

6111m  
HP 2001

Stage 1A Archaeological Study

for

Proposed Improvements to Coenties Slip

for the

Office-Trading Facility at 55 Water Street

New York, New York, NY

*Prepared for:*

Allee King Rosen Fleming, Inc.  
117 East 29<sup>th</sup> Street  
New York, NY 10016

*Prepared by:*

Historical Perspectives, Inc.  
P.O. Box 3037  
Westport, CT 06880

October, 2001

886

CONTENTS

I. INTRODUCTION ..... 1

II. ENVIRONMENTAL SETTING ..... 3

III. PREHISTORIC ERA ..... 4

IV. HISTORICAL PERIOD ..... 9

V. CONCLUSIONS AND RECOMMENDATIONS ..... 15

BIBLIOGRAPHY ..... 21

FIGURES

PHOTOGRAPHS

## FIGURES

Figure 1. Project Site Location Map – Current U.S.G.S. Topographic Map, 1981

Figure 2. Project Site Location – Current Sanborn Land Use Map

Figure 3a. Visscher View, from *Novi Belgii Novaeque Angliae Nec Non Partis Virginia Tabula*, c.1655-1677

Figure 3b. Castello Plan, *Afbeeldinge van de Stadt Amsterdam in Nieuw Neederlandt* (photo negative), c.1665-70

Figure 4. Danckaerts, *Labadist General View of New York from Brooklyn Heights*, 1679-1680

Figure 5. Burgis, *A South Prospect of the Flourishing City of New York in the Province of New York in America*, 1719-1721.

Figure 6. Ratzer, *Plan of the City of New York*, 1766-67

Figure 7. Bromley, *Atlas of the City of New York*, 1879

Figure 8. *Proposed Improvements to Coenties Slip Project Site Showing Area of Archaeological Sensitivity*

## I. INTRODUCTION AND METHODOLOGY

Improvements to Coenties Slip in Lower Manhattan, coordinated through the New York City Parks Department in conjunction with a new Office-Trading Facility at 55 Water Street, may cause subsurface disturbance through the installation of utility lines, catch basins, and new amenities such as plantings, and curbing. The small, triangular project site is situated on the south side of the Coenties Slip right-of-way between Pearl and Water Streets (Figs. 1, 2). The proposed action requires discretionary approvals and is subject to City Environmental Quality Review (CEQR). In order to satisfy CEQR requirements, and as requested by the New York City Landmarks Preservation Commission (LPC), a Stage 1A documentary study was prepared to evaluate the site's archaeological sensitivity.

The following Stage 1A Archaeological Assessment by Historical Perspectives, Inc (HPI) has been designed to satisfy the requirements of the LPC and was completed as per New York Archaeological Council (NYAC) Standards (1994). The assessment documents Lower Manhattan's long history and rich cultural heritage. Over the last thirty years archaeological investigations have been able to record much of this history, increasing our understanding of daily life in early New York and how the city, literally, expanded its territory. Land that bounded the riverfront, particularly prior to the 1800s, experienced a succession of activities that reflect the cycles of people, polity, and early commerce that dominated the burgeoning city. The research potential of the Coenties Slip site includes several resource types:

- Shoreline remains
- Landfill and landfill retaining devices
- Remains of 17<sup>th</sup>-century fortifications
- 18<sup>th</sup> century market resources
- 19<sup>th</sup>-century transportation remains

### RESEARCH GOALS AND METHODS

The goal of this archaeological assessment is to determine the likelihood that potential archaeological resources have survived the destructive forces of river tides, episodes of bulkhead construction, modern street development and the associated infrastructure system. Documenting known prior disturbance was established through a review of cartographic sources available at various repositories. Historical maps and atlases were compared for early and later land use, topography, historical events, and documented subsurface disturbance episodes, as available. Early maps helped to provide an account of land-use modifications and episodes of construction over the course of the last three centuries. Twentieth century insurance maps were reviewed to track specific development episodes which may have caused subsurface impacts.

Documentary research was also completed to provide a prehistoric and historical context. This prehistoric and historical background was established in order to understand the types of archaeological resources that may have been deposited within the project area. File searches were conducted at LPC, and the inventoried sites from the files of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), and the New York State Museum (NYSM) were also examined to determine if prehistoric or historical materials had previously

been reported in the vicinity of, or within, the project area. It should be noted that because the Coenties Slip project site has been public land throughout the historical period, i.e., a public slip, public market or public thoroughfare, various sources of documentary data normally accessed when studying building lots, such as real estate and personal tax records, directories, census materials, etc., were not relevant for discerning land usage or archaeological potential.

According to the *CEQR Technical Manual* of 1993, only those sections of a project parcel that would be directly impacted by subsurface, project-related activities are subject to archaeological evaluation. At the time of completion of this report, plans indicating specific improvements to Coenties Slip, including their anticipated depth and location, had not been finalized. Because of this, and also since the project site is very small, the potential area of impact is assumed to cover the entire triangular parcel, as shown in Figure 2. While specific project improvements are undetermined at this time, they may be assumed to include infrastructure installations and/or improvements (e.g., catch basins), and possible plaza amenities (e.g., landscaping, utility piping, curbing, lights, benches, paving blocks, etc.).

## II. ENVIRONMENTAL SETTING

Manhattan Island lies within the Hudson Valley region, and is considered part of the New England Upland Physiographic Province (Schuberth 1968:10). The underlying geology, much like that of the Bronx and lower Westchester County to the north, is made up of "gneiss and mica schist with heavy, intercalated beds of coarse grained dolomitic marble and thinner layer of serpentine" (Scharf 1886:6-7). During the Pleistocene period, glaciers advanced across North America four times, with ice as much as one thousand feet thick over Manhattan during the most recent glacial period, the Wisconsin, which ended approximately 12,000 years ago. Advancing and retreating glaciers carved, scraped and eroded land surfaces, and with their final retreat, glacial debris, or till, a mixture of sand, gravel and clay, was left behind, forming many low hills or moraines that constitute the present topography of the New York City area. Briefly, until it drained about 12,000 years ago, Manhattan was largely covered by a glacial lake formed by the vast volumes of meltwater (Church and Rutsch 1984:6).

The project area is within the embayed section of the Coastal Plain which extends along the Atlantic Coast and ranges from 100 to 200 miles wide. The Manhattan prong, which includes southwestern Connecticut, Westchester County and New York City, is a small eastern projection of the New England uplands, characterized by 360 million year old highly-metamorphosed bedrock (Schuberth 1968:11). The Manhattan ridge generally rises in elevation towards the north, and sinks towards the south. South of 30th Street, the bedrock dips down several feet beneath the ground surface, and south of Washington Park it plunges down 100 feet, forming a valley. Near Chambers Street the bedrock rises to less than 100 feet below the current surface (Barlow 1971:18).

The prevalent gneissoid formation is known as Hudson River metamorphosed rock. The city is characterized by a group of gneissoid islands, separated from each other by depressions which are slightly elevated above tide and filled with drift and alluvium. The southern section of Manhattan is characterized by drift with underlying crystalline rocks including stratified gneiss, mica schist, hornblende gneiss and hornblende schist with some feldspar and quartz (Gratacap 1909:27). Soil within Manhattan is mostly glacial till, clay, sand, gravel, mud, and assorted debris (Kieran 1982:24).

Historical development has altered many of the natural topographic features that once characterized Manhattan (Gratacap 1909:5). During the late Pre-contact and early Historical Periods, much of the project site was partially submerged with the East River tides, with the shoreline running through the project site, approximately 20 feet southeast of present Pearl Street. (Fig. 2) During the historical period, filling episodes were undertaken along the East River, to expand available real estate, as well as to support and maintain the waterfront as the coastline became overburdened with trash and the accumulation of river silt.

### III. PREHISTORIC ERA

Archaeologists have divided North American prehistory into three distinct periods, Paleo-Indian, Archaic, and Woodland. The latter periods are generally divided into sub-periods using the appellations Early, Middle, and Late. Changes in the prehistoric environment, the cultural characteristics of prehistoric peoples, and the artifacts left behind enable archaeologists to present a chronological framework for the prehistory of North America. What follows is a brief overview of these periods with emphasis on the characteristics of, and archaeological evidence for, each period in the New York City area.

#### *Paleo-Indian Period (10,000 - 7,000 B.C.)*

Near the end of the Wisconsin glacial age the first humans crossed into the New World via a narrow land bridge in the vicinity of the Bering Strait. These nomadic hunters, known as the Paleo-Indians, are identified by their utilization of a distinctive artifact, the fluted point. Archaeological evidence suggests that although Paleo-Indians were limited in number and traveled in small groups, they soon spread across the pristine environment of North America. Perhaps they were following the migration patterns of the game animals they depended upon for subsistence. Numerous Paleo-Indian "kill sites" have been discovered in the western and southwestern United States. In contrast, none have been recovered in the Northeast. Several camp sites have been excavated in the Northeast, however, leading scholars to suggest that seasonal patterning or perhaps territorialism commenced during the latter part of this period (Ritchie 1965: 3,9).

The environment during the Paleo-Indian period was dominated by the retreating glaciers and the change toward the deciduous woodland setting prominent in the Archaic Period. The warmer climate and the new open river valleys provided ample hunting grounds. As a result, the favored location for Paleo-Indian sites, and all prehistoric sites, were well-elevated large fertile valleys close to a fresh water source. Along with the fluted point, scrapers and borers were part of the nomadic hunter's "tool kit." These tools were used to hunt and butcher mastodon, elk, caribou, bison, and other smaller mammals. A variety of these animals, dated to this time period, have been excavated in New York State, particularly in the vicinity of former glacial lakes and moraines (Ritchie 1965: 9-16).

Although Paleo-Indians were dispersed across the North American continent no human skeletal material, or artifacts such as animal hides or wood objects have been recovered. Perhaps due to the transitory nature of these people little remains of their culture but lithic material. In New York State a few camp sites have been examined (For a detailed discussion on Paleo-Indian, Archaic, and Woodland sites in New York see Ritchie 1980). The closest recorded Paleo-Indian site to the project area is Port Mobil, a small camp site, recovered in Staten Island (Ritchie 1980: 1,3,7).

### *Archaic Period (7,000 - 1,000 B.C.)*

The transition from the Paleo-Indian period to the Archaic was marked by the availability of a larger variety of plants and small-game as the post-glacial Archaic peoples exploited the now dominant deciduous woodland environment. The decreased population of big-game animals led to the hunting of smaller game including the white-tailed deer, moose, wild turkey, and rabbit. In addition, Archaic peoples began to exploit the marine environment. Although not as mobile as the Paleo-Indians, archaeological evidence indicates that early Archaic peoples continued to travel seasonally. Their group movements, however, were within well-defined territorial boundaries and the camp sites that have been recovered indicate that they were repeatedly occupied over time.

River valleys and around other sources of fresh water were locales that could support the game animals exploited by Archaic hunters. The tool kit of the Archaic Period was expanded to include the grooved axe, beveled adz, and narrow bladed projectile point. In addition, appearance of the mortar and pestle, and grinders, used for processing plant foods, and various implements used for fishing, are evidence of greater variety in the diet of Archaic peoples.

An increase in the number and size of archaeological sites recovered from the Archaic period suggests that the human population had expanded and that Archaic peoples were becoming more settled and therefore having a greater impact on the landscape. A result of becoming more settled, and the establishment of specific territories, was the emergence of different cultural phases. A phase has been defined "as a recurring complex of distinctive archaeological traits" representing an individual cultural group (Ritchie 1965: xvi). The Lamoka, Vosburg, and Brewerton phases are among those identified in New York State by Ritchie (1980).

A number of small multicomponent sites have been recovered in coastal New York. Like the inland sites, they are usually located near fresh water ponds, tidal inlets, coves, and bays. These locales provided abundant resources including small game, fish, shellfish, and a large variety of plants and tuberous grasses. Sites discovered in coastal areas around New York City indicate that by the Late Archaic there was a distinct reliance upon shellfish, particularly oysters and clams. No large camp site or settlement has been found within the boundaries of the five boroughs and the few Archaic sites recorded within the city are isolated finds.

### *Woodland Period (1,000 B.C. - circa A.D. 1600)*

The Woodland period is characterized by the introduction of pottery and horticultural activity, as well as the establishment of clearly defined trade networks. During the Woodland Period primary habitation sites, or villages, had increased in size and were permanent (year-round) settlements. As in the Archaic Period these sites were located near a large fresh water source (e.g., pond, lake, tributary, or river). Secondary sites, where specific activities took place (e.g., shellfish gathering and/or processing, tool making), were usually situated near the location of the resource.

The first significant and identifiable use of pottery in New York State can be traced to the Early Woodland Period, around 1,000 B.C. By the Middle Woodland Period a wide variety of stamped, impressed and cord-decorated pottery types were developed. Smoking pipes, another Woodland innovation, reflected different cultural styles which archaeologists have been able to link to specific groups. The tool kit of the Woodland peoples expanded to include a larger variety of knives, drills, hammerstones, etc. Although some Archaic human burials have been recovered, those discovered dating from the Woodland Period suggest that more complex ceremonial burials commenced during the later period. Furthermore, this widespread mortuary ceremonialism (mound building) peaked during the beginning of the Middle Woodland and was essentially nonexistent by the close of the Period.

Although the use of cultigens was evident in many areas of North America during the Early Woodland, it was not until near the end of the Middle Woodland stage (A.D. 800-1000) that agriculture may have played a part in the economy of New York State culture groups. By the Late Woodland, cultigens had become an essential element in daily life. The introduction of agriculture brought about a major change in settlement patterns as larger villages, some fortified or palisaded, were established. One such site was noted by the early Dutch explorer Adriaen Block, who described seeing "large wigwams of the tribe on Castle Hill" in the Bronx (Skinner 1919: 76). With the creation of more permanent sites came the development of extensive trade networks for the exchange of goods between the coastal and inland areas.

Late Woodland Stage sites of the East River Tradition in Manhattan and other parts of southern New York have been noted on the "second rise of ground above high water level on tidal inlets," and situated on "tidal streams or coves" and "well-drained sites" (Ritchie 1980:269). Carlyle S. Smith, who studied and analyzed the distribution of prehistoric ceramics in coastal New York, stated that "village sites" are found on the margins of bays and tidal streams" (Smith 1950:130). Early 20th century archaeologist Reginald P. Bolton writes that "the indispensable elements in the selection of native dwelling places," were an accessible spring, and shelter from prevailing winter winds, which on Manhattan Island was found on "the eastern side of hills, or a southern exposure" (Bolton 1922:46,62,64).

#### Contact Period (A.D. 1600 - A.D. 1800)

Much of what is known about the Contact Period has been acquired from the documentary record. Using legal documents and early ethnohistorical accounts, archaeologists have been able to learn much about the Native American groups present when the first Europeans arrived. One example is the journal of Robert Juet who traveled with Henry Hudson on his 1609 voyage. Juet described the native groups encountered and the exchange of "Indian Wheate" (maize) and tobacco for beads and knives (Van Zandt 1981: 10-11).

In his book *Native American Place Names in New York City*, Robert Steven Grumet organized data from historical documents and the work of other scholars in an attempt to synthesize and verify known information on Native American sites, pathways and culture groups. Grumet notes that the 1610 Velasco map used the name *Manahata* as the designation for the native inhabitants

of both banks of the lower Hudson River (1981: 24). Although the Manhattan Indians were identified on 17th-century Dutch maps, no individual Manhattan Indian was referred to by name in the documentary record.

Isaak de Rasieres reported in c.1628, that the island was "inhabited by the old Manhatesen; they are about 200 to 300 strong, women and men, under different chiefs." The Wiechquaesgeck have been identified as the denizens of northern Manhattan, as well as parts of the Bronx and Westchester County. However, there is little data available to identify the "Manhatesen" who dwelt to the south, in lower Manhattan. Tradition, rather than firm evidence, has identified them as Canarsee Indians, while another, also discredited line of reasoning, suggested that they were Rechgawanacks. However, there is no 17th-century documentary evidence to support this, nor even the idea that Manhattan was divided north/south between different maximal groups. It is likely that the Manhattan Indians were a sub-group of the Wiechquaesgeck, with whom they eventually combined (Grumet 1981:24-26; Bolton 1972:127).

The Manhattan and their Wiechquaesgeck relatives had few furs to trade with the Dutch. As a result, there was little motivation on either side for good relations, and New Amsterdammers probably considered the local Indians an annoyance. In addition, the sometimes cruel and often dishonest practices of European traders led to Wiechquaesgeck retaliation, which took the form of several murders between 1640 and 1642, leading to various raids and counter raids between Dutch and Indians (Grumet 1981:60-61; Kammen 1975:45-46).

The Dutch practice of trading firearms to the upriver Mahican and Mohawk, while denying guns to the Indians of the lower Hudson, left them vulnerable to attack. When a large force of Mahican or Mohawk attacked the Wiechquaesgeck and Tappan in 1643, the surviving Indians fled to the Dutch in New Jersey and Corlaer's Hook on Manhattan (about two miles east of the project site) for protection. Governor Kieft and his advisors seized this chance to revenge themselves, and sent forces to attack the refugee camp at Pavonia (now Jersey City), massacring 80 Tappan, and killing another 40 Wiechquaesgeck on Manhattan. Eventually every lower Hudson native group joined in war against the Dutch, with disastrous results for European settlers. "Governor Kieft's War" ended when the Manhattan and Wiechquaesgeck sued for peace in 1644, after a series of surprise attacks on Indian villages ended in brutal massacres. Nevertheless, friction with the Dutch continued, as the Wiechquaesgeck participated in the "Peach War" (1655-1657) and the "Esopus War" (1659-1664) (Grumet 1981:60-62; Brodhead 1853:349-353; Bolton 1975:79).

These hostilities, coupled with the introduction of European diseases against which Native American populations had no natural protection, decimated Indian populations in the New York City area, and forced many groups to merge in order to maintain viable communities. The last of the Manhattans apparently left the island sometime after 1628, joining the mainland Wiechquaesgeck, where they were noted in 1680 as the *former* inhabitants of Manhattan Island (Grumet 1981:24,25).

### *Prehistoric Sites in Lower Manhattan*

So few Native American toponyms have survived in Lower Manhattan, that some 19<sup>th</sup>-century scholars created their own, which apparently have no basis in the ethnohistorical or documentary record, and should therefore be disregarded (Grumet 1981:3-4). These include all the place names within a half mile of the project site, the terms *Kapsee*, *Ashibic*, and *Abik*. Actually *Kapsee* may be the only term that has any historical validity, although it is probably derived from the Dutch *kaaphoekje*, meaning little promontory, referring to "a ledge of rocks" originally off Manhattan Island, about 1,500 feet southwest of the project site, now buried beneath Battery Park (Grumet 1981:68).

Lower Broadway, about 1,000 feet west and southwest of the project site appears to have been the chief Native trail in this part of Manhattan, beginning on the former shoreline at approximately Pearl Street, and veering easterly to follow Park Row and Bowery to the north of Fulton Street. A side trail led southward from Park Row to the shore of the East River, now at the foot of the Brooklyn Bridge, about 3,500 feet northeast of Coenties Slip.

In addition, no prehistoric archaeological sites within one mile of the project site are recorded in the inventories of the New York State Museum or the New York State Office of Parks, Recreation and Historic Preservation. The nearest is NYSM #4060, approximately 1.4 miles north of the Coenties Slip, somewhere near the Manhattan Bridge. Archaeologist Arthur C. Parker identifies this site as a village, but provides no other detail (Parker 1920:627; Grumet 1981:68).

Although not technically prehistoric "sites," archaeological investigations at historical sites in Lower Manhattan have occasionally encountered precontact material (Baugher-Perlin et al. 1982:12; Karen Rubinson, personal communication to Cece Saunders, 1989). No *in situ* habitation or other prehistoric site types have been recovered.

## IV. HISTORICAL PERIOD

New York City, with Manhattan Island as its commercial and locational center, has developed at a rapid pace over the last three centuries. An important factor has been the flourishing commercial waterfront and the growth of the surrounding mercantile and later industrial ventures. The expansion and development of the waterfront along the East River began in the early 17th century. Although sections of the current project area between Pearl and Water Streets were submerged and partially submerged at that time, early historical maps indicate that filling and bulkheading had begun before 1660 (Fig. 3b). These operations continued, as the shore was eventually filled in and the new blocks were developed.

### *The Seventeenth Century*

Although early Dutch trading expeditions had already been visiting the Hudson River for many years, the first permanent settlement in New Netherland was not undertaken until 1624, under the authority of the Dutch West India Company, a private trading company founded in 1621. The purpose of this expedition was to strengthen Dutch ownership claims by occupying strategic points in the territory. Surprisingly, Manhattan was ignored in favor of Governors Island, where eight men were left to build a fort to protect the mouth of the Hudson. The main group of colonists traveled north and established Fort Orange, now part of Albany, in an area advantageously situated for participation in the lucrative fur trade (Brodhead 1853:150-151).

Eventually the Dutch recognized Manhattan as the strategic heart of the region. Colonization of Manhattan began in earnest in 1625, when an expedition of Company farmers with livestock, tools and provisions arrived on the Hudson River, establishing itself at the southern tip of Manhattan Island, with the purpose of building a fort and laying out nine Company farms, or *bouwerijen* (bow-wer-RAY-en). These *bouwerijen* were intended to supply Company personnel with agricultural provisions, so that the Manhattan post would be self-sufficient (Bachman 1969:82-87).

The Dutch West India Company was generally scrupulous about acquiring title to the lands it occupied, and upon his arrival on Manhattan Island in 1626, Governor Peter Minuit opened negotiations with the local Indians, and purchased the approximately 22,000 acres of the island for about 60 guilders worth of goods. The erection of Fort Amsterdam was begun near the foot of present Broadway, commanding the upper bay and the entrances to the Hudson and East Rivers (Brodhead 1853:164). The settlement which grew up around the fort, eventually called New Amsterdam, grew slowly, and at the time of the English conquest in 1664, extended only as far north as the palisades built along present Wall Street. The majority of these settlers were merchants and fur traders who needed access to the shipping routes. As a result, much of the land granted was located along the rivers surrounding the island.

Since the Dutch first established the settlement of New Netherland, the growth of the waterfront has played a vital role in the history of Manhattan Island. The first public dock on the East River was constructed in 1647, and probably corresponds to the dock shown in the 1660 Castello Plan, which stood at Pearl and Moore Streets, about 480 feet southwest of the project site. (Fig. 3b)

Ships could anchor in the river and passengers and cargo would be transported via a small boat to the narrow wooden dock (Buttenwieser 1987:26; Cohen and Augustyn 1997:39). In addition, the 1660 plan shows a smaller wharf on Pearl Street, about 100 feet west of the project site, a dock which presumably served the New Amsterdam city hall, or *Stadt Huys*. Built by Governor Willem Kieft at the company's expense in 1642, the stone building was originally a municipal inn, or *Stadts Herberch*, intended to house travellers and guests whose entertainment had become burdensome on the governor (Brodhead 1853:335). (Figs. 3a, 3b, 4) The *Stadt Huys*, on what is now the north side of Pearl Street (71-73 Pearl Street) just south of the Coenties Slip/Alley intersection (Photo 1), was about 49 feet north of the project site.

If the very decorative 1660 plan is to be believed, bulkheading and filling along the East River shore had widened Pearl Street, which now extended into the project site. Trees had been planted there, possibly to anchor the new-made land, and perhaps to provide the patrons of the inn a pleasant place for eating, drinking and conversation (Stokes 1916:319). This had not always been the case, however. An earlier view of the *Stadt Huys* and the project site show the building on a bluff sloping down roughly through the project site toward the East River shore. (Fig. 3a) In 1656, the order was given to stabilize the shoreline with piles and bulkheading:

Whereas the *Waal* [river shore] in front of the City Hall is more or less washed away by the high water and heavy rain, so that finally City Hall might be in danger; Resolved . . . that the same . . . be properly protected with street [sheet] piles (Stokes 1915:121).

Filling and stabilizing operations seem to have taken place between 1656 and 1660 resulting in the view shown in the Castello Plan. (Fig. 3b) By September 1661, the location, including part of the subject parcel, was transformed into a defensive redoubt, and the trees were replaced by a "half moon" battery. (Fig. 4) Detailed depictions of the half moon show three cannon, which corresponds to the 1661 description of "3 smal bras guns, tho it be large enough to mount 8 guns on it." The redoubt was maintained by the English, who captured New Netherland in 1664, and is shown again in somewhat exaggerated size in a view of the city made when the Dutch recaptured the province briefly in 1673 (Cohen and Augustyn 1997:43,45,47; Stokes 1915:122, pls.17, 20b;1918:945).

The new British government transferred ownership of vacant (unpatented) and public (wharves, streets, and highways) land to the City of New York. City leaders then concentrated on developing the waterfront in an effort to bolster trade. The most notable construction was the "Great Dock" in 1675. Stretching along the East River Shore from present Whitehall to Coenties Slip (abutting the project site on the southwest – see Fig. 4), the two curving stone arms of the Great Dock extended, and embraced a large protective basin two blocks beyond the original high-water line, centered on the foot of Broad Street. Landfill created two new blocks along the shore between Pearl and Water Streets, and seems also to have expanded the filled-in area of the project site further to the southwest (Cohen and Augustyn 1997:53; Buttenwieser 1987:27).

Jasper Dankaerts' view of New York, drawn in c. 1680, shows the northernmost curving, bulkheaded arm of the Great Dock extending from the shore in front of the *Stadt Huys*, with an adjacent wooden structure standing on the project site. (Fig. 4) The building, just beyond the regulated shoreline, was held above the water on wooden piles. The half moon battery was

maintained, with the three cannon visible, although now landlocked by the construction of the Great Dock (Blackburn and Piwonka 1988:96-97). With constant fear of French attacks during this period, the redoubt appears to have remained until c.1700, appearing in the Miller Plan depicting 1695, and identified as "*Batterie de Mortiers*," in the Franquelin Plan of 1693 (Cohen and Augustyn 1997:51,53).

The Dongan Charter of 1686 granted all unencumbered lands to the City of New York, which allowed the city to expand eastward 200 feet, to the low water mark in the East River. That same year, the City Council ordered a survey of what is now Block 7, adjacent to the project site on the southwest. The order required the landowners to fill their lots along the south side of Pearl Street, and bulkhead the shoreline, 80 feet to the south. This seems to have been done by 1688, possibly at the same time that additional waterside land grants had specified a second row of lots to be filled and bulkheaded, extending the shoreline an additional 25 feet south. This established the current dimensions of Block 7, and the southwestern boundary of the project site, stretching approximately 105 feet from Pearl to Water Streets. Governor Dongan was the original grantee of these lots, which he sold to Frederick Philipse. Philipse (1626-1702), a Dutch settler, and one of the wealthiest men in the colony, erected the first house on the new block in 1688, at the corner of Pearl Street and present Coenties Slip (now 66 Pearl Street/1 Coenties Slip). The house abutted the northernmost corner of the project site (NYCLPC 1978:2,3; Pickman and Rothschild 1981:10).

The extension of the shoreline in and around the project site left a ships' berthing area or slip open to the East River. This was called Coenties Slip, along with nearby Coenties Alley, which cuts through Block 29 on the north side of Pearl Street. The name was derived from that of Conraet ten Eyck and his wife Annetje (Antje, Antie, Antey, Entie = Annie, or according to amateur cartographer David Grim, "Jane"), who lived at the north corner of present Water Street (then Little Dock Street) and Coenties Slip, about 25 feet northeast of the project site. Although it was occasionally referred to as Conrads Alley, an anagram of both their names became popular, resulting in Coenties (Co-enties) Alley, which would have been pronounced co-ENT-yess. (Stokes 1915:247, 271).

The earliest reference to a wharf at what became Coenties Slip is a request to the mayor's court from the nearby residents to complete the wooden bulkheading of the wharf by Long Mary's tavern on the north side of Pearl Street in 1671. This was followed by the court's authorizing the payment of eight *stuivers* per cartload to the public carters for filling in the wharf's wooden framework (Stokes 1922:279,281).

During this period the most common type of wharf constructed was made of timber. The two types of timber wharves are "crib" and "cobb." Crib wharves are made out of rough timbers that are placed in alternating rows of "headers" (running lengthwise) and "stretchers" (spanning the width). In most cases a floor is built at the base to support the fill placed within. The cobb wharf is an openwork variant of the crib wharf. It's name comes from the cobblestone fill used to fill and sink the wharf. The least common wharf is that made out of wrecked or burned ships. After securing the ship in the desired place, the framework of the hull is filled in much the same manner as the cobb wharf. While the primary function of these wharves was to provide docking

space, in some cases they were later used as bulkheads for the continuing landfill along the East River. Most of the bulkheads constructed were of stone, although in some cases timber bulkheads were driven into the river bottom.

The lots along the southwest side of the project site (Block 7), were transferred to Frederick Philipse's son-in-law, Jacobus van Cortlandt (1659-1740), a member of one of New York's most prominent Knickerbocker families. Like his elder brother Stephanus, Cortlandt served in many prominent positions in the colony, including the office of mayor of New York. The block was mostly residential, and although it was not the most affluent residential block in the city, it was still prominent because of its proximity to the city hall (NYCLPC 1978:3,4; Pickman and Rothschild 1981:11).

In 1696, Alderman Cortlandt petitioned the common council for permission to create, at his own expense, a "A Slip or Inlett . . . before the Citty Hall [Stadt Huys]," which was later called Coenties Slip (Stokes 1922:394). Despite the private means by which Coenties Slip was created, and its proximity to Cortlandt property, the slip appears to have been a for public, or at least municipal use. When the city sold the old Stadt Huys in 1699, the common council decreed that the slip itself should "Remaine Continue and Abide for Ever A Publick Slip for the Publick use & Benefitt of the Citty" (Stokes 1922:417). As a location associated with the City Hall (which contained the jail), the slip and its paved borders were naturally associated with crime and punishment. Coenties Slip below Pearl Street was the location of the city's pillory, cage and ducking stool from 1692 to 1703 (Stokes 1918:972).

### *The Eighteenth Century*

As the shoreline was pushed eastward, numerous slips were created, and many of their names survive on the current map of Manhattan. These include Old Slip, (the earliest, pre-1696), just north of the project site at the end of William Street; and further north: Market Slip at Market Street, Burling Slip, at the foot of John Street; and Rutgers Slip, at Rutgers Street. As the blocks to the east were filled and Front Street, and then South Street were created, the slips became longer and longer. Interior sections of the slips were filled in, and between 1754 and 1766 Coenties Slip had been filled in to the limits of the project site, and by 1782 as far as the current southeast side of Water (Dock) Street. Water Street was officially opened across the former slip waterway in 1794 (Cohen and Augustyn 1997:65,71,85; NYCLPC 1978:4). (Fig. 6)

The landfill program stranded the old redoubt far inland, rendering it useless as a shore defense. Many of the filled sections of the slips, as public, open land, close to the waterfront, were well-suited for the sites of public markets. Coenties Market seems to have been established as early as 1691. The 1716-1718 Burgis View of the East River shoreline shows an open-walled structure at the head of the slip, partially on the project site, and extending beyond it to the northeast. (Fig. 5) In 1720, the "Old Markett house near the Custom house" (Pearl and Moore Streets) was removed and placed on the project site at Coenties Slip, where it became known as the Great Fish Market, and was enlarged in 1763 and 1771, and probably torn down in 1780 (Stokes 1915:pl.25; 1918:958, 1,015; 1922:494; Cohen and Augustyn 1997:55). (Fig. 6)

The need for more waterfront land promoted the Montgomerie Charter of 1730, which extended the boundary for development around the island to 400 feet. By 1750, as the creation of land for the future Front Street progressed, and the head of Coenties Slip, then along the north side of Water Street, was far inland. A few small piers near the market were removed as dangerous nuisances, and the new Albany Pier was constructed, extending into the East River from the southwest side of Coenties Slip, beyond even the limits of the old Great Dock (Stokes 1922:619). (Fig. 6)

During this period, the block (Block 7) adjacent to the project site on the southwest gradually lost its residential character. The most famous structure, Fraunces Tavern, at the eastern corner of Broad and Pearl Streets (54 Pearl Street), began its days as the elegant DeLancey house in 1719, but was transformed into a tavern by Samuel Fraunces in 1762 (NYCLPC 1978:5).

The number of ships owned by residents of Manhattan continued to increase dramatically from approximately 60 ships at the turn of the century, to 447 by 1760, and 709 by 1770. This rapid increase accentuated the shortage of waterfront dock space (Buttenwieser 1987:13,28,32,35-36). Along with the lack of dock space, the expansion of Manhattan-based shipping was also hampered by British taxation and other mercantilist policies. During the Revolutionary War the occupation of the city by the British, which was accompanied by a devastating fire in 1776, also prevented further waterfront construction and in most cases even the maintenance of the existing facilities. During the years of occupation, the population of Manhattan was cut in half, dropping from approximately 20,000 to 10,000.

Following the war the recovery of the city was swift. Central to this revitalization was the establishment of new trade routes to China which gave "fresh impulse and energy to American industry" (McKay 1969:5). The China trade and open markets encouraged buying, filling, repairing, and building along the banks of the East River. In order to address the problem of the lack of dock space, the East River waterfront was filled, expanding the boundaries of lower Manhattan to South Street (McKay 1969: 7). By the end of the 18th century, the waterfront all along the East River was crowded with wharves of all sizes.

#### *The Nineteenth Century to Present*

During the early 19th century the continued growth of maritime trade made New York the most important port in the United States. Historical documents are full of requests for more docking space including an 1803 letter from Comptroller Strong to the Common Council where he states there is a "great want of accommodations for market boats and coasting vessels . . . there being no public slips between Catherine & Rutgers slips the distance of near half a mile" (Stokes 1918: 1,403). The areas directly adjacent to the waterfront became the location for supplementary shipping activities (e.g., machine works, sail makers, ship's carpenter tool makers, iron and brass foundries and lumber yards) (McKay 1969: 69).

During the opening decades of the 19<sup>th</sup> century, the city's business and residential core had expanded to the point of requiring six major markets below Chambers Street and a seventh market at Catherine Slip from where a new ferry to Brooklyn departed. The city limits

continued to creep northward on Manhattan Island, passing 14<sup>th</sup> Street on the West side and 6<sup>th</sup> Street on the East side. Neighborhoods of specific nationalities, classes and businesses coalesced, but residences and shops were intermixed in all areas. The shipping industry dominated the shores of the island, while the vicinity of Wall Street hosted the customs, banks, insurance brokers, the Post Office and the daily papers and their printers. Broadway was the principal street for retail shops, hotels and churches, and Pearl Street was dominated by wholesale and dry goods merchants (NYCLPC 1983:25,26,27).

The growth in the number of wage earners throughout the 19<sup>th</sup> century resulted in crowded housing conditions for those of limited means who could not afford the trip from, or real estate costs in, the newly-developed areas of the city (NYCLPC 1983:30-31). By the 1860s, ground transportation in the city had begun to improve, making possible the middle-class residential development of large parts of Manhattan and also areas outside the city. At first, this was limited to omnibuses, stages and streetcars. Numerous lines connected the central business district – the area below Chambers Street – with points north and east. Several began at South Ferry, about 1,000 feet southwest of Coenties Slip, with one line running via Water Street adjacent to the project site (Dripps 1867). (Fig. 7) The first elevated train was built in 1867, from the Battery to Dey Street. After 1875, additional lines were authorized, and the Third Avenue line of the New York Elevated Rail Road Company opened from South Ferry to 42<sup>nd</sup> Street in 1878. The Third Avenue “el” structure went northward along Water Street, and then over to Pearl Street through Coenties Slip, tracing an S-shaped path through the project site. Support piers seem to have been constructed on the project site, but from historical maps it is unclear precisely where and how many (WPA 1939:404; NYCLPC 1983:36; Stokes 1926:1,968). The el was in service for the major part of the 20<sup>th</sup> century, with the structure removed by the 1970s.

In the early 1960s, Lower Manhattan underwent extensive redevelopment, with tall office buildings replacing earlier low-scale commercial structures. The widening of Water Street in this period from its original 30-foot breadth to its present 90 feet width at Coenties Slip, was accomplished by razing the buildings on the south side of the street and extending the roadway over the former building lots. Concern for the surviving 19<sup>th</sup>-century buildings, as well as Fraunces Tavern on the block adjacent (Block 7) to the project site on the southwest, resulted in the eventual designation of the block as the Fraunces Tavern Block Historic District in 1978 (NYCLPC 1978:6). (Fig. 2)

## V. CONCLUSIONS AND RECOMMENDATIONS

This Stage 1A documentary study, completed by Historical Perspectives, Inc. was designed to determine the likelihood that archaeological resources were once present on the project site, and the likelihood that these resources have remained undisturbed by historical and modern development, and still possess their integrity.

### *Prehistoric Archaeological Potential*

The precontact archaeological potential of the project site is almost nonexistent. At the time of European contact, project site topographic conditions ranged from continuous inundation beneath the waters of the East River, to the sloping shoreline subject to erosion by heavy rains and storm tides. There may have been periods prior to that time when the water level was lower and the project site was dry and available for exploitation. However, documentary research indicates that the coastal area of Lower Manhattan was rocky in places (See Fig. 3b, e.g.), and not necessarily suited for precontact habitation. Furthermore, inundation and tidal and flood action along the shore would have adversely impacted any fragile precontact remains. It is highly unlikely that any precontact remains, if they ever existed on the site, would have survived. Therefore, the project site is not sensitive for precontact period resources that would have research potential and meet criteria necessary for inclusion on the National Register of Historic Places. No further archaeological study of these resources is warranted.

### *Historical Archaeological Potential*

Historical research indicates that documented land use episodes on the Coenties Slip project site which would have archaeological visibility and research potential (barring subsequent adverse construction impacts) date as early as the 1650s. The types of potential resource are:

- Shoreline remains
- Landfill and landfill retaining devices
- Remains of 17<sup>th</sup>-century fortifications
- 18<sup>th</sup>-century market resources
- 19<sup>th</sup>-century transportation remains

The archaeological research potential of these different resource types will be discussed below.

### *Research Potential*

#### • **Shoreline Remains**

Prior to filling operations beginning in the 1650s, the project site was fully or partially inundated, with dry sections sloping downward from the Stadt Huys site on the opposite side of Pearl Street. Excavations on the Stadt Huys lot identified the original 17<sup>th</sup>-century ground surface at a depth of between 6½ and 7 feet below the current surface (Rothschild et al. 1987:322-324). Since the Stadt Huys was elevated above the project site on a knoll, and both are presently crossed by the

10-foot topographic contour line (Fig. 1), the original ground surface, shoreline and river bottom can be estimated to be more than seven feet below the current surface. Excavations at 64 Pearl Street (about 80 feet to the west), a location along the former shoreline quite similar to the present project site record the river bottom at more than 4 feet below the *basement floor* of the building there (Pickman and Rothschild 1981:Figs. 4, 5, 7). Given a shallow estimate for basement depth of approximately 4 feet, this would concur with the Stadt Huys figures and suggest that shoreline remains on the Coenties Slip project site at 8 feet or more below the current surface.

Archaeologists at 64 Pearl Street recognized the value of cultural deposits in the river bottom sediments. The types of cultural remains recovered, both deliberately and accidentally deposited in the river, reflected the proximity of 64 Pearl Street to the shoreline, the Great Dock and Coenties Slip. Significant was a large amount of coral, assumed to be dumped ballast (Pickman and Rothschild 1981:30,75). Similar deposits would be expected at the Coenties Slip project site, reflecting the trade patterns and other shoreline activities (i.e., the fish market), from the 1650s until the final filling of project site sections of Coenties Slip in c.1766. Therefore, if the proposed project construction would not exceed a depth of 8 feet or more, there would be no potential project impacts to these resources. If it would exceed this depth, then it is possible that potential archaeological resources associated with dumping episodes and other shoreline activities could be adversely affected.

#### • Landfill and Landfill Retaining Devices

Landfill on the project site began during the 1650s, and continued to c.1766. The area of landfill extends from the present surface to at least 8 feet below the surface, where it is anticipated that the original shoreline would be located. Archaeological excavations have proven the existence and research value of these buried resources in Manhattan. Because the majority of a landfill structure is in a stabilized, anaerobic environment, structural members do survive under today's landscape. The upper portions of landfill devices that were above mean low water were, however, are subject to decay.

Louis Berger & Associates, Inc. (Berger 1990), as part of the *Final Report: Archaeological and Historical Investigations at the Assay Site, Block 35, New York, New York*, critically examined the types of research questions that might be productively addressed when conducting investigations at landfill sites in Manhattan. To do this evaluation, Berger first presented a brief synopsis of past projects undertaken along the eastern seaboard and in the city. Landfill and waterfront development have been a primary research focus for archaeological projects undertaken in Manhattan during the past twenty years and have included Crueger's Wharf, Telco Block, 175 Water Street, Barclays Bank Site, Baches Wharf Site, Assay Site, and the Washington Street Urban Renewal Area. The Berger analysis suggests that the general methods employed in waterfront construction have varied little over the last two hundred years. However, joinery techniques, which are one of the major engineering components of landfill device installation, appear to have been more temporally sensitive. Furthermore, these techniques also vary depending on available materials, expertise, geological conditions, composition of the proposed fill, the demands of tides and currents, any many other factors (Berger 1990:V-25).

As noted in the subsequent and agency-reviewed contextual study for the Route 9A project in Manhattan (Hartgen *et al* 1995) based on Berger's findings, the research potential of further in-depth studies of landfill devices appears to be focused on the various wood joints used in device construction. This research potential is based on the scarcity of information previously gathered on landfill sites. Joinery methods may prove to be sensitive to temporal and geographic differences in craftsmanship and, therefore, the limited archaeological data from joinery studies applicable only to specific urban environments.

If potential landfill device sites are to be studied archaeologically, Berger (1990:V-25) recommended that the research design be focused on documenting these joinery methods by recording the exterior members (front and back) and interiors of as many exposed devices as possible. Standard engineering/structural terminology should be used during the photo recordation by an archeologist.

Similarly, the content of very early landfill has been studied in various lower Manhattan projects where the artifacts have ranged from leather worker's discards to intact ships. Therefore, sites in Lower Manhattan have the potential to produce comparable, yet unique, data of value to the archaeological record.

#### • Remains of 17<sup>th</sup>-Century Fortifications

In the New World, fortifications were among the very first structures to be erected. Works of wood, stone, earth, brick, and other readily available materials were conceived and executed on European patterns with such modifications as time, distance, weapons, environment, and craftsmanship might produce to protect newcomers from both the original inhabitants and their own European brothers. (Workmaster 1972:9)

New York City, or New Amsterdam, was no exception. The erection of Fort Amsterdam at the southern tip of Manhattan Island was one of the first actions of the Dutch settlers. Soon blockhouses were built as defensive posts at strategic points along the harbor. The Half Moon Battery apparently built on the project site in 1661 was a part of the increasing awareness of New Amsterdam's military vulnerability. When the colony changed hands in 1664, England altered little in the city's defenses except the name of Fort Amsterdam, which eventually changed to Fort George; however, by c.1690, despite fear of French invasion, the commercial development of the waterfront had made the battery useless.

There are numerous, recorded archaeological investigations of late 18<sup>th</sup> century fortifications in New England and, and in the New York area particularly. The Revolutionary War-era investigations, both American and British sites, have been a major focus of the National Park Service, as well as avocational and professional archaeologists (Lopez 1978; Poirier 1976; Cohn 1983; Seidel 1983; Fisher 1983; Lenik 1987; Starbuck 1988, 1990; Historical Perspectives 1997). Investigations at northern military outposts such as Fort Bull, Fort Stanwix, Crown Point, and Fort Ontario relate the life and military activities of the Upper Hudson Valley/Lake Ontario/Oswego River area and relations between the English, French, and Native Americans (Gilmore 1983; Ping Hsu 1972; Workmaster 1972; Fisher 1995).

There are, however, in contrast, a minimum of earlier fortification investigations that are from the New York City area or relevant to the Dutch or English occupation of early Manhattan.

In downtown Albany, Fort Orange, built in 1648 and reconstructed last in 1671 before abandonment in 1675, overlaps the 1661-1690 period of the potential archaeological deposits at the Coenties Slip site. It was built by the Dutch as a Dutch fortification, and although its rebuilding took place under English rule, this was supervised by a member of the Van Rennselaer family (Huey 1988:115, 119,120) in a town that would have supplied mostly Dutch laborers and craftsmen. However, the trading post of Fort Orange with its many residences (Ibid. 119), and constructed on fast land would have been a different species of fortification altogether.

However, what is critical about the Fort Orange excavations relative to the possible military, late 17<sup>th</sup>-century Coenties Slip site resources is the recovery of colonial resources in a highly-complex urban setting; shallowly-buried colonial deposits, even in urban areas are not unusual. The site of Fort Orange, along the shore of the Hudson in Albany, suffered floods, the construction of streets, houses, use as a steamboat landing, the laying of railway tracks and the construction of a railroad abutment in the 300 years since its abandonment in 1675 (Huey 1988:115,133,140-141,145,148,156-157). Yet excavations conducted on the site of Fort Orange in Albany encountered 17<sup>th</sup>-century levels within 3 feet of the surface, and as shallowly as within 1 feet of the pre-excavation surface (Huey 1988:764).

#### • 18<sup>th</sup>-Century Fish Market Remains

Markets and docks were closely linked, since "Meat and produce which was unloaded at the docks always passed directly to markets nearby" (NYCLPC 1982: 38). Although City regulations prohibited produce purchases outside the market, the rules were often flaunted by citizens meeting the produce-laden boats at the water's edge (Ibid.).

The archaeological visibility of the fish market house would be high. However, for early markets the "foundation and structure were most often located in the street or in the Slip, right over the water....By the early 19<sup>th</sup> century....As the city grew, markets were not torn down, but were enlarged, a result of widening streets and filling in slips" (NYCLPC 1982:41). "Artifacts at the market place would result from day to day breakage, refuse [e.g., meat bones] and loss" and "would tend towards a broad spectrum of manufactured and dietary products;" (Ibid.:47) however, there is no refuse pattern that would indicate a market-house deposition outside the immediate periphery of the market house. It is unclear if activities that would have traditionally taken place between the market and the dock, albeit outside the law, would be archaeologically visible.

#### • 19<sup>th</sup>-century transportation remains

Support pylons from the Third Avenue el, which began service in 1878, and continued carrying commuters until the late 20<sup>th</sup> century, are expected on sections of the project site. Contemporaneous remains from such footings have been recovered in streetbeds in other parts of Manhattan. In the case of the Ninth Avenue El, rectangular and square brick piers were found approximately 18 to 20 inches below the current streetbed, and can extend more than 7 feet below the surface (Hartgen 1997:24,32). Their archaeological research potential is modest, given existing documentation and photographic records, and a full-scale archaeological

investigation of this resource is not necessarily a cost effective method of study. However, photo-recording of similar resources has been carried out in other parts of Lower Manhattan (Ibid.), and if required by the review agency, any el piers encountered at the time of archaeological testing of the site (if applicable) could be measured and photo-recorded to the standards requested by the review agency

*Project Design/Potential Historical Archaeological Resources Impact Evaluation*

According to the *CEQR Technical Manual* of 1993, it is not necessary to evaluate those sections of a project parcel that would not be impacted by project activities. Project impacts can be assumed to include utility installations and/or improvements (including catch basins), and possible plaza amenities that might include installation of trees, curbing, lights, benches, paving blocks, etc.

As described above, the Coenties Slip project site is sensitive for the following potential historical archaeological resources:

<u>Depth</u>	<u>Resource</u>
<ul style="list-style-type: none"> <li>• 8 feet or more below the present surface</li> </ul>	Original 17 <sup>th</sup> -century shoreline/river bed deposits
<ul style="list-style-type: none"> <li>• From the present surface to 8 feet or more below the surface</li> </ul>	Landfill and landfill retaining devices Remains of 17 <sup>th</sup> -century fortifications 18 <sup>th</sup> -century market resources 19 <sup>th</sup> -century transportation remains

With regard to documented disturbance of Coenties Slip, no soil boring logs are available for the project site (Mike Greenman, Subsurface Exploration Bureau, personal communication with Kevin Mears, October 2001). However, given that the archaeological resources of the project site are historical fill, or are expected to be found in historical fill, it is not clear whether a program of soil borings would provide information useful for eliminating, narrowing, or more clearly defining areas of potential archaeological sensitivity, except perhaps to define the depth of the 17<sup>th</sup> century shoreline and riverbed.

Historical atlases record only one 6-inch water pipe beneath the Coenties Slip project site, although there must be additional unrecorded lines, especially at shallow depths from modern telephone installations. Unfortunately, at the time of preparation of this report, WPA records of subsurface utility lines and other streetbed disturbances (including the locations of the columns supporting the structure of the Third Avenue el) were not available for review (Due to the terrorist events involving the World Trade Center of September 11, 2001, research access has been curtailed at relevant city repositories to facilitate Federal Emergency Management Agency (FEMA) current disaster recovery measures). It is recommended that these resources, when available, be reviewed by an archaeologist to assess disturbance and eliminate those sections of the project site which have lost archaeological integrity due to modern construction disturbance.

Subsequently, when project design plans have been finalized, and the total impact (location and depth) of the proposed actions are known, then a comparison of final design plans and profiles with the vertical and horizontal extent of the archaeologically sensitive areas would be undertaken to determine possible impacts. Following completion of that analysis, if the proposed improvements would occur in areas that have been disturbed and have lost archaeological sensitivity, then no further archaeological study would be warranted. If project impacts would be anticipated to extend into potentially sensitive strata, then a proposal for Stage 1B archaeological investigations would be developed in consultation with LPC. All fieldwork would be undertaken as per NYAC Standards, 2000.

## BIBLIOGRAPHY

- Bachman, Van Cleaf  
 1969 *Peltries or Plantations: The Economic Policies of the Dutch West India Company in New Netherland, 1623-1639*. Johns Hopkins Press, Baltimore.
- Barlow, Elizabeth  
 1971 *The Forests and Wetlands of New York City*. Little, Brown and Co., Boston.
- Blackburn, Roderick and Ruth Piwonka  
 1988 *Remembrance of Patria: Dutch Arts and Culture in Colonial America 1609-1776*. Albany Institute of History and Art, Albany, NY.
- Bolton, Reginald Pelham  
 1922 *Indian Paths in the Great Metropolis*. Indian Notes and Monographs, Misc. series #23. Museum of the American Indian Heye Foundation, New York.
- 1972 *Indian Life of Long Ago in the City of New York*. Enlarged edition. Harmony-Books, .
- 1975 *New York City in Indian Possession*. Museum of the American Indian Heye Foundation, New York.
- Brodhead, John Romeyn  
 1853 *History of the State of New York*. Harper and Brothers, New York.
- Bromley, George W. and Walter S.  
 1902 *Atlas of the City of New York, Borough of Manhattan*. G.W. Bromley & Co., Philadelphia.
- Butzenwieser, Ann L.  
 1987 *Manhattan Water-Bound*. New York University Press, New York.
- Church, David E. and Edward S. Rutsch  
 1984 *Stage 1A Documentary Cultural Resources Survey for the 184 East 70th Street Proposed Construction Site, Borough of Manhattan, New York City*. Historic Conservation and Interpretation, Inc. Prepared for Trafalgar House Real Estate, Inc., New York.
- Cohen, Paul E. and Robert T. Augustyn  
 1997 *Manhattan in Maps 1527-1995*. Rizzoli, New York.
- Cohn, Michael  
 1983 "Evidence of Children at Revolutionary War Sites." *Northeast Historical Archaeology*. Vol. 12:40-42.

Colton, G.W. and C.B.

1881 "New York City South of 93rd Street." G.W. and C.B. Colton & Co., New York.

Colton, Joseph H.

1836 "Topographical Map of the City and County of New York and the Adjacent Country." Published by J.H. Colton & Co., New York.

Commissioners of New York State

1807- "This map of the city of New York and island of Manhattan as laid out by the  
1811 commissioners." Adapted by William Bridges, New York

Cudahy, Brian J.

1988 *Under the Sidewalks of New York*. Revised edition. Pelham Books, New York.

Dripps, Matthew

1851 "Map of the City of New York North of 50th Street." Surveyed and Drawn by John F. Harrison, New York.

1867 "New York City, County, and Vicinity." Prepared for Valentine's Manual, by M. Dripps, New York.

Fisher, Charles L.

1983 "Archaeology at New Windsor Cantonment: Construction and Social Reproduction at a Revolutionary War Encampment." *Northeast Historical Archaeology*. Vol. 12:15-23.

1995 "The Archaeology of Provincial Officers' Huts at Crown Point State Historic Site." *Northeast Historical Archaeology*. Vol. 24:65-86.

Geismar, Joan

1988 *UPS Manhattan South Facility, Phase 1A Archaeological Assessment*. Prepared for Allee King Rosen and Fleming, New York.

Gilmore, Russell S.

1983 *Guarding America's Front Door: Harbor Forts in Defense of New York City*. The Fort Hamilton Historical Society, Center for Cultural Resources, New York.

Gratacap, Louis Pope

1909 *Geology of the City of New York*. Third ed. Henry Holt & Co., New York.

Grumet, Robert Steven

1981 *Native American Place Names in New York City*. Museum of the City of New York.

## Hartgen Archeological Associates

- 1997 "Draft Phase 1A Archeological Assessment: Route 9A Segment 3 Canal Street 48", 12" and 20" Watermains." Prepared by Hartgen Archeological Associates, Inc., Troy, NY, in conjunction with Historical Perspectives, Inc., Westport, CT. Prepared for Vollmer Associates, New York. December 22.

## Historical Perspectives, Inc.

- 1997 Naval Undersea Warfare Center [Fort Trumbull], New London, CT: Cultural Resources Survey. Prepared for Northern Division Naval Facilities Engineering Command, on file with the CT SHPO.

## Holland, Samuel

- 1757 "A Plan of the North East Environs of the City of New York." Performed by Order of His Excellency the Earl of Loudon, September 17th, 1757.

## Hooker, William

- 1824 "Hooker's New Pocket Plan of the City of New York." Compiled and surveyed by William Hooker, New York.

## Huey, Paul R.

- 1988 *Aspects of Continuity and Change in Colonial Dutch Culture at Fort Orange, 1624-1664*. Unpublished Ph.D. dissertation. University Microfilms, Ann Arbor.

## Ingle, Marjorie, Jean Howson, and Edward S. Rutsch

- 1990 *A Stage 1A Cultural Resource Survey of the Proposed Foley Square Project in the Borough of Manhattan, New York, New York*. Revised May 1990. Prepared for Edwards & Kelcey Engineers, Inc., New York.

## Jackson, Kenneth T. ed.

- 1995 *The Encyclopedia of New York City*. Yale University Press, New Haven, CT.

## Kammen, Michael

- 1976 *Colonial New York - A History*. Charles Scribner's Sons, New York.

## Kardas, Susan and E. Larrabee

- 1977 "Cultural Resource Reconnaissance, East River Reach, New York Harbor Collection and Removal of Drift." Project #DACW51-77-M-00B1.

## Kearns, Betsy and Cece Kirkorian

- 1987 *Phase 1A Archaeological Assessment for the East River Landing Project, Manhattan*. Prepared for Allee King Rosen and Fleming, Inc., New York.

## Kieran, John

- 1982 *A Natural History of New York City*. Second edition. Fordham University Press, New York.

Lenik, Edward J.

- 1987 An Admirable Police Maintained: Evidence of Sanitary Practices at the New Windsor Cantonment, in *Northeast Historical Archaeology*. Vol. 16:58-66.

Lockwood, Charles

- 1976 *Manhattan Moves Uptown*. Houghton Mifflin Co., Boston.

Longworth, David

- 1817 "Actual Map and Comparative Plans Showing 88 Years of Growth of the City of New York." David Longworth, New York.

Lopez, Julius

- 1978 "The History and Archeology of Fort Independence on Tetard's Hill, Bronx County, NY." *The Bulletin of the New York State Archaeological Association*. vol. 73:1-28.

Louis Berger & Associates, Inc., The Cultural Resource Group

- 1987 *Druggists, Craftsmen, and Merchants of Pearl and Water Streets, New York. The Barclays Bank Site*. Prepared for London & Leeds Corporation and Barclays Bank, PLC.

McKay, Richard C.

- 1969 *South Street, A Maritime History of New York*. Revised edition. 7 C's Press, Riverside, CT.

New York City Landmarks Preservation Commission (NYCLPC)

- 1978 "Fraunces Tavern Block Historic District Designation Report." New York City Landmarks Preservation Commission, Kent L. Barwick, chairman.
- 1982 "Towards an Archaeological Predictive Model for Manhattan: A Pilot Study." Manuscript on file, New York City Landmarks Preservation Commission.
- 1983 "New York City Pilot Study for New York State's Resource Planning Protection Process (RP3) Program." Draft. Funded by the New York State Department of Parks, Recreation and Historic Preservation.
- 1990 "The Archaeological Investigation of the City Hall Park Site, Manhattan." Prepared for New York City Department of General Services, New York.
- 1991 *Design Through Archaeology: An Archaeological Assessment of Fifteen City-Owned Cultural Institutions*. Prepared for the New York City Department of Cultural Affairs.
- 1997 "Phase 1A Archaeological Documentary Study: Stone Street Historic District (LP-1938)." Draft. Prepared by Amanda Sutphin, et al. September.

- New York City Landmarks Preservation Commission (NYCLPC)  
1998 "Phase 1B Archaeological Monitoring Report: Stone Street Historic District (LP-1938). Written by H. Arthur Bankoff, NYCLPC.
- Parker, Arthur C.  
1920 "The Archeological History of New York - Part II," *New York State Museum Bulletin*, 237/238, September/October, 471-743.
- Pickman,, Arnold and Nan A. Rothschild  
1981 "64 Pearl Street: An Archaeological Excavation in 17<sup>th</sup> Century Landfill." Sponsored by the New York Landmarks Conservancy. May.
- Ping Hsu, Dick  
1972 "Fort Stanwix." *Northeast Historical Archaeology*. Vol. 2:1:29-34.
- Plunz, Richard  
1990 *A History of Housing in New York City*. Columbia University Press, New York.
- Poirier, David A.  
1976 "Camp Reading: Logistics of a Revolutionary War Winter Encampment." *Northeast Historical Archaeology*. Vol. 5:1-2:40-52.
- Ratzer, Bernard  
1767 "Plan of the City of New York Surveyed in 1767." D. T. Valentine, New York, 1854.
- Rink, Oliver A.  
1986 *Holland on the Hudson*. Cornell University Press, Ithaca.
- Risse, Louis A.  
1910 *New York in 1800*. Compiled from Original maps by Louis A. Risse. New York.
- Ritchie, William A.  
1965 *The Archaeology of New York State*. Harbor Hill Books, Harrison, New York.  
1980 *The Archaeology of New York State*. Revised edition. Harbor Hill Books, Harrison, New York.
- Rothschild, Nan A.  
1990 *New York City Neighborhoods: The 18th Century*. Academic Press, San Diego, CA.
- Rothschild, Nan A., Diana diZ. Wall and Eugene Boesch  
1987 "The Archaeological Investigation of the Stadt Huys Block: A Final Report." CEQR 79-045M. Submitted to the NYCLPC, December.

- Scharf, J. Thomas  
1886 *History of Westchester County, New York, Including Morrisania, Kings Bridge, and West Farms, Which Have Been Annexed to New York City.* 2 vol. L. E. Preston and Co., Philadelphia.
- Schuberth, Christopher J.  
1968 *The Geology of New York City and Environs.* Natural History Press, Garden City, NY.
- Seidel, John L.  
1983 "Archaeological Research at the 1778-79 Winter Cantonment of the Continental Artillery, Pluckemin, New Jersey." *Northeast Historical Archaeology*. Vol. 12:7-14.
- Skinner, Alanson  
1919 *Exploration of Aboriginal Sites at Throg's Neck and Clason's Point, New York City.* Contributions from the Museum of Natural History 43(2).
- Smith, Carlyle Shreeve  
1950 *The Archaeology of Coastal New York,* Anthropological Papers of the American Museum of Natural History, 43(2), New York.
- Smith, Thomas E. V.  
1972 *The City of New York in the Year of Washington's Inauguration, 1789.* Chatham Press, Riverside, Connecticut.
- Soil Systems, Inc.  
1981 "175 Water Street History." Prepared for Fox and Fowle Architects, New York.  
1982 "Archaeological Investigation of the 175 Water Street Block." Prepared for Fox and Fowle Architects, New York.
- Starbuck, David R.  
1988 "The American Headquarters for the Battle of Saratoga." *Northeast Historical Archaeology*. Vol. 17:16-39.  
1990 "The General Hospital at Mount Independence: 18<sup>th</sup> Century Health Care at a Revolutionary War Cantonment." *Northeast Historical Archaeology*. Vol. 19:50-68.
- Stevens, B.F.  
1900 "Facsimile of the Unpublished British head Quarters Coloured manuscript Map of New York & Environs (1782)." Reproduced from the original drawing in the War Office, London. B.F. Stevens, London.

## Stokes, I. N. Phelps

- 1915 *The Iconography of Manhattan Island*. Vol. 1. Robert Dodd, New York.
- 1916 *The Iconography of Manhattan Island*. Vol. 2. Robert Dodd, New York.
- 1918 *The Iconography of Manhattan Island*. Vol. 3. Robert Dodd, New York.
- 1922 *The Iconography of Manhattan Island*. Vol. 4. Robert Dodd, New York.
- 1926 *The Iconography of Manhattan Island*. Vol. 5. Robert Dodd, New York.
- 1928 *The Iconography of Manhattan Island*. Vol. 6. Robert Dodd, New York.

## Valentine, David T.

- 1852 "Map of the City of New York Showing the Original High Water line and the Location of Different Farms and Estates." D.T. Valentine, New York.
- 1853 *History of the City of New York*. G. P. Putnam, New York.

## Van Zandt, Roland

- 1981 *Chronicles of the Hudson: Three Centuries of Traveler's Accounts*. Rutgers University Press, New Brunswick, NJ.

## Viele, Egbert Ludovicus

- 1874 "Topographical Atlas of the City of New York, Including the Annexed Territory." Egbert L. Viele, New York.

## White, Norval and Elliot Willensky

- 1978 *A Guide to New York City*. Revised edition. Collier Books, New York.

## Workmaster, Wallace

- 1972 The Forts of Oswego, in *Northeast Historical Archaeology*. Vol.2:1:9-20.

## Works Progress Administration (WPA)

- 1939 *The WPA Guide to New York City*. Pantheon Books, New York.

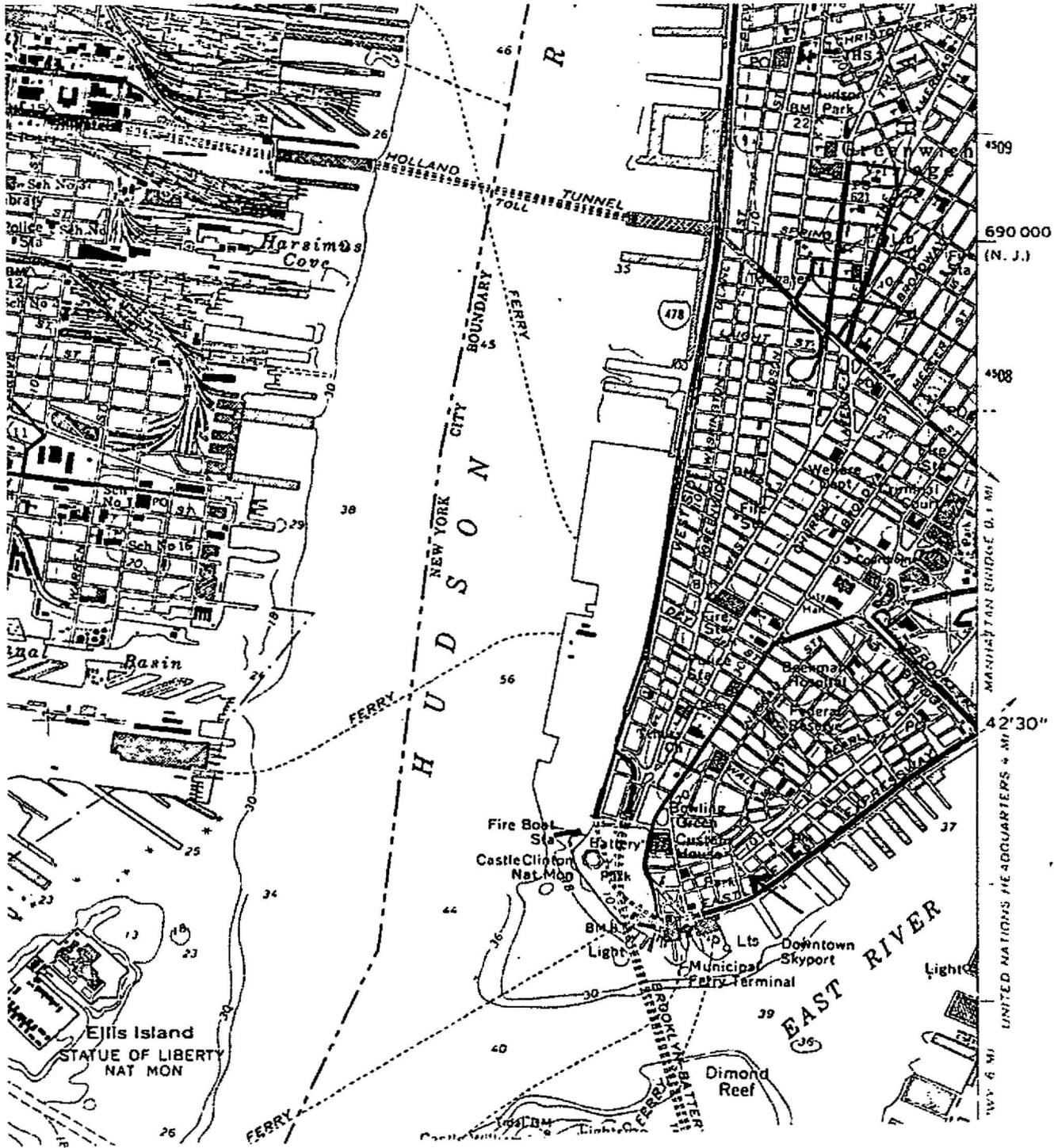


Figure 1. Project Site Location - U.S.G.S. Topographic Map, 1981  
Jersey City Quad  
Scale 1:24000

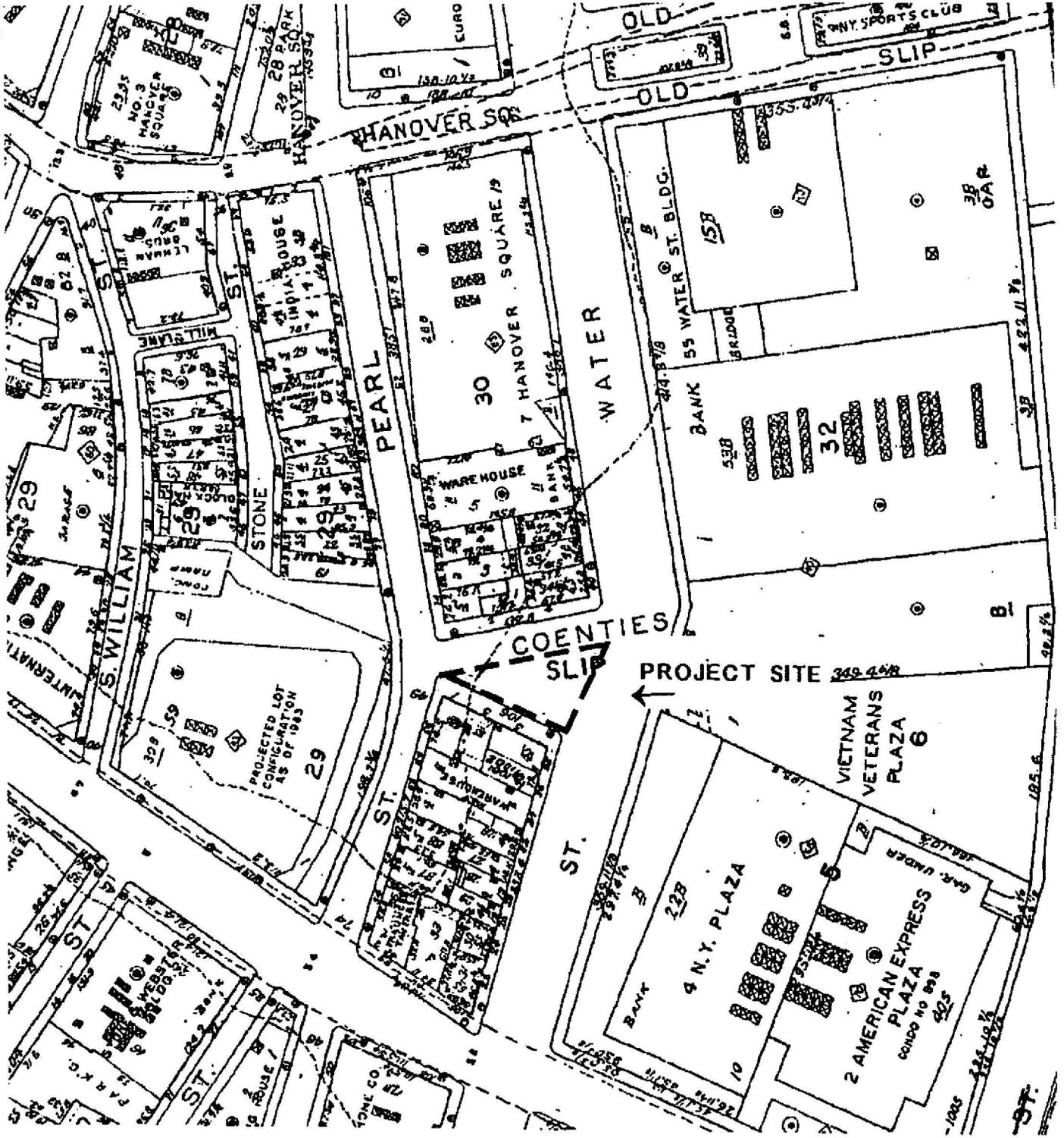


Figure 2. Project Site Location - Current Sanborn Land Use Map



Figure 3a. (top)  
 Visscher View, inset in *Novi Belgii Novaeque Angliae Nec Non Partis Virginia Tabula*, c.1655-1677, depicting the period between 1651 and 1655

K. Stadts Herberch = City Inn, later the Stadt Huys

Arrows indicate the approximate location of the project site.

Figure 3b. (bottom)  
 Castello Plan – *Afbeeldinge van de Stadt Amsterdam in Nieuw Neederlandt* (photo negative)  
 Drawn c.1665-70, depicting conditions in 1660. Stadt Huys is the large building with a cupola.

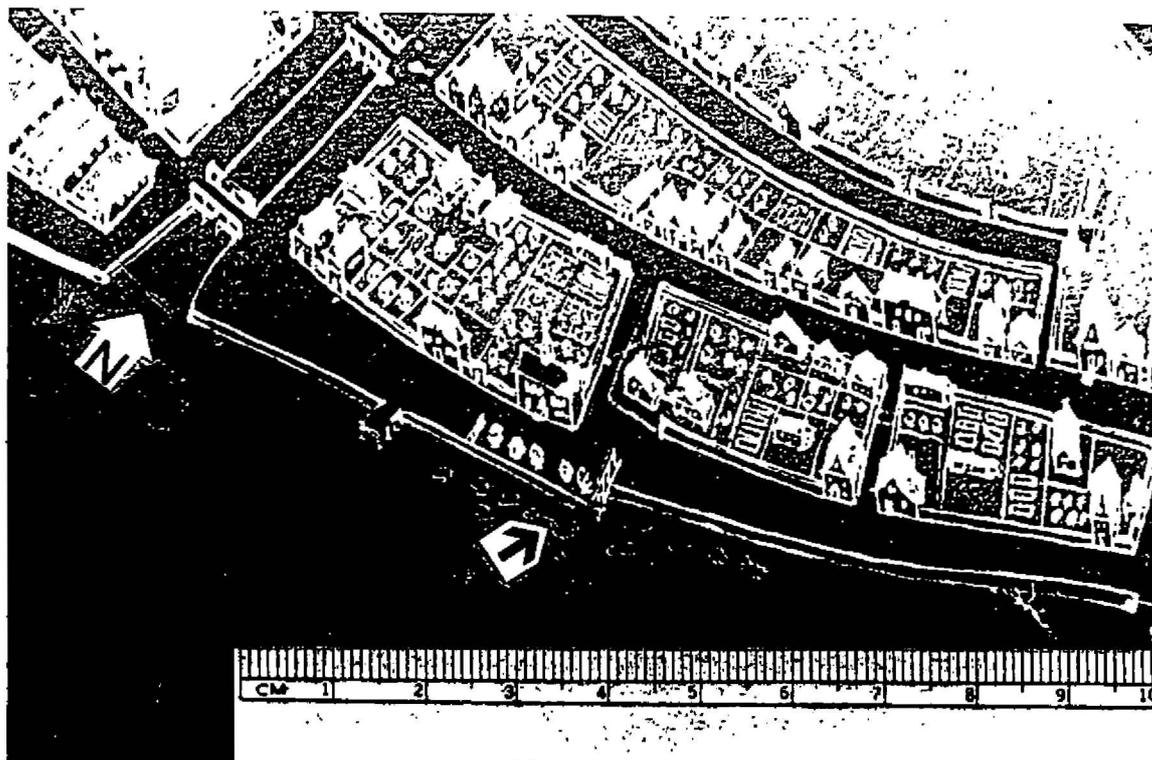




Figure 4. Danckaerts, Labadist General View of New York from Brooklyn Heights, 1679-1680 (Stokes 1915:pl.17).

Arrow indicates the approximate location of project site

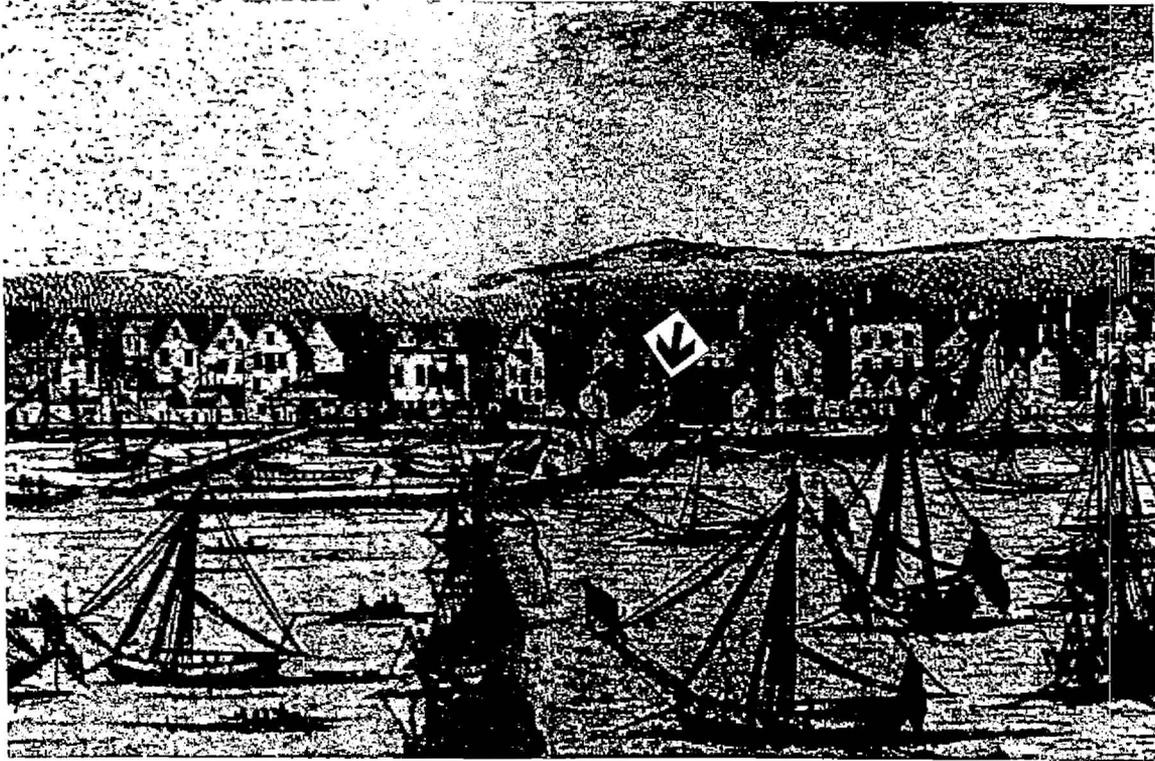


Figure 5. *Burgis, A South Prospect of the Flourishing City of New York in the Province of New York in America, 1719-1721.*

Arrow indicates the approximate location of project site

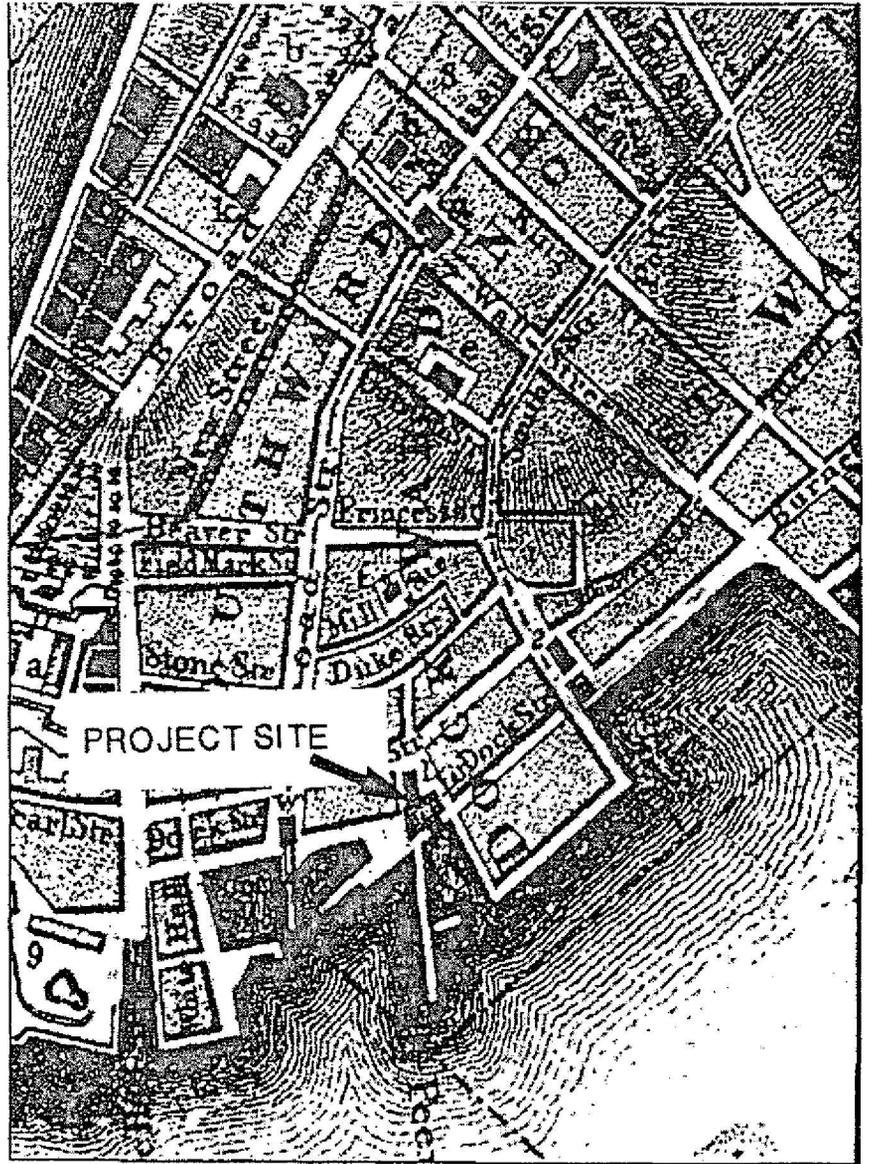


Figure 6. *Plan of the City of New York, Ratzer 1766-67*



Figure 7. Bromley, Atlas of the City of New York, 1879.

Arrow indicates the project site



Figure 8. Proposed Improvements to Coenties Slip Project Site

 Area of Archaeological Sensitivity



Photo 1. View west from the east corner of the intersection of Coenties Slip and Water Street. Project site extends from the 5-story brick buildings to the center of Coenties Slip. Pearl Street is in the distance on the right, with tall building behind it on the Stadt Huys Site. Water Street is in the foreground.

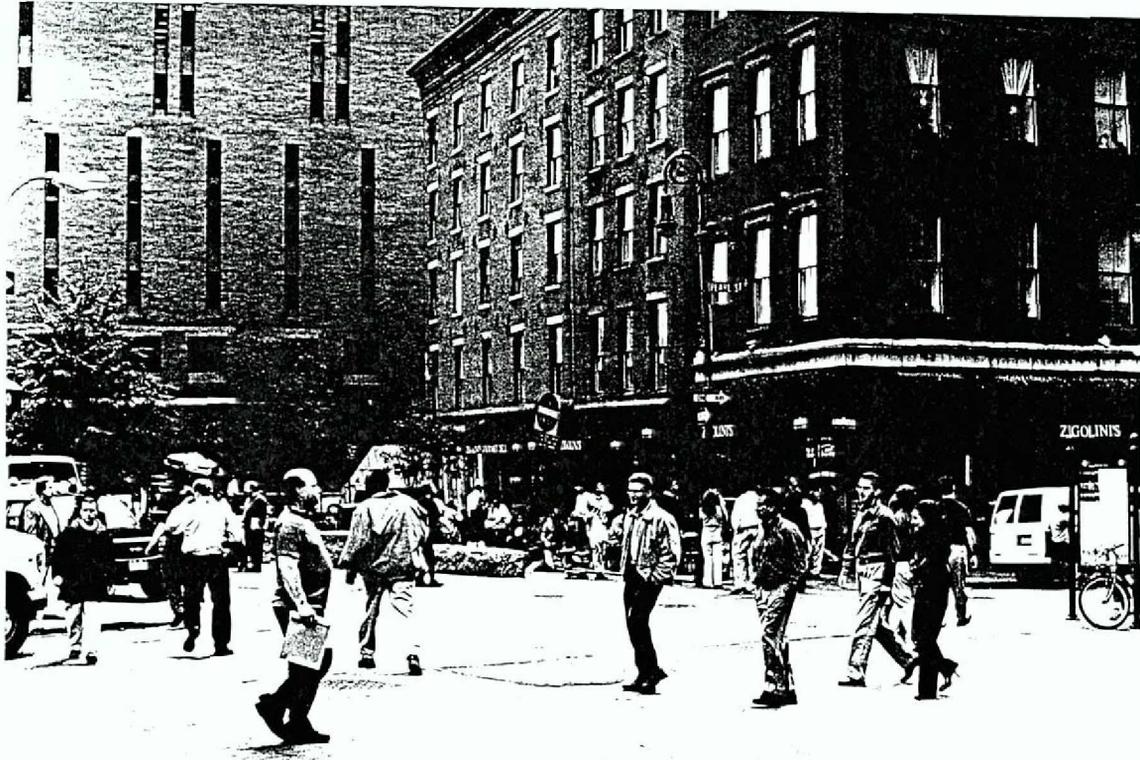


Photo 2. Looking south down Coenties Slip from the north side of Pearl Street. Project site extends from the 5-story brick structures to the large stones in the center of Coenties Slip. Large building in the distance is on the far side of Water Street.