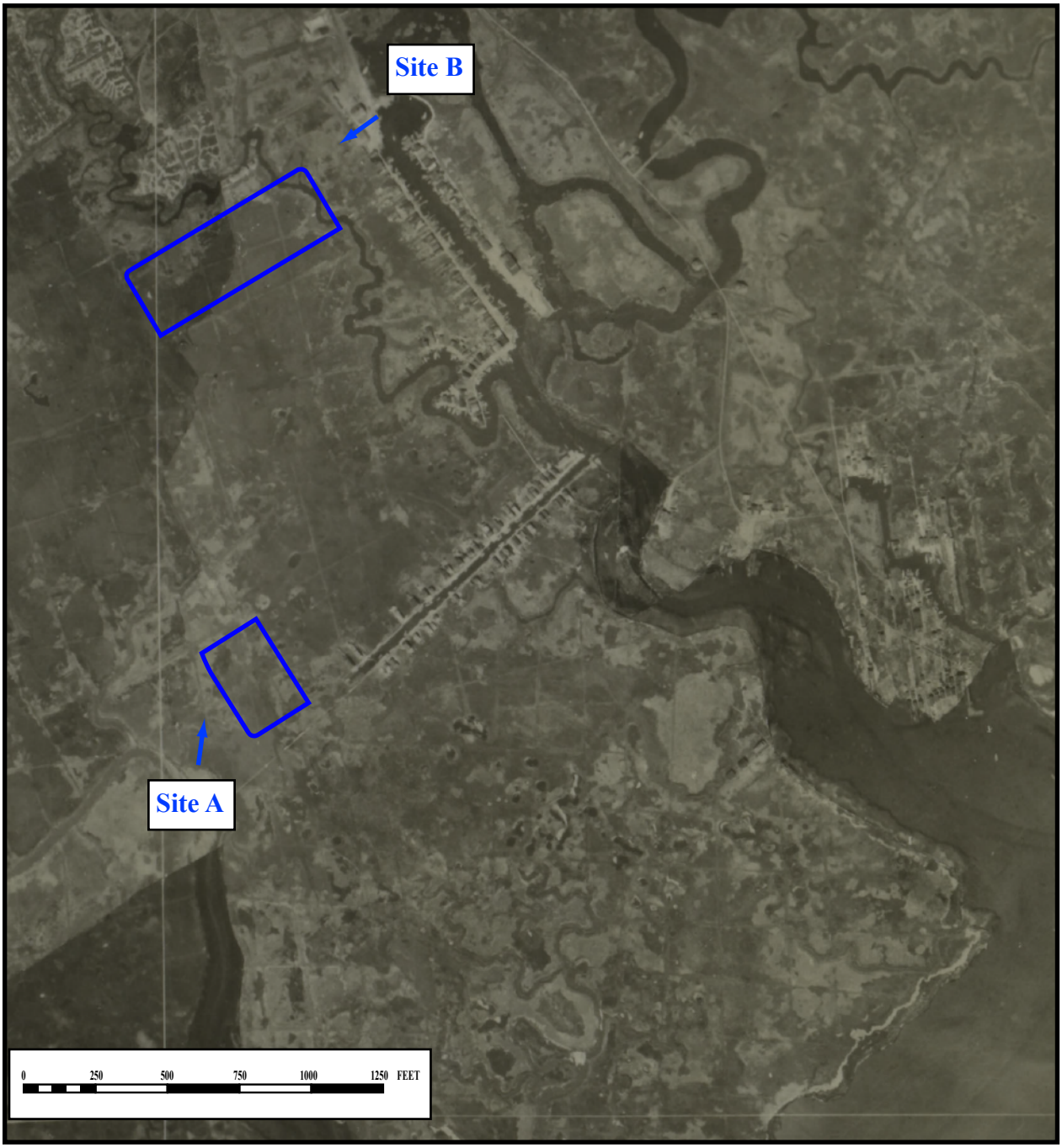

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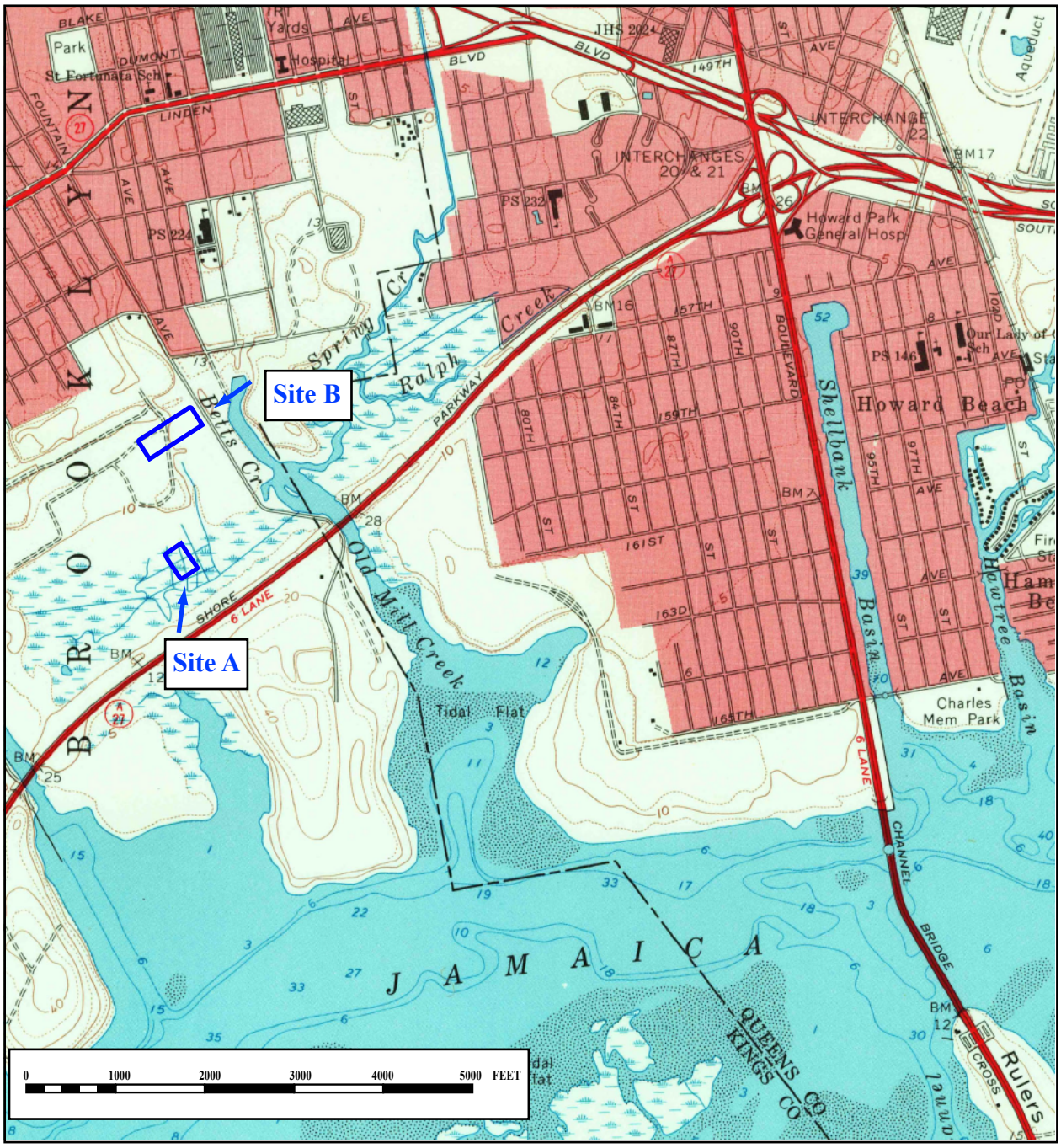
Figure 8: Project site on Sectional aerial maps of the City of New York (Bureau of Engineering 1924).



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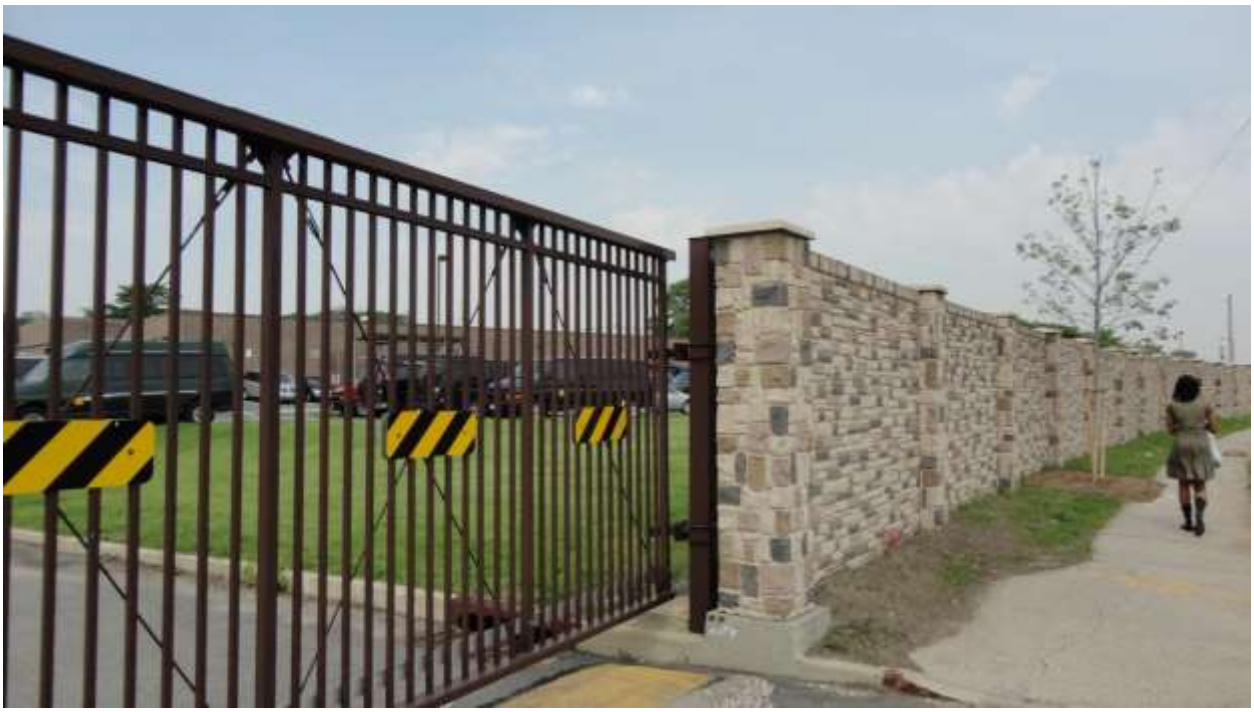
Brooklyn Development Center Sites A and B
888 Fountain Avenue
Brooklyn, Kings County, New York
Part of Block 4586, Lot 300

N

Figure 9: Project site on *Jamaica, New York* 7.5 Minute Quadrangle (U.S.G.S. 1966).

Photograph 1: Entrance to Brooklyn Development Center (BDC) on Fountain Avenue. View looking south.


Photograph 2: High wall and gate on Fountain Avenue. View looking northwest.

Photograph 3: Perimeter BDC roadway on interior of complex with utility poles. View looking northwest.

Photograph 4: Site A showing perimeter BDC roadway and grassy area. Intersection of Erskine Street and Seaview Avenue is in background. View looking southwest.

Photograph 5: Site A main area with perimeter road and BDC complex wall in background. View looking southwest with Erskine Street beyond wall.

Photograph 6: Site A showing change in topography at northwest end. Trailer and parking lots within BDC complex in background. View looking southeast.

Photograph 7: Site B showing perimeter BDC roadway and parking lot at northwest end. Intersection of Vandalia Avenue and Erskine Street is in background. View looking northwest.

Photograph 8: Site B showing trailer and metal storage containers at northeast end. Vandalia Avenue is in background. View looking northwest.

Photograph 9: Site B grassy area with chain link fence and trees on left. View looking southwest toward Erskine Street in background.

Photograph 10: Site B grassy area with chain link fence and trees on right. View looking northeast toward trailer. Vandalia Avenue is on left and Fountain Avenue is in background.