

# **Red Hook Container Terminal Recycling Facility Relocation Project**

**Block 314, Lots 27, 28, 31, 36, 38, 40, and 42 and  
Block 316, Lot 1**

**BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK**

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**Phase 1A Archaeological Documentary Study**

**Prepared for:**

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**NOVEMBER 2023**

## Management Summary

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### LPC Project Unique

**Identification Number:** 37169

**OPRHP Project Review Number:** [not yet issued]

**Involved Agencies:** New York City Department of Transportation  
New York State Department of Environmental Conservation

**Phase of Survey:** Phase 1A Documentary Study

### Location Information

*Location:* Brooklyn, New York

*Minor Civil Division:* 04701

*County:* Kings County

### Survey Area

*Length:* Approximately 115 to 210 feet

*Width:* Approximately 50 to 350 feet

*Area:* 1.9 acres (83,000 square feet)

**USGS 7.5 Minute Quadrangle Map:** Jersey City

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**Date of Report:** November 2023

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## A. INTRODUCTION AND PROJECT DESCRIPTION

The New York City Department of Transportation (NYCDOT) is proposing to relocate its concrete-recycling facility and citywide concrete operation from the South Brooklyn Marine Terminal (SBMT) to a portion of the Red Hook Container Terminal (RHCT) site (the Proposed Project) (see **Figure 1**). The Project Site includes all or portions of Block 281, Lot 1; Block 314, Lots 1, 27, and 28, 31, 36, 38, 40, and 42; and Block 316, Lot 1 (see **Figure 2**). It also includes portions of the demapped and undeveloped streetbeds of Baltic Street, Kane Street, Irving Street, and Van Brunt Street. The RHCT is an approximately 30-acre intermodal freight transport facility that is owned and operated by the Port Authority of New York and New Jersey (PANYNJ).

The Proposed Project would relocate the NYCDOT concrete recycling facility used for its Sidewalk Inspection and Maintenance (SIM) operations from the SBMT to the Project Site. As shown in **Figure 3**, the Proposed Project would entail the construction of a concrete-recycling facility containing concrete-crushing equipment; material, finished product, and debris/refuse storage areas; nine employee office and locker trailers; and parking for the SIM fleet and employee vehicles. The Proposed Project would also install associated utilities including permanent electric services and an electrical control center. The Proposed Project would include construction of a site entrance on Columbia Street (at its intersection with Kane Street).

The concrete-crushing equipment would operate in an area generally located at the center of the Project Site, with designated debris/refuse piles and materials and finished product storage nearby and in areas to the north of the concrete-crushing equipment. The areas to the south and east of the concrete-crushing equipment would contain fleet and worker parking areas, trailers containing office/administrative space and lockers, an electrical control center, guard booths, and additional materials storage space (see **Figure 3**). The trailers would be concentrated in the easternmost portion of the site where the existing NYCDOT Bridges operation is located. The NYCDOT Bridges activities would be relocated within the Project Site. It is anticipated that the Proposed Project would be a temporary facility which would be operational for approximately five years, after which it would relocate to another location.

Subsurface disturbance for specific project components would occur at various depths below the current ground surface; the specific location of some elements/locations of disturbance has not yet been identified, but expected depths of disturbance could include the following:

- Milling and paving across the entire site resulting in disturbance to a depth of less than 1 foot;
- The installation of electrical service lines requiring disturbance to a depth of up to 3 feet in locations to be determined in the future;
- Excavation and regrading to a depth of 2 to 3 feet at the eastern end of Block 314;
- The installation of four piers/foundations to support a 20- by 8-foot utility building and enclosure requiring disturbance to a depth of 4 feet;
- The installation of an approximately 200-foot-long water line requiring disturbance to a depth of 4 feet;

- The installation of a to-be-determined number of drainage manholes excavated to a depth of 8 feet.

## **B. ENVIRONMENTAL REVIEW**

To facilitate the relocation of the facility, NYCDOT intends to amend an existing lease agreement with PANYNJ to allow NYCDOT to relocate its concrete-recycling facility and citywide concrete operation. While the proposed facility would be constructed as-of-right, it would require an amendment to the existing lease with PANYNJ. This lease amendment is a discretionary action subject to New York City Environmental Quality Review (CEQR). NYCDOT is serving as the lead agency for the CEQR review. The project will not result in earth disturbance greater than 1-acre and as such would not require a Stormwater Prevention Pollution Plan (SWPPP). Therefore, the project is not expected to involve state or federal actions.

Pursuant to CEQR, consultation was initiated with the New York City Landmarks Preservation Commission (LPC). In a comment letter dated October 11, 2023, LPC determined that Block 314, Lots 27, and 28, 31, 36, 38, 40, and 42 and Block 316, part of Lot 1 were potentially archaeologically significant, and requested an archaeological documentary study of that portion of the Project Site. Block 281, Lot 1 and Block 314, Lot 1 were determined to have no potential archaeological significance, and no further archaeological analysis of those properties was requested. To satisfy LPC’s request, this Phase 1A Archaeological Documentary Study (“Phase 1A Study”) has been prepared for those portions of Block 314, Lots 27, and 28, 31, 36, 38, 40, and 42 and Block 316, Lot 1 that are included within the Project Site (the “Study Area”). LPC also clarified that the demapped streetbeds of Kane (formerly Harrison), Irving, and Van Brunt Streets adjacent to the lots identified as potentially significant should be included within the Study Area.

## **C. RESEARCH GOALS AND METHODOLOGY**

This Phase 1A Archaeological Documentary Study has been designed to satisfy the requirements of LPC as issued in 2018. The study documents the development history of the Study Area and its potential to yield archaeological resources, including both precontact and historic cultural resources. In addition, this report documents the current conditions of the Study Area, as well as previous cultural resource investigations that have taken place in the vicinity.

This Phase 1A Archaeological Documentary Study has four major goals: (1) to determine the likelihood that the Study Area was occupied during the precontact (Native American) and/or historic periods; (2) to determine the effect of subsequent development and landscape alteration on any potential archaeological resources that may have been located within the Study Area; (3) to make a determination of the Study Area’s potential archaeological sensitivity; and (4) to make recommendations for further archaeological analysis, if necessary. The steps taken to fulfill these goals are explained in greater detail below.

The first goal of this documentary study is to determine the likelihood that the Study Area was inhabited during the precontact and/or historic periods and identify activities that may have taken place in the vicinity that would have resulted in the deposition of archaeological resources.

The second goal of this Phase 1A study is to determine the likelihood that archaeological resources could have survived intact within the Study Area after development and landscape alteration (e.g., erosion, grading, filling, etc.). Potential disturbance—associated with paving, utility installation, and other previous construction impacts—was also considered. As described by the New York Archaeological Council (NYAC) in its *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State*, published in 1994 and subsequently adopted by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP):

*An estimate of the archaeological sensitivity of a given area provides the archaeologist with a tool with which to design appropriate field procedures for the investigation of that area. These sensitivity projections are generally based upon the following factors: statements of locational preferences or tendencies for particular settlement systems, characteristics of the local environment which provide essential or desirable resources (e.g., proximity to perennial water sources, well-drained soils, floral and faunal resources, raw materials, and/or trade and transportation routes), the density of known archaeological and historical resources within the general area, and the extent of known disturbances which can potentially affect the integrity of sites and the recovery of material from them (NYAC 1994: 2).*

The third goal of this study is to make a determination of the Study Area's archaeological sensitivity. As stipulated by the NYAC standards, sensitivity assessments should be categorized as low, moderate, or high to reflect "the likelihood that cultural resources are present within the project area" (NYAC 1994: 10). For the purposes of this study, those terms are defined as follows:

- Low: Areas of low sensitivity are those where the original topography would suggest that Native American sites would not be present (i.e., locations at great distances from fresh and saltwater resources), locations where no historic activity occurred before the installation of municipal water and sewer networks, or those locations determined to be sufficiently disturbed so that archaeological resources are not likely to remain intact.
- Moderate: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and with some disturbance, but not enough to eliminate the possibility that archaeological resources are intact within the Study Area.
- High: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and minimal or no documented disturbance.

The fourth and final goal of this study is to make recommendations for additional archaeological investigations where necessary. According to NYAC standards, Phase 1B testing is generally warranted for areas determined to have moderate or higher sensitivity. Archaeological testing is designed to determine the presence or absence of archaeological resources that could be impacted by a proposed project. Should they exist within the Study Area, such archaeological resources could provide new insight into precontact occupation in southwestern Brooklyn, the transition from Native American to European settlement, or the historic period occupation of the Study Area.

To satisfy the goals as outlined above, documentary research was completed to establish a chronology of the Study Area's development, landscape alteration, and to identify any individuals who may have owned the land or worked and/or resided there, and to determine if buildings were present there in the past. Data were gathered from various published and unpublished primary and secondary resources, such as historic maps, topographical analyses (both modern and historic), historic and current photographs (including aerial imagery), newspaper articles, local histories, and previously conducted archaeological surveys. These published and unpublished resources were consulted at various repositories, including the Main Research Branch of the New York Public Library (including the Local History and Map Divisions) and the Library of Congress. Previously identified sites and previously conducted archaeological resources in the vicinity were collected from the files of OPRHP and the New York State Museum (NYSM). Information on previously identified archaeological sites and previous cultural resources assessments was accessed through the New York State Cultural Resource Information System (CRIS). Online textual archives, such as Google Books and the Internet Archive Open Access Texts, were also accessed.

**A. CURRENT CONDITIONS**

As described previously, the Study Area includes a portion of the existing RHCT, an approximately 30-acre intermodal freight transport facility that is owned and operated by PANYNJ. The Project Site is a paved industrial area used largely for the storage of shipping containers and for vehicle storage (see **Figures 4a to 4d**). A portion of the Project Site also contains an area used seasonally by NYCDOT Bridges for road salt operations. There are currently no permanent structures located on the Project Site. The Project Site is surrounded by other industrial uses within the RHCT site including shipping container storage areas, administrative and warehousing buildings, a waste carting operation, surface parking, and salt piles. The Project Site is western-adjacent to an NYCDOT Traffic Operations facility and to Waterfront Commission of New York Harbor (WCNYH) and PANYNJ administrative buildings, located along the eastern edge (Columbia Street frontage) of the RHCT site. The entire RHCT site is surrounded by a security fence, and access to the site is restricted. Currently, the primary access to the Project Site is at the RHCT entrance at the intersection of Van Brunt Street and Hamilton Avenue.

**B. GEOLOGY AND TOPOGRAPHY**

The Study Area is situated within a geographic province known as the Atlantic Coastal Plain (Isachsen, et al. 2000). Brooklyn’s physical setting was shaped by massive glaciers up to 1,000 feet thick that retreated from the area toward the end of the Pleistocene. There were four major glaciations that lasted until approximately 12,000 years ago when the Wisconsin period—the last glacial period—came to an end. During the Wisconsin ice age, a glacial moraine known as the “Terminal Moraine” traveled southwest across portions of what are now Brooklyn, Queens, and Staten Island. The progression of the Terminal Moraine resulted in the separation of the Atlantic Coastal Plain in southern Brooklyn from the rest of Long Island to the north and northeast. The Study Area is situated north of the moraine and while its underlying bedrock is unidentified, the area is characterized by glacial and alluvial deposits dating to the Quaternary Period of the Cenozoic Era beginning 2 million years ago (Fisher, et al. 1970; Isachsen, et al. 2000). Surficial geological deposits in the Study Area and vicinity are identified as glacial till (Cadwell 1989).

**C. HYDROLOGY**

As the glaciers receded, the ensuing runoff created streams, rivers, and lakes as well as thick tracts of marshland in the low-lying areas along Brooklyn’s coastline. As recently as a few thousand years ago, the sea level was 2 to 4 meters (6.6 to 13.1 feet) lower than it is at present and the coastline was located farther out into New York Bay, hundreds of meters south of its present location (GRA 2014). Red Hook is located on a landform—what was historically a neck of land separated by water to the west and from mainland Brooklyn by water to the east. The majority of the Study Area was historically located within the historical footprint of Buttermilk Channel, on the western side of the Red Hook landform. On its eastern side, the Red Hook landform was historically bordered by the Gowanus Creek but is now



bordered by the Gowanus Canal, an artificial channel. The canal was constructed by filling in and channelizing the creek in the late-19th century.

Historical maps suggest that only a portion of the eastern end of what is now Block 314 was on land, while the remainder was inundated (see **Figure 5**). A historical mill was located in the southeastern portion of the Study Area; mill-related modifications to the natural landscape are visible on historical maps published in the first half of the 19th century. The Herbert and Tolford map depicts a marshy hassock to the southwest that is identified on the map as “Locust Island,” which was separated from the mainland by “Cornell’s Mill Pond.” The mill pond flooded an area formerly inundated by a body of water known as Graver’s Kill (Stiles 1867). The 1844 Hassler coastal survey continues to depict the majority of the Study Area as inundated but suggests that landfilling along the waterfront had progressed. By the early 1850s, the Study Area was entirely filled.

## D. SOILS

The Web Soil Survey maintained by the United States Department of Agriculture (USDA)’s National Resource Conservation Service indicates that the Study Area is situated in an area characterized by a single soil type, the Urban land, reclaimed substratum complex. These soils are typically found in well-developed urban areas with slopes of 0 to 3 percent. The typical profile of this soil type is summarized in **Table 2-1**.

**Table 2-1**  
**Study Area Soils**

Series Name	Typical Soil Profile			Slope (%)	Drainage	Landform
	Level	Soil Horizon Depth (inches)	Soil Type			
Urban Land, Reclaimed Substratum (UrA)	M	0 to 15	Cemented Material	0 to 3	n/a	Summit
	2^C	15 to 79	Gravelly Sandy Loam			

**Sources:** USDA Natural Resources Conservation Service Web Soil Survey: <https://websoilsurvey.sc.egov.usda.gov> (accessed October 2023).

## E. ASSESSMENT OF LANDSCAPE MODIFICATION IN THE 20TH CENTURY

Modern topographical information obtained from Light Detection and Ranging (Lidar) analysis as published by the City of New York in 2017<sup>1</sup> indicates that the ground surface of the Study Area is generally level. The ground surface of that portion of Block 314 within the Study Area rises slightly to the southeast between 12 and 14 feet relative to the North American Vertical Datum of 1988 (NAVD88). The ground surface within that portion of Block 316, Lot 1 that is included within the Study Area slopes down to the west between elevations of approximately 13 and 11 feet NAVD88. The comparison of the street elevations as depicted on historical maps (see **Table 2-2**) suggests that ground surface elevations in the vicinity of Columbia Street have remained relatively stable. Those near the western side of the site in the vicinity of historical Van Brunt Street appear to have fluctuated more, with current elevations 2 to 4 feet higher than those in the 19th century. Because of the historical maps suggest that the Columbia Street elevations have remained relatively consistent, it does not appear that these differences are the result of the use of different datum points, but rather due to extensive modification associated with the industrial development of the waterfront and the subsequent demolition of all buildings in the Study Area to create the existing PANYNJ facility.

<sup>1</sup> Issued by the New York City Department of Information Technology & Telecommunications (DoITT) in 2019.

**Table 2-2**  
**Street Corner Elevations as Identified on Historical Maps**

Historical Map	Datum Used	Elevation at the Intersection of:					
		Harrison/Kane and Columbia	Harrison/Kane and Van Brunt	Irving and Columbia	Irving and Van Brunt	Sedgwick and Columbia	Sedgwick and Van Brunt
1886 Robinson	High Tide	12.1	<i>[not listed]</i>	14.3	8.4	14.7	8.9
1898 Hyde	<i>Not given</i>	11.3	6.29	13.05	7.34	13.44	8.10
1904 Sanborn	Mean High Tide	12	6	14	7	14	8
1915, 1939, 1950 Sanborn	Mean High Tide	11.83	6.4	14	7.4	14	8
2017 Lidar	NAVD88	12	10	14	10	14	10

## **Chapter 3: Previous Archaeological Investigations of Brooklyn Bridge Park**

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### **A. INTRODUCTION**

Numerous archaeological investigations have been completed within modern Brooklyn Bridge Park (BBP), in the portion located north of the Project Site northwest of the intersection of Columbia Street and Atlantic Avenue. This area of Brooklyn's waterfront was landfilled and developed earlier in the historic period than the Study Area due to its proximity to the historical village of Brooklyn. However, the development histories of the Study Area and those portions of study area in the southern end of the modern park located west of Furman Place and north of Atlantic Avenue were similar. The results of Phase 1A, Phase 1B, and Phase 2 Archaeological Investigations of portions of the park are summarized below.

### **B. 2005 PHASE 1A STUDY BY HPI AND RABER ASSOCIATES**

A comprehensive Phase 1A Archaeological Documentary Study of a 70-acre, 1.3-mile-long section of the park was completed by Historical Perspectives, Inc. (HPI) and Raber Associates in 2005. The Phase 1A Study identified seven types of potential archaeological sensitivity within the BBP study area: (1) precontact archaeological resources; (2) landfill deposits; (3) waterfront deposits dating before 1904; (4) residential deposits; (5) industrial deposits; (6) commercial deposits in the form of 19th century warehouses; and (7) transportation elements relating to ferries and railroads. Those portions of the BBP study area located closest to the current Project Site—Blocks 245 and 258—were both determined to be sensitive for waterfront deposits pre-dating 1904 between depths of 5 to 10 feet and 20 to 25 feet below the ground surface. That portion of Block 245 within the study area was also determined to be sensitive for landfill deposits 8 to 12 feet below the ground surface and commercial deposits and transportation elements at depths close to the ground surface.

### **C. 2008 PHASE 1B ARCHAEOLOGICAL INVESTIGATION BY URS**

In 2008, URS Corporation completed a Phase 1B Archaeological Investigation of the BBP site. As a result of both archaeological testing and monitoring during construction, numerous brick and stone foundation remnants and brick utility conduits were documented beneath an upper layer of fill containing rubble and demolition debris dating to the 19th and 20th centuries. The fill layer was between approximately 2 and 4.8 to 5.5 feet near the southern end of the BBP project site in the vicinity of Piers 5 and 6. Several areas within the project site were determined to have been extensively disturbed as a result of the construction and demolition of buildings and the installation of utilities.

### **D. 2012 PHASE 2 ARCHAEOLOGICAL SURVEY/EVALUATION BY URS**

Based on the conclusions of the 2008 Phase 1B Archaeological Investigation, in 2012, URS Corporation completed a Phase 2 Archaeological Survey and Evaluation of a portion of the BBP site near the southwest corner of Furman Street and Old Fulton Street. The survey documented some of the earliest known warehouses along the East River waterfront in this portion of Brooklyn: the brick and stone foundations of warehouses and a flour mill complex constructed in the area before 1855. These

foundation remnants were encountered within 18 and 24 inches of the ground surface and were determined to be eligible for listing on the State and National Registers of Historic Places.

#### **E. 2013 PHASE 1B ARCHAEOLOGICAL INVESTIGATION BY AKRF**

AKRF, Inc., completed a Phase 1B Archaeological Investigation of the “John Street Site” at the northeastern end of the BBP project area in 2013. The investigation resulted in the documentation of 19th century warehouse foundation remnants. While the area was considered to be sensitive for landfill deposits pre-dating the 1840s, no timber landfill retaining structures were observed. It was concluded that the landfill deposits were either disturbed as a result of later development or that timber structures were not utilized during the filling episodes.

#### **F. 2018 PHASE 1B ARCHAEOLOGICAL INVESTIGATION BY AKRF**

In 2018, AKRF, Inc., completed a Phase 1B Archaeological Investigation of a portion of the “Pier 2 Uplands” near the central portion of the BBP project area. The investigation concluded that no archaeological resources representing landfill deposits were present within 6 feet of the ground surface.

**A. PRECONTACT CONTEXT**

Archaeologists have divided the time between the arrival of the first humans in northeastern North America and the arrival of Europeans more than 10,000 years later into three periods: Paleo-Indian (11,000–10,000 BP), Archaic (10,000–2,700 BP), and Woodland (2,700 BP–AD 1500). These divisions are based on certain changes in environmental conditions, technological advancements, and cultural adaptations, which are observable in the archaeological record.

**PALEO-INDIAN PERIOD**

Human populations did not inhabit the Northeast until the glaciers retreated more than 11,000 years ago. These new occupants included Native American populations referred to by archaeologists as Paleo-Indians, the forebears of the Delaware—also called the Lenape Indians—who would inhabit the land in later years. Archaeological evidence suggests that the Paleo-Indians were likely highly mobile hunters and gatherers who utilized a distinct style of lithic technology, typified by fluted points. They appear to have lived in small groups of fewer than 50 individuals (Dincauze 2000) and did not maintain permanent campsites. In addition, most of the Paleo-Indian sites that have been investigated were located near water sources. Because of the close proximity of Paleo-Indian sites to the coastline, few have been preserved in the New York City area. Of the few Paleo-Indian sites that have been discovered in New York City, nearly all have been found on Staten Island.

**ARCHAIC PERIOD**

The Archaic period has been sub-divided into three chronological segments, based on trends identified in the archaeological record which reflect not only the ecological transformations that occurred during this period, but the cultural changes as well. These have been termed the Early Archaic (10,000–8,000 BP), the Middle Archaic (8,000–6,000 BP), and the Late Archaic (6,000–2,700 BP) (Cantwell and Wall 2001). The Late Archaic is sometimes further divided to include the Terminal Archaic (3,000–2,700 BP). The abundance of food resources that arose during this period allowed the Archaic Native Americans to occupy individual sites on a permanent or semi-permanent basis, unlike their nomadic Paleo-Indian predecessors. Fishing technology was developed during the Middle Archaic in response to an increasing dependence on the area's marine resources. Tools continued to be crafted in part from foreign lithic materials, indicating that there was consistent trade among Native American groups from various regions in North America throughout the Archaic period.

The rising sea levels and rapid formation of the area's ecological setting, as well as the dominance of coniferous forests at that time generated a habitat ill-fit for human habitation (Boesch 1994), and few Early Archaic sites have been identified in New York City. Most of those that have been identified are located on Staten Island, including Ward's Point at the southwestern tip of the island; Richmond Hill; the H. F. Hollowell site; and the Old Place site. Sites such as Ward's Point—a domestic habitation location that due to lowered sea levels was originally inland—tend to be deep and stratified and have yielded stone tools related to cooking, woodworking, and hide processing. The many years of constant occupation caused the artifacts to be deeply buried under more recent debris deposits (Cantwell and Wall 2001).

However, at the Old Place Site, the only artifacts that were discovered—stone tool assemblages—were found at relatively shallow depths of around 42 inches or 3.5 feet (Ritchie 1980).

There are also few Middle Archaic sites in the region. The majority of these tend to consist of large shell middens, which are often found near major watercourses such as the Hudson River, although stone points have also been found in such locations. These sites have remained in great danger of obliteration because of their proximity to the shrinking coastlines thousands of years ago. Unlike the Early and Middle periods, many Late Archaic sites have been found throughout the New York City area. Late Archaic habitation sites are often found in areas of low elevation near watercourses, and temporary hunting sites are often located near sandy areas (Boesch 1994).

Finally, many Terminal Archaic sites from all across the city have provided examples of what archaeologists call the “Orient” culture, which is characterized by long fishtail stone points and soapstone bowls. Extremely elaborate Orient burial sites have been found on eastern Long Island (Ritchie 1980).

## **WOODLAND PERIOD**

The Woodland period represents a cultural revolution of sorts for the Northeast. During this time, Native Americans began to alter their way of life, focusing on a settled, agricultural lifestyle rather than one of nomadic hunting and gathering. Social rituals become visible in the archaeological record at this time. Composite tools, bows and arrows, domesticated dogs, and elaborately decorated pottery were introduced to Native American culture, and burial sites grew increasingly complex. Woodland-era sites across North America indicate that there was an overall shift toward full-time agriculture and permanently settled villages. Woodland sites in New York City, however, suggest that the Native Americans there continued to hunt and forage on a part-time basis. This was most likely due to the incredibly diverse environmental niches that could be found across the region throughout the Woodland period (Cantwell and Wall 2001; Grumet 1995).

## **B. PREVIOUSLY IDENTIFIED NATIVE AMERICAN ARCHAEOLOGICAL SITES NEAR THE STUDY AREA**

In general, Native American habitation sites are most often located in coastal areas with access to marine resources and near fresh water sources and areas of high elevation and level slopes of less than 12 to 15 percent (NYAC 1994). Prior to urban development, the Study Area was almost entirely inundated by Buttermilk Channel with the exception of a small area in the southeastern corner that was situated on dry land. Brooklyn’s original shoreline would have been an ideal location for a seasonal camping or resource acquisition/processing site. However, it is unclear if reliable sources of fresh water were present in the immediate vicinity, and the proximity of the site to the waterfront may have made it subject to tidal fluctuations over many millennia.

Further indication of the potential presence of Native American activity near a Study Area is indicated by the number of precontact archaeological sites that have been previously identified in the vicinity. Information regarding such previously identified archaeological sites was obtained from various locations including the site files of OPRHP and NYSM, and from published accounts. No previously reported archaeological sites have been identified within Brooklyn within one mile of the Study Area in databases maintained by OPRHP and NYSM and accessed via CRIS. Two previously identified precontact archaeological sites were identified across the river on Governors Island (see **Table 3-1**). The Study Area is partially located within generalized areas of archaeological sensitivity as mapped by OPRHP; however, those buffer zones were largely designated relative to historic period archaeological sites rather than precontact archaeological sites.

**Table 4-1**

**Previously Identified Precontact Archaeological Sites within One Mile of the Study Area**

Site Number	Distance to Study Area	Time Period	Site Type	Additional Source(s)
Fort Jay Prehistoric Site OPRHP 06101.009523	3,500 feet	Woodland	Small number of precontact ceramics found in possible buried ground surface	
Nolan Park Prehistoric Site OPRHP 06101.009524	2,800 feet	Precontact	Precontact ceramics and lithic debitage	
Native American Burial OPRHP Site A04701.017322	2,800 feet	Precontact	Human burial encountered by a private landowner. Burial included clam and oyster shell and possibly red ochre.	Adams 2004
Werpoes Bolton (1922) Site 67	3,500 feet	Precontact	Village and Maize Field	Bolton 1922
Sassian's Maize Land Bolton (1922)	2,000 feet	Precontact	Planting Field	Bolton 1922 Grumet 1981
<b>Sources:</b> CRIS database.				

As seen on Bolton's 1922 map of Native American sites and trails, the largest village site near the Study Area was *Werpoes*, situated near the intersection of Hoyt and Baltic Streets. At its closest point, the site was located approximately 3,550 feet east of the Study Area near what was originally the northern terminus of the stream that was subsequently converted into the Gowanus Canal (Bolton 1922, Bolton 1934). The village was on the western side of the creek that originally ran through the area on the landform now known as Red Hook. Bolton indicated that the village was abandoned shortly after European settlement and that the village was originally inhabited by the Manhattan Indians (Bolton 1922). The same group maintained a second village also called *Werpoes* within what is now Greenwich Village in Manhattan (ibid).

A large maize planting field was situated immediately to the northwest of the village (ibid). A trail extended southwest from this site toward the southern end of Red Hook and Bolton's map indicates that another Native American settlement was situated along the pathway (Bolton 1922). It is possible that the southern site was a planting field known as "Sassian's Maize Land" (Grumet 1981: 50). Another Native American trail, later known as Gowanus Road, extended along the southeastern side of the Gowanus Creek from a point near modern Atlantic Avenue to settlements along the Gowanus Bay to the south of the Project Site.

## A. EARLY COLONIAL HISTORY

New York was “discovered” by Giovanni de Verrazano in 1524 and explored by Henry Hudson in 1609, thus marking the beginning of European occupation in the area. By 1621, Brooklyn had become part of a Dutch colony and the States-General in the Netherlands chartered the Dutch West India Company (WIC) to consolidate Dutch activities in the New World (Burrows and Wallace 1999). In the 17th century, the WIC began to purchase large tracts of land from local Indigenous communities. The WIC began to purchase land in northwest Brooklyn in the late 1630s (Bolton 1975). It has been speculated that the sale of Brooklyn land “saved New Netherland from being abandoned by the West India Company” (Armbruster 1918: 3).

The western end of Long Island was settled in the first half of the 17th century by predominantly Dutch and Walloon—French Protestants from Belgium who fled to escape persecution—families (Stiles 1867). In 1638, land was granted to any individual who promised to establish a farm in the area (Armbruster 1918). Six independent towns were established in the second and third quarters of the century (Stiles 1867). While at first the WIC granted patroonships—a patroon was the “feudal chief” of a small colony of fifty or more individuals (Stiles 1867: 20)—they found that farms were more successful if the land was granted directly to individual farmers. Therefore, the land was given the name Brooklyn, which is derived from the Dutch *Bruijkleen*, meaning “a free loan, given to a tenant or user for a certain consideration” (Armbruster 1914: 20). The name went through several changes throughout the Dutch and English colonial periods; from *Bruijkleen* to *Breukelen* to *Brookland* and, finally, to *Brooklyn*. English settlements were established throughout Brooklyn during the mid-1600s. In 1664, the English took control of the colony, and it was renamed “New York” (Stiles 1867).

## B. COLONIAL MILLS NEAR THE STUDY AREA

The tidal waters of Buttermilk Channel and the Gowanus Creek made the Red Hook landform naturally conducive to milling, which quickly became one of the first industries in the area in addition to agriculture (Hunter Research, et al. 2004). The construction of the mills and their associated mill dams also represent one of the first efforts made by European settlers to alter the landscape of the region. By the late 18th century, numerous mills were located around the perimeter of Red Hook. The earliest known development in the vicinity of the Study Area was a historical mill. The 1776 Ratzler map (depicting 1767) identifies “C[ornelius] Seabring’s Mill” in the location of the Study Area (see **Figure 5**). While the majority of the Study Area was inundated, buildings associated with the mill were situated to the east and southeast of the Study Area. The mill is believed to have been constructed along the waterfront southeast of the Study Area by John Marsh in 1689 on land formerly owned by the Lubbertson family (Stiles 1867:66). It was later known as Cornell’s Mill or “The Red Mill” (ibid). Seabring acquired a 100-acre parcel likely including the Study Area in 1698 (ibid). The 1781 Sproule map continues to identify the location as “Seabring’s Mill.”

Brooklyn and all of the area now known as New York City were occupied by the British during the Revolutionary War in the late 18th century. The most prominent battle in the New York region was the



Battle of Long Island, also known as the Battle of Brooklyn, which occurred on August 27, 1776. The Gowanus and Red Hook areas were the scene of violent fighting during the battle, resulting in destruction and death. Following the departure of the Seabring family after the American defeat, the mill and house were burned by the British army during the Revolutionary War (Stiles 1867: 307). The Seabring family fell into financial ruin after the destruction of their property (ibid). As such, they sold their land holdings to their son-in-law, Whitehead Cornell, who had amassed great wealth as a result of providing provisions to the British army during the war (ibid). The marshy hassocks and mill dams continue to be visible on the 1782 British Headquarters map (and the copy made by B.F. Stevens in 1900), though no buildings appear in the area.

The Study Area was included within/adjacent to a 60-acre portion of the Cornell property that was ultimately inherited by John Cornell. The 1821 Randel map identifies the mill in the same location as well as the nearby Cornell property (Stiles 1867). The 1834 Herbert and Tolford map continues to depict the mill near the southeast corner of the Study Area. While the mill owner is not identified on the map, the adjacent mill pond is labeled “Cornell’s Mill Pond.” The 1834 Martin map identifies the mill as “VanDyke’s Mill.” Two buildings on the mill property are depicted: (1) what may have been the mill house on the waterfront within the Study Area near the former streetbed of Irving Street south of Block 314; and (2) what may have been a residence more than 120 feet to the east. Both buildings were located south of the line of Butler Street (later Harrison Street and now Kane Street), which at the time terminated at the waterfront in the vicinity of what is now Columbia Street.

### **C. POSSIBLE USE OF STOLEN LABOR IN ASSOCIATION WITH MILL OPERATIONS**

Slavery was an integral component of social and economic life in Brooklyn in the 17th and early 19th centuries. Slavery was not abolished in New York State until 1827 following a period of gradual manumission, and Brooklyn therefore experienced centuries of enslavement (Berlin and Harris 2005). The portion of Brooklyn’s population occupied by free and enslaved individuals of African descent rose from nearly 18 percent at the beginning of the 18th century to more than 32 percent at the century’s end (Greene and Harrington 1981). While the role of forced labor in Brooklyn is not well documented in the historical record, enslaved persons were present in large numbers in the area surrounding the Study Area, representing “the highest proportion of slaveholders and slaves in the North” (Linder and Zacharias 1999: 81). Their labor helped form the physical landscape of the area, as slave labor was used to construct and operate mills in the region (Stiles 1868; Louis Berger Group [LBG]/HPI 2009).

The labor of enslaved persons helped Brooklyn become a center for agriculture in the region, and farmers of European descent generated significant profits, allowing the system to thrive for hundreds of years and remain more prevalent in Brooklyn than in other parts of New York City in the years leading up to 1827 (Linder and Zacharias 1999). Even after the end of slavery in New York in 1827, a system of indentured servitude kept many newly freed individuals within a system of forced labor (Berlin and Harris 2005). The continued presence of former slaves within the homes of the owners who formerly enslaved them was noted across Brooklyn in the years following emancipation but decreased toward the middle of the 19th century (Linder and Zacharias 1999).

Members of the Cornell family are known to have been enslavers (Stiles 1867). The 1800 federal census records Whitehead Cornell as a resident of Queens County and indicates that his household included two people of European descent; one “free” individual who may have been a formerly enslaved person still bound by indentured servitude; and two enslaved people of African descent. Along with other property, Cornell’s 1805 will left an enslaved person named Ben to his wife and another enslaved person named Ben to his grandson, Whitehead (son of Isaac) (Ancestry.com 2015). A man named John Cornell was identified as a Brooklyn resident in the 1810 federal census. His household included sixteen individuals

of European descent; one “free” individual, possibly a formerly enslaved person still bound by indentured servitude; and four enslaved people of African descent. It is therefore likely that enslaved labor was utilized to construct, maintain, and operate the mill within/southeast of the Study Area.

#### **D. LANDFILLING IN THE VICINITY OF THE STUDY AREA**

Northwestern Brooklyn’s waterfront in the vicinity of the Study Area was transformed in the 1840s. Then an independent city, Brooklyn rapidly grew into an urban center in the first half of the 19th century as former farms and large estates were sold and streets cut through, creating blocks for development. The Project Site was rapidly filled in the 1840s. The 1836 Colton map continues to depict Cornell’s Mill Pond and shows the majority of the Project Site as an inundated area. The 1839 Hammond, Cheever, and Tiffany Map shows that landfilling along the waterfront had begun. It also depicts the newly proposed bulkhead line more than 700 feet west of what was then the shoreline and west of the limits of the Project Site. The bulkhead line was established in 1836 (Stiles 1867). The landfilling that occurred in the years that followed was unregulated and, in many cases, undocumented, making it difficult to identify the sources of fill material and to ascertain the exact chronology of filling episodes (HPI and Raber Associates 2005: 46). Landfilling technology became standardized and increasingly regulated by the mid-19th century (McDonald 2011).

The area between the shoreline and the bulkhead line was gradually filled before the publication of the 1849 Colton map. Unlike other waterfront areas in northern Brooklyn and southern Manhattan, maps do not suggest that a network of historical docks or piers that would have later been incorporated into the landfill material extended through the Study Area. The fill was therefore constructed solely for the purpose of expanding the waterfront within a short span of time. A large waterfront structure known as Atlantic Basin was constructed several blocks to the south of the Study Area in 1847 (HPI and Raber Associates 2005).

#### **E. URBAN DEVELOPMENT IN THE 19TH AND 20TH CENTURIES**

The 1849 Colton map continues to identify John Cornell as the owner of the farm in the vicinity of the Study Area. The map also suggests that landfilling was planned, and that the lines of Baltic; Harrison (now Kane); Irving, and Sedgwick Streets had been mapped—but possibly not constructed—through the Study Area west of Columbia Street. The 1852 Connor map suggests that landfilling in this area was not yet complete and depicts a large basin north of the line of Harrison (now Kane) Street and west of Columbia Street. The map also uses shading to suggest the presence of buildings or other development within the Study Area on the west side of Columbia Street between Irving and Harrison Streets. By the publication of the 1855 Perris atlas (see **Figure 6**), the Study Area was divided into blocks and lots to facilitate development. The individual development histories of the lots within the Study Area are presented below.

##### **STREETBEDS**

The former streetbeds of Kane (formerly Harrison), Irving, and Van Brunt Streets were mapped as early as 1839, as shown on the Hammond, Cheever, and Tiffany map, but were not constructed until landfilling efforts were completed in the late 1840s. The 1855 Perris map indicates that Irving and Van Brunt Streets were constructed in the same alignments as those shown on the modern tax map by the mid-19th century. The map also shows that Harrison (Kane) Street was of an irregular width west of Columbia Street, and small buildings and outbuildings associated with an adjacent stone cutter’s yard extended into the streetbed at that time. The street width appears to have been standardized before the publication of the 1869 Dripps map, and no other map-documented structures were identified within any of the streetbeds

included within the Study Area. While historical maps indicate that a streetcar line (identified as the Brooklyn Rapid Transit Company line by the early 20th century) ran along Columbia Street, no historical maps depict any transportation routes within the streetbeds included within the Study Area.

Streets in this area of Brooklyn were developed with municipal water and sewer lines by the 1860s (HPI and Raber Associates 2005). All of the streets within the Study Area were developed with sewer lines of various size by 1875, as shown on the 1875 Adams map. The 1886 Sanborn map depicts water lines and fire hydrants within all of the streets within and surrounding the Study Area. Subsequent Sanborn maps reflect the expansion of subsurface utilities within the streets through the installation of additional water lines. Tax photographs taken by the New York City Department of Finance in the 1940s indicate that these streetbeds were paved with cobblestone through the mid-20th century.

### **BLOCK 314, LOTS 27 AND 28**

Lots 27 and 28 are situated on what was historically the southern side of Harrison (Kane) Street west of Columbia Street. Both lots are depicted as vacant on the 1855 Perris Atlas. The 1869 Dripps map continues to depict these lots as vacant and indicates that they were part of the “J.R. Clover Lumber Yard” that occupied Lot 31 to the east. The 1880 Hopkins atlas depicts a line of wood frame barns or stables lining the southern side of Harrison Street in the vicinity of Lots 27 and 28; however, these buildings are not depicted on an atlas published by Bromley in the same year.

The 1886 Robinson-Pidgeon atlas and 1886 Sanborn map (see **Figure 7**) indicate that Lots 27 and 28 were included within “Thomas Clyne’s Coal Yard” that extended east onto Lot 31. Lot 27—then known as 66 Harrison Street—is depicted as developed with a one- to two-story brick barn or stable with a small wood frame rear addition and Lot 28 remained vacant. The 1904 Sanborn map (see **Figure 8**) continues to depict Lots 27, 28, and 31 as a single property. The brick building at 66 Harrison Street continues to be depicted, but with its rear yard developed with a one-story wood frame structure that extended east onto Lot 28, which was developed with a second wood frame structure at 68 Harrison Street. The 1915 Sanborn map (see **Figure 9**) indicates that the brick building on Lot 27 had been expanded to the east with a two-story brick complex at 66 to 70 Harrison Street, and partially extending onto historical Lot 29 (now part of Lot 1) to the east. The complex was occupied by “Star & Star Co. Macaroni Manufacturing.” The rear yards of both Lots 27 and 28 were developed with one-story wood frame buildings.

The 1939 Sanborn map (see **Figure 10**) continues to depict the same brick commercial buildings at 66 to 70 Kane (formerly Harrison) Street and indicates that the small additions to the rear had been replaced or modified for use as storage. Kettles and oil storage tanks are depicted on Lot 27. The 1950 Sanborn map reflects the demolition of many of the rear buildings and suggests that an additional floor had been constructed at 66 Kane Street. The 1969 Sanborn map indicates that the building formerly at 70 Kane Street (historical lot 29/part of modern Lot 1) was demolished and the remaining buildings appear to have been demolished in the 1970s.

### **BLOCK 314, LOT 31**

What is now Lot 31 was historically located at the southwest corner of Harrison (Kane) and Columbia Streets. The 1855 Perris atlas indicates that Lots 29 and 31 were a single property occupied by “Well & Chase Lumber Yard.” Lot 29 (outside the Study Area) was developed with a building, possibly a house, fronting on Harrison Street. A large wood frame building lined the western side of Columbia Street within modern Lot 31, but outside the Study Area. As described previously, the 1869 Dripps map depicts this parcel as part of the J.R. Clover Lumber Yard and continues to indicate that a building was located at the eastern edge of the lot but does not depict any buildings within the Study Area.

The 1880 Hopkins atlas depicts modern Lot 31 as divided into three parcels. The northern half was divided into historical lots 33 and 34, both of which appear to have been developed with buildings by that time. The southern half was identified as historical lot 30 and was vacant. As described previously, the 1886 Sanborn map depicts Lot 31 as developed with “Thomas Clyne’s Coal Yard.” Several small buildings associated with the coal yard lined Columbia Street east of the Study Area—known then as 122 to 132 Columbia Street—and two large one-story wood frame structures (122 and 132 Columbia Street), possibly used for coal storage, extended into the Study Area. The 1904 Sanborn map depicts Lot 31—then known as 72 to 80 Harrison Street and 122 to 132 Columbia Street—as entirely vacant. The 1915 Sanborn map continues to depict Lot 31 as largely undeveloped with the exception of a small one-story wood frame building that stood at the northeast corner of the lot outside the Study Area. The map indicates that the lot was used for barrel storage.

The 1939 Sanborn map indicates that Lot 31 was redeveloped with a large one-story garage capable of storing 50 automobiles. Gasoline storage tanks and a boiler are identified on the map in the northeastern corner of the building. The 1950 and 1969 Sanborn maps depict the garage in the same condition; it was demolished in the 1970s.

### **BLOCK 314, LOT 36**

The 1855 Perris atlas depicts a row of four buildings at the northwest corner of Irving and Columbia Streets, the northernmost of which occupied the southern half of modern Lot 36. The buildings are depicted as a wood-frame-front structure with a brick rear addition and an undeveloped rear yard. This building appears on the 1869 Dripps map, the 1880 Hopkins atlas, and the 1880 Bromley atlas.

The 1886 Sanborn map depicts on Lot 36 seven buildings, all on what appears to be a single parcel, and provides greater detail on the building than previous maps. The northeastern corner of the lot was developed at 134 Columbia Street with a one-story blacksmith shop situated partially within the Study Area. The previously depicted buildings—now referred to as three-story stores located at 136 and 138 Columbia Street—are depicted in the southeastern corner of the lot and partially extending into the Study Area. To the rear of both buildings were three small wood frame outbuildings and a large one-story wood frame barn or stable. The lot appears in the same condition on the 1904 Sanborn map, which identifies 134 Columbia Street as a “smithy.”

By the publication of the 1915 Sanborn map, the former buildings on Lot 36 appear to have been demolished and replaced with a five-story brick complex. Along Columbia Street, the building was divided into four storefronts that extended outside the Study Area and were referred to as 134, 136, 136A, and 138 Columbia Street. To the rear of these buildings was a large rear addition that extended across much of the former rear yard area. This building appears in the same manner on the 1939, 1950, and 1969 Sanborn maps and was demolished in the 1970s.

### **BLOCK 314, LOT 38**

What is now Lot 38 was developed with the middle two buildings in the row of four depicted at the northwest corner of Irving and Columbia Streets on the 1855 Perris atlas. The buildings are depicted as a wood-frame-front structure with a brick rear addition and an undeveloped rear yard. These houses appear on the 1869 Dripps map, the 1880 Hopkins atlas, and the 1880 Bromley atlas. The 1886 Sanborn map identifies the two buildings as three-story stores with undeveloped rear yards located at 140 and 142 Columbia Street. The buildings continue to be depicted on the 1904 Sanborn atlas, which identifies 140 Columbia Street as a dwelling. The 1915 Sanborn map depicts the two buildings at 140 and 142 Columbia Streets as three-story brick stores and indicates that the former rear yard had been redeveloped with a two-story brick dwelling accessed via a narrow alley to the south of 142 Columbia Street. These

buildings appear in the same manner on the 1939, 1950, and 1981 Sanborn maps and were demolished in the early 1980s.

#### **BLOCK 314, LOT 40**

The 1855 Perris atlas depicts modern Lot 40 as developed with the southernmost of the row of four buildings depicted at the northwest corner of Irving and Columbia Streets on the 1855 Perris atlas. The building on this lot was a brick building slightly longer than those to the north and may not have been built by the same developer. An outbuilding is depicted to the rear of the building within its backyard. This building appears on the 1869 Dripps map, the 1880 Hopkins atlas, and the 1880 Bromley atlas. The 1886, 1904, 1915 Sanborn maps depict the buildings as a four-story brick store with an undeveloped rear yard. The 1939, 1950, and 1981 Sanborn maps depict the same building and indicate that the rear yard had been redeveloped with an automobile garage at 87 to 89 Irving Street. These buildings were demolished in the early 1980s.

#### **BLOCK 314, LOT 42**

The 1855 Perris atlas depicts a small wood frame building with an undeveloped rear yard on this lot. This building appears on the 1869 Dripps map, the 1880 Hopkins atlas, and the 1880 Bromley atlas. The 1886 Sanborn map depicts the building as a two-story wood frame dwelling with an undeveloped rear yard known as 85 Irving Street. The house appears in the same condition on the 1904 Sanborn map and the 1915 Sanborn map indicates that it had a corrugated iron façade along its eastern side. The 1939 and 1950 Sanborn maps continue to depict the property in the same condition, though the latter depicts a small brick addition to the north/rear. The building is last depicted on the 1977 Sanborn map and was demolished before 1979.

#### **BLOCK 316, PART OF LOT 1**

The 1855 Perris map depicts that portion of Block 316, Lot 1 that is included within the Study Area as divided into three seemingly commercial properties. In the northwest corner was an approximately 50-by-100-foot stave yard that was vacant with the exception of a small brick building in the northeastern corner of the parcel. A second 25-by-100-foot parcel was situated near the center of the property and was developed with a small wood frame commercial building at the southern end of the parcel. The remainder of that portion of Lot 1 within the Study Area was a largely undeveloped area with two wood frame buildings located within the Study Area; however, the use or ownership of the buildings or surrounding property are not identified on the map. By the publication of the 1869 Dripps map, Block 316 had been subject to extensive development, largely for industrial purposes. The southern half of the property had been developed with several buildings, including at least one factory. The former stave yard had also been replaced by a larger building. The 1880 Hopkins atlas depicts the entire lot as developed with a series of commercial buildings. The 1880 Bromley atlas depicts the same buildings and suggests the entire parcel was owned by the Kelsey estate.

The 1886 Sanborn map provides greater detail on the industrial development of Block 316, Lot 1. The western portion of the portion of the lot within the Study Area was developed with a nearly 125-by-200-foot brick or iron warehouse (38 to 48 Irving Street) complex identified as part of the Kelsey Stores and Union Stores that also occupied the waterfront lots to the west. At the northeastern corner of Van Brunt and Irving Streets was a small three-story brick store at 41 Sedgwick Street that is identified on the map as vacant. To the east was a three-story brick building at 50 Irving Street that is identified as a macaroni factory. This may be the same building seen on the 1855 Perris map. A complex of four small wood frame buildings was to the east of the factory, possibly also the same buildings seen in that area on the 1855 map. Finally, a two-story brick dwelling is depicted within the Study Area at 69 Sedgwick Street.

The building had a large rear yard with a wood frame outbuilding located approximately 10 to 15 feet behind the house.

The 1904 Sanborn map depicts greater industrial development across that portion of Block 316, Lot 1, that is included in the Study Area. The western two-thirds of this portion of the Study Area was almost entirely developed with two- to five-story brick industrial complexes that included Columbia Chemical Works (43 to 51 Sedgwick Street and 35 to 43 Van Brunt Street); Paris Green Manufacturing (25 to 35 Van Brunt Street and 38 to 44 Irving Street); Savarese & Brothers Macaroni Factory (46 to 58 Irving Street); Hills Brothers Co. Fruit Preserving (60 to 66 Irving Street); E.W. Sutton Carpet Lining Factory (53 to 59 Sedgwick Street); W.C. Shaw Paper Stock (61 to 65 Sedgwick Street); and other unidentified commercial properties. The eastern third of this portion of the Study Area was largely undeveloped with the exception of a one-story boiler building in the center of the block that appears to have been associated with the adjacent fruit-preserving factory. The same buildings are depicted on the 1915 Sanborn map, which indicates that the Hills Brothers Company had taken over many of the factories on the block and expanded the boiler building. The small brick building at 35 to 37 Van Brunt Street was at that time occupied by Thomas Meehan & Son sawdust storage, and the former paper stock storage building at 59 to 63 Sedgwick Street was at that time occupied by stevedores and tailors. The remainder of the undeveloped portion of the lot was used for barrel storage.

The Hills Brothers Company complex appears the same on the 1939 and 1950 Sanborn maps; however, both maps indicate that the factory had expanded to the east to occupy much of the former barrel storage yard and other areas to the east of the Study Area. The buildings continue to be depicted on the 1969 and 1977 Sanborn maps, although the Hills Brothers Company no longer appears to have occupied the industrial complex in that location. By the publication of the 1979 Sanborn map, portions of the former factory complex had been demolished, with the gradual demolition of additional buildings in this area reflected on the 1981 and 1982 Sanborn maps. Block 316 was entirely undeveloped by the publication of the 1986 Sanborn map.

## **F. THE STUDY AREA IN THE LATE 20TH CENTURY**

By the mid-1980s, the entire Study Area was vacant. Sanborn maps published between 1986 and the present indicate that the vacant lots within the Study Area were first used for parking and then later for container storage. Historical aerial photographs taken as late as 1985 continue to depict the cobblestone streets that formerly divided the blocks within the Study Area.<sup>1</sup> By 1987, the Study Area and vicinity were transformed into the current PANYNJ waterfront complex. Aerial photographs published by New York City between 1996 and the present<sup>2</sup> depict the Study Area in its current condition as an area used for parking and the storage of sand/salt stockpiles and shipping containers.

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<sup>1</sup> Accessible at: <https://www.historicaerials.com>.

<sup>2</sup> Accessible at: <https://www.historicaerials.com/viewer>.

**A. CONCLUSIONS**

As part of the background research for this Phase 1A Archaeological Documentary Study, various primary and secondary resources were analyzed, including historic maps and atlases, historic photographs and lithographs, newspaper articles, and local histories. The information provided by these sources was analyzed to reach the following conclusions.

**PREVIOUS DISTURBANCE**

The Project Site has been disturbed as a result of the construction and demolition of numerous historical structures in the 19th and 20th centuries. Those portions of the Study Area situated on Block 314 were developed with smaller structures and several of the lots within the Study Area were redeveloped over time. That portion of Block 316, Lot 1 included within the Study Area was developed with large industrial buildings that were constructed and expanded between the late 19th and late 20th centuries before being demolished. The historical streetbeds within the Study Area were developed with multiple utility lines, including water and sewer mains. Finally, the historical landscape of blocks and cobblestone streets was removed in the 1980s as part of the area's conversion from a former waterfront commercial/industrial district to a waterfront storage and parking area. The ground surface of the Study Area west of Columbia Street appears to have been raised by 2 to 4 feet as a result of the construction of the current facility. The entire Study Area is therefore determined to be disturbed to a minimum depth of 4 feet—the maximum possible depth for the majority of the Proposed Project's proposed impacts—owing to the construction and demolition of 19th and 20th century buildings as well as the construction of the current facility.

**PRECONTACT SENSITIVITY ASSESSMENT**

The precontact sensitivity of project sites in New York City is generally evaluated by a site's proximity to level slopes (less than 12 to 15 percent), watercourses, well-drained soils, and previously identified precontact archaeological sites (NYAC 1994). Until the early 19th century, the Study Area was almost entirely inundated by the Buttermilk Channel with the exception of a small area in the extreme southeastern corner. While that portion of the Study Area that was situated along the waterfront would have been an extremely attractive place for short-term seasonal occupation and resource acquisition, precontact archaeological sites are typically found at relatively shallow depths. Given the extensive disturbance that has occurred across the majority of the Study Area as a result of the construction and demolition of buildings as well as the construction of landfill along the waterfront, the Study Area is determined to have no sensitivity for precontact archaeological resources.

**HISTORIC SENSITIVITY ASSESSMENT**

Prior to the landfilling efforts that transformed Brooklyn's waterfront in the 19th century, the southeastern corner of the Study Area was historically located in the vicinity of 17th and 18th century mill complexes. After landfilling efforts in the 1840s, the Study Area was divided into blocks and lots and gradually

developed. Most of the development was commercial/industrial in nature and few residential properties were documented within the Study Area. Much of this development appears to have occurred after the 1850s and 1860s, when municipal water and sewer networks would have been available in this region of Brooklyn (HPI and Raber Associates 2005). The Study Area is therefore determined to have low to moderate archaeological sensitivity for archaeological resources associated with historical development—including 17th and 18th century milling and 19th century landfilling and residential and commercial occupation—at depths greater than 4 feet below the current ground surface.

## **B. RECOMMENDATIONS**

The Study Area is determined to have no sensitivity for precontact archaeological resources and low to moderate sensitivity for historic period archaeological resources at depths of greater than 4 feet below the ground surface. Project impacts that will result in disturbance to depths greater than 4 feet will involve the installation of manholes to depths of up to 8 feet in locations that have not yet been determined. Archaeological monitoring during construction is recommended for any excavation to a depth greater than 4 feet within the Study Area. An Archaeological Work Plan describing the scope of work for the monitoring should be submitted to LPC for review prior to the start of the monitoring effort.



## References

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- Adams, Bradley  
2004 "New York State Prehistoric Archaeological Site Inventory Form: Case K-04-5451." On file at the New York State Office of Parks, Recreation, and Historic Preservation, Site Identifier A04701.017322.
- Adams, J.W.  
1875 *Plan Exhibiting the System of Sewerage in the City of Brooklyn, NY*. Brooklyn, NY: Brooklyn Department of Health.
- AKRF, Inc.  
2013 "Phase IB Archaeological Survey: John Street Site; Brooklyn Bridge Park; Block 1, Lot 1, Borough of Brooklyn, Kings County, New York." Prepared for: Brooklyn Bridge Park and Gardiner & Theobald, Inc.; New York, NY.
- 2018 "Brooklyn Bridge Park Project: Pier 2 Uplands Block 199, Lot 3 Brooklyn, Kings County, New York: Phase 1B Archaeological Investigation Final Report." Prepared for: Brooklyn Bridge Park and Gardiner & Theobald, Inc.; New York, NY.
- Ancestry.com  
2015 "New York, U.S., Wills and Probate Records, 1659-1999 [database on-line]." Updated 2021. Lehi, UT: Ancestry.com Operations, Inc.
- Armbruster, Eugene L.  
1914 *Long Island; Its Early Days and Development*. Brooklyn, New York: The Brooklyn Daily Eagle.  
1918 *Bruijkleen Colonie (Borough of Brooklyn) 1638-1918*. New York: unknown.
- Berlin, Ira and Leslie M. Harris  
2005 *Slavery in New York*. New York: The New Press and the New York Historical Society.
- Boesch, Eugene  
1994 *Archaeological Evaluation and Sensitivity Assessment of Staten Island, New York*. For: The New York City Landmarks Preservation Commission.
- Bolton, Reginald Pelham  
1922 "Indian Paths in the Great Metropolis." In *Indian Notes and Monographs*. Miscellaneous #22. New York: Museum of the American Indian, Heye Foundation.  
1934 *Indian life of long ago in the city of New York*. New York: J. Graham.  
1975 *New York City in Indian Possession*. Museum of the American Indian, Heye Foundation, New York.
- "The British Headquarters Map"  
Ca. 1782 New York: Unknown.

- Bromley, G.W. and Co.  
1880 *Atlas of the entire city of Brooklyn, complete in one volume. From actual surveys and official records by G. W. Bromley & Co.* New York: G.W. Bromley and E. Robinson.
- Burrows, Edwin G. and Mike Wallace  
1999 *Gotham.* New York: Oxford University Press.
- Cadwell, Daniel, compiler/editor  
1989 *Surficial Geologic Map of New York: Lower Hudson Sheet.* New York State Museum-Geological Survey, Map and Chart Series #40. Albany: New York State Museum.
- Cantwell, Anne-Marie and Diana diZerega Wall  
2001 *Unearthing Gotham: The Archaeology of New York City.* New Haven: Yale University Press.
- Colton, J.H.  
1836 *Topographical Map of the City and County of New York.* New York: J.H. Colton.  
1849 *Map of the city of Brooklyn, as laid out by commissioners, and confirmed by acts of the Legislature of the state of New York: made from actual surveys, the farm lines and names of original owners, being accurately drawn from authentic sources, containing also a map of the Village of Williamsburgh, and part of the city of New-York: compiled from accurate surveys & documents and showing the true relative position of all / engraved by S. Stiles Sherman & Smith.*
- Connor, R.F.O.  
1852 *Map of Kings and Part of Queens Counties, Long Island, NY.* New York: M. Dripps.
- Dincauze, Dena F.  
2000 "The Earliest Americans: The Northeast." *Common Ground: Archaeology and Ethnography in Public Interest.* Washington, D.C.: National Park Service.
- Dripps, M.  
1869 *Maps of the City of Brooklyn.* New York: M. Dripps.
- Fisher, Donald W., Yngvar W. Isachsen, and Lawrence V. Rickard, compilers/editors  
1995 *Geologic Map of New York: Lower Hudson Sheet.* Originally published 1970, reprinted 1995. New York State Museum and Science Service Map and Chart Series No. 15. Albany: New York State Museum.
- Fulton, Henry, C.E.  
1874 *Farm line map of the city of Brooklyn.* New York: J.B. Beers & Co.
- Geoarcheology Research Associates (GRA)  
2014 *Geomorphology/Archaeological Borings and GIS Model of the Submerged Paleoenvironment in the New York and New Jersey Harbor and Bight in Connection with the New York and New Jersey Harbor Navigation Project, Port of New York, and New Jersey, Under contract to U.S. Army Corps of Engineers New York District CENAN-PL-EA, 26 Federal Plaza New York, New York 10278-0900.* March 2014. Prepared under subcontract to and in conjunction with Hunter Research, Inc., Trenton, NJ. Prepared for: Tetra Tech, Portland, ME; under contract to the US Army Corps of Engineers, New York, NY.
- Greene, Evarts B. and Virginia D. Harrington  
1981 *American Population before the Federal Census of 1790.* Baltimore, MD: Genealogical Publishing Co., Inc.

- Grumet, Robert S.  
1981 *Native American Place Names in New York City*. New York: Museum of the City of New York.  
1995 *Historic Contact*. Norman, OK: University of Oklahoma Press.
- Hassler F.R.  
1844-5 *Map of New-York Bay and Harbor and the Environs*. United States Coastal Survey.
- Hammond, A.G., S. Cheever and J. Tiffany  
1839 *Map of the City of Brooklyn*. New York: J.H. Colton.
- Herbert, S.C. & R. Tolford  
1834 *Map of the City of Brooklyn*. New York: LeCounty & Hammond.
- Historical Perspectives, Inc. and Raber Associates  
2005 "Phase IA Archaeological Assessment: Brooklyn Bridge Park Project: Blocks 1, 7, 16, 25, 26, 45, 199, 208, 245, 258, and Portions of Pearl, Washington, New Dock, Fulton, and Joralemon Streets and Atlantic Avenue Bounded Roughly by Atlantic Avenue, Jay Street, and the East River; Brooklyn, Kings County, New York." Prepared for: AKRF, Inc.; New York, NY.
- Hopkins, G.M.  
1880 *Detailed Estate and Old Farm Line Atlas of the City of Brooklyn*. Philadelphia: G.M. Hopkins.
- Hunter Research, Raber Associates, and Northern Ecological Associates  
2004 Final Report National Register of Historic Places Eligibility Evaluation and Cultural Resources Assessment for the Gowanus Canal, Borough of Brooklyn, Kings County, New York, In Connection with the Proposed Ecosystem Restoration Study. Prepared for US Army Corps of Engineers; New York, NY.
- Hyde, E. Belcher  
1929 *Desk Atlas, Borough of Brooklyn, City of New York*. New York: E. Belcher Hyde Map Company.
- Isachsen, Y.W., E. Landing, J.M. Lauber, L.V. Rickard, W.B. Rogers, editors.  
2000 *Geology of New York: A Simplified Account*. Second Edition. New York: New York State Museum Educational Leaflet 28.
- Linder, Marc and Lawrence S. Zacharias  
1999 *Of Cabbages and Kings County: Agriculture and the Formation of Modern Brooklyn*. Iowa City, IA: University of Iowa Press.
- Louis Berger Group and Historical Perspective, Inc. (LBG/HPI)  
2009 Gowanus Canal Corridor Rezoning Project; Gowanus, Brooklyn, New York: Phase IA Cultural Resource Assessment. Prepared for: The New York City Department of City Planning; New York, NY.
- Martin, Alexander M.  
1834 *Map of Brooklyn, Kings County, Long Island from an Entire New Survey*. New York: P. Desobry's Lith<sup>y</sup>.
- McDonald, Molly R.  
2011 "Wharves and Waterfront Retaining Structures as Vernacular Architecture." *Historical Archaeology* 45(2):42-67.

**RHCT Recycling Facility Relocation Project; Brooklyn, NY—Phase 1A Archaeological Documentary Study**

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New York Archaeological Council

1994 *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State*. The New York Archaeological Council.

New York City Department of Information Technology & Telecommunications

2019 “Topobathymetric LiDAR Data (2017).” Available through: <https://data.cityofnewyork.us/City-Government/Topobathymetric-LiDAR-Data-2017-/7sc8-jtbz>

Perris, William

1855 *Maps of the City of Brooklyn*. New York: William Perris.

Ratzer, Bernard

1776 *Plan of the city of New York in North America: surveyed in the years 1766 & 1767 / B. Ratzer, lieutt. in His Majestys 60th or Royal American Regt; Thos. Kitchin, sculpt., engraver to His Late Royal Highness, the Duke of York, &c.*

Ritchie, William A.

1980 *The Archaeology of New York State: Revised Edition*. Harrison, New York: Harbor Hill Books.

Robinson, Elisha

1886 *Robinson's atlas of the city of Brooklyn, New York: embracing all territory within its corporate limits; from official records... / by and under the supervision of E. Robinson and R.H. Pidgeon, civil engineers*. New York: E. Robinson.

Sanborn Map Company

1886 *Insurance Maps, Brooklyn, New York*. New York: Sanborn Map and Publishing Co.

1904 *Insurance Maps of the Borough of Brooklyn of the City of New York*. New York: Sanborn Map Co.

1915 *Insurance Maps of the Borough of Brooklyn of the City of New York*. New York: Sanborn Map Co.

1939 *Insurance Maps of the Borough of Brooklyn of the City of New York*. New York: Sanborn Map Co.

1950 *Insurance Maps of the Borough of Brooklyn of the City of New York*. New York: Sanborn Map Co.

Stevens, B.F.

1900 *B. F. Stevens' facsimile of the unpublished British headquarters colored manuscript map of New York & environs (1782)*. Reproduced from the original drawing in the War Office, London. London: B.F. Stevens.

Stiles, H.R.

1867 *A History of the City of Brooklyn Volume I*. Brooklyn, NY: Published by subscription.

Ullitz, Hugo

1898 *Atlas of the Brooklyn Borough of the City of New York: originally Kings Co.; complete in three volumes... based upon official maps and plans... / by and under the supervision of Hugo Ullitz, C.E.* New York: Hyde & Co.

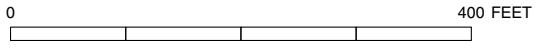
1916 *Atlas of the Brooklyn Borough of the City of New York*. New York: Hyde & Co.

URS Corporation

2008 “Preliminary Results Phase IB Archaeological Testing Test Areas 2, 3, 4, 5, 6 and 7; Brooklyn Bridge Park Project; Brooklyn, New York.” Prepared for: Skanska USA Building, Inc.; New York, NY.

2012 “Phase II Archaeological Testing: Test Areas 6 and 7 Brooklyn Bridge Park Project; Brooklyn, New York.” Prepared for: Skanska USA Building, Inc.; New York, NY.

## Figures



-  *Project Site*
-  *Phase 1A Study Area*
-  *Photograph View Direction and Reference Number*







**RELOCATION OF NYCDOT'S SBMT FACILITY TO RED HOOK TERMINALS**

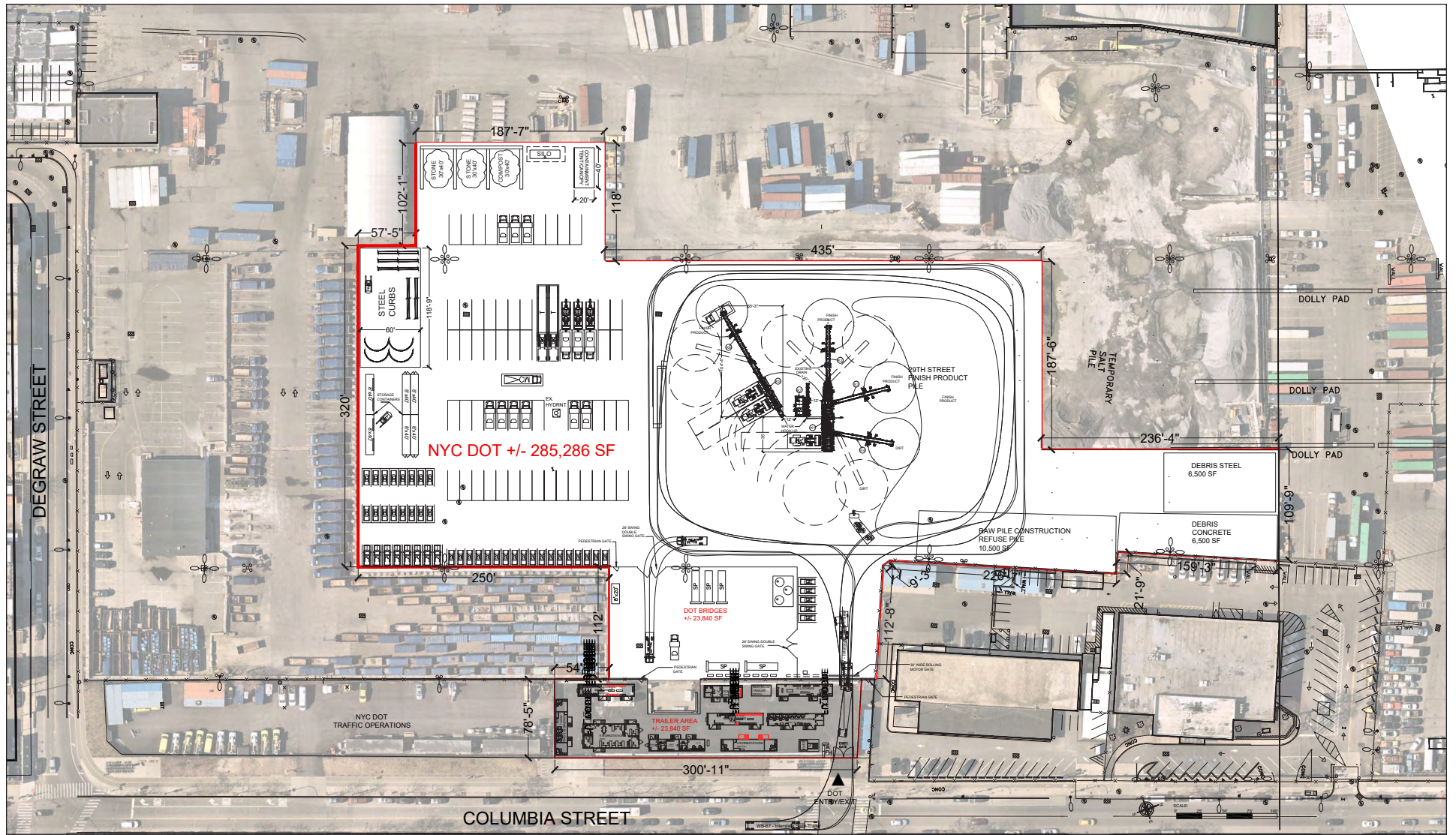
Project Location  
Figure 1



Data source: NYC Dept. of Finance Digital Tax Map, November 2022.

-  Project Site
-  Phase 1A Study Area
-  Tax Lot Boundary
-  Tax Block Boundary

0 400 FEET



RELOCATION OF NYCDOT'S SBMT FACILITY TO RED HOOK TERMINALS

Site Plan  
Figure 3





Western View of Project Site at Kane Street 1



Interior View of Project Site at Kane Street (Facing West) 2



View of Project Site Facing South on Columbia Street 3



Western View of Project Site from Columbia Street (Mid-block Between Kane and Degraw Streets) 4



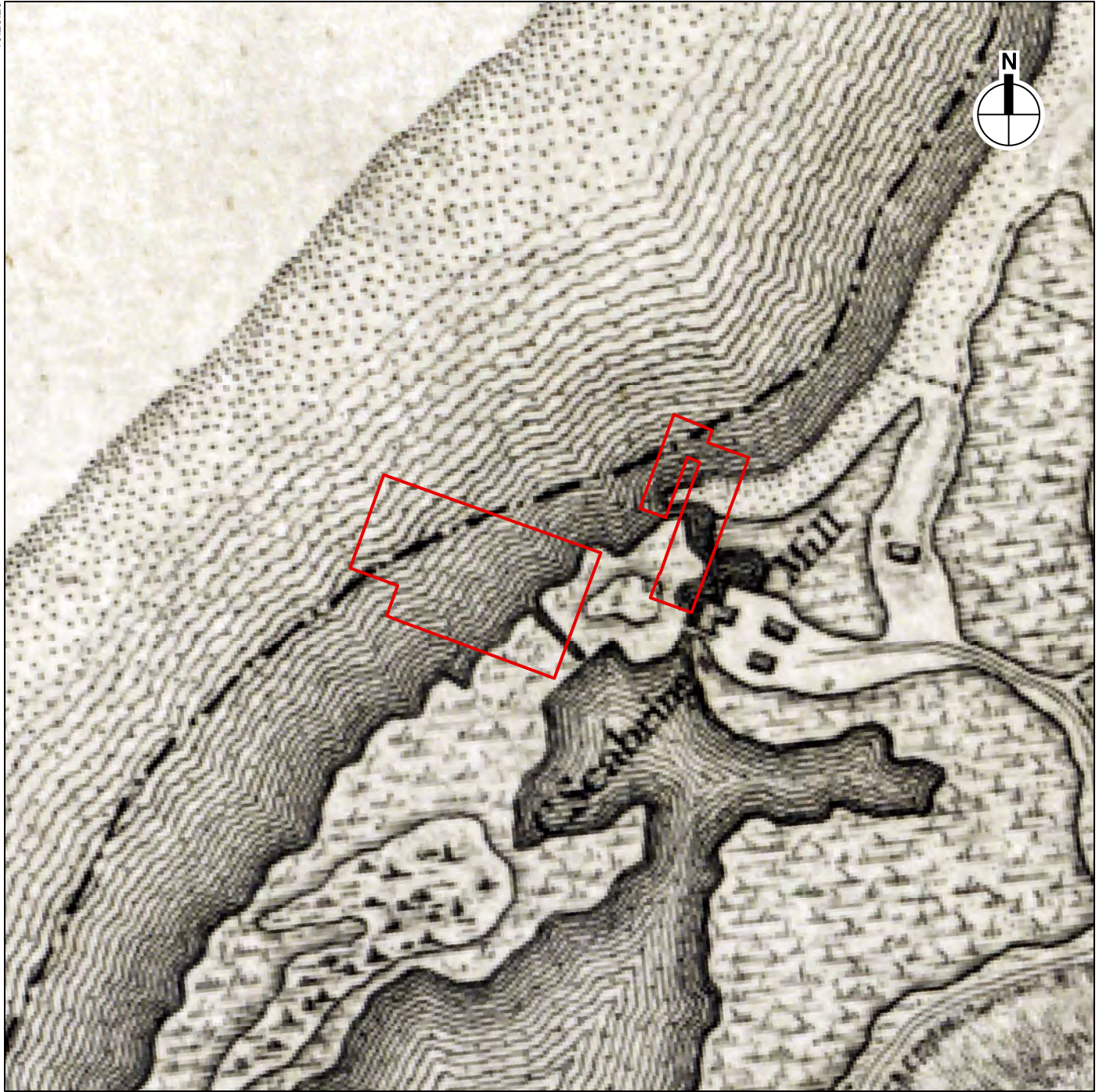
Western View of Project Site from Interior of RHCT (Mid-block Between Kane and Degraw Streets) 5



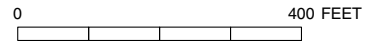
Western View of RHCT near Degraw Street 6

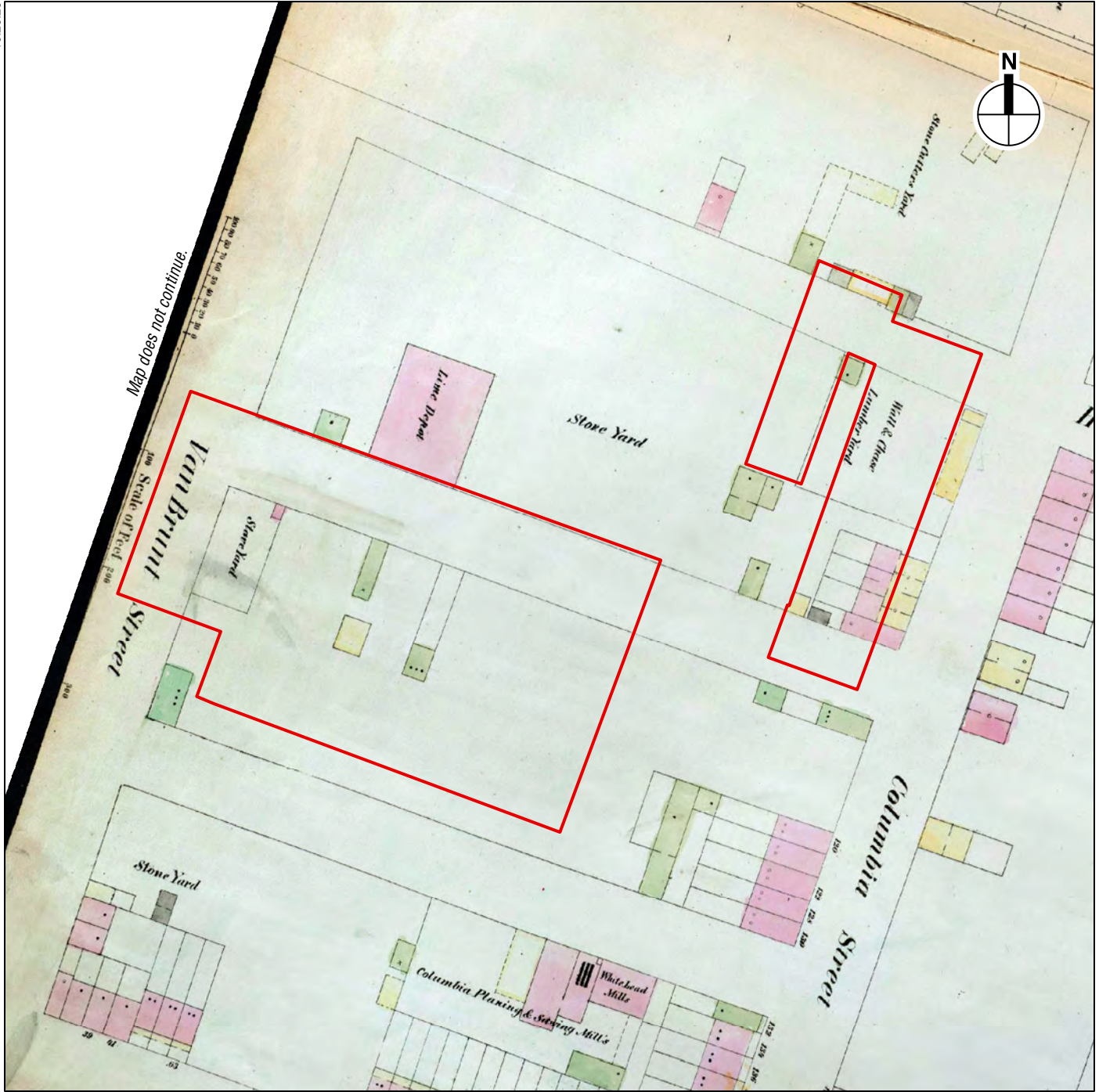


Northwestern View of RHCT from Degraw Street 7

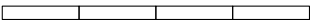


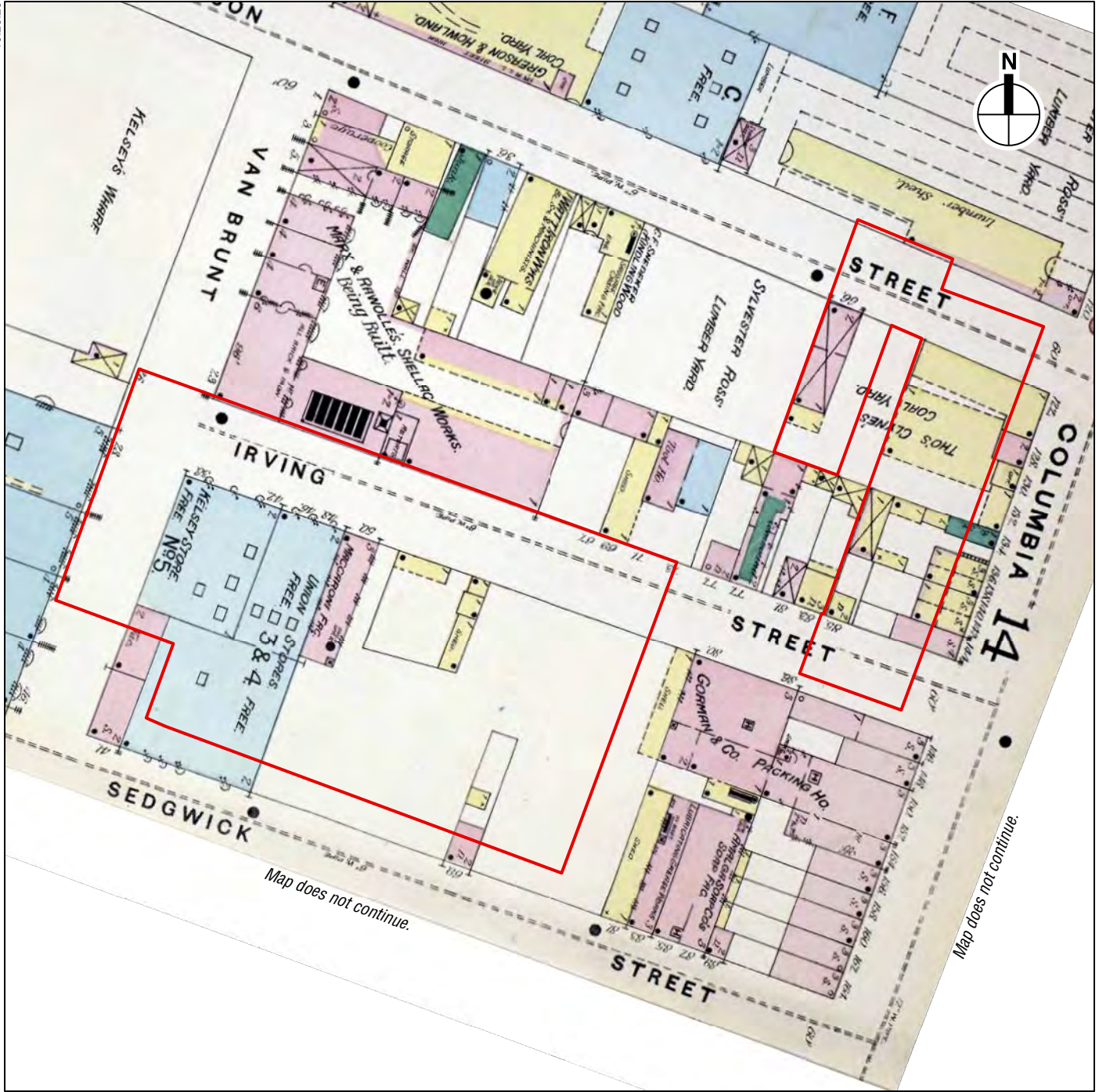
 Phase 1A Study Area



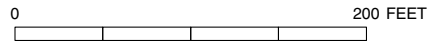


 Phase 1A Study Area

0  200 FEET



Phase 1A Study Area





 Phase 1A Study Area

0 200 FEET

**RELOCATION OF NYCDOT'S SBMT FACILITY TO RED HOOK TERMINALS**

1904 Sanborn Map  
**Figure 8**





Phase 1A Study Area

0 200 FEET



Phase 1A Study Area

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