



Phase 1A Archaeological Documentary Study

280 Richards Street

Brooklyn, Kings County, New York

Prepared for:

Thor 280 Richards, LLC
25 West 39th Street
New York, NY 10018

Prepared by:

AKRF, Inc.
440 Park Avenue South
New York, New York 10016

May 20, 2015

Management Summary

SHPO Project Review Number: 09PR04480

Involved State and Federal Agencies: United States Army Corps of Engineers
New York State Department of Environmental Conservation

Phase of Survey: Phase 1A Documentary Study

Location Information

Location: 280 Richards Street
Red Hook, Brooklyn, New York

Minor Civil Division: 04701 (Brooklyn)

County: Kings

Survey Area

Length: Approximately 366 meters (1,200 feet)

Width: Approximately 183 meters (600 feet)

Total Area Surveyed: 12.12 acres (528,000 square feet)

USGS 7.5 Minute Quadrangle Map: Brooklyn

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Date of Report: May 20, 2015

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A. PROJECT OVERVIEW AND BACKGROUND

Thor 280 Richards Street, LLC is proposing to stabilize the bulkhead surrounding the site at 280 Richards Street in the Red Hook neighborhood of Brooklyn, NY (see **Figure 1**). The project site comprises Block 612, Lot 150, which is located along the southern side of Beard Street on either side of Richards Street (see **Figure 2**). The project site is bounded by water on three sides: two slips line the eastern and western sides of the project site and the Erie Basin is located to the south. The waterfront portions of the site are currently lined with bulkheads. The proposed project would stabilize the bulkheads surrounding project site. The reconstruction and stabilization of the bulkhead would support the future reuse of the upland portion of the site, although no specific plans for the redevelopment of the site are proposed at this time.

The existing timber crib bulkhead is currently failing and requires stabilization to prevent further erosion of upland area and the collapse of deteriorated bulkhead elements (see **Figure 3**). The proposed project would replace the existing timber bulkhead and restore the banks of the site through the installation of approximately 2,000 linear feet of new sheet pile bulkhead. The bulkhead is stable in two relatively small areas totaling approximately 450 linear feet along Beard Street at the northeast and southeast corners of the project site. These portions of the bulkhead would be repaired rather than replaced. The proposed new bulkhead installation will largely follow the historic bulkhead alignment but would be set back from the existing edge of the eastern side of the site and it would extend farther into the Erie Basin on the western side of the site. While new fill would be added below mean high water as part of the proposed project, the project would have a net cut of 550 square feet in comparison with existing conditions. In addition, three 30-inch storm water sewer outfalls would be installed; almost 19,000 square feet of timber pier decking would be removed, and an elevated steel former sugar conveyor shading area would be removed.

The construction of the proposed project would require a permit from the United States Army Corps of Engineers (USACE) and the New York State Department of Environmental Conservation (NYSDEC), and a Joint Permit Application has been submitted. The work described in this application was previously authorized under Permit No. 2-6102-00130/0001 (dated June 15, 2009), which expired on December 31, 2011 without any of the authorized work having commenced. The project was also reviewed by USACE under Application No. 2008-00307-EJE; however, a permit was not issued based on the need for additional information requested during the public comment period. In a comment letter dated September 14, 2009 regarding that USACE application, the SHPO identified the project site as archaeologically sensitive and requested a Phase 1A Archaeological Documentary Study and specifically requested that the history of the project site and the surrounding bulkheads be studied. This document has been prepared to satisfy those comments.

B. RESEARCH GOALS AND METHODOLOGY

The following Phase 1A Archaeological Documentary Study of the 280 Richards Street project site has been designed to satisfy the requirements of SHPO, issued in 2005, and it follows the guidelines of the New York Archaeological Council (NYAC), issued in 1994 and adopted by SHPO in 1995. The study documents the development history of the proposed project site as well as its potential to yield archaeological resources including both precontact and historic cultural resources. In addition, this report documents the current conditions of the project site and previous cultural resource investigations which have taken place on the project site and in the vicinity.

This Phase 1A Archaeological Documentary Study has four major goals: (1) to determine the likelihood that the project site was occupied during the precontact (i.e., 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 at the project site; (3) to make a determination of the project site'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 project locations were inhabited during the precontact or historic periods and identify any activities that may have taken place on the project site that would have resulted in the deposition of archaeological resources. In order to determine the likelihood of the project site's occupation during the precontact and historic periods, documentary research was completed to establish a chronology of the project location'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 on the project locations 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 photographs, 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). File searches were conducted at SHPO and the New York State Museum (NYSM). Information regarding previous archaeological sites and cultural resources investigations from the files of SHPO and NYSM were accessed through the New York State Cultural Resources Information System (CRIS).¹ On-line textual archives, such as Google Books and the Internet Archive Open Access Texts, were also accessed.

The second goal of this Phase 1A study is to determine the likelihood that archaeological resources could have survived intact on the project site after development and landscape alteration (i.e., erosion, grading, filling, etc.). Potential disturbance associated with the construction and demolition of buildings, paving, and utility installation was also considered. Historic maps documenting structures on the project location were analyzed and historic and current topographical maps were compared to determine the extent to which the project locations have been disturbed. After identifying the likelihood that archaeological resources were deposited on the project site and the likelihood that they could remain intact given subsequent development and landscape alteration, a sensitivity determination was made for the project locations for both precontact and historic period resources. As described by NYAC in their Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State, published in 1994 and subsequently adopted by SHPO (see page 2):

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.

¹ CRIS can be accessed at: <https://cris.parks.ny.gov/>.

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 salt water 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 sufficient disturbance to eliminate the possibility that archaeological resources are intact on the project site.
- **High:** Areas with topographical features that would suggest Native American occupation, documented historic period activity, and minimal or no documented disturbance.

According to NYAC standards, Phase 1B testing is generally warranted for areas determined to have moderate sensitivity or higher. Archaeological testing is designed to determine the presence or absence of archaeological resources that could be impacted by a proposed project. Should they exist on the project locations, such archaeological resources could provide new insight into the precontact occupation of the Brooklyn waterfront, the transition from Native American to European settlement, or the historic period occupation of the project site.

C. SUMMARY OF PREVIOUS CULTURAL RESOURCES ASSESSMENTS IN THE VICINITY OF THE PROJECT SITE

The project site has been included within or in the immediate vicinity of the study areas of several previous archaeological assessments.

NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT PROJECT: BROOKLYN REACH 1

In 1984, the archaeological sensitivity of the waterfront of Northwestern Brooklyn—including the area within and adjacent to the Erie Basin—was assessed in a cultural resources investigation prepared by Raber Associates. The report was prepared as part of a project intended to document waterfront structures so as to identify and remove deteriorating objects. The report included a detailed history of the precontact and historic period occupation of the project site as well as the development of the Erie Basin and surrounding area. The report identified the potential for precontact ground surfaces pre-dating the rise of sea levels ca. 2,600 to 4,000 years before present (BP) at depths of 35 to 50 feet or more below mean low water (Raber 1984). The report concluded that bulkheads in the area, including the bulkheads surrounding the 280 Richards Street site, had been extensively altered and repaired, and therefore were not sensitive above the water line. However, the portions of the cribbing saturated beneath the water line and the fill materials used to fill the cribbing were identified as having potential historic significance (Raber 1984).

REVERE SUGAR FACTORY PHASE 1A STUDY

The archaeological sensitivity of the project site was previously analyzed as part of a Generic Environmental Impact Study (GEIS) prepared for the New York City Long Range Sludge Management Plan. In 1991, as part of the GEIS, Historical Perspectives, Inc. (HPI) prepared a Phase 1A Archaeological Assessment of the former Revere Sugar Site. In addition to the 280 Richards project site (Block 612, Lot 150), HPI’s 1991 study analyzed a large area including Block 598, Lots 22 and 30 to 43; Block 599, Lots 2, 14, 17, and 18; Block 604, Lot 16; and Block 605, Lot 1. The report included a

thorough documentary history of the precontact and historic period occupation of the area (relevant research pertaining to the 280 Richards Street project site is summarized in this Phase 1A Archaeological Documentary Study). The 1991 Phase 1A summarized information from a 1991 cultural resources evaluation of the former Revere Sugar Factory—which at that time still occupied the project site—that was prepared by Thomas Flagg. HPI determined that the entire project site—including Block 612, Lot 150—possessed no archaeological sensitivity as a result of disturbance to the area as a result of 19th and 20th century development (HPI 1991).

IKEA RED HOOK

In 2003, HPI prepared a Phase 1A for the site of the Red Hook Ikea, immediately adjacent to and east of the 280 Richards project site. The report determined that the site, which is composed of landfill, was not sensitive for precontact archaeological resources (HPI 2003). The Ikea project site was an active industrial/shipping facility through the late 19th and 20th centuries. However, as a result of industrial development and use, the majority of the project site was not identified as sensitive for historic period archaeological resources, nor was the majority of the piers and bulkheads adjacent to the site. Additional study and documentation was recommended for two graving docks. Finally, the locations of buried pumps beneath a standing building was also identified as sensitive, but as the project was not going to result in impacts to that location, no further work was recommended.

In 2008, HPI completed a report summarizing the results of archaeological monitoring in the location of Graving Dock Number 2, one of the waterfront structures identified as potentially significant in the 2003 Phase 1A study. The wooden graving dock had been constructed ca. 1867 and subsequently incorporated into the landfill. The monitoring effort resulted in the determination that the dock had been extensively altered and destroyed and was no longer intact (HPI 2008).

A. GEOLOGY AND TOPOGRAPHY

The borough of Brooklyn is found within a geographic bedrock region known as the Atlantic Coastal Plain Province. This has been described as “that portion of the former submerged continental shelf which has been raised above the sea without apparent deformation” (Reeds 1925: 3). This area is typified by an unconsolidated glacial till deposits located on top of crystalline bedrock including Pre-Cambrian schist, gneiss, and grandorite (Environmental Planning and Management, Inc. [EMP] 2009). Soils on Long Island, on which King’s County is located, are composed of glacial till or undifferentiated sediments such as sand and clay. The Atlantic Coastal Plain is typified by “flat, low-lying” ground “that slopes very gently toward the sea” (Isachsen, et al. 2000: 149).

The glacial till was deposited by the massive glaciers that retreated from the area towards the end of the Pleistocene (1.6 million years before present [BP] to approximately 10,000 years BP). There were four major glaciations that affected New York City, culminating approximately 12,000 years ago with the end of the Wisconsin period. During the ice age, a glacial moraine bisected Brooklyn, running in a northeast-southwest direction (Homburger 1994). The deposition of glacial till in the wake of the retreating glaciers resulted in the creation of sand hills, known as kames, across New York City, some of which rose to heights of one hundred feet.

Historic maps published in the late 18th and early 19th centuries indicate that the majority of what is now known as the Red Hook neighborhood of Brooklyn, west of Hamilton Avenue, was originally entirely inundated by Lower New York Bay/the Buttermilk Channel or was occupied by salt marshes and hummocks (see **Figure 4**). Later 19th century maps that depict the original water line (e.g., Fulton 1874) also indicate that the project site was to the south of the original fast land. By the early portion of the historic period, modifications had already been made to the area through the construction of canals, ponds, and mill dams. One of the few upland areas in the vicinity was a point known as “Red Hook,” for which the area was named, located northeast of the project site.

B. SOILS

The New York City Soil Reconnaissance Survey published by the National Resource Conservation Service (2005) indicates that the soils within the project site and in the immediate vicinity belong to the “Pavement & buildings, wet substratum-Laguardia-Ebbets” soil complex. This soil complex is typically found in areas with 0 to 8 percent slopes. These areas are characterized as urban areas “filled with a mixture of natural soil materials and construction debris over swamp, tidal marsh, or water...with up to 80 percent impervious pavement and buildings covering the surface” (New York City Soil Survey Staff 2005: 12). The specific soil characteristics that contribute to this soil complex are summarized in **Table 1**.

Table 1
Project Area Soils

Series Name	Soil Horizon Depth (in inches)	Color	Texture	Slope (%)	Drainage	Landform
Ebbets	A: 0 to 4	Very Dark Grayish Brown (10YR3/2)	Loamy fill with construction debris	0 to 8	Well-drained	Anthropogenic urban fill plains
	Bw: 4 to 8	Dark Yellowish Brown (10YR4/4)				
	C1: 8 to 60	Dark Yellowish Brown (10YR4/4)				
LaGuardia	A: 0 to 8	Brown (10YR4/3)	Fill materials; gravelly sandy loam	0 to 8	Well-drained	Modified landscapes near urban centers
	Bw: 8 to 26					
	C: 26 to 79					
Sources: New York City Soil Survey Staff (2005): <i>New York City Reconnaissance Soil Survey</i> . United States Department of Agriculture, Natural Resources Conservation Service, Staten Island, NY.						

C. CURRENT CONDITIONS

Though formerly part of a large industrial complex, the project site is currently vacant land. All structures on the project site were demolished between 2005 and 2009. As seen on the current survey of the site (see **Figure 3**), the ground surface of the site is covered with asphalt, concrete, and gravel remains associated with the former structures and their demolition. The slabs and foundations of the structures that formerly stood on the site are still present beneath the fill that covers the ground surface across the site. Masonry walls and broken concrete line portions of the site's perimeter. The waterfront areas are lined with deteriorating bulkheads and the perimeter of the site above the bulkhead is covered with riprap slopes. The site is currently used for the storage of construction vehicles and shipping containers (see **Photographs 1** through **6**).

Richards Street bisects the project site but is not a fully built road. A waterline runs through the mapped streetbed throughout the majority of the site and a catch basin and manhole are present near the road's southern end, adjacent to the water, and elsewhere around the site. Finally, the remnants of a steel sugar conveyor extend out into the Erie Basin near the southern boundary of the project site. A series of piles representing the remnants of an older wooden pier (known as "Pier A") are visible in the water to the east of the existing steel former sugar conveyor.

For a short time, a wrecked vessel known as "Lightship 84" was located adjacent to the western side of a pier that formerly extended south of the project site along the approximate line of Richards Street. The decommissioned Coast Guard vessel was constructed in 1907 in Camden, New Jersey and was considered to be eligible for listing on the State and National Registers of Historic Places. The vessel appears to have sunk ca. 1996-1997 at the location noted above. The vessel was subsequently considered a navigational hazard and was removed in 2007 pursuant to a demand by the City of New York, which had earlier levied fines against the site owner (at that time, Revere Sugar) for safety violations.

A. PREVIOUSLY DOCUMENTED NATIVE AMERICAN ARCHAEOLOGICAL SITES

In general, Native American habitation sites in the northeastern United States 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. The potential presence of Native American activity near a project site is further indicated by the number of precontact archaeological sites that have been previously identified in the vicinity of a project site. Information regarding such previously identified archaeological sites was obtained from various locations including the site files of SHPO and NYSM, and other published accounts.

As mapped in the CRIS database, there are no SHPO or NYSM precontact archaeological sites within Brooklyn within 1.0 mile of the project site. Two sites have been identified on Governor’s Island within the East River opposite the Brooklyn waterfront. In addition, the project site is not included within a generalized area of archaeological sensitivity as mapped by SHPO in the CRIS database. Other sources (e.g., Bolton 1922 and 1934; Parker 1922) document Native American sites in the general vicinity of the project site. As described in previous archaeological studies of the site, the Red Hook area was characterized by harsh tides and lacked natural topographical features that would have afforded a settlement protection (HPI 1991). These sites are summarized in **Table 2**, and are depicted in **Figure 5**.

Table 2
Previously Identified Precontact Archaeological Sites

Site Name and Number	Approximate Distance from Project Site	Time Period	Site Type and Information	Other Reference(s)
Fort Jay Prehistoric Site SHPO: 06101.009523 (Governor’s Island)	1.1 miles (5,800 feet)	Woodland	Ceramic fragments and charcoal from an intact buried ground surface	
Nolan Park Prehistoric Site SHPO: 06101.009523 (Governor’s Island)	1.2 miles (5,900 feet)	Woodland	Basin-shaped features with charcoal and oxidized soils; contained ceramics and lithic flakes and debris	
Werpoes Bolton (1922) Site 67	1.4 miles (7,400 feet)	Precontact	Village and Maize Field	Bolton 1922
Sassian’s Maize Land Bolton (1922)	0.7 miles (3,700 feet)	Precontact	Planting Field	Bolton 1922 Grumet 1981
Sunset Park Bolton (1922) Site 109	1.8 miles (9,500 feet)	Precontact	Native American station	Bolton 1922
Gowanus Bay Bolton (1922) Site 110	1.0 mile (5,200 feet)	Precontact	Shell middens and evidence of Native American occupation	Bolton 1922

Source: New York State Cultural Resource Information System (<https://cris.parks.ny.gov>); Bolton 1922 and 1934; and Grumet 1981.

As seen on Bolton’s 1922 map of Native American sites and trails (see **Figure 5**), the largest village site near the project site was *Werpos*, situated near the intersection of Hoyt and Baltic Streets, approximately 1.4 miles northeast of the project site near what was originally the northern terminus of the stream that was subsequently converted into the Gowanus Canal. 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 *Werpos* 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 towards the project site, and other planting fields and Native American settlements were situated along this branch (ibid). It is possible that the southern planting field was known as “Sassian’s Maize Land” (Grumet 1981: 50). As depicted by

Bolton, the trail extended as far southwest as the former marshland and did not extend as far as the project site. Additional Native American sites were identified between 1 and 2 miles southeast of the project site, near the shores of the Gowanus Bay in the vicinity of what is now the Sunset Park neighborhood of Brooklyn (Bolton 1922).

B. PRECONTACT ARCHAEOLOGICAL SENSITIVITY

As described above, Native American activity has been documented to the northeast of the project site. A Native American trail is known to have extended southwest from village sites towards the project site. It therefore seems highly likely that Native Americans used the marshes in the vicinity of the project site as an important source of plant and animal food resources. Marine life and wild game would have been abundant in this area during the precontact period, making the western shore of Brooklyn attractive to Native Americans. More extensive Native American habitations sites may have been present in the area before sea levels rose and the project site became inundated by tidal marshland thousands of years ago. Therefore, it is possible that archaeological deposits associated with the earliest occupation of the project site may have been inundated by tidal marshes after their occupation by Native Americans, potentially preserving artifacts beneath protective layers of peat and clay deposits.

A. INTRODUCTION

The historical context of the area immediately surrounding Fresh Creek has been summarized at great length in many previous archaeological investigations (i.e., Raber 1984; HPI 1991; and Flagg 1991). As such, the history of the neighborhood surrounding the project site and the detailed history of developments such as the Revere Sugar Factory will only be briefly summarized here as it pertains to the development of the project site itself. The following chapter therefore summarizes the development history of the site as depicted on historic maps supplemented with information from previous studies.

B. EARLY DEVELOPMENT NEAR THE PROJECT SITE

EARLY COLONIAL SETTLEMENT

As discussed in **Chapter 2, “Environmental and Physical Setting,”** during the 18th century, historic maps indicate that the entirety of the project site was inundated by the Lower New York Bay between Gowanus Bay and Buttermilk Channel. Salt marshes, large millponds, and marshy hassocks characterized most of the surrounding area. Northeast of the project site was an upland area known as “Red Hook,” for which the area was named. Red Hook was connected to the mainland by fragmented, marshy lowland to the east and a narrow spit of land to the south. The marshes that lined Red Hook’s southern side were located near the northeastern corner of the project site. The southern isthmus curved to the east at “Bompjes” or “Bompus Hook,” enclosing a large pond. Bompus Hook was apparently located between what is now Van Dyke and Coffey Streets to the northeast of the project site. Multiple versions of Ratzert’s maps depicting the area ca. 1767 (published 1776) show that the Red Hook upland was cultivated (see **Figure 4**).

The marshland adjacent to the northwestern Brooklyn waterfront was attractive to early Dutch settlers as it was topographically similar to Holland’s waterfront (Raber 1984; HPI 1991). These early settlers immediately began to modify the landscape of the area, largely to create an environment conducive to milling (ibid). One of the earliest developments in the area as seen on the Ratzert maps was a small building located on the eastern edge of the Red Hook landmass that was identified as, “A. Van Dyck’s Mill.” This mill appears to have been located to the north of the project site and was established in the late 17th century (ibid). The Van Dyke family constructed another mill in the vicinity of what is now Block 598, northwest of the project site, later in the 18th century (ibid).

ACTIVITY IN RED HOOK DURING THE REVOLUTIONARY WAR

During the time of the Revolutionary War in the late 1700s, fortifications were constructed in the Red Hook area as part of the American Army’s attempt to defend the city. A redoubt known as “Fort Defiance” was constructed in the vicinity of what is now the intersection of Conover and Van Dyke Streets, northwest of the project site (HPI 1991). Fort Defiance is shown to the north of the project site on Stiles’ 1867 map of Revolutionary War activity. The redoubt played a role in the Battle of Brooklyn in the summer of 1776, although that battle was largely fought to the east of the project site near what is now the Gowanus Canal.

THE FIRST HALF OF THE 19TH CENTURY

The 1821 Randel map shows the vicinity of the project site in a similar condition to that illustrated on the 18th century Ratzert maps. Colton’s 1836 map of New York City (see **Figure 6**) and 1849 maps of New York City show similar conditions. The maps also provide an overlay of planned streets that had not yet been built. By the late 1820s, an increase in ship traffic and population density resulted in increased real

estate development and the transformation of formerly rural, agricultural areas such as Red Hook (Raber 1984). In the early 1830s, the former mill properties were sold to developers who began what would be decades of construction and landscape modification (HPI 1991). These modifications included the grading of hills and the filling of marshes (ibid). While the residential developments planned at this time were never constructed, these modifications paved the way for the industrial developments that would characterize Red Hook in the 19th century.

Colton's 1836 and 1849 maps indicate that at Richards Street, the shoreline was located immediately west of Coffey Street (then called Partition Street), almost two blocks east of the project site. These streets would not be constructed until after 1850 (HPI 1991). The mapped line of Beard Street, then known as Elizabeth Street, is depicted within the open water. The 1845 Hassler map, which does not depict the proposed streets, does show that the Atlantic Dock, a large regularized basin that had been constructed to the north of the Red Hook upland. The Atlantic Docks were constructed in 1841 in order to provide a safe port for vessels in the otherwise hazardous waters of the Buttermilk Channel (HPI 1991). In the immediate vicinity of the project site, the 1845 Hassler map shows no indication that the shoreline has been regularized or augmented and "rocks" are identified in the water to the south of the isthmus connecting Red Hook and Bompus Hook. That map also appears to indicate that the project site was entirely underwater at that time.

Richard Butt's 1846 map of Brooklyn also depicts the streets identified on the 1836 Colton map, as well as the original water line. As seen on that map, the southernmost bulkhead in the vicinity of the project site crossed Richards Street along a former street known as Osage Wharf one block to the south of Beard (Elizabeth) Street. As later maps indicate that the bulkhead did not extend south of Beard Street, it is unclear if mid-19th century maps depict proposed conditions or if a portion of the bulkhead was later demolished to extend slips as far north as Beard Street.

Sidney's 1849 map does not indicate that the area had been filled as depicted on the 1846 map, although it does reflect more of the landfilling activities that had occurred. That map may even depict the first landfilling of what is now Richards Street. Connor's 1852 map of Brooklyn also indicates that the project site had been filled out to Osage Wharf Street, one block south of Beard (Elizabeth) Street. That map uses shading to depict the presence of structures and does not indicate that any development had occurred south of Beard Street or in the immediate vicinity. Subsequent maps, including the 1860 Walling map, depict the project site in a similar manner. The project site is not included in Perris's 1855 atlas of Brooklyn's industrial development, although adjacent blocks are included. This indicates that the project site was not developed with structures at that time.

C. INDUSTRIAL DEVELOPMENT IN THE SECOND HALF OF THE 19TH CENTURY

It was not until the construction of the Erie Basin beginning in the mid-1850s that the development of the project site really occurred. Referred to as the "greatest dredging and breakwater construction project in Brooklyn history," the basin's construction dramatically altered the history of the Red Hook waterfront (Raber 1984: 30). The basin was constructed by William Beard and Jeremiah and George Robinson who by the mid-1860s also began to develop the inland waterfront lots lining the north side of the basin (Flagg 1991). The development of the area slowed overall during the Civil War in the early to mid-1860s and surged in the years that immediately followed (Raber 1984). It was during this post-war development boom that the bulkheads within the project site were first developed.

Dripps' 1869 map of Brooklyn is the first late 19th century map to accurately depict the conditions of the project site (see **Figure 7**). The map depicts the majority of the project site as a wharf extending south of Beard (Elizabeth) Street as far as the established bulkhead line. This structure has been identified as the

Richards Street Bulkhead (Raber 1984). The bulkhead was constructed on piles and filled using dredged silt and sand and ballast from ships leaving the port of New York (ibid).

The 1869 Dripps map indicates that the wharf extended 190 feet to the north of the mapped center line of Richards Street, which was not constructed at that time, and 170 feet to the south. The map also indicates that the northwest corner of the project site may still have been inundated or developed with a small slip at that time. Fulton's 1874 map also depicts this inundation, suggesting that the slip to the north of the project site was in the shape of an upside-down and backwards "L." This secondary slip continues to appear on maps through 1880.

As seen on the 1869 map, while industrial uses are identified on the map to the north, including a fire brick factory on the northern side of Beard (Elizabeth) Street, the project site was not developed with structures at this time. Around the time the map was produced, water lines were installed in the neighborhood and the site would have had full access to municipal water and sewer networks before 1886 (HPI 1991). The fire brick works was still present to the north of the project site by the publications of the 1880 Bromley and 1880 Hopkins atlases. Both 1880 atlases depict the first development on the project site: a large brick structure at the southwest corner (identified as a shed on the Hopkins atlas) with a wood-frame shed to the rear (north) and a wood-frame shed occupying much of the eastern half of the project site. The Hopkins atlas also depicts two small, wood-frame outbuildings near the southeast corner of the project site.

By the publication of Robinson's 1886 atlas, which depicts the areas east and west of Richards Street on separate plates, the project site was an active industrial site. Additional piers had been constructed to the south of Lot 150, including what was later known as the "Middle Pier" or "Pier A" at the foot of Richards Street and a second—known as the "New pier" or "Pier B,"—near the southeast corner of Lot 150. Neither of these piers is still extant. No developments are depicted on Pier B on the 1886 map although Pier A contained a large, wood-frame structure as "W. Beard's Covered Pier," at that time owned by the recently deceased Beard's estate. Beard's heirs also owned the western half of the project site, which was developed with a large brick warehouse identified as "W. Beard's Stores." The former L-shaped slip near the northwestern corner of the project site had been filled by that time, marking the first time that Lot 150 was entirely composed of solid ground. The eastern half of the site was developed with a brick warehouse identified as "W. Beard's Stores" and a large, wood-frame warehouse and two small, wood-frame outbuildings identified as the "Johnson and Hammond Stores." A Sanborn map published in 1886 depicts these same structures, but indicates that the Beard warehouses were constructed of iron (this is the only map to do so) and identifies the eastern Beard structure as the "Erie Basin Stores." Similarly, the Johnson and Hammond warehouse is also identified as the "Union Naval Stores" and a corrugated-iron and wood-frame structure at the southeast corner of Beard and Richards Streets is identified as "vacant tank house."

By the 1890s, Brooklyn's grain industry began to decline and the success of the Erie Basin decreased (Raber 1984). Hugo Ullitz's 1899 atlas of the Brooklyn depicts few changes to the project site. The structures on the southern half of the project site are identified as part of the larger land holdings of the Brooklyn Wharf & Warehouse Company." Wood-frame structures are depicted above both the "Middle" and "New" Piers to the south of the site, indicating that both were covered by that time. Finally, the northeast corner of the site was largely vacant with the exception of a long, narrow wood-frame stable or barn identified as the property of the Erie Basin Coal Yard. An atlas published by Ullitz in 1903 is largely similar, although some buildings appear to have been expanded or reconfigured and the property was now identified as that of the "New York Dock Company." The New York Dock Company was created after landowners along Brooklyn's waterfront began to consolidate their holdings in light of the area's overall economic decline (Raber 1984). However, for many years, the Beard Estate's landholdings were not included in the property consolidation (ibid).

A Sanborn map published in 1904 provides greater detail about the industrial use of the property at the turn of the 20th century (see **Figure 8**). Once again identified as “Beard’s Erie Basin Stores,” large, brick warehouses line the southwestern portion of the site. To the north of the warehouses were several small, wood-frame sheds identified as the “Weighmaster’s Tool Houses.” A fence crossed the mapped bed of Richards Street north of the southern terminus of the road, where Pier A stretched to the south out into the water (this fence is not shown on a connecting plate that depicts the eastern half of the site). The brick and stone warehouses to the east of Richards Street are identified on the map as the “Erie Basin Stores Richards St. Shed.” Finally, the coal yard at the northeast corner of the site had been expanded and was by then operated by the Nelson Brothers coal company. A Bromley atlas published in 1908 and an Ullitz atlas published in 1916 depict conditions similar to the 1904 Sanborn map. Beginning ca. 1910, Beard’s stores shifted their focus from grain to other goods (Raber 1984).

D. ESTABLISHMENT OF THE SUGAR REFINERY IN THE 20TH CENTURY

Beginning in the early 20th century, Brooklyn’s waterfront became a central location for America’s sugar refining industry (Flagg 1991). The American Molasses Company began acquiring land within the project site beginning ca. 1915 and by 1930 owned the entire area (ibid). The American Molasses Company was renamed SuCrest Sugar and was later purchased by the Revere Sugar company (ibid). By the time the factory ceased operations in the early 1990s, the Revere Sugar Company was the last sugar refinery operating in the area (ibid).

The 1915 Sanborn map depicts “Beard’s Erie Basin Stores” in expanded buildings along the west half of the site. One of the warehouses in that area is identified on the map as “William Bannerman Storage.” By that time, the Brooklyn Fire Brick Works had expanded to the south and was using the northwestern portion of the project site for bulk clay storage. To the east of Richards Street, the northernmost portion of the project site continued to be occupied by the Nelson Brothers Coal Yard. To the south of that was the Fowler and Silberhorn Lumber Yard. The southeastern quadrant of the site was occupied by the “American Molasses Company of New York, Inc. (The Nulomoline Company).” The large warehouse of the molasses company featured two 775,000-gallon iron storage tanks at the southeast corner of the building. The 1916 atlas identifies the wood-frame warehouse on the eastern half of the site as belonging to the National Transportation and Terminal Company.

By the publication of the 1939 Sanborn map, the American Molasses Company had expanded to the west to occupy the western half of the project site. The formerly vacant northwestern quadrant of the site was developed with sugar refinery buildings; the former Beard Stores to the south were used to store “raw sugar in bags,” and three sets of scales were installed along the western side of the property. The expansion of the sugar refinery also dramatically altered the eastern half of the site, and by 1939 the parcel was fully developed with various refinery buildings used for canning, cold storage, and storage, among other uses. Additional, circular, iron storage tanks of various sizes were constructed around this time. The Beard estate retained control of Piers A and B at this time. By the publication of the 1951 Sanborn map, the factory had expanded again and few vacant areas remained within the project site. The mid-20th century expansions included additional structures and a 1,500,000-gallon storage tank.

The sugar refinery was closed in 1985 and the buildings on the site were unoccupied after that time. Some of the refinery structures were dismantled after the closure of the refinery (Flagg 1991). Piers A and B were intact during the preparation of the 1984 Raber report, at which time Pier B was described as “unused and deteriorating” (Raber 1984: 77). That pier was demolished before 1996. An aerial photograph taken that year¹ depicts Pier A and indicates that it was in poor condition. The Lightship that

¹ Accessible through: <http://maps.nyc.gov/doitt/nycitymap/>.

formerly lay partially submerged to the western side of Pier A is also visible in this photograph. The remaining buildings associated with the sugar refinery were demolished between 2005 and 2009, and the property has remained vacant ever since.

A. SENSITIVITY ASSESSMENT

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.

DISTURBANCE ASSESSMENT

The project site was extensively developed in the late 19th and early 20th centuries as part of its transformation from a waterfront pier with warehouses to an area of importance for the American sugar refining industry. Extensive disturbance would have occurred as a result of the construction and demolition of buildings. Waterfront piers to the south of Block 612, Lot 150 were constructed, demolished, and replaced during the 20th century. Some subsurface disturbance has occurred across the site as a result of the installation of a water line, catch basins, and manholes. It is possible that additional utilities were present when the site was an active industrial complex. In addition, the existing waterfront appears to have fallen into disrepair, likely as a result of tidal action and lack of maintenance.

In a 1984 assessment of the historic sensitivity of the waterfront of Erie Basin and general sensitivity, Raber Associates determined that “the original timber structures along the east and west sides of the Richards Street bulkhead apparently held up better than those of the outer breakwaters, since bulkhead faces here retain the original configuration in most places, with concrete decking added on top” (Raber 1984: 75). However, Raber also noted that after World War II, when concrete was added to most waterfront structures, additional steel sheet piles were driven through older wooden structures to support the weight of the added materials. Raber also noted that the timber cribbing along the waterfront in the Erie Basin was at that time:

...well preserved below mean low water; virtually all bulkhead faces above mean low water are modified in concrete steel sheet piling, or in a few cases timber reconstructions along the lines of original work. Most of the timber reconstruction is around the Richards Street bulkhead, especially the south side (Raber 1984: 76).

The southern side, where much of the timber was reconstructed, was in the vicinity of Piers A and B, which were demolished subsequent to the completion of the 1984 report. Since 1984, the bulkhead surrounding the project site has fallen into disrepair and the portions located above the water line are not well-preserved. It therefore appears that the upper portions of the existing bulkhead above the water line have been disturbed through the addition of concrete and potentially steel sheet piles as well as through the construction and demolition of Piers A and B and general decay associated with tidal action and lack of maintenance.

PRECONTACT SENSITIVITY ASSESSMENT

As described in **Chapter 3, “Precontact Resources,”** in general, Native American habitation sites in the northeastern United States 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. The potential presence of Native American activity near a project site is further indicated by the number of precontact archaeological sites that have been previously identified in the vicinity of a project site. The project site was inundated until the early to mid-19th century and would therefore not have been the site of precontact settlements, although more extensive Native American habitations sites may have been present in the area before sea levels rose and the project site became inundated by tidal marshland thousands of years ago. However, the

development of the waterfront in the Red Hook area and the rapid movement of the tides would have resulted in disturbance to precontact resources beneath what is now the bottom of the harbor. Therefore, the project site is determined to have low sensitivity for precontact archaeological resources.

HISTORIC SENSITIVITY ASSESSMENT

The project site was not filled until the mid-19th century and no residential occupation appears to have ever occurred within the boundaries of the project site. The first industrial structures constructed on the project site are depicted on historic maps published beginning in 1880. The project site was then developed and redeveloped with large industrial complexes during the 20th century. As a result of the lack of early occupation and development in the early historic period and disturbance associated with industrial development in the 20th century, the project site is determined to have no sensitivity for historic period archaeological resources associated with the historic period occupation and industrial use of the project site independent of the construction and landfilling of the existing bulkhead (see below).

As described in **Chapter 1**, the Richards Street bulkhead was previously analyzed as part of the 1984 archaeological assessment prepared by Raber Associates. That document determined that only the portions of the historic bulkheads situated below the water line were potentially significant (Raber 1984). The report referred to some alterations of the bulkhead and stated that “most of the timber reconstruction” that occurred in the vicinity of the Erie Basin “is around the Richards Street Bulkhead, especially on the south side” (ibid: 76). In the more than 30 years since that have passed since that report was prepared, the bulkhead appears to have deteriorated significantly. As described above, the existing bulkhead above the water line appears to have been significantly altered. Portions of the bulkhead situated beneath the water line may be undisturbed and therefore retain their integrity and moderate archaeological sensitivity. Portions of the bulkhead that have been disturbed and no longer retain their integrity have no archaeological sensitivity.

B. RECOMMENDATIONS

Those potentially intact portions of the bulkhead that are situated beneath the water line may have moderate archaeological sensitivity, as described above and identified in the 1984 Raber report. As currently proposed, the bulkhead repairs will not result in impacts to the existing bulkhead below the water line. Therefore, the proposed project would not result in impacts to the original timber bulkhead structure situated beneath the water line. Therefore, no additional archaeological analysis is warranted at this time.

In the event that project plans are altered and, as a result, the proposed project would impact those portions of the bulkhead, then additional archaeological investigation would be necessary. If the proposed work would be staged in such a way that there would be an opportunity for archaeologists to document those remains (e.g., by using shoring and dewatering the area to expose the bulkhead below the water line), then it is recommended that limited archaeological monitoring be conducted to confirm if the original timber structures are intact. If intact structures are observed, archaeologists should document the construction methodology of the mid- to late 19th century waterfront structures as well as to determine what materials (e.g., ballast from ocean-going vessels) were used to fill in the land behind the bulkhead walls. Such documentation would be completed in the form of photographs, measured drawings, and field notes. However, if the proposed project would occur in such a manner that would preclude the documentation of these resources (e.g., if no dewatering or shoring was used to allow archaeologists to safely make observations), then no additional archaeological analysis is recommended.

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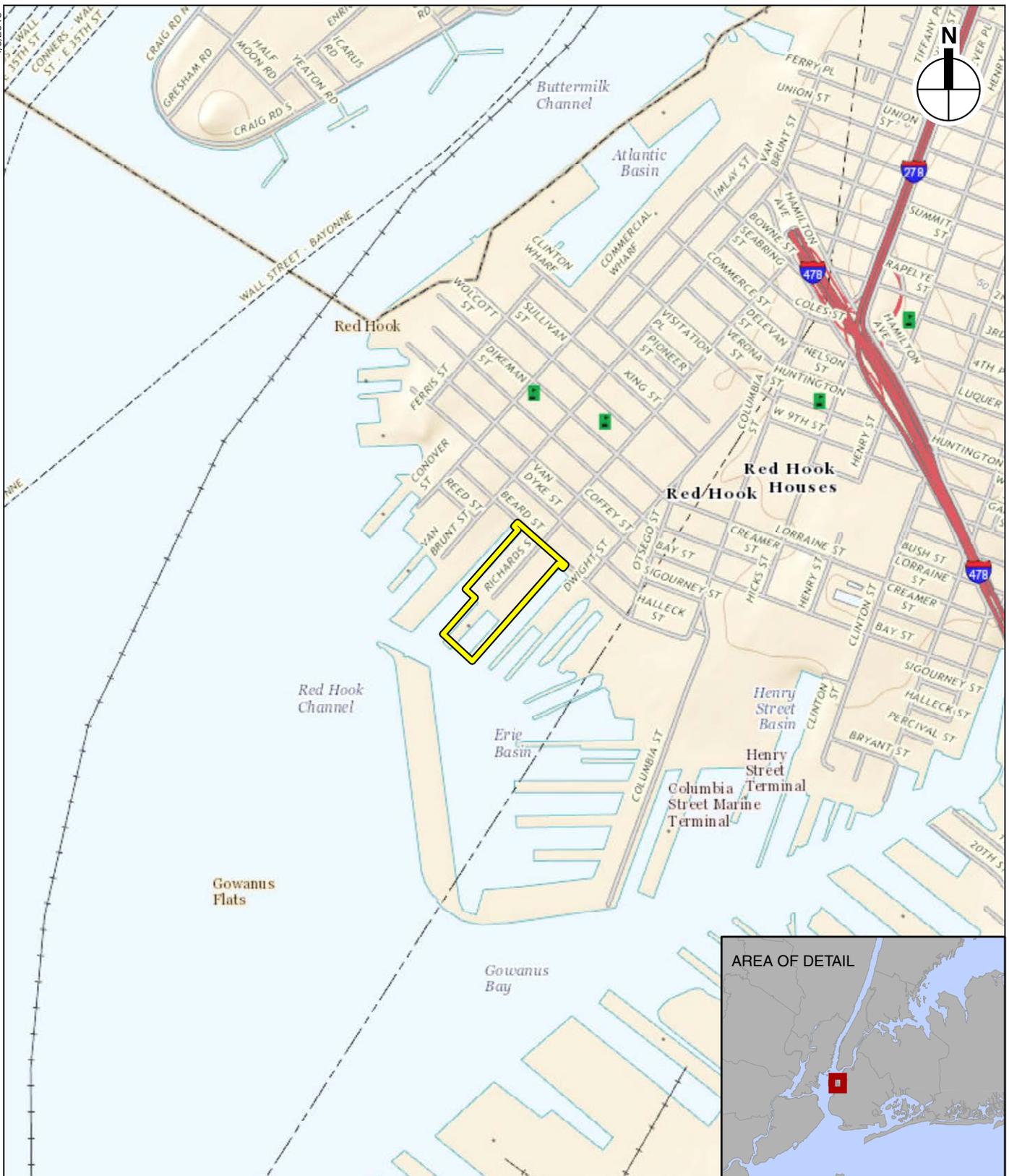
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Figures

4/6/2015



 Project Site

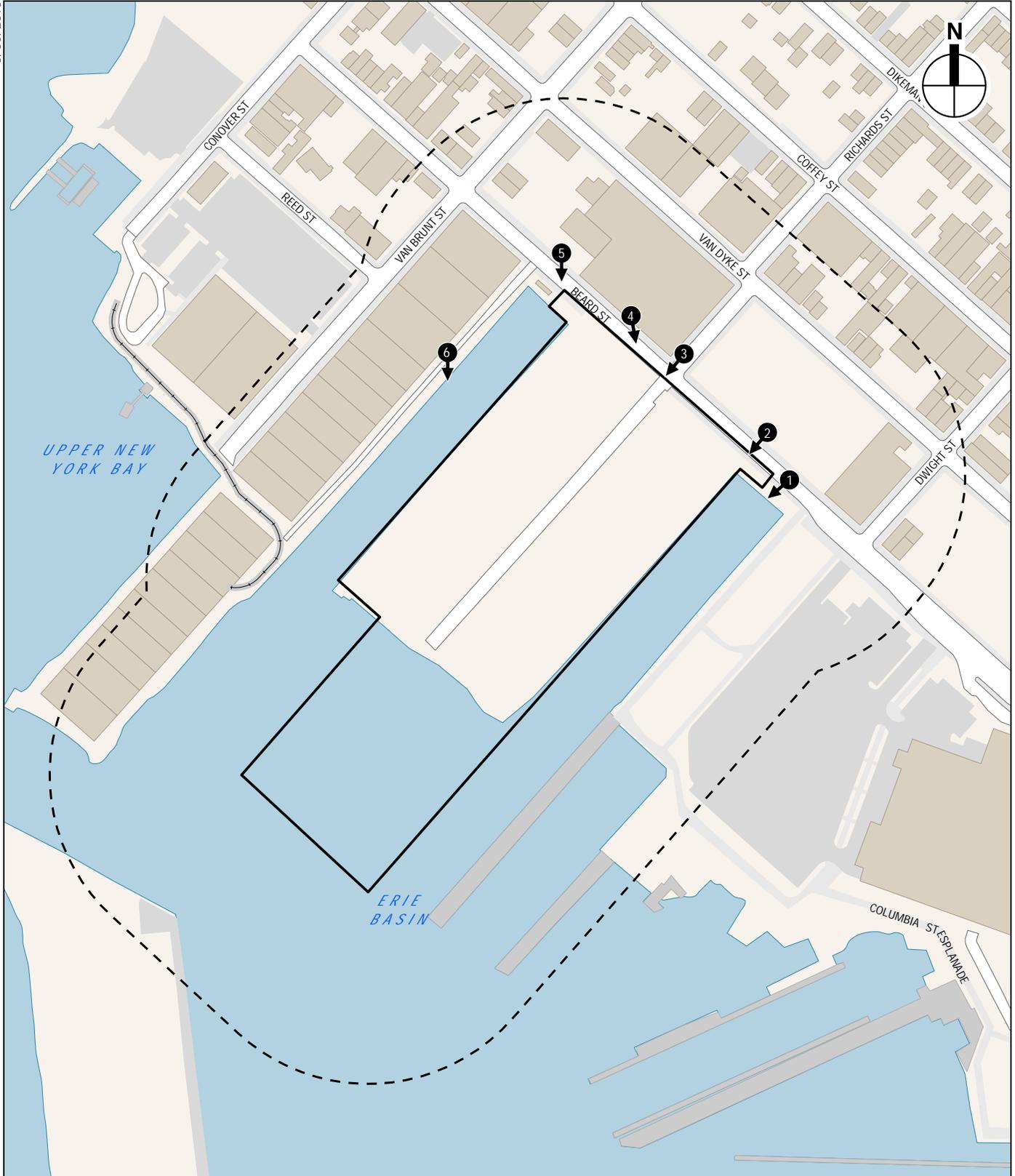
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Approximate coordinates of Project Site:
40° 40' 23" N, 74° 0' 54" W

USGS 7.5 Minute Topographic Map
Jersey City Quad
Figure 1

280 RICHARDS STREET

3/30/2015

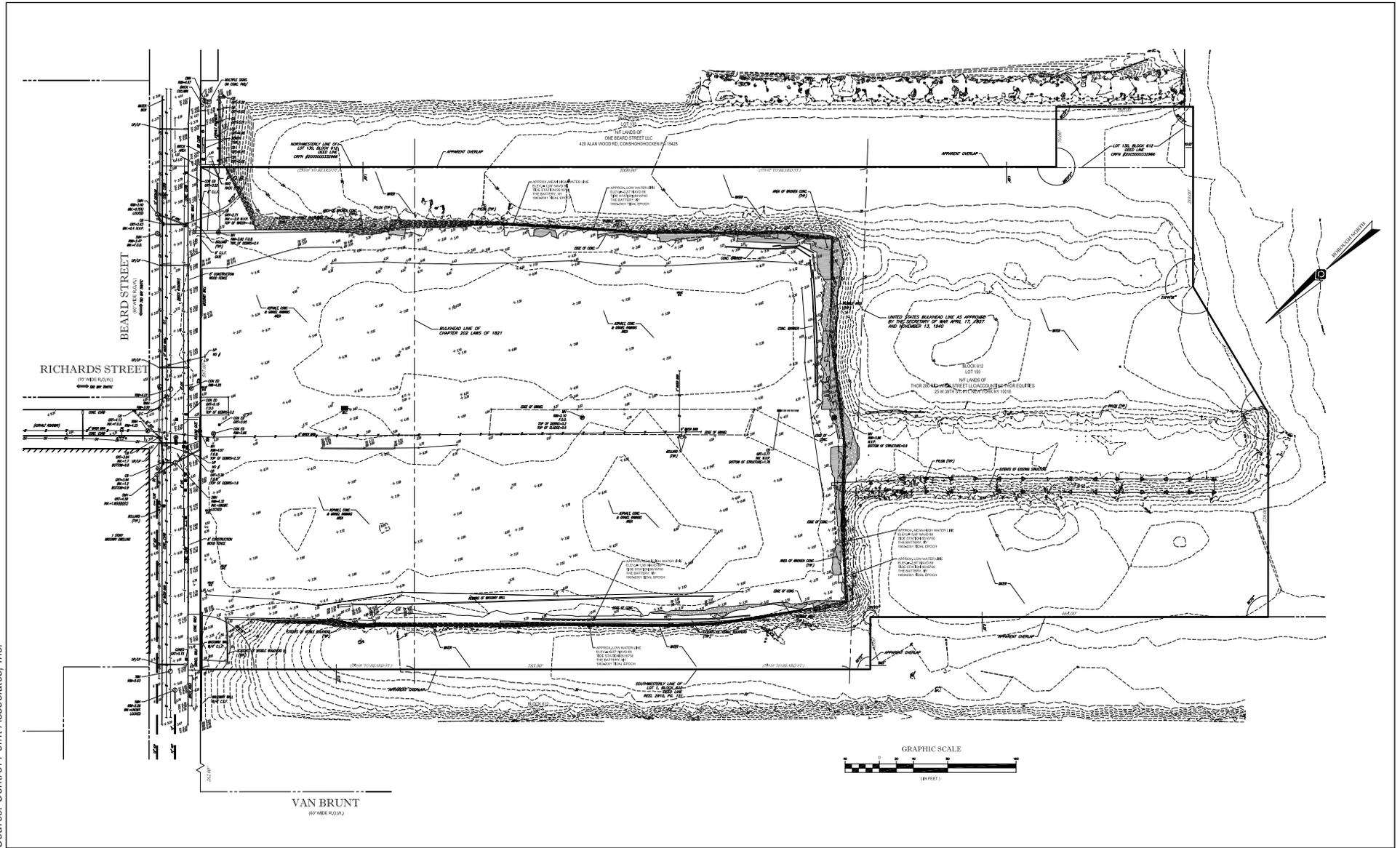


-  Project Site
-  Study Area (400-foot boundary)
-  Photo View Direction and Reference Number

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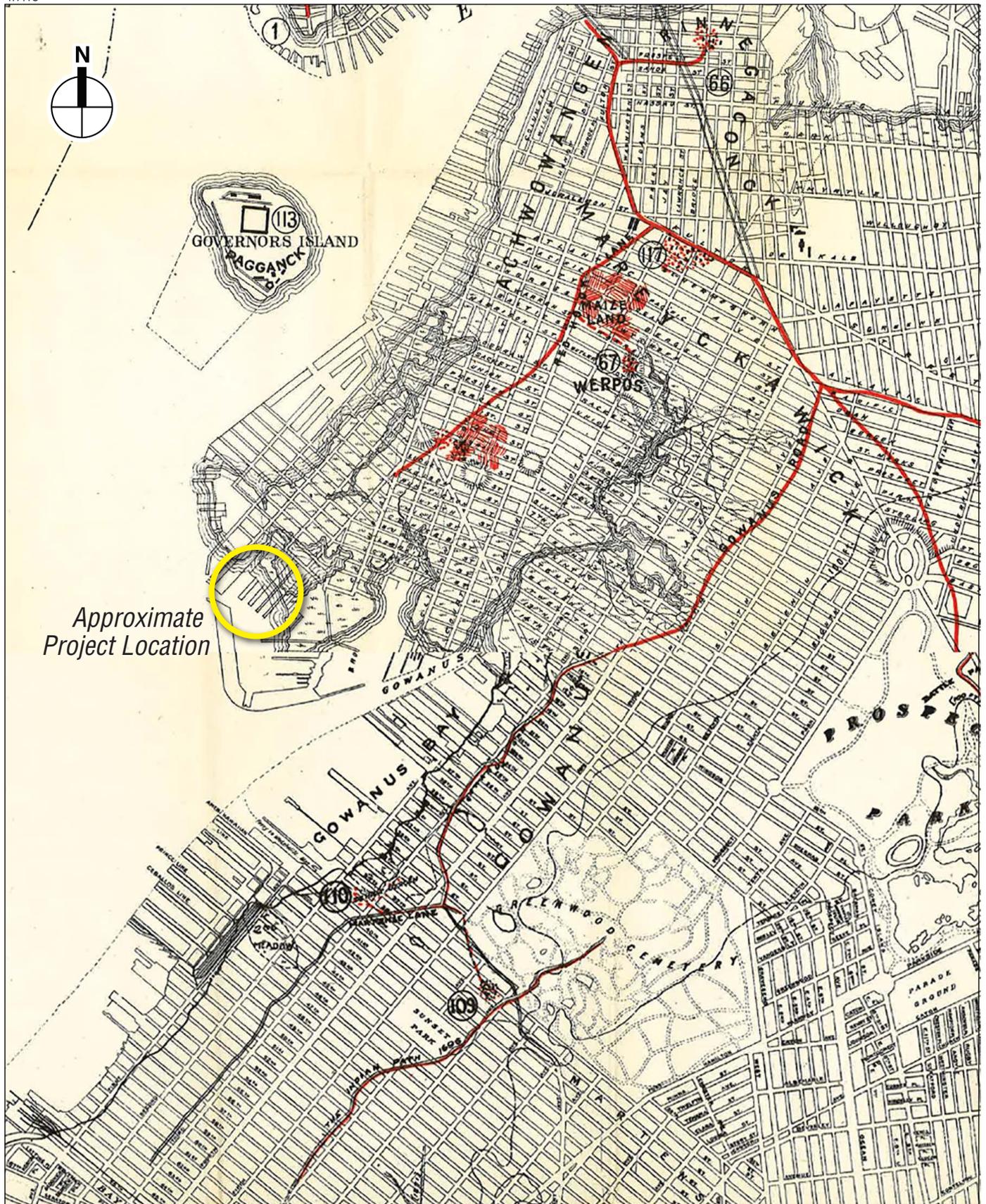
280 RICHARDS STREET

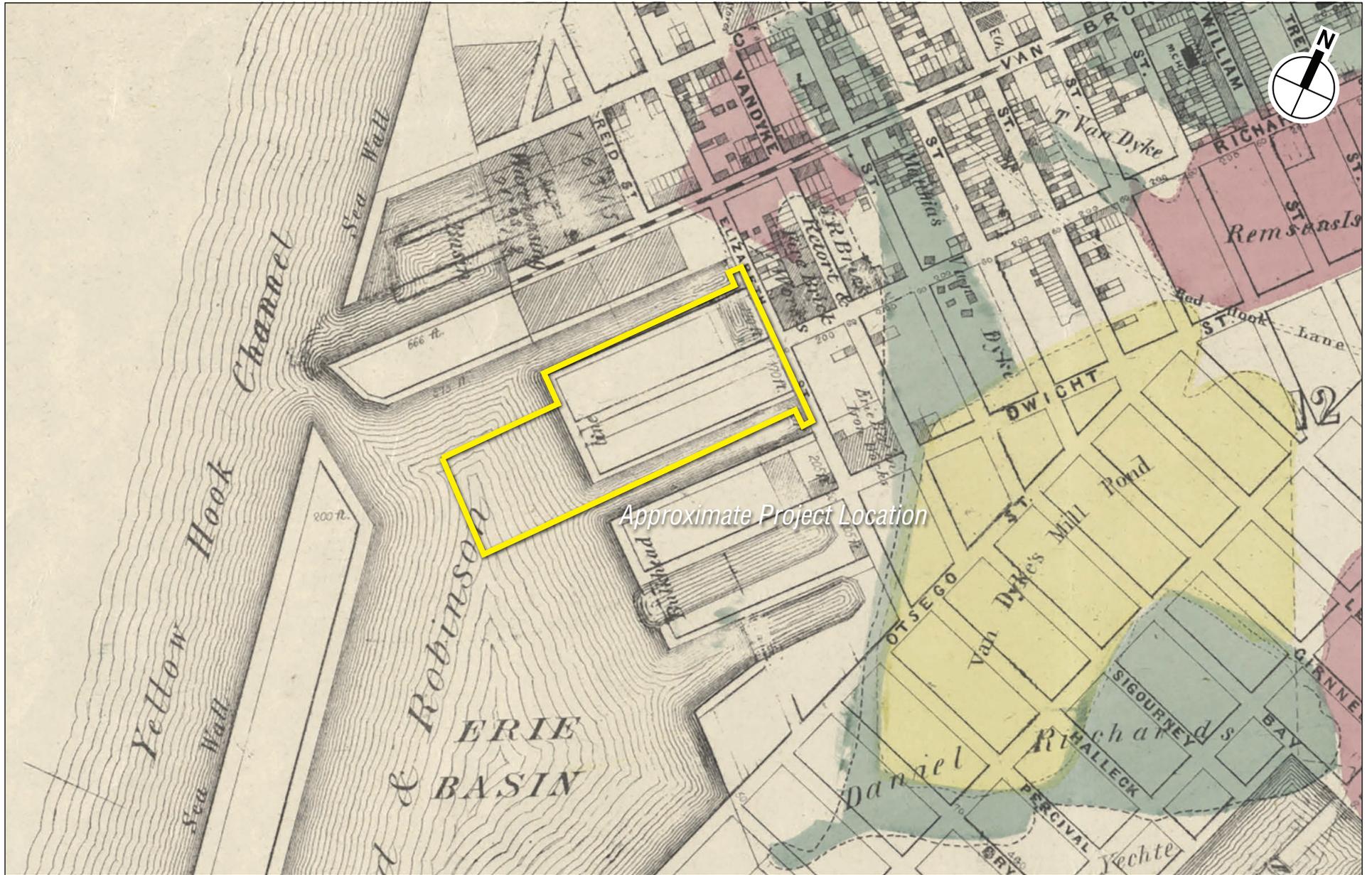
Project Location Map
Figure 2

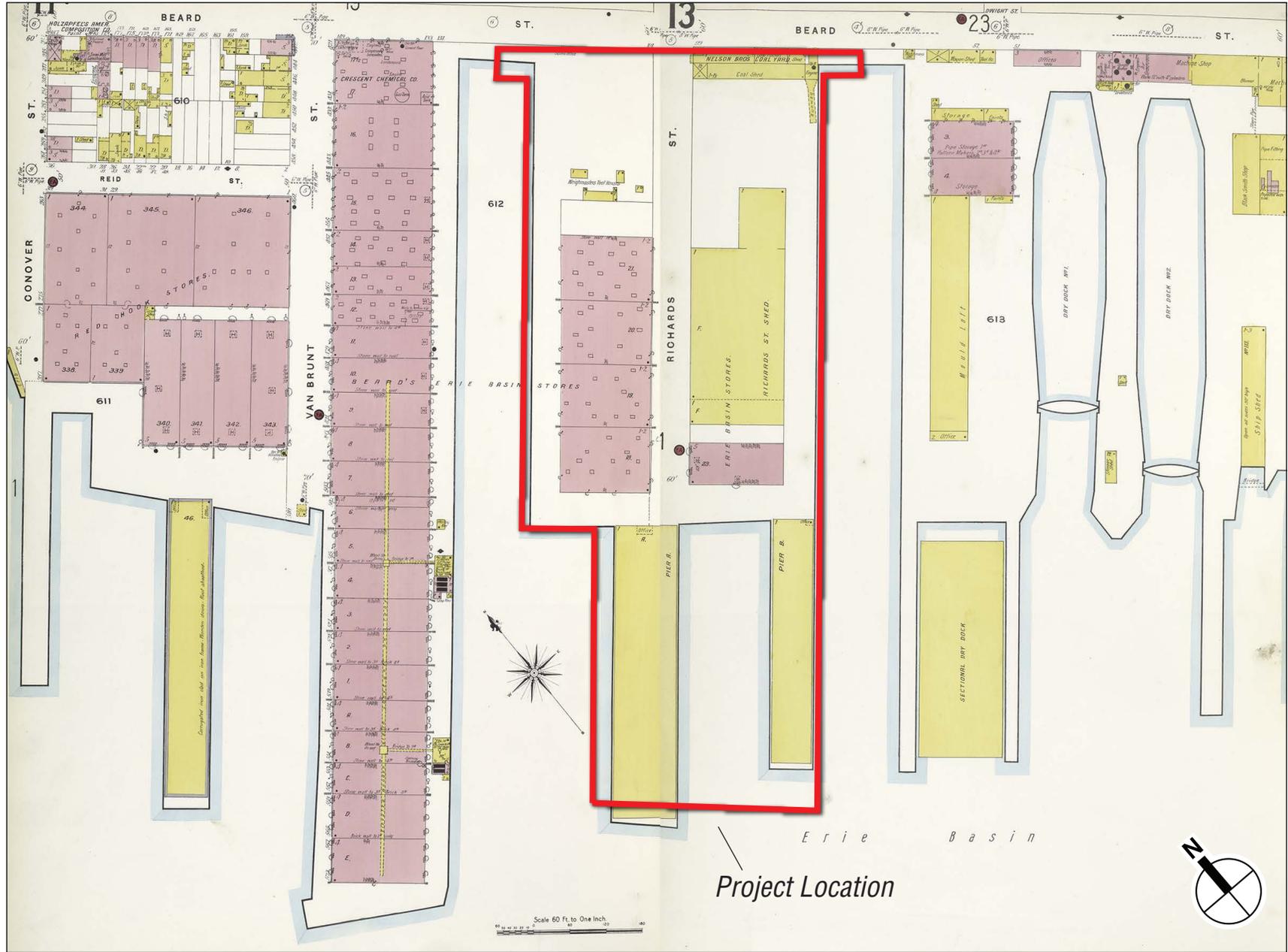




1776 Ratzel map depicting conditions circa 1767
 Figure 4







Photographs



View southwest from Beard Street showing the deteriorating bulkhead lining the eastern side of the project site

1



Broken concrete and the damaged bulkhead along the southern side of the project site

2



The mapped continuation of Richards Street south of the entrance to the site **3**



View southeast from Beard Street at the northern portion of the project site **4**



View south at the deteriorating bulkhead lining the northwestern side of the project site **5**



The southwestern portion of the project site including the existing steel pier that extends south from the bulkhead **6**