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GREENWICH STREET RECONSTRUCTION

PRELIMINARY ARCHAEOLOGICAL ASSESSMENT

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GREENWICH STREET RECONSTRUCTION

PRELIMINARY ARCHAEOLOGICAL ASSESSMENT

INTRODUCTION

The New York City Economic Development Corporation (EDC) is proposing the reconstruction of Greenwich Street between Hubert and Chambers Streets in Lower Manhattan (Figures 1 and 2). The project consists of the narrowing of the roadway and a corresponding widening of the west sidewalk as well as resurfacing and landscaping activities. The roadway is currently approximately 70 feet wide with a 15 foot sidewalk on both sides. Subsurface activities include replacement of the water main between North Moore and Chambers Streets, sewer and catch basin replacement, hydrant replacement, and removal of some of the subsurface remains of the Greenwich Street trolley line.

This report is undertaken to determine the potential effects of the proposed street reconstruction project on any extant archaeological resources located in the impact area. Specifically, this documentary study addresses concerns stated by the New York City Landmarks Preservation Commission (LPC) that there is "the potential for the recovery of remains from 18th and 19th Century occupation on the project site" (LPC: 3/10/98). The aim of the preliminary assessment is to provide the threshold for a next level of study if warranted.

PROJECT LOCATION AND DESCRIPTION

Critical to this report was information obtained at a conference with an RBA Group engineer who helped draw the plans for the proposed project. During the interview, the engineer "translated" the various plan drawings so that the data might be used for the archaeological assessment.

Greenwich Street Roadbed/Sidewalk Improvements

The improvements will take place within the entire 100 foot right-of way of the eight block segment of Greenwich Street from the north side of Hubert Street southward to the south side of Chambers Street (see Figure 2). The impact of improvements in the roadway is limited to approximately 3 feet below existing grade except for eight catch basin locations that can require an excavation as deep as approximately 9 feet below grade and approximately 5 feet in diameter. In regard to the sidewalk on the west side of Greenwich Street, the improvements will consist of filling rather than cutting and thus will not involve additional subsurface disturbance below a level already impacted.

Greenwich Street Water Main

The water main, which requires an approximately 3 foot by 3 foot excavation trench, will run in the street bed except for two locations where it will be laid under the sidewalk on the east side of Greenwich Street: 1) the south side of Chambers to the south side of Reade Street 8 feet in from the street, and 2) a forty foot section between Franklin and North Moore Streets 2 feet 7 inches in from the edge of the street. The engineer explained that the water main must go under the sidewalk because the street is so crowded with other utilities at those loci that the Con Ed lines could not be avoided.

EXISTING CONDITIONS

Hubert Street is the northern boundary of the project corridor. At that point there is a 70-foot roadway with 15-foot sidewalks on both sides. Approximately 2,000 feet south of Hubert, at Chambers Street the southern boundary of the project corridor, the width of the roadway is reduced to 38 feet although the right-of-way maintains its 100-foot width. There is mixed land use within the corridor. Washington Market Park is located at the south end of the site on the west side of the street. The buildings moving north are generally late 20th century high-rise construction containing residential, commercial, and office spaces. On the east side of the street older late 19th century buildings featuring residential, retail, restaurant and warehousing uses are characteristic. The buildings on the east side of Greenwich Street between Hubert and Reade Streets are located in the LPC designated Tribeca West Historic District. Also designated by LPC are the Harrison Houses located at 25-41 Harrison Street, just west of the project site.

A maze of underground utilities exist below Greenwich Street including water mains, sewers, electrical lines, catch basins, manholes, telephone wires, gas lines, cable tv, abandoned refrigerant lines, fire equipment and steam lines. In addition there are an undetermined number of abandoned trolley yokes and foundations as well as brick elevated railroad supports. There are underground sidewalk vaults on the east side of Greenwich Street from Hubert Street two thirds of the way to Beach Street, from Beach Street almost to the corner of North Moore Street, the southern half of the block from North Moore Street to Franklin Street, almost all of the block from Franklin Street to Harrison Street, the entire block from Harrison Street to Jay Street, the southern half of the block from Jay Street to Duane Street, and the block from Duane Street to Reade Street. Otherwise the amount of disturbance below the sidewalk beds is unknown.

SUMMARY HISTORICAL OVERVIEW

The west bank of the Hudson River along the Manhattan shoreline when first explored by Henry Hudson in the early 17th century was topographically much different than today. At about where Greenwich Street is today there was a ridge of high bluffs running north-south along the river bank. Efforts to regularize and extend the shoreline and roadways paralleling it began as early as 1729 when a Common Council ordinance mandated the creation of two streets - one (Greenwich Street) at high water mark and another (now Washington Street) at low water mark (Gerard 1872:218). Some maps of the era show a gate associated with the early palisade defense system approximately in the area of the Chambers and Greenwich Streets intersection (e.g Maerschalk 1754) and a line of entrenchments approximately along the western side of Greenwich Street (Ratzer, 1767).

A portion of the proposed street lay within Trinity Church property whose vestry orders of May 7, 1772 declared that Greenwich Street "be extended in breadth to sixty-six feet and to be continued...from the north side of Chambers Street to the Oswego Market (Stokes 1915-1926: vol 5 p.1333). However, it was not until 1784 that Greenwich Street was officially regulated and opened as shown on the Map of Street Openings and Closings.

Thus, it is clear that the principal land use within the Greenwich Street roadway bed has always been as a transportation artery with approximately the same width as today (originally 66 feet, now 70 feet). The land use history may be different in the sidewalk areas along both sides of the street. The earliest extant tax rolls are 1794, and owners of property on Greenwich Street in the project area were assessed at least by 1808. A view at Warren and Greenwich Street (one block south of Chambers Street - see Figure 3) in 1809 shows frame houses built quite close to the street and it is possible that commercial or residential activities might have left associated subsurface remains within the 15 foot sidewalk areas on each side of Greenwich Street. By 1818 Greenwich Street was a "place of considerable retail trade" (Blunt 1818:37) and in March of 1822 the Common Council adopted a resolution to number the houses on the street (Stokes 1915-1926: vol 5 p.1621).

Following the creation in 1811 (The Commissioner's Plan) of a formal street system within the city, public transportation efforts were escalated. The great network of mass-transit that exists in Manhattan today got its small beginning in 1832 when the first car drawn by a team of horses, passed along the streets of New York City. While surface railways were operating in Manhattan in the 1840's and 1850's, these were typically at-grade steam engines which proved hazardous to pedestrian traffic and nuisances in general. Horse-drawn cars were slow to gain popularity, but by the 1860's were networked throughout the city. The earliest lines were no more than tracks in the

streetbeds which guided horse-drawn cars. The rails were capable of holding 35 pounds per yard - a relatively low weight. These tracks were commonly ripped out and replaced since they were not capable of supporting the weight of later cable and electrified cars. Electrified trolleys, powered by overhead wires, were instituted in the 1880's, but these were later outlawed and replaced by cars which connected to an electrified track in a slot between the two main trolley tracks directly in the street bed. Ploughed cable cars required rails capable of supporting 65 pounds per yard, and the subsequent electrified cars were even heavier which forced earlier tracks to be ripped up and replaced with even heavier weight tracks. Large cast iron saddles, typically three to four feet high and yoke shaped were installed in the street beds to support both the trackage of the cable cars and later the electrified cars. Many of these were later modified or modernized; cast-cement models sometimes replaced them. The older trolley saddles within the streetbeds of Manhattan were often either ripped up and replaced, or abandoned *in situ* and paved over (Hartgen 1997: 18-19).

"The first practical rapid transit line on Manhattan was a section of single-track elevated railway that opened for passenger service on February 1, 1870" (Cudahy 1989:11) as the West Side and Yonkers Patent Railway Company. The line ran from Dey to Thirtieth Streets (along Greenwich Street) and eventually became part of the Ninth Avenue El. "The line consisted of a single-track cable-propelled elevated railway" (Kahn 1977: 5). "Cable operations quickly proved unsatisfactory. The elevated company turned to the technology of standard railroading and began hauling trains behind diminutive steam locomotives....Both the cars and the locomotives of the elevated lines were essentially scaled-down versions of regular railroad equipment" (Cudahy 1989:11 and see Figure 4). The steam line was operated by the New York Elevated Railroad Company and the el tracks - as well as the trolley tracks - appear on atlases of the time such as the 1879 Bromley ATLAS OF NEW YORK.

However, steam power had definite drawbacks; the engines were dirty , noisy and dangerous. Electricity was being developed as an alternative energy source and the Ninth Avenue line was electrified by 1903 and run by the Manhattan Railway company (Kahn 1977:8). However, other forms of mass transit such as buses and subways eventually rendered the elevated trains obsolete. In 1940 the Ninth Avenue El was abandoned and "their structures deeded over to the city for dismantling" (Cudahy 1989:118).

ARCHEOLOGICAL POTENTIAL

The proposed project consists of street narrowing and sidewalk widening as well as esthetic improvements within the already established 100-foot right-of-way and is not anticipated to have any effect on the designated historic resources consisting of the Harrison Houses and the Tribeca West Historic District buildings.

Greenwich Street Roadway

The Greenwich Street roadway lacks archaeological potential in most resource types due to a combination of extensive disturbance and lack of initial deposition since it has historically been used almost exclusively as a transportation artery.

Potential archaeological resources are limited to those associated with early mass transit in Manhattan. Horse-drawn trolleys, which were replaced by electrified lines in the late 19th century, ran along Greenwich Street in the project area. As noted above, those tracks were either removed or abandoned. The remains of the electrified tracks - that consisted of two outside tracks and a third central electrified track - are commonly found throughout Manhattan. Other features, such as saddles (yokes), switching boxes, or electrical duct feeder vaults may be associated with them. Since many of these lines ran through the 1940's, the earliest systems were often modified and updated with more modern equipment. Subsurface remains of these late-running systems bear evidence of these later modernizations, and little - if no - evidence of their original components.

In terms of archaeological potential, some trolley features are considered more likely to address meaningful research issues than others given that there is an abundance of documentation on Manhattan's transportation networks. According to Tom Harrington, curator at the New York City Transit Museum, the presence of former trolley lines alone is not a reason to designate their former routes as archeologically sensitive (personal communication, December 15, 1997). Extensive documentation already exists regarding the routes, technology, and construction of Manhattan's trolleys. Thus tracks found in streetbeds are not typically considered potentially significant. However, encountering a feature such as a cast-iron saddle - a support structure for the earliest electrified trolleys - would warrant consideration (Figure 5). It is recommended that this trolley feature, if encountered at the time of construction, be measured and photo-recorded to HAER standards. In the event that these features are encountered, curators at the New York City Transit Museum should be contacted for input regarding the curation of two of them as a representative sample of this type of transportation artifact.

The Ninth Avenue el pier foundations were common considering that the line ran from Dey Street to Thirtieth Street when it first opened in the early 1870's. Therefore, the entire length of Greenwich Street within the project area may contain a number of these where previous impacts have not destroyed or partially destroyed them. However, " as a potential archaeological resource footings can provide only limited information about the structures they supported. The Ninth Avenue El stood through the early 1940s and numerous photographs and other documents exist regarding its use and construction" (Hartgen 1997:29). For example, the authors of the Electric Railroaders' Association booklet quoted in this report cited "George E. Votava, who went out and recorded the el lines on film in 1940 when it became clear they would be abandoned" (Kahn 1977: 10). (See, also, for another example of documentation, Figure 6 which is a drawing from the current project plans). These brick piers "are architectural remains from the pylon footings of the Ninth Avenue el, the first el to run in Manhattan (c.1870-1940) and are potentially abundant.

potentially abundant. Their archaeological potential is considered modest given that photographs and documents of the resource exist. Therefore, full scale archaeological investigation of this resource is not necessarily a cost-effective method of studying the transit system history" (Hartgen 1997:32).

Also, plans call for removal of only the top two feet of the brick piers. There is no provision to remove them entirely; except for the top portion, each of the structures will remain *in situ* Therefore, further archeological consideration of this resource is not warranted.

Greenwich Street Sidewalk

There are only two portions of the sidewalk that will be impacted for more than a few inches below existing sidewalk according to the proposed construction plans as explained by the RBA Group engineer. They are both on the east side of Greenwich Street.

The sidewalk (where it will be impacted by water main placement) may have the potential to contain archaeological resources associated with 18th and 19th century activities, although the integrity of such resources may have been compromised by subsurface disturbances during the late 19th and 20th centuries. The small portion of sidewalk between Franklin and North Moore Streets that will be impacted by water main installation has low potential to produce substantial, intact resources; it will be laid only 2 feet 7 inches from the edge of the street and has already been disturbed by construction in the form of an elevated train brick support pier as shown on the RBA Group engineering drawings (1997-98).

However, a Phase 1A study of the sidewalk area between Chambers and Reade Streets on the east side of Greenwich Street is recommended. Maps and historical documents should be researched in regard to the possibility of early defense system remains. In addition, land use histories of each original lot should be compiled in order to assess the possibility of other types of extant 18th and 19th resources within the impact corridor.

BIBLIOGRAPHY

Blunt, E.M.
1818 A STRANGER'S GUIDE TO THE CITY OF NEW YORK. London: Samuel Liegh.

Cudahy, Brian J.
1989 UNDER THE SIDEWALKS OF NEW YORK. Revised Edition. New York:Viking Penguin.

Gerard, J.W. Jr.
1872 A TREATISE ON THE TITLE OF THE CORPORATION AND OTHERS TO THE STREETS WHARVES, PIERS, PARKS, FERRIES, AND ETC. New York: Poole and MacLauchlan.

Hartgen Archeological Associates, Inc. in conjunction with Historical Perspectives, Inc.
1997 "Draft Phase 1A Archeological Assessment:Route 9A Segment 3, Canal Street." Prepared for Vollmer Associates, New York City.

Historical Perspectives
1986 "Phase IA Archaeological Assessment Report on the 303 Greenwich Street Project." MS on file L. M. Dalton Corp, New York, NY.

Historical Perspectives
1984 "Phase One Archaeological Impact Report for Sites 1A, 1B, 5B, and 5C, Washington Street Urban Renewal Area, New York City." MS on file at NYCLPC.

Kahn, Alan Paul and Jack May
1977 THE TRACKS OF NEW YORK: MANHATTAN AND BRONX ELEVATED RAILROADS, 1920. Number 3. New York: Electric Railroaders' Association, Inc. .

Kearns, Betsy, Cece Saunders, and Richard Schaefer
1997 "Ericsson Place Archaeological Assessment." MS on file at NYCLPC.

Kearns, Betsy, Cece Saunders and Sara Mascia
1997 "Phase 1A Archaeological Assessment, 195 Hudson Street, Manhattan, New York." MS on file at Allee King Rosen & Fleming, New York, NY.t

Lockwood, Charles
1976 MANHATTAN MOVES UPTOWN. New York: Barnes & Noble Books.

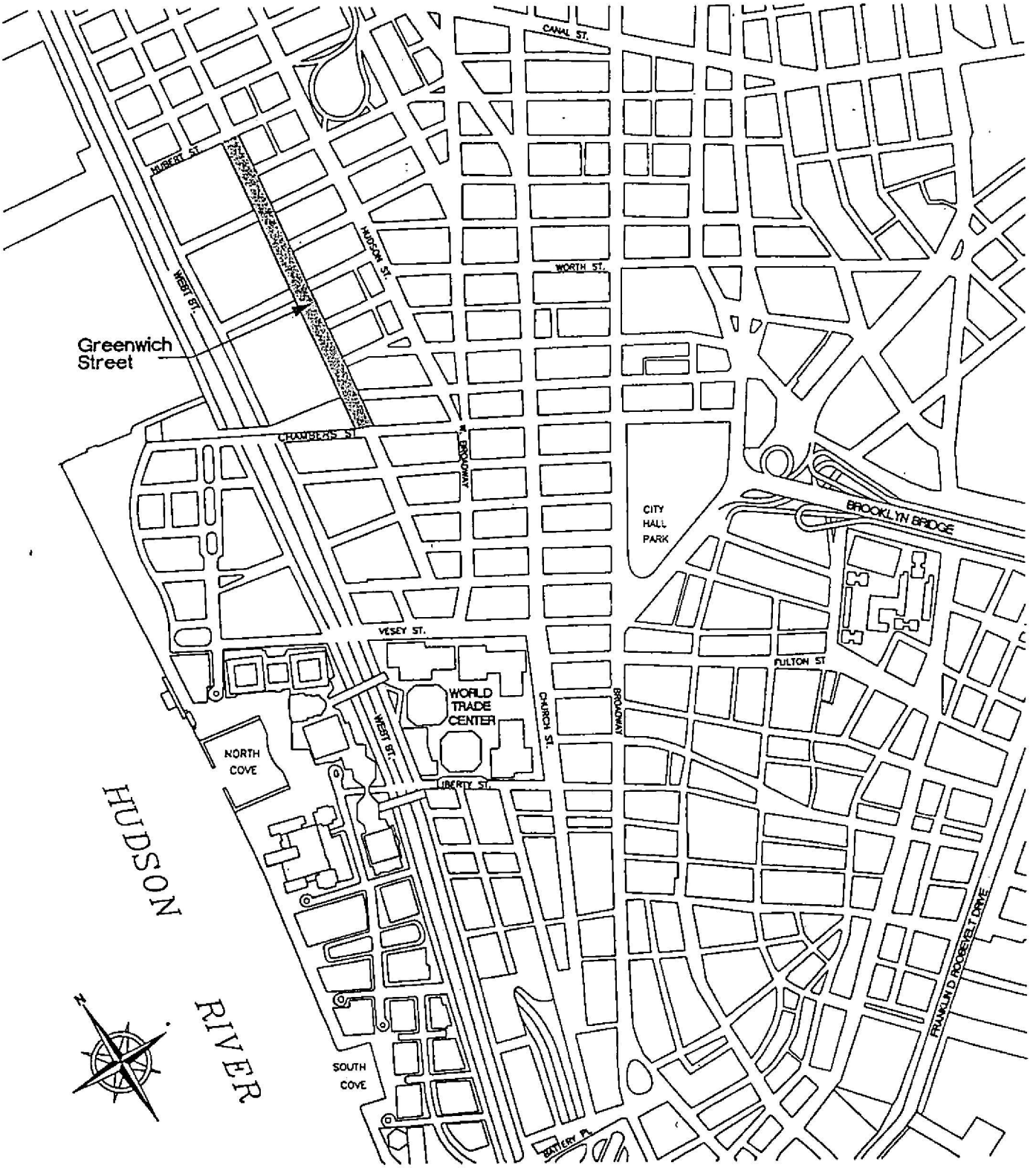
Louis Berger and Associates
1992 "Route 9A Reconstruction Project, New York, New York. Draft Contextual Study:Land Transportation." Prepared for the New Yok State Department of Transportation in Cooperation with the Federal Highway Administration and the City of New York.

Stokes, Isaac Newton Phelps
1915-1926 THE ICONOGRAPHY OF MANHATTAN ISLAND. Volumes 1-6. New York: Robert H. Dodd.

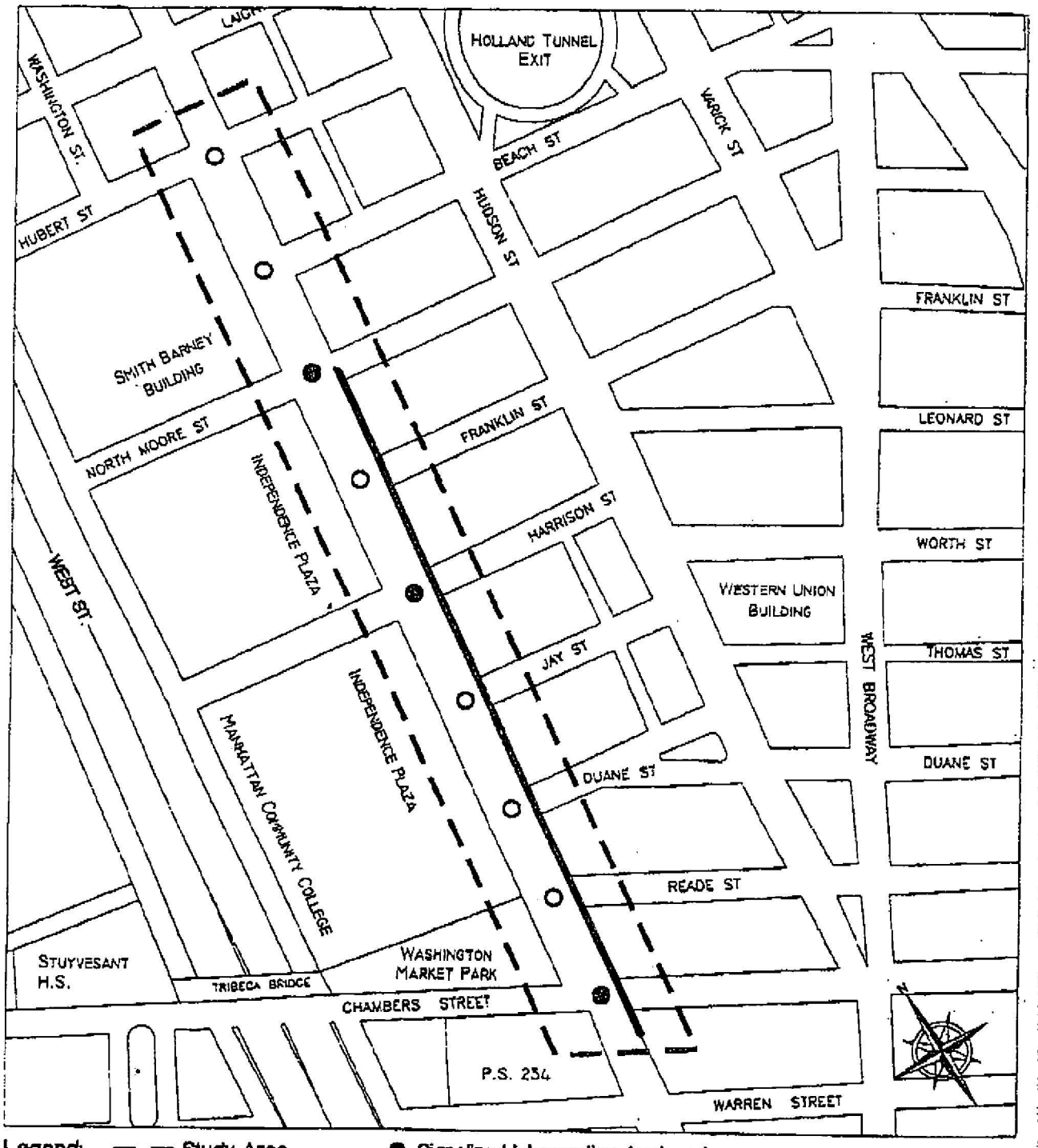
Vollmer Associates
1992 "Route 9A Reconstruction Project, New York, New York: Draft Contextual Study, Land Transportation." MS on file at Vollmer Associates, New York City.

Greenwich Street Reconstruction

Location Map
Figure I



Study Area
Figure 2

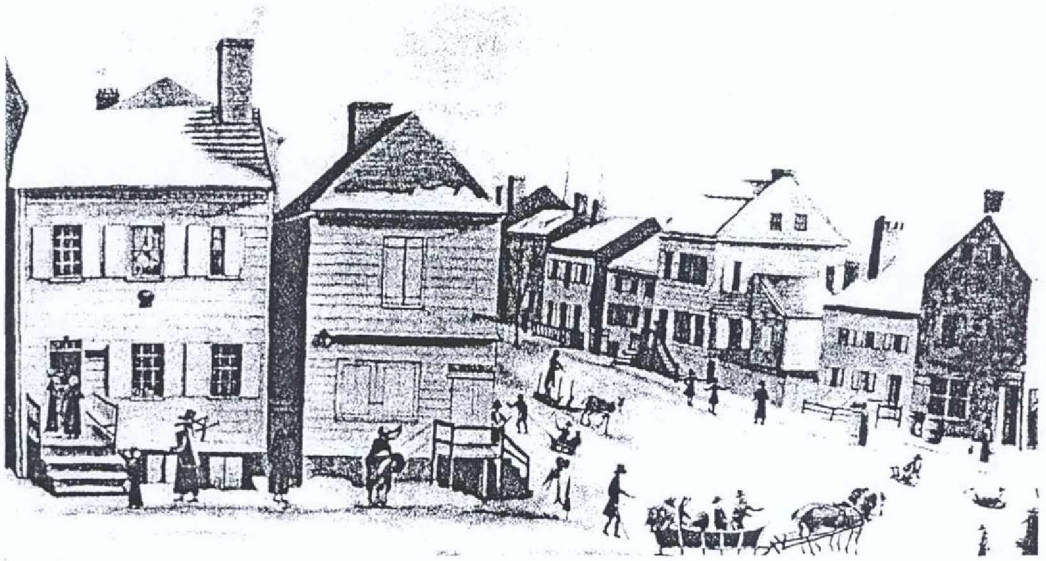


Legend: — — Study Area Street Direction ● Signalized Intersection Analyzed ○ Unsignalized Intersection Analyzed

▬ Approximate Location of Water Main

Figure 3

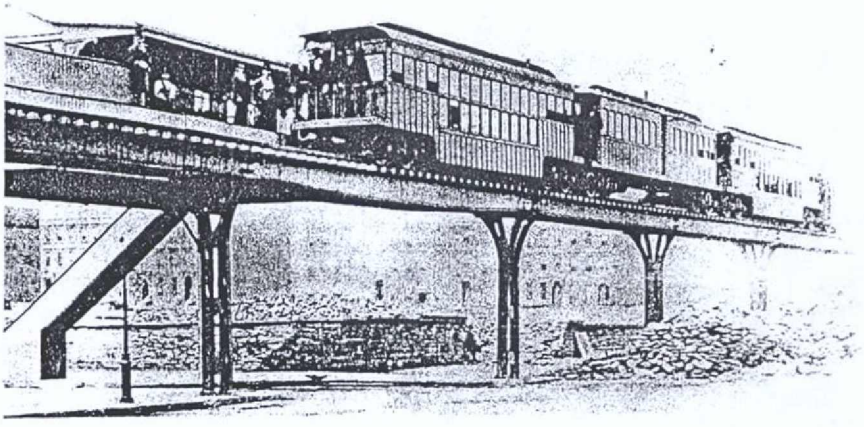
Warren and Greenwich streets, 1809



Photocopied from Lockwood 1976: 41

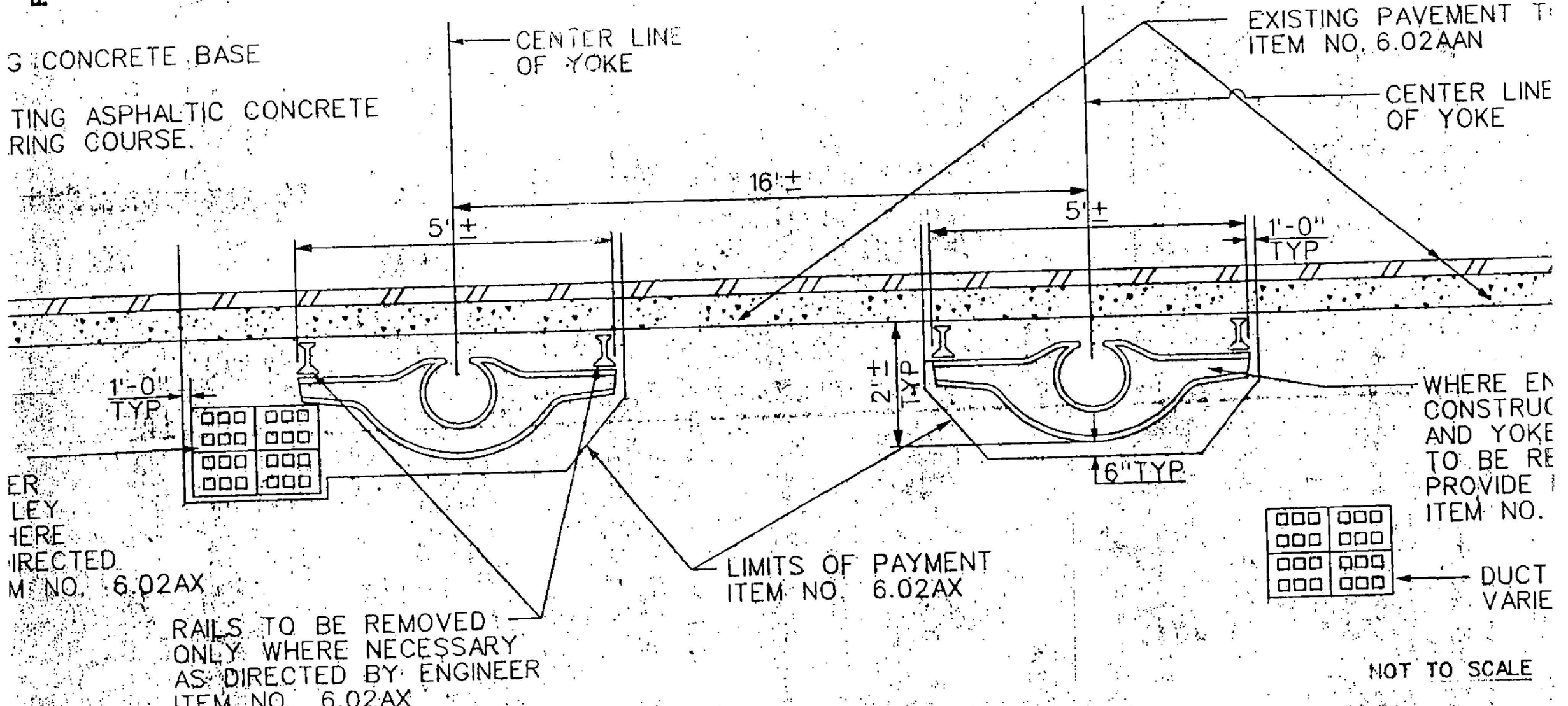
Figure 4

An 1872 view of the Ninth Avenue el. Notice the drop-belly sides on two of the cars to ensure a better center of gravity and the small steam engine on the far end of the train. [Smithsonian Institution]



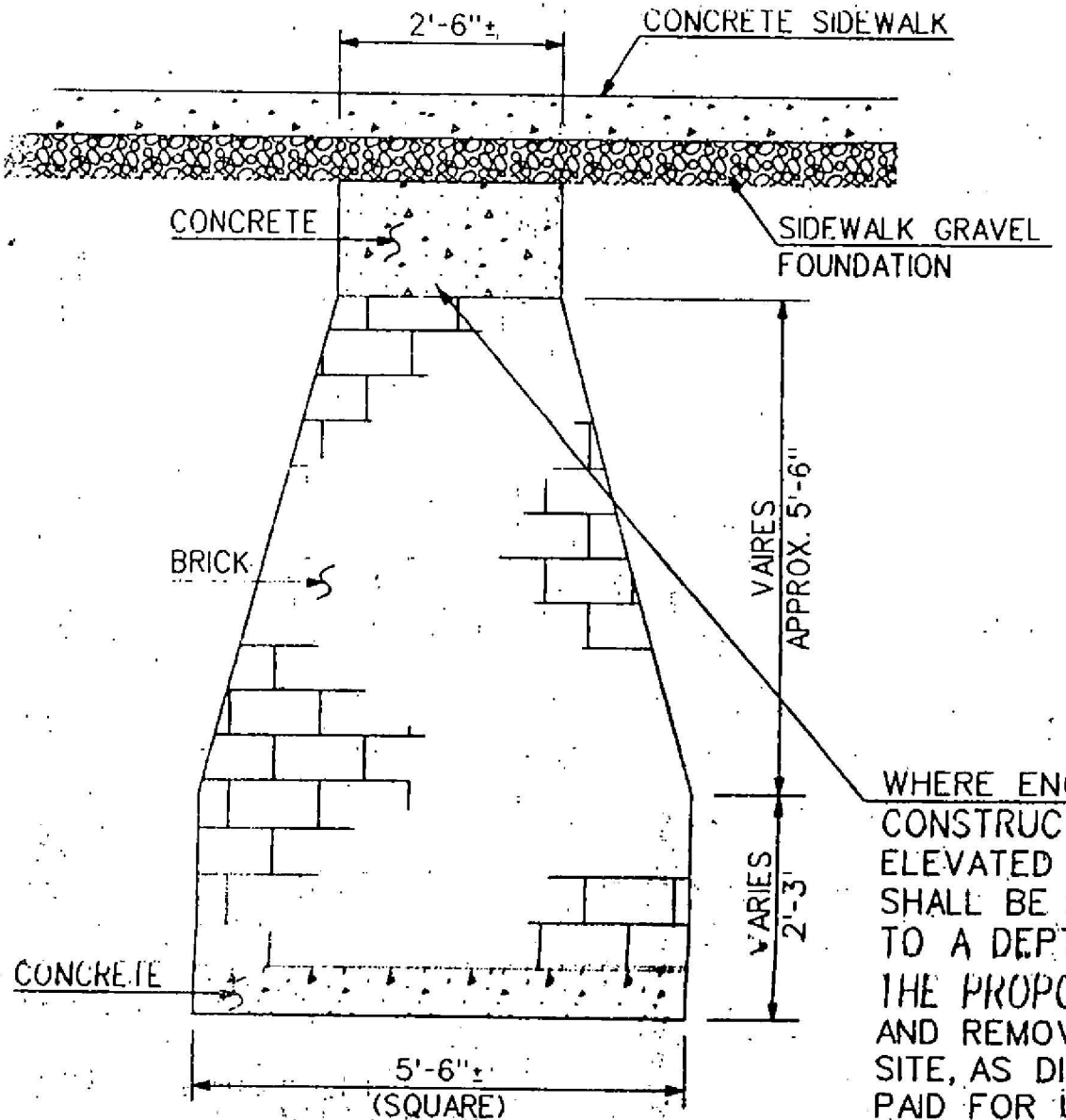
Photocopied from Cudahy 1989:13

Figure 5



SCHEMATIC EXISTING ROADWAY CROSS SECTION SHOWING APPROMINATE TROLLEY YOKES AND FOUNDATIONS

Figure 6



WHERE ENCOUNTERED DURING CONSTRUCTION, ABANDONED ELEVATED SUBWAY FOUNDATION SHALL BE DEMOLISHED BY CU TO A DEPTH OF TWO (2) FEET THE PROPOSED CONCRETE PAV AND REMOVE ALL DEBRIS FROM SITE, AS DIRECTED BY THE ENG PAID FOR UNDER ITEM NO. 7.31

TYPICAL SECTION

ABANDONED ELEVATED SUBWAY FOUNDATION

SCALE: 1/2" = 1'-0"

GREENWICH STREET RECONSTRUCTION

PHASE 1A ARCHAEOLOGICAL ASSESSMENT

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INTRODUCTION

The New York City Economic Development Corporation (EDC) has proposed the reconstruction of Greenwich Street between Hubert and Chambers Streets in Lower Manhattan. (See Fig. 1) The roadway would be narrowed, and the western sidewalk would be correspondingly widened. In addition, resurfacing and landscaping will be performed. Activities which will cause subsurface disturbance include the replacement of a water main between Chambers and North Moore Streets, sewer and catch basin replacement, hydrant replacement and the removal of some of the subsurface remains of the Greenwich Street trolley line.

Preliminary Archaeological Assessment

In order to determine the potential effects of the proposed street reconstruction project on any extant archaeological resources located in the impact area, a documentary study: "Greenwich Street Reconstruction: Preliminary Archaeological Assessment" was prepared by Historical Perspectives, Inc. (Historical Perspectives 1998). This report addressed the concerns of the New York City Landmarks Preservation Commission (LPC) that there is "the potential for the recovery of remains from 18th and 19th Century occupation on the project site" (LPC 3/10/98).

The preliminary assessment report concluded that the vast majority of the project corridor roadbed "lacks archaeological potential in most resource types due to a combination of extensive disturbance and lack of initial deposition since it has historically been used almost exclusively as a transportation artery." (Historical Perspectives 1998:5).

According to the proposed construction plans, as explained by an engineer of the RBA group, only two sections of the sidewalk will be impacted by more than a few inches below the existing surface. Of these two areas, only the sidewalk area between Chambers and Reade Streets, on the east side of Greenwich Street, was considered to have archaeological potential as well as little or no subsurface disturbance subsequent to deposition, i.e., disturbance which might have adversely impacted the integrity of potential archaeological resources.

Phase 1A Study

A Phase 1A study of the sidewalk area between Chambers and Reade Streets was recommended, with particular emphasis on the potential for 18th-century defense system remains, as well as the possibility of other types of land use during the 18th and 19th centuries (Historical Perspectives 1998:6).

Therefore, the Phase 1A study has been conducted to address LPC's original concerns that there is potential for the recovery of archaeological remains from the 18th- and 19th-century site occupations. However, the project site is now much reduced in area from the original, and consists only of the sidewalk on the eastern side of Greenwich Street, between Chambers and Reade Streets, an area approximately 15 feet wide, and 193 feet long. In this area, henceforth known as the project site, Greenwich Street reconstruction will entail the laying of a water main beneath the current sidewalk, eight feet east of the Greenwich Street roadbed. Installation will require the excavation of a trench approximately 3 feet wide and 3 feet deep from the Chambers Street roadbed to the Reade Street Roadbed. (See Fig. 2)

The project site, in the section of Manhattan now known as Tribeca, lies on the east side of the Greenwich Street roadbed, and is bounded on the east by Lots 15 and 18 of Block 140,. The northern and southern boundaries are the Reade and Chambers Street roadbeds, respectively.

This report is based on documentary, cartographic and iconographic research carried out at the New York Public Library, the New-York Historical Society, the Municipal Archives, the Municipal Reference Library and the Department of Buildings. A site visit was made and a brief informant interview was carried out with the building manger of 303 Greenwich Street (7/10/98).

ENVIRONMENTAL SETTING

Before the filling in of the Hudson River shore and the residential/commercial development of the project site vicinity beginning at the end of the 18th century, the subject parcel was part of a large elevated area which overlooked the Hudson, and the city to the south. The 1767 Ratzer map clearly shows a long ridge which formed the original shore of the river (and formed a natural roadbed for part Greenwich Street), extending southward below Vesey Street (about 1,700 feet south of the project site) and northward beyond Harrison Street (about 1,000 feet north of the project site). (See Fig. 8)

An examination of 18th-century maps, as well as Viele's "Topographical Atlas" (Viele 1874), which depict pre-development topography, show that the Hudson's high water mark was formerly on the west side of Greenwich Street, only 180 feet west of the project site. The high ground sloped downward northeast of Reade Street, where it bordered an arm of the Cripplebush Swamp, an extensive marshy tract which began north of current Duane Street, only 300 feet northeast of the project site, and drained into the Hudson further north. (See Figs. 8, 9 and 13)

Samuel Holland's plan for future fortifications in the area, carefully depicts the commanding view that the project site and its vicinity had over the lowlands to the north and over the river to the west. (See Fig. 5) However, to suggest that the project area was a flat, plateau-like region, would be incorrect. The c.1763 "Howdell-Canot View," which depicts the project area from the north, clearly shows that the area was not an elevated area of even terrain, but was a collection of numerous smaller hills and ridges, with somewhat depressed areas in between. (See Fig. 6) Some sense of this is provided by the "scalloped" edge of the hills that Holland, Viele and others draw along and north of Reade Street. Unfortunately, most maps tend to show this detail only beyond Reade Street. (See Figs. 5, 9 and 13)

New York's urban developers generally took little note of existing topographical features, truncating hills and filling in marshes and valleys to create a generally uniform, level area for the laying out of a street grid and the construction of buildings. An observation from 1828 refers to the drained Cripplebush Swamp as the "fresh water pond," and reports that "several large hills or mounds of earth that environed the pond . . . have all been leveled, and the ground thrown into the ponds" (Stokes 1926:1671 1828). However, not only are these episodes of truncation and filling imprecisely located, but by 1828, the project site and its surrounding blocks had already been laid out and urbanized for over three decades. At the end of the 18th century, references appear regarding the "filling up" and "raising" of sections of Greenwich Street (Stokes 1926:1382), as well as orders to "dig out" Chambers and Reade Streets (Stokes 1926:1288), but unfortunately, the nature and location of this work is unclear.

Current street corner elevations provided by the current Sanborn atlas show evidence of the pre-development contours in the project area, and indicate that some of the natural contours were smoothed and extreme elevations eliminated. Elevations along Greenwich Street decline very gradually to the north and south from 12.2 feet (above sea level) at Chambers Street to 11.8 feet at Reade and Duane Streets and 11.11 feet at Warren Street. As expected, elevations decline more precipitously toward the Hudson, dropping to 4 feet along the made land of present West Street. To the northeast, elevations increase to between 18 and 22 feet, although Chambers Street is still elevated (now two to three feet) above Reade and Warren. Not coincidentally, Viele depicts a small hill on Chambers, east of West Broadway. (See Fig. 13) Also, the elevation drop from 18.10 on Reade and Hudson Streets to 14.10 feet at Hudson and Duane Streets, appears to be evidence of the former marsh, now filled in (Sanborn 1998). (See Fig. 2).

PREHISTORIC PERIOD

As described in the preceding section, before urban development and filling episodes along the river shore, the study site was in an area of high ground, with a broad view of the nearby Cripplebush Swamp to the northeast, and the Hudson River to the west.

There are few recorded prehistoric archaeological sites in the vicinity of the project site, possibly because they were destroyed during the area's early (1790s) urban development. Archaeologist R. P. Bolton locates the closest native village, called Werpoes, approximately 2,300 feet to the southeast, in the vicinity of City Hall (Bolton 1934:133). Neither Grumet nor Parker record any archaeological sites or native place names closer than Bolton's Werpoes (Grumet 1981:68; Parker 1920:626).

Although prehistoric man preferred elevated sites near estuarine marsh systems, the project site had a number of shortcomings. Most importantly, the Hudson River and the Cripplebush Swamp are salty in these areas, and would not have served as a source of fresh water. Also, the elevated ridge along the river, although it would have provided an excellent lookout post, would have been exposed to prevailing northwest winds, making the site unattractive for year-round occupation. In addition, the study site was fairly isolated. The meadow/marshland and the Hudson River would have effectively blocked overland travel to and from all directions except south and east, which is probably why no recorded Indian trails enter this natural "dead end" (Grumet 1981:68).

These deficiencies would preclude the use of the study parcel as a major or permanent settlement site. However, exposure to winter winds and lack of fresh water do not preclude use as a processing site for plant and animal resources, or a temporary hunting camp. During hot summers, exposure to winds would have been considered an asset.

The study site once had the potential for having hosted buried cultural remains from the prehistoric period. However, due to the usually shallow nature of such deposits, three to four feet below the pre-development surface, they are usually extremely vulnerable to the ravages of historical period construction.

HISTORICAL PERIOD

European fur traders and fishermen probably visited New York Harbor and the lower reaches of the Hudson River as early as the 1590s, although officially, Henry Hudson and the crew of his ship, the *Halve Maen*, sailing under the Dutch flag, are the first recorded European visitors to the western shore of Manhattan.

The first known land grant to European settlers which included the project site occurred in 1636, when Governor-General Wouter van Twiller granted a farm of 62 acres to Swedish-born Roeloffe Jansen and his Dutch wife Annetje (Stokes 1928:146). The farm ran along the Hudson River shore roughly from present Canal Street on the north to just below Chambers Street on the south. To the east and north the roughly L-shaped farm was bordered by the Cripplebush Swamp, which began just north of Reade Street and east of Greenwich Street, only about 300 feet northeast of the study parcel (See Fig. 7, labelled "Harrison").

After Roeloffe Jansen's death in 1637, Annetje married Everardus Bogardus, New Amsterdam's Dutch Reformed minister, or *dominie*, and the farm was called the Dominie's Bouwery. The Jansen/Bogardus farmhouse stood on the Hudson River shore, west of the line of present Washington Street, between Jay and Harrison Streets (about 850 feet north of the project site). This high point of land, extending into the Hudson came to be known as Dominie's Hoek. There is no record of the construction of any structures on or near the subject parcel during this period. After Bogardus' death in 1647, and Annetje's death in 1663, her seven surviving children deeded the land to the English governor, Francis Lovelace in 1671, and the farm remained under the control of the subsequent governors until Lord Cornbury, leased it to the recently founded (1697) Trinity Church in 1700, and Queen Anne made it an official land grant in 1705. Thereafter, the property was known as the Queen's (later King's) or Trinity Church Farm (Stokes 1928:146-147).

The Trinity Church Farm, including the project site, was far outside New York City during the 17th and much of the 18th centuries. However, as the city expanded, and its older sections became more crowded, with more larger buildings and fewer open spaces, recreational areas in what was then the near countryside were developed. The 1735 Buchnerd plan shows a number of gardens and country taverns in the vicinity of the project site. On the west side of what was then the Road to Greenwich [Village] (west of present Greenwich Street at about Murray Street, approximately 800 feet southwest of the project site) was "Shairman's Meed House" More opulent were the gardens or resorts, clustered in the vicinity of the project area: Spring Garden, "John Ell. Gardin," the "Winyerd" and "Bolding" [Bowling] Green. The Bowling Green Garden,[1] established in 1733-34, at approximately Greenwich and Warren Streets, and extended as far north as present Chambers Street (which did

[1] Not the same Bowling Green as the current park at the southern tip of Manhattan.

not yet exist), possibly abutting the project site on the south (Cohen and Augustyn 1997:60-61). (See Fig. 3)

Bowling Green Garden later known as Vauxhall Garden, after a fashionable resort in London, faced the Hudson River and provided a park- or garden-like setting for patrons to stroll, converse, drink, eat, listen to music, view various entertainments, etc. (See Fig. 8) An advertisement of 1769, following a just-completed refurbishment, announced twice-weekly concerts; a "long room," suitable for holding a ball or a dinner; the sale of tickets for an impending fireworks display with musical accompaniment; as well as providing a list of available refreshments: coffee, tea, hot rolls, cakes, wines and liquors (Singleton 1902:369-371). Contemporary maps generally show a building or house (the "long hall"?) in the gardens, at different locations. The Grim plan, seems to place it along the south side of what was to become Chambers Street, possibly abutting the southern edge of the project site. Subsequent maps which also depict Chambers Street show a structure on the south side of the garden, along Warren Street. (See Fig. 8) Records confirm that the house stood along the north side of Warren Street, within 60 feet of the project site (Stokes 1922:829). It is possible that this was a later (post 1745), more permanent structure. (See Fig. 6)

During a Stamp Act riot in 1765, Vauxhall was attacked by a mob which destroyed the residence on the property, which had been leased for three years to the unpopular Major James of the Royal Regiment of Artillery. The rioters destroyed everything in the building, down to the doors, the window frames and the summer houses in the garden, leaving behind a "mere shell." Unfortunately for the Major, a newspaper account reports that "he had obliged himself to return it in the like good order as he had received it " (Ibid. 371-372).

18th-Century Fortifications

In contrast to the pleasurable pursuits normally sought in Vauxhall was the threat of attack from the French and their Indian allies. New York City's strategic position near the center of England's North American colonies, and its control of the mouth of the Hudson River, made it a valuable prize, and from the time of King William's War in 1689, until the French were finally defeated in the French and Indian War in 1763, the grim specter of enemy attack hung over the city like a storm cloud.

As an elevated location overlooking the Hudson and the swamp to the north and city to the south, the project site vicinity was strategically important. At the outbreak of King George's War (1744-48), the Provincial Assembly in 1745 voted £8,000 to build a line of palisades with blockhouses from the East River to the Hudson. The line of palisades zigzagged across Manhattan, following the contours of the high ground, and in the vicinity of the project area, the location of the wall corresponded ***roughly*** to the line of Chambers Street.

Of the six maps that show the location of the palisade (Holland, two by Grim, three by Maerschalck), the fortification either runs through the project site just north of Chambers Street, or it runs through the future location of Chambers Street itself. The two Grim maps tend to depict the more southerly location, and since they were drawn from memory in 1813, their accuracy is questionable where they diverge from other maps. For example, the Grim plans are the only maps to show the palisade as a straight line. (See Fig. 3) The three versions of the Maerschalck plan, based on the same 1754 survey, show the palisade location within the project site (Cohen and Augustyn 1997:64-65; Maerschalck 1755).[2] (See Fig. 4) Finally, and unfortunately, the Holland map (1757) shows only the palisade, and cannot be related to the nascent street grid. (See Fig. 5)

Grim also provides a valuable description of the wall's construction:

> Those Palisades were made of cedar logs, about fourteen feet long and nine or ten inches in diameter, were placed in a trench, dug in the ground for that purpose, three feet deep, with loopholes in the same, for musketry, and a breastwork four feet high and four feet in width. In this line of Palisades were three Block-houses, about thirty feet square and ten feet high, with six port holes for cannon. These Block-houses were made with logs, of eighteen inches diameter. They were placed thus: the one was in (now) Pearl Street . . . the second in the rear of the Poor-house, and the other between Church and Chapel Streets. There were four large gates, or outlets to the city, the one at the head of Pearl Street, Chatham Street, Broadway and Greenwich Street (Stokes 1922:270-271).

The Grim's depiction of the Greenwich Street gate shows what appears to be the framing or support for the gate -- a pair of thicker terminals where the sections of the palisade end. A more substantial anchorage would have been necessary there, due not only to the movement of the gates themselves, but also because the gates were the most vulnerable parts of the palisade. Grim drew these thickened terminals on each side of Greenwich Street, extending slightly north and south of the wall, the eastern side approximately on the project site location (See Fig. Grim) Other maps depict a simple break in a thick line, with no additional detail. (See Figs. Holl and Maersch)

Although only three blockhouses are specified in Grim's description, he, as well as professional cartographers Samuel Holland (1757) and Francis Maerschalck (1754), also show a structure on the west side of Greenwich Street, within the

[2] The 1763 Maerschalck "Reduced" Plan, used as Fig. 4, erroneously shows "Elias Degrushe's Ropewalk" running across Greenwich Street. The rope walk is shown in its correct location (running from Church Street to Broadway) on larger, more detailed versions of the map (Cohen and Augustyn 1997:65), and on Fig. 5 (not labelled).

gate. It probably served as a shelter for the guards who would have been stationed by the gate. Holland and Maerschalck also designate this building as a blockhouse. Traditionally, a blockhouse had two stories, and the upper story projected over the first, with openings from which the defenders could shoot. Grim describes "six port holes for cannon," and his dimensions of "about thirty feet square," must have meant about thirty feet to a side. (See Fig. 6)

At the conclusion of King George's War, in 1748, the fear of attack lifted somewhat, and the palisade was either permitted to deteriorate, or sections were removed. As William Smith wrote in his 1757 *History of the Province of New York*:

> During the late War a Line of Palisadoes was run from *Hudson's* to the East River, at the other End of the City, with Block-houses at small Distances. The Greater Part of these still remain as a Monument of our Folly, which cost the Province about 8,000£ (Stokes 1922:279).

The palisades and blockhouses "along the line of Chambers Street" were still standing in 1761, when they are mentioned in a mortgage (Stokes 1922:718). By 1767, the detailed Ratzer plan shows no sign of palisade, gate or blockhouses in the project area. The present routes of Greenwich, Chambers and Reade Streets were established by the time of this map, and the Vauxhall Gardens continued to operate on the block south of Chambers Street. (See Fig. 8)

Greenwich Street, originally the Road to Greenwich [Village], was the earliest of the project site streets to be completed. An ordinance passed by the Common Council in 1729, stipulated that it be laid out at the high water mark, with the future Washington Street to the west at the low water mark (Gerard 1872:218). The high water mark is still visible as a wavy dotted line on current real estate maps, and lies about 180 feet west of the project site. The elevated ridge very near the Hudson shore, visible on a number of early maps (See e.g. Fig. 3) provided a natural roadbed for Greenwich Street, which in the vicinity of the project area began only four blocks to the south (about 1,400 feet) at current Barclay Street (from whence it went to Broadway), and meandered northward following the existing topography.

During the 1760s and 1770s Greenwich Street was straightened, more closely approximating its current path. Maerschalck in 1763 eliminated the road entirely, while Montresor, in his survey of 1766 drew a fairly straight road north of Warren Street. By 1767, the Ratzer map sharply defined the east side of Greenwich Street (which would include the project site), while the indistinct western edge blends into the ridge along the shoreline. (See Fig. 8) and by the time of the

Holland Map of 1776, Greenwich Street in the project area looked like its modern incarnation (Cohen and Augustyn 1997:83). (Compare Figs. 4, 7 and 8)

Although according to the "Map of Street Openings and Closings," Greenwich Street was not officially regulated and opened until 1784, the street was already widened to its present width of 66 feet in 1772, northward from the "corner of the north side of Chambers Street" through the entire Trinity Church property, an area which included the entire project site (Stokes 1922:829). The widening probably began at Chambers Street because above Chambers there were no structures to remove. (See Fig. 8) It is not clear what this street widening and "regulating" entailed.

Chambers and Reade Streets were not released to the City of New York by Trinity Church Corporation until 1761, and do not appear on paper until 1767 (See Fig. 8), and even then were paper streets, since the Holland Map of 1776 does not show them extending west of current Church Street (Cohen and Augustyn 1997:83). Chambers Street was originally 40 feet wide, and although the land leases granted since 1778 provided for a 65-foot-wide street, according to a 1784 letter written by Anthony Van Dam (first Secretary of New York City's Chamber of Commerce) in some places it was still necessary to remove buildings which were in the roadbed. Van Dam proposed setting aside ten to twelve feet on each side of the road for pedestrians, leaving the 40- to 45-foot width for carts, the roadbed arched in the center (Stokes 1926:1,186). The current Sanborn atlas shows Chambers Street at Greenwich Street to be 60 feet wide.

Less information is available on Reade Street, drawn in the current Sanborn as 65 feet wide. (See Fig. 2) It is likely that Reade was 40 feet wide like neighboring Chambers Street. For both Chambers and Reade Streets, it is unclear when the streets were widened, although this must have occurred before c.1850, when buildings were constructed occupying the entire street frontages of the lots abutting the project area. The size of the lots has not been altered since.

By the time of the Revolutionary War, New York City had grown sufficiently that Chambers Street was no longer the front line of defense, and the entrenchments and fortifications running across Manhattan Island from the Hudson to the East River began farther north, at present Harrison Street. However, after the British occupied the island, they continued the process of its fortification which the Americans had begun in 1775-76. Although the British forces held the island securely from 1776 to 1783, they prepared themselves for an American or French attack. The city was particularly vulnerable during the winter of 1780, when the Hudson froze, and an army could have easily marched across the river (Augustyn and Cohen 1997:88). The project area, on high ground along the Hudson, was once again considered strategic for the city's protection.

An entrenchment, probably a combination of trenches and palisades, cut across Greenwich Street, south of Chambers Street effectively shutting off traffic, and the fortified line extended up the west side of Greenwich Street, ending at a five-sided battery with six embrasures (open on the Greenwich Street side) at Duane Street, between Greenwich and Washington Streets. (See Fig. 10, labelled "c") Although many fortifications had been constructed by the American forces, the Holland Plan of 1776, which postdates the British capture of Manhattan Island, does not depict this entrenchment and battery. They appear only on the British Head Quarters Map and the Hills Plan, both of 1782 (Ibid.:83). On the other hand, the "References" printed on the British Head Quarters Map records that the batteries marked "c" were "first thrown up by the Rebels, and afterwards improved by the King's Troops," and Hills appears to indicate that the entrenchment was originally American work, although his system of distinguishing between American and British fortifications may not reproduce as well as the rest of his map. (See Fig. 9)

I. N. Phelps Stokes, in the maps from his *Iconography of Manhattan Island*, draws the entrenchment running diagonally across current Greenwich Street, and apparently running through the southern end of the project site (Stokes 1928:Pl.64). The existing historical maps clearly show the entrenchment confined to the west side of the street, between Chambers and Reade, and although it is most probable that British troops camped or had shelters on the adjacent property, the works themselves were not on the project site. (See Figs. 9 and 10) The entrenchment was removed sometime after the end of British occupation, in 1783, and appear on no subsequent maps.

Late 18th- and 19th-Century Urban Development

Following the war, and with Greenwich, Chambers and Reade Streets opened, Trinity Church Corporation divided the blocks in the project area into building lots and began to sell off the parcels. Block 140, adjacent to the project site on the east, was already built up by 1797 (Taylor Roberts 1797). Beginning with 169 or 167 Chambers Street (less than 100 feet to the east of the project site), which was purchased by Agnes Stuart in 1828, the western end of the block, which abuts the project site to the east, was gradually acquired by the Stuart family, who established their sugar refinery there.

The appearance of the structures along the east side of Greenwich Street and the project site, is not precisely known, because the earliest real estate tax descriptions and detailed atlas renderings do not appear before they were removed for the Stuart sugar refinery by c1850. Real estate tax records indicate that there were probably seven lots with approximately 25-foot frontages on Greenwich and the project site sidewalk. The lots were probably occupied by

six or seven small frame buildings, similar to those which appear in the 1809 watercolor showing the west side of Greenwich Street at the corner of Warren Street. These residences, some containing shops, all have stoops extending out onto the sidewalk, which might have been an important household activity area. Another in the same series, showing Greenwich Street at Dey Street (about 2,000 feet south of the project site) in 1810, also shows similar buildings dating from the late 1780s, with partially aboveground basements which could be entered through doors built into the sidewalk (Dunshee 1952:66). (See Fig. 11)

Kinloch Stuart, husband of Agnes Stuart, was a confectioner, and by 1821 city directories list him as having a shop in what was probably a similar frame building at the corner of Greenwich and Chambers Streets (Directory 1821). Stuart's heirs appear on this and the adjacent lots in directories through 1882. By the time of the 1849 directory (Directory 1849 & ff.), the family had developed into, or at least redefined themselves as "manufacturers of candy and sugar refiners," and subsequent directories would identify them as sugar refiners only.

Kinloch's sons, Alexander and Robert, ran their sugar refinery in buildings on the western end of Block 140, i.e., Greenwich Street between Chambers and Reade Streets (abutting the project site on the east) until Robert's death in 1882. The first clear description of these structures comes from the Perris real estate maps of the 1850s. By that time the lots adjacent to the project site were covered with the Stuart's brick factory buildings – the northern half, Lot 18 (309-313 Greenwich Street), hosted a nine-story structure, and the southern half, Lot 15 (303-307 Greenwich Street), contained five-story buildings, all built right up to the western lot line, abutting the Greenwich Street sidewalk (Perris 1855:3; 1862:8). (See Fig. 12) In these and similar buildings, sugar makers and refiners like the Stuarts would take imported molasses or treacle, syrup derived from raw sugarcane, and continue the refining process to produce solid sugar of various grades (Mintz 1985:22).

After Robert Stuart's death, the structural configuration of the buildings remained the same., The nine-story structure on the northern half of Block 140 (Lot 18), was converted into a warehouse, labelled in atlases as the Greenwich Warehouse Co. in 1899 and 1908 (Bromley 1899; 1908), Heermances Storage in 1917 and 1950 (Hyde 1917; 1950). In 1951 the building was razed, and a parking lot with gas station replaced it. However, prior to this, the owner applied for permission to remove the sidewalk surrounding the lot, part of which corresponds to the northern half of the project site. This was necessary because the then existing basement of the Lot 18 building extended beneath the sidewalk from Lot 18 to two feet beyond the curb into the current roadbed along the lot's frontage with Greenwich and Reade Streets. The entire vault, which extended at least eight feet below the current sidewalk surface, was "to be filled with clean, wetted, well-tamped earth to sidewalk level" (Bromley 1959; Block 140 Lot 18,

Demolition Permit 71-1951). An apartment building was built on Lot 18 in 1989 (Willensky and White 1988:51).

The southern half of the property, Lot 15, was purchased by John S. Martin, who leased the five-story building to Charles K. Sherwood, a dealer in pickles, during the first decade of the 20th century (Hyde 1907; Directory 1909-1911). The property went through various owners, and its usage is unclear, up to its demolition in 1962, when it was replaced by a parking lot. No sidewalk vault was noted in the building records (Block 140 Lot 15, Demolition 430-1962; 400-1962).

An eleven-story apartment building replaced the parking lot on Lots 15 in 1987. Although the structure has a basement, a site visit (7/10/98), as well as a short interview with the building manager of 303 Greenwich Street, determined that the basement of the current building does not extend beyond the lot line, and that at present there is no sidewalk vault beneath the project site section adjacent to Lot 15 (Willensky and White 1988:51).

CONCLUSIONS AND RECOMMENDATIONS

Prehistoric Occupation

Although the project site did not present an optimal setting for prehistoric human occupation, the elevated position and nearby marshland may have proven attractive for the establishment of temporary camps and processing sites. However, prehistoric cultural deposits are normally shallowly buried, usually within three feet of the pre-development surface. As a result they would have been extremely vulnerable to a variety of well-documented disturbances from the construction of the various fortifications and entrenchments, and to negative impacts from subsequent residential and commercial construction and deposition.

Therefore, NO FURTHER RESEARCH OR INVESTIGATION regarding prehistoric archaeological resources is recommended.

Historical Occupation

Documentary research has identified three separate occupation episodes during the historical period for which the project site may be potentially sensitive. These have been discussed in more detail in the previous section:

Palisades and City Gate 1745 to c.1765
The palisaded wall and the Greenwich Street gate were built in 1745 for defense against French and Indian attack, and existed until approximately 1765. According to early maps, this fortification cut across present Greenwich Street near Chambers Street, and consisted of ten-inch logs buried three feet deep. Artifacts for construction and repair, such as tools and nails, as well as other contemporary refuse would be expected in the postholes, and since the gate and the adjacent blockhouse (on the west side of Greenwich Street) would probably have been continuously-manned while fear of attack existed, surface midden scatter may have built up during the early portion of the approximately 20 years of the gates existence. Not only military artifacts would be expected, but also buttons, buckle fragments, gaming pieces, cooking vessels and faunal remains might be present.

Revolutionary War Entrenchment c.1776 to c.1783
Although the American-built and British-improved entrenchment and fortification line was constructed along the Hudson River shore on the opposite side of Greenwich Street (about 50 feet west of the project site), it is likely that the soldiers who manned the entrenchment and nearby battery would have constructed structures for shelter and storage adjacent to their positions. The soldiers in the nearby entrenchment would also have left surface midden scatter in the vicinity.

As with the palisade and gate described above, a wide range of artifacts would be expected, from weapons, weapons fittings, ammunition to personal items, such as buttons, belt and shoe buckles; items for food preparation and storage – cooking vessels, glass containers, faunal remains; and artifacts for amusement, such as gaming pieces and marbles.

Domestic/Commercial Remains c.1797 to c.1850
Until the construction of the Stuart Sugar refinery in c. 1850, there were seven lots with six or seven small buildings on Greenwich Street, abutting the project site sidewalk. As was typical before 1850, some of these buildings would have been strictly residences, while others, particularly at the corners, would have been used both as homes and shops. Kinloch Stuart had a shop here at the corner of Chambers and Greenwich by 1821.

Although no views have been found of the project site and adjacent buildings from this period, two watercolors showing the streetscape east side of Greenwich Street, on nearby blocks, show not only stoops built out beyond the property lines, but also basement entrances dug into the sidewalk. Builders trenches from these constructions may still exist in the project site, as well as domestic and commercial artifacts deposited in them at the time of construction, and prior to their demolition or filling.

Disturbance

As described at the end of the previous section, the major, recorded, subsurface disturbance to the project site was the construction of the sidewalk vault beneath the project site pavement adjacent to Lot 18. The excavation for this basement, to a depth of eight feet or more below the current surface, would have destroyed any archaeological deposits which might have survived in the northern 99 feet of the project site, from the northern lot line of Lot 15 to the Reade Street roadbed.

The remaining southern "half" (94 feet) of the project site, although unaffected by the construction of this sidewalk vault, probably experienced some regrading at the end of the 18th century. This may have impacted the buried remains from the 18th-century fortifications on and near the project site, but the extent of this disturbance remains unclear. Domestic/commercial remains from the adjacent houses, extant for the first half of the 19th century, postdated this regrading, and would have been unaffected by it. However, each subsequent land use with which we are concerned may have adversely impacted the archaeological evidence of the previous occupation. Finally, it should be noted that although though there are municipal utilities, namely a fire hydrant, at the curb in the southern section of the project site (See Fig. 2) the area of construction impact for the proposed project is seven feet to the east of the curb.

The record of post-depositional disturbance is neither extensive nor complete enough to remove the southern part of the project site from further archaeological consideration. Therefore, the project site must be considered potentially sensitive for archaeological deposits relating to the c.1745-1765 palisades and gate, the c.1776-1783 entrenchments, and domestic/commercial remains from the adjacent buildings for the period c.1797-1850.

Recommendations

The area of potential archaeological sensitivity is quite small – approximately 15 feet by 94 feet – and the area of the three-foot-deep trench necessary for the proposed water main installation is even smaller – 3 feet by 94 feet. Potential archaeological deposits would probably lie within four feet of the surface. If agreed to by the review agency, a construction-monitoring plan – with authority to halt machinery for salvage/documention purposes temporarily vested in the archaeological supervisor – would be an appropriate work effort on a such a constricted site. When construction plans are finalized, a specific monitoring protocol for archaeological resources would be developed and submitted for approval by the review agency.

BIBLIOGRAPHY

Bolton, Reginald Pelham

1916 *Relics of the Revolution.* Published by the author, New York.

1934 *Indian Life of Long Ago in the City of New York.* Joseph Graham, New York.

Bridges, William

1807 "City of New York and Island of Manhattan as laid out by the Commissioners."

Bromley, G. W.

1899 *Atlas of the City of New York.* G. W. Bromley & Co., Philadelphia.

1908

1959

Cohen, Paul E. And Robert T. Augustyn

1997 *Manhattan in Maps 1527-1995.* Rizzoli, New York.

Colton, J. H.

1836 "Topographical Map of the City and County of New-York & the adjacent country." J. H. Colton & Co., New York.

Directory (New York City Directories)

1812-1890 Directories of names, including two street directories (1812 and 1851), published variously by Doggett, Elliot, Longworth and Trow.

Dunshee, Kenneth Holcomb

1952 *As You Pass By.* Hastings House Publishers, New York.

Grim, D.

1813 "A Plan of the City and Environs of New York as They Were in the Years 1742_1743 and 1744." D. G., New York.

c1820? "Plan of the City of New York (within the Palisades which were erected in the year 1745) . . . showing the progress and extent of the Great Fire [1776]."

Gerard, J. W. Jr.

1872 *A Treatise on the Title of the Corporation and Others to the Streets, Wharves, Piers, Parks, Ferries, &c.* Poole and McLauchlan, New York.

Grumet, Robert Steven
1981 *Native American Place Names in New York City*. Museum of the City of New York, New York.

Hills, John
1785 "Plan of the City of New-York and its Environs." Surveyed in 1782. Reprinted by G. Hayward for D. T. Valentine's *Manual*, 1857.

Historical Perspectives, Inc.
1998 "Greenwich Street Reconstruction: Preliminary Archaeological Assessment." (April). Prepared for Philip Habib & Associates, New York. Historical Perspectives, Inc., Westport, CT.

Holland, Samuel
1757 "A Plan of the Northeast Environs of the City of New-York."

Hyde, E. Belcher
1907 *Atlas of the Borough of Manhattan*. E. B. Hyde, New York.
1917
1950

Johnston, Henry Phelps
1971 *The Campaign of 1776 around New York and Brooklyn*. Reprint of 1878 edition. DaCapo Press, New York.

Kouwenhoven, John A.
1953 *The Columbia Historical Portrait of New York*. Doubleday, Garden City, NY.

Lockwood, Charles
1976 *Manhattan Moves Uptown*. Barnes and Noble, New York.

Maerschalck, Francis
1755 "Plan of the City of New York from an actual Survey." Surveyed in 1754.

1763 "A Plan of the City of New York, Reduced from an actual Survey." Based on a survey of 1754.

Mintz, Sidney W.
1985 *Sweetness and Power: the Place of Sugar in Modern History*. Viking Penguin, New York.

Montresor, John
1766 "A Plan of the City of New-York & its Environs." Surveyed in 1766.

Demolition Permit 71-1951). An apartment building was built on Lot 18 in 1989 (Willensky and White 1988:51).

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BIBLIOGRAPHY

Bolton, Reginald Pelham

1916 *Relics of the Revolution*. Published by the author, New York.

1934 *Indian Life of Long Ago in the City of New York*. Joseph Graham, New York.

Bridges, William

1807 "City of New York and Island of Manhattan as laid out by the Commissioners."

Bromley, G. W.

1899 *Atlas of the City of New York*. G. W. Bromley & Co., Philadelphia.

1908

1959

Cohen, Paul E. And Robert T. Augustyn

1997 *Manhattan in Maps 1527-1995*. Rizzoli, New York.

Colton, J. H.

1836 "Topographical Map of the City and County of New-York & the adjacent country." J. H. Colton & Co., New York.

Directory (New York City Directories)

1812-1890 Directories of names, including two street directories (1812 and 1851), published variously by Doggett, Elliot, Longworth and Trow.

Dunshee, Kenneth Holcomb

1952 *As You Pass By*. Hastings House Publishers, New York.

Grim, D.

1813 "A Plan of the City and Environs of New York as They Were in the Years 1742_1743 and 1744." D. G., New York.

c1820? "Plan of the City of New York (within the Palisades which were erected in the year 1745) . . . showing the progress and extent of the Great Fire [1776]."

Gerard, J. W. Jr.

1872 *A Treatise on the Title of the Corporation and Others to the Streets, Wharves, Piers, Parks, Ferries, &c.* Poole and McLauchlan, New York.

Parker, Arthur C.
1920 "The Archaeological History of New York," Part 2. *New York State Museum Bulletin*, Nos 237 & 238, September/October.

Perris, William
1855 *Maps of the City of New-York.* Perris, New York.
1857

Poppleton, Thomas H.
1817 "Plan of the City of New York." Prior & Dunning, New York.

Ratzer, Bernard
1767 "Plan of the City of New York." ("Ratzen" Plan) Surveyed in 1766 and 1767 (Map Division - New York Public Library).

Real Estate
1808-1871 New York City Real Estate Tax Assessments. Microfilm. Collection of the Municipal Archives, City of New York.

REDI-Sanborn
1989 *Manhattan Landbook.* REDI, New York.

Singleton, Esther
1902 *Social New York Under the Georges 1714-1776.* D. Appleton & Co., New York.

Stevens, B. F.
1900 "British Head Quarters Map." Reproduction of 1782 original.

Stokes, I. N. Phelps
1915 *The Iconography of Manhattan Island.* Vol. 1. 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.

Taylor, Benjamin and John Roberts
1797 "A New & Accurate Plan of the City of New York in the State of New York in North America."

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

Willensky, Elliot and Norval White
1988 *AIA Guide to New York City*. Harcourt Brace Jovanovich, New York.

Windwart, Heinrich
1877 "Map of Trinity Church Property Between Fulton and Christopher Strs. Broadway and Hudson River, and adjoining Estates." Depicts lot owners c1804. Farm Maps #6S (Map Division - New York Public Library).

Location Map
Figure 1

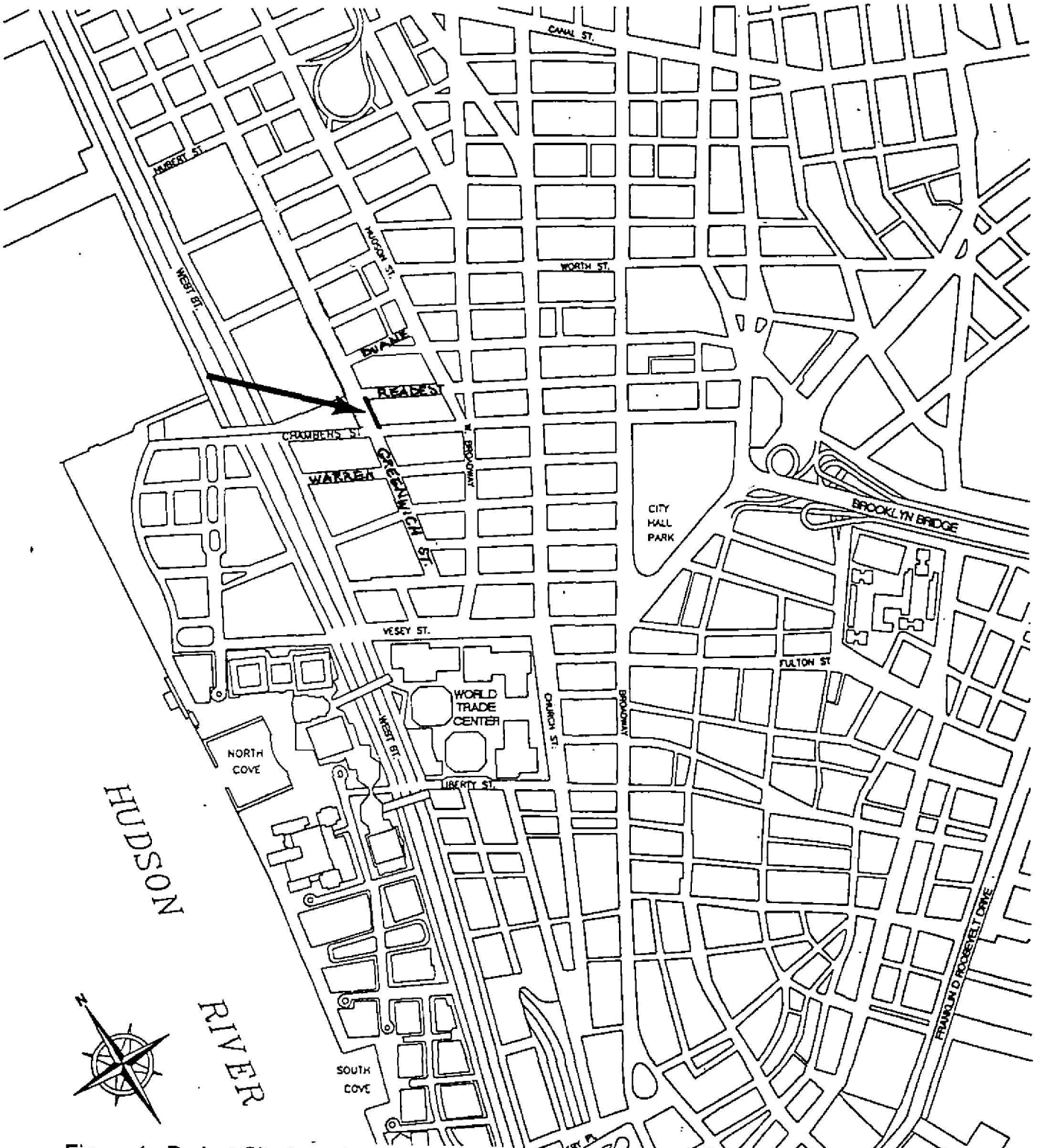


Figure 1. Project Site Location Map
(Arrow shows project site location)

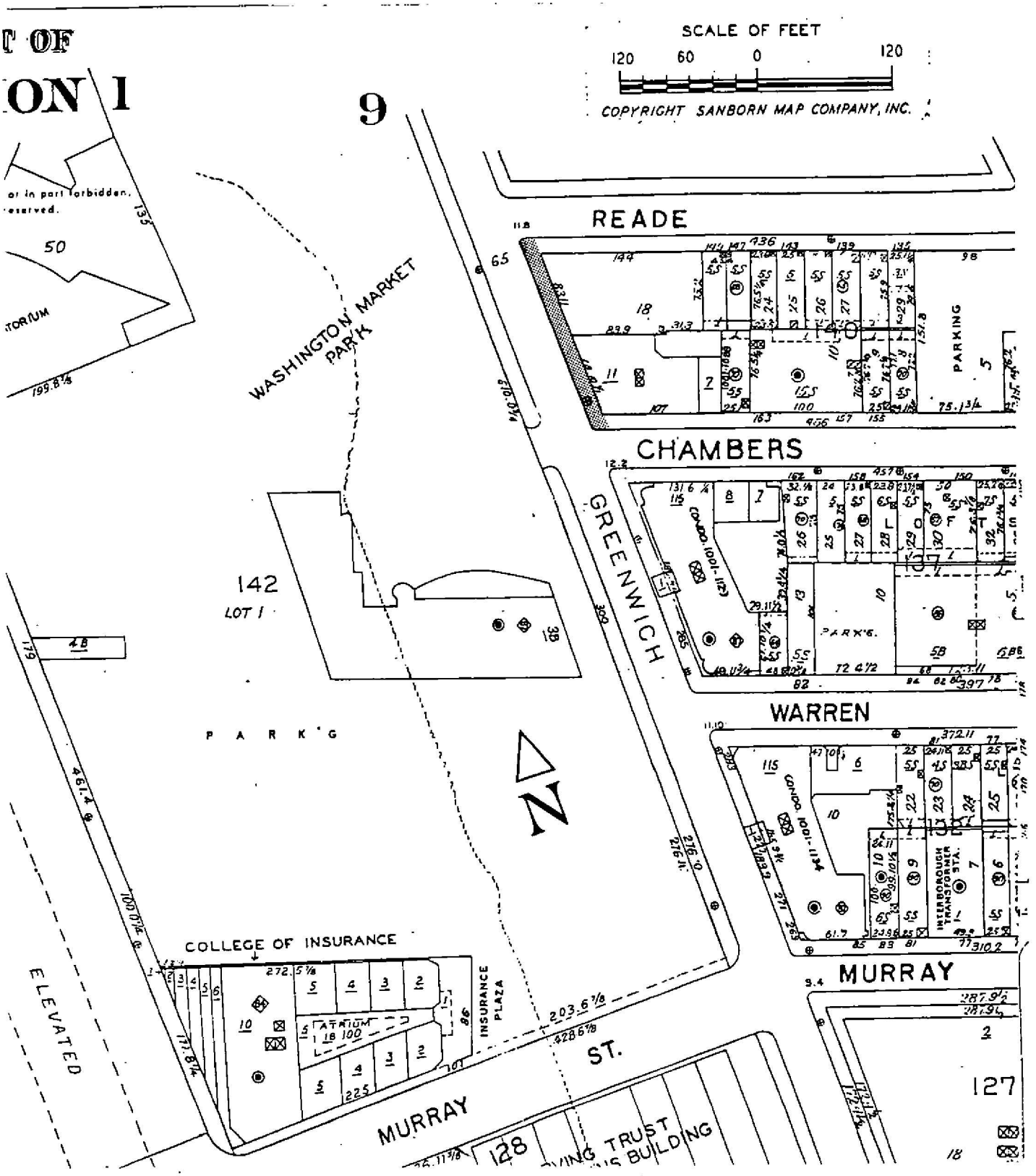
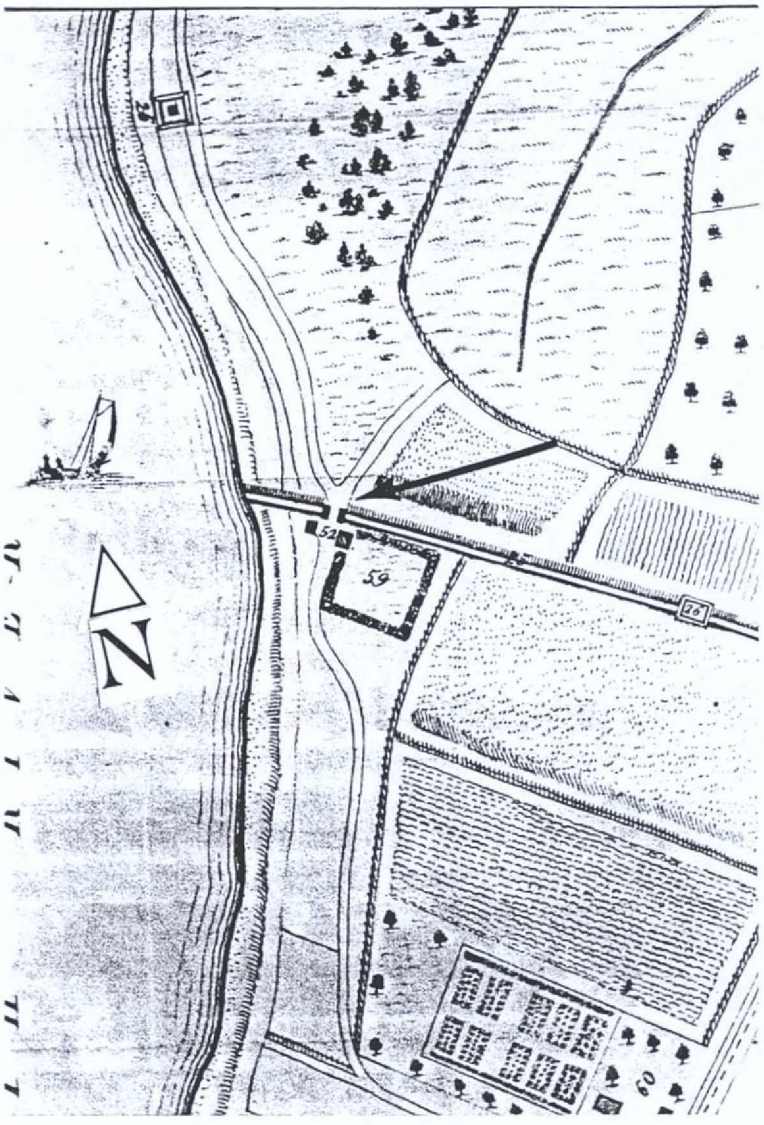


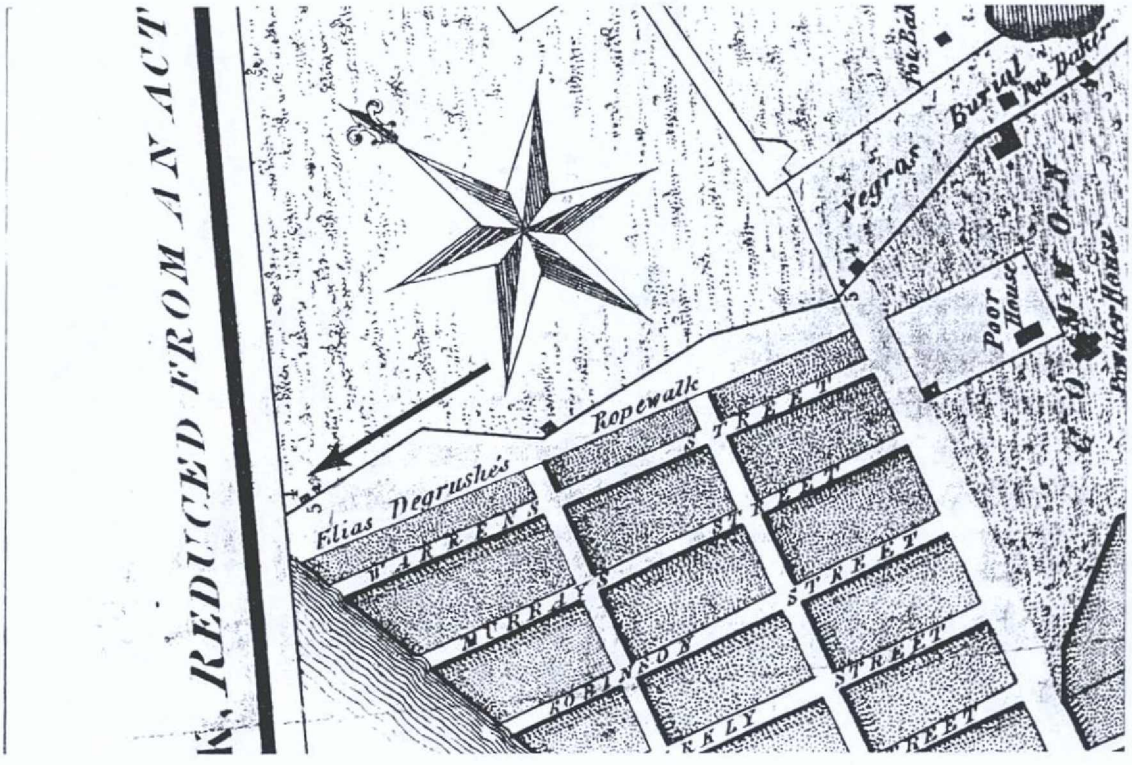
Figure 2. REDI-Sanborn, Real Estate Maps of New York, 1989

– Shaded area shows project site location



52. City Gates 59. Bowling Green

Figure 3. Grim, A Plan of the City and Environs of New York as They Were in the Years 1742_1743 and 1744
(Arrow shows project site location)



4. Block house 5. Gates

Figure 4. Maerschalck, A Plan of the City of New York, Reduced from an actual Survey. Surveyed in 1754.
(Arrow shows project site location)

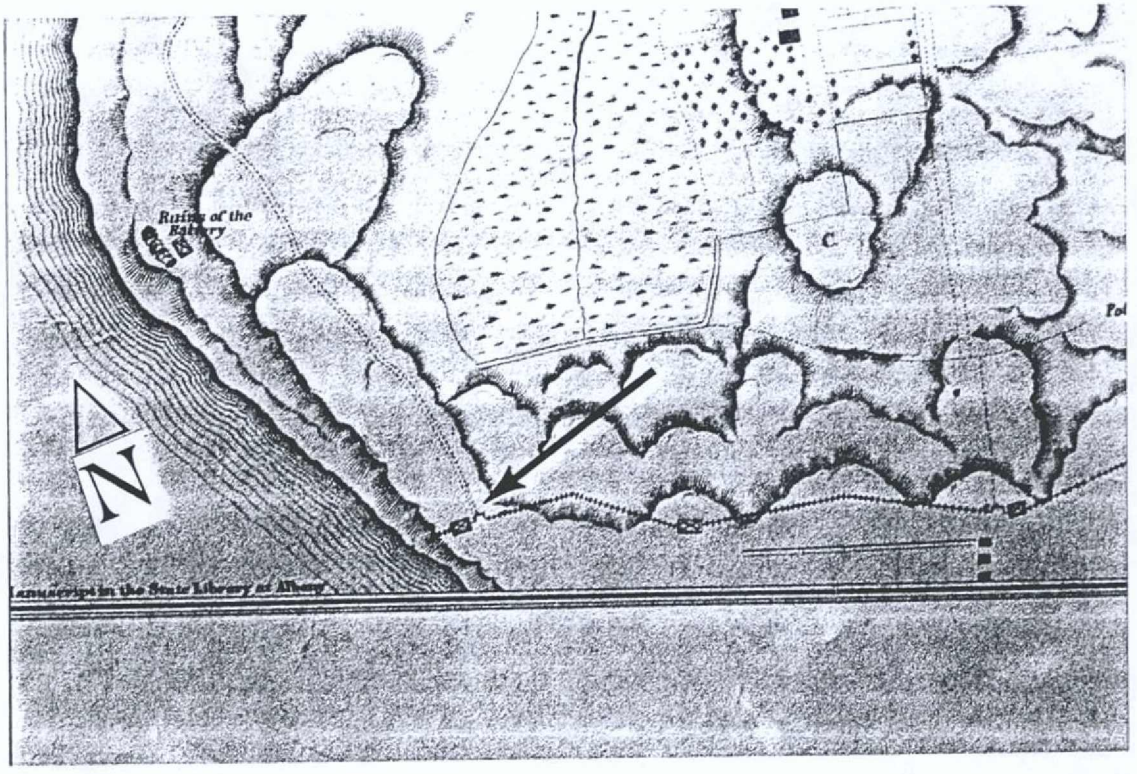


Figure 5. Holland, A Plan of the Northeast Environs of the City of New-York, 1757
(Arrow shows project site location)

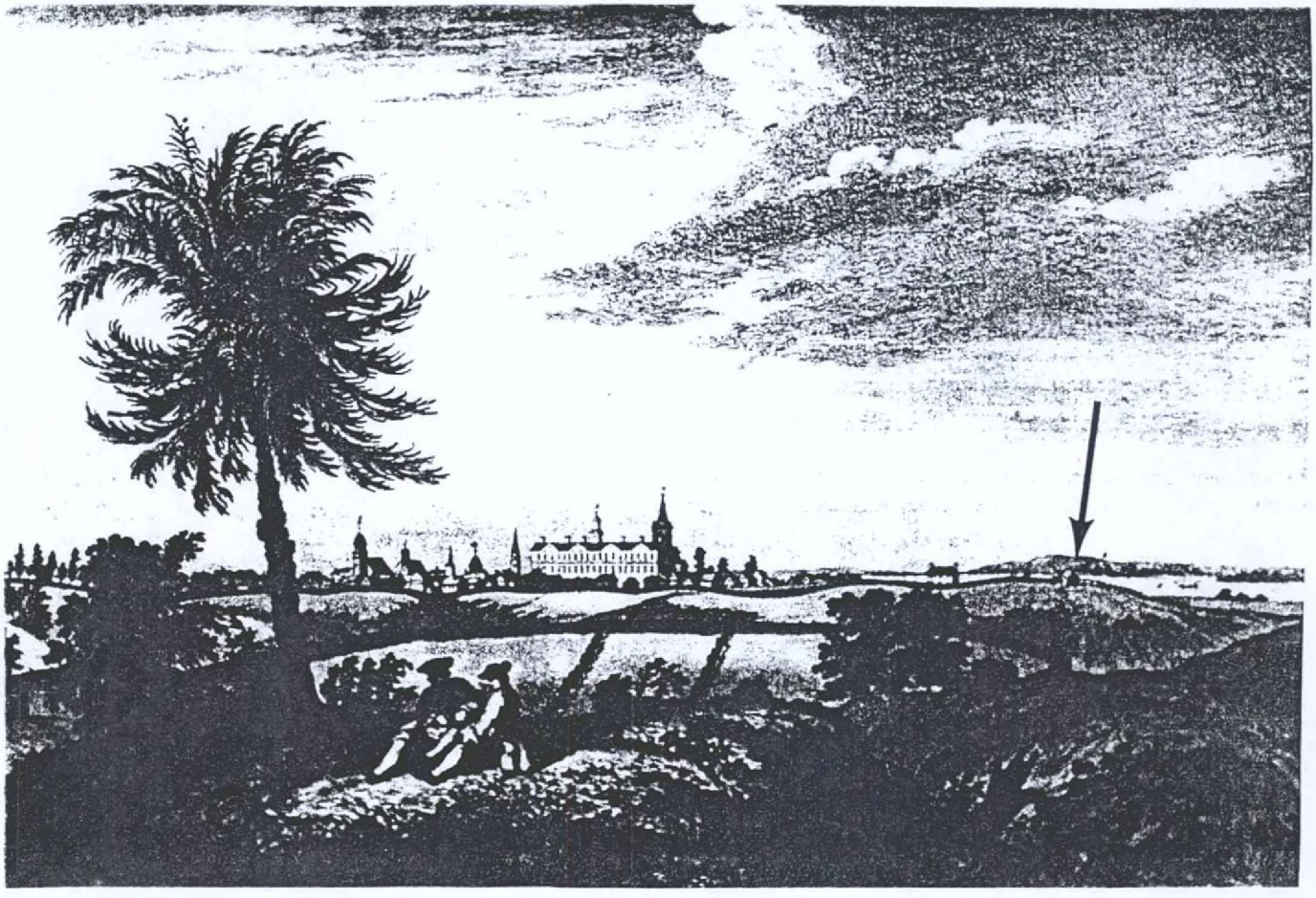


Figure 6. Howdell/Canot, South East View of the City of New York, c1763
published in 1768, from Kouwenhoven (1953:67).
View drawn from vicinity of current Hudson and Vestry Streets

Note: 1745 palisades with blockhouse and gate indicated by arrow. Large building to the left of blockhouse probably Vauxhall.

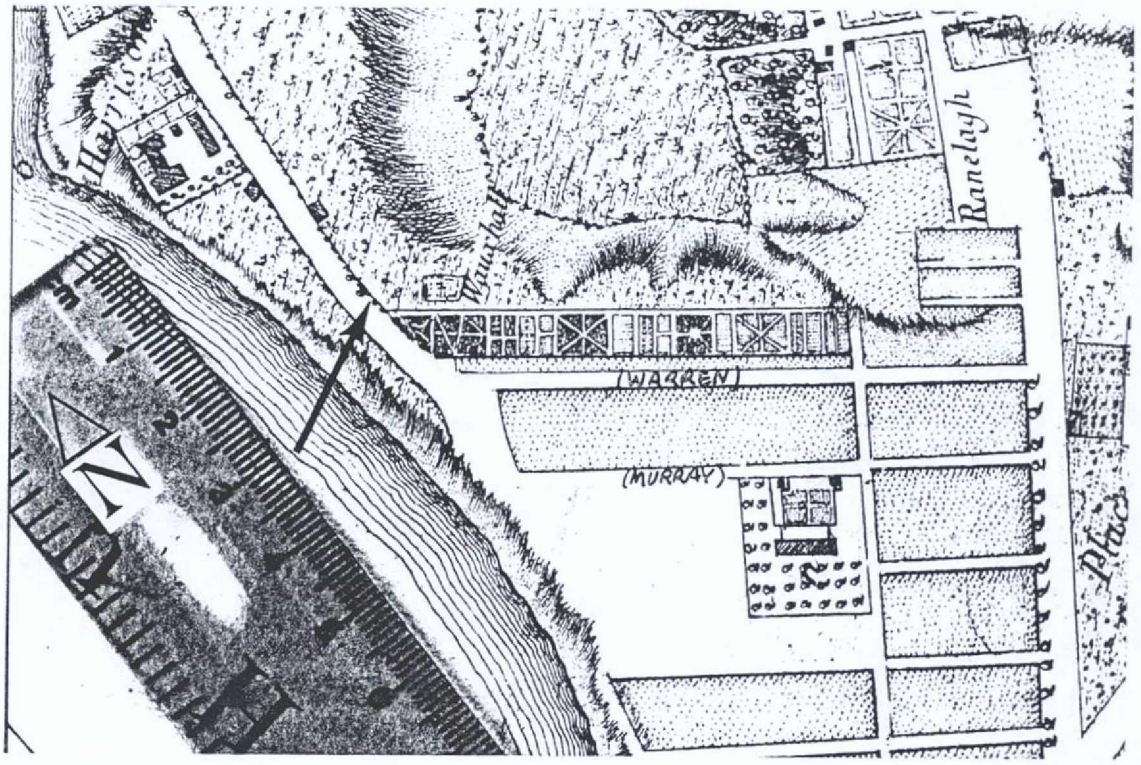


Figure 7. Montresor, A Plan of the City of New-York & its Environs,
Surveyed in 1766.
(Arrow shows project site location)

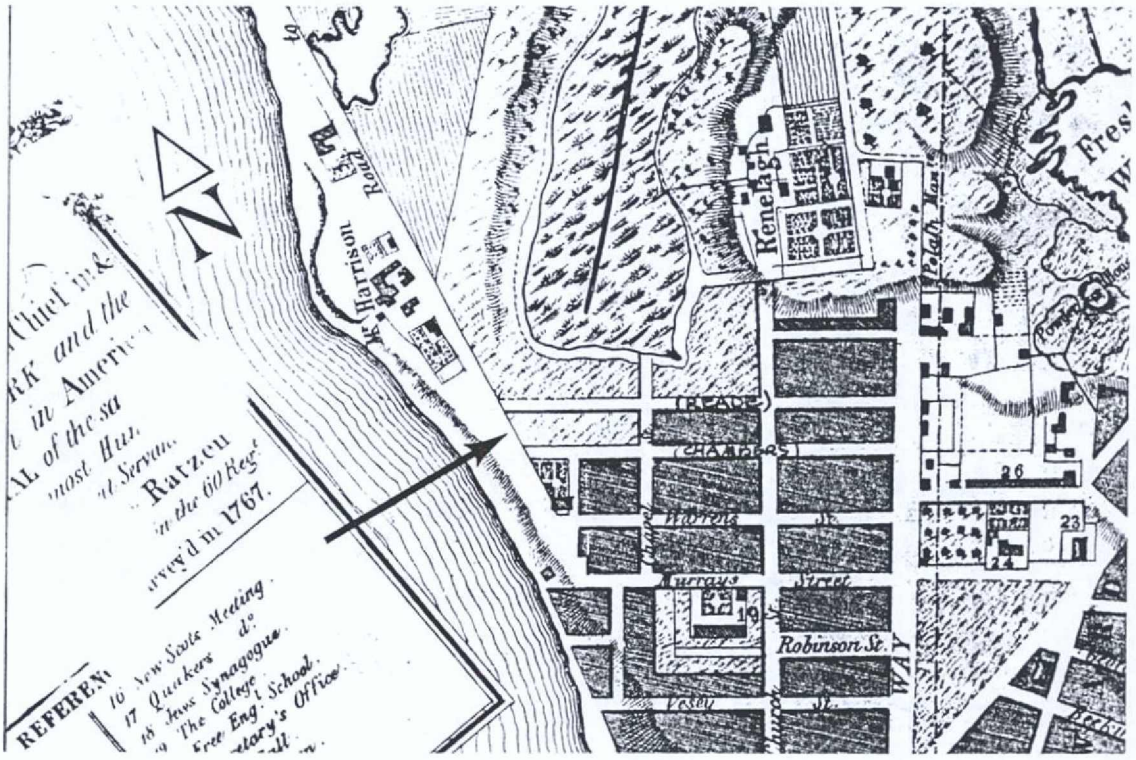


Figure 8. Ratzer, Plan of the City of New York ("Ratzen" Plan), Surveyed in 1766 and 1767
(Arrow shows project site location)

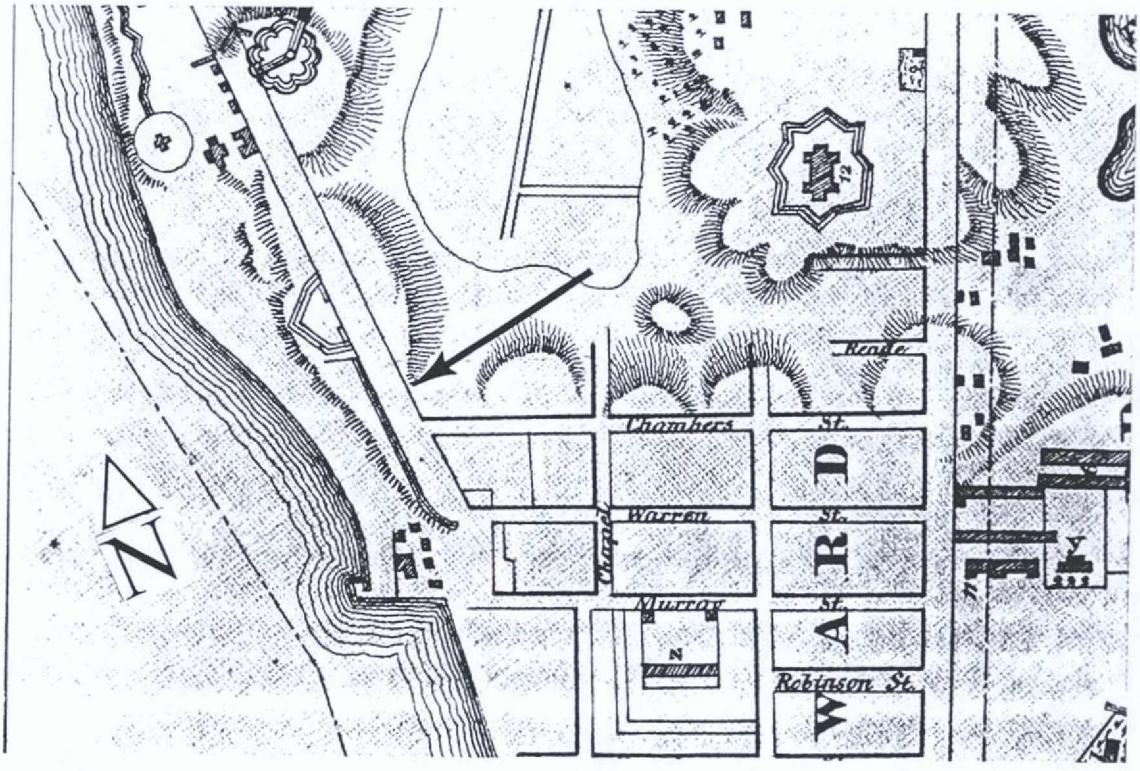


Figure 9. Hills, Plan of the City of New-York and its Environs, Surveyed in 1782.
(Arrow shows project site location)

Figure 10. British Head Quarters Map. Reproduction of 1782 original, by B. F. Stevens
(Arrow shows project site location)

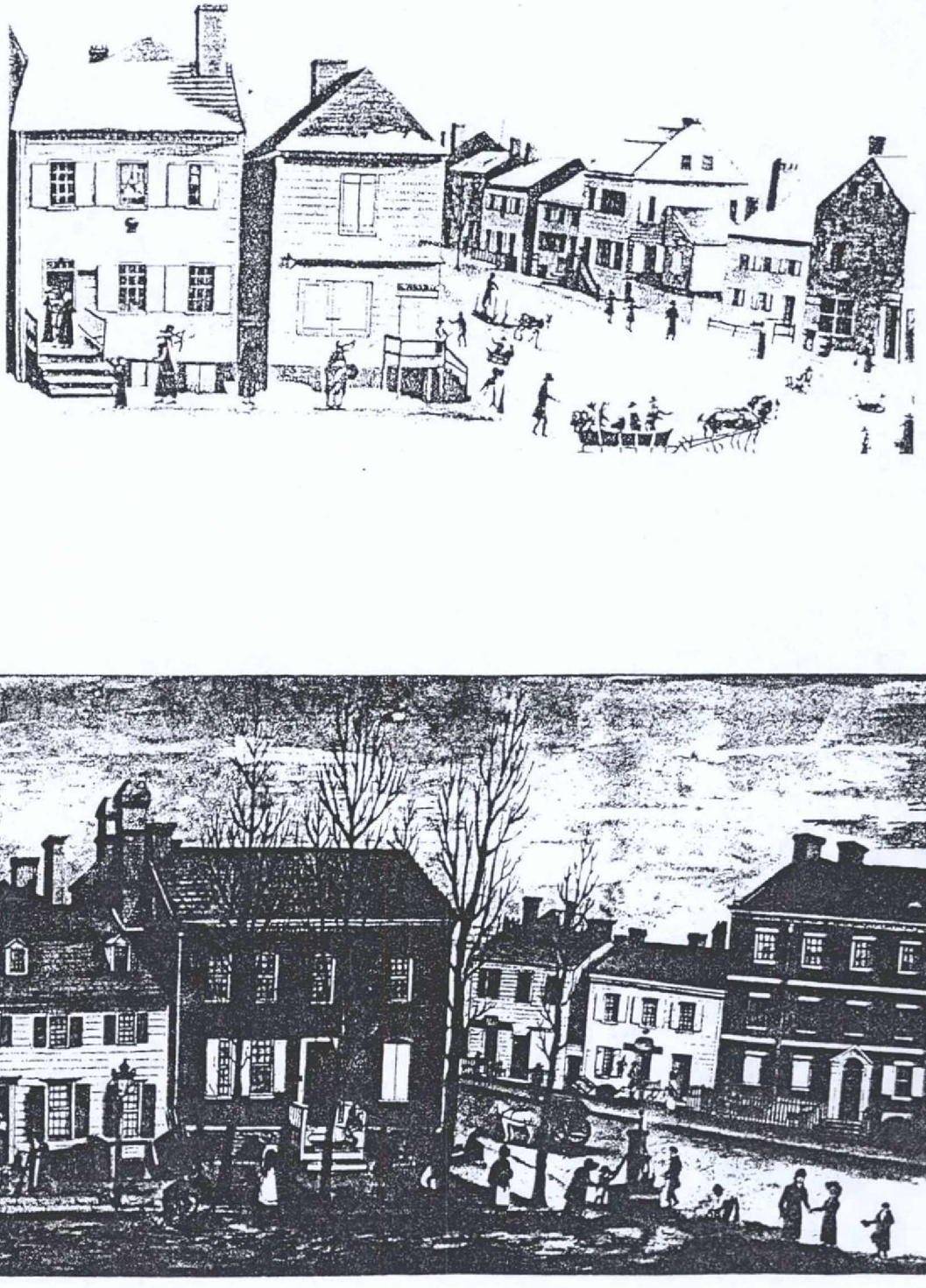


Figure 11. A Pair of Watercolors by Baroness Hyde de Neuville
(TOP) Warren and Greenwich Streets, 1809 (in Lockwood 1976:41)
(BOTTOM) Greenwich and Dey Streets, 1810 (in Dunshee 1952:66)

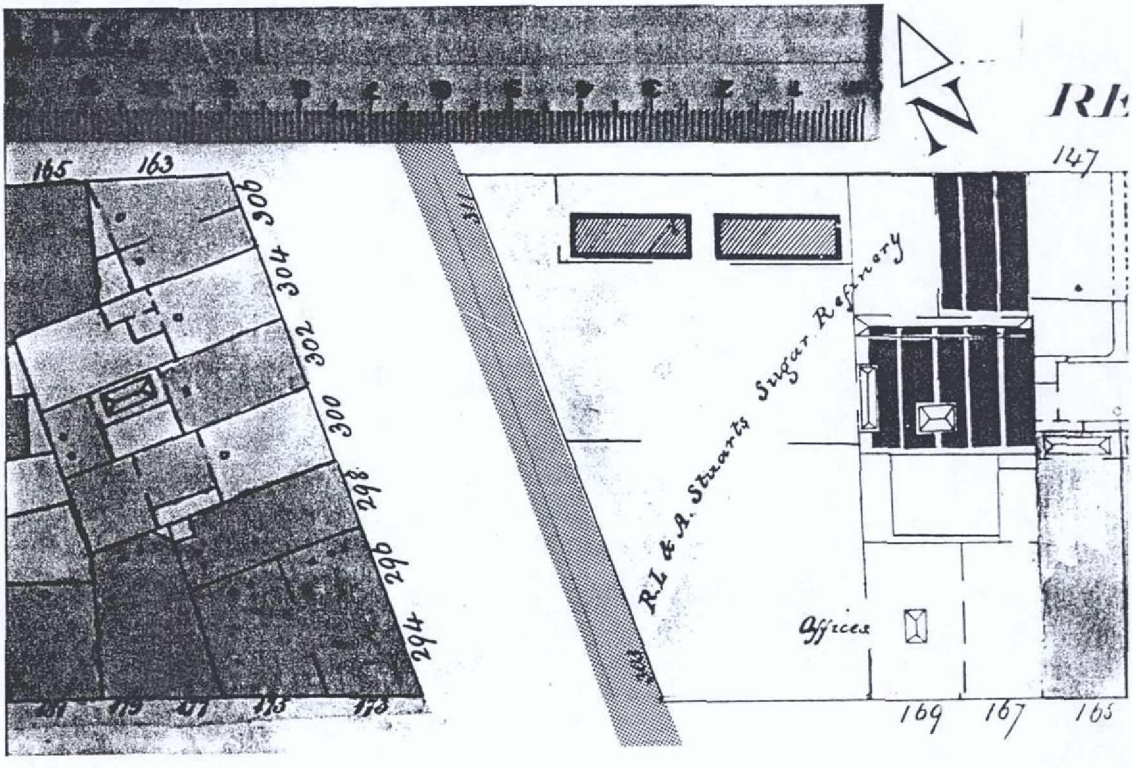


Figure 12. Perris, Maps of the City of New-York, 1857
(Volume 1, Plate 8)

– Shaded area shows project site location

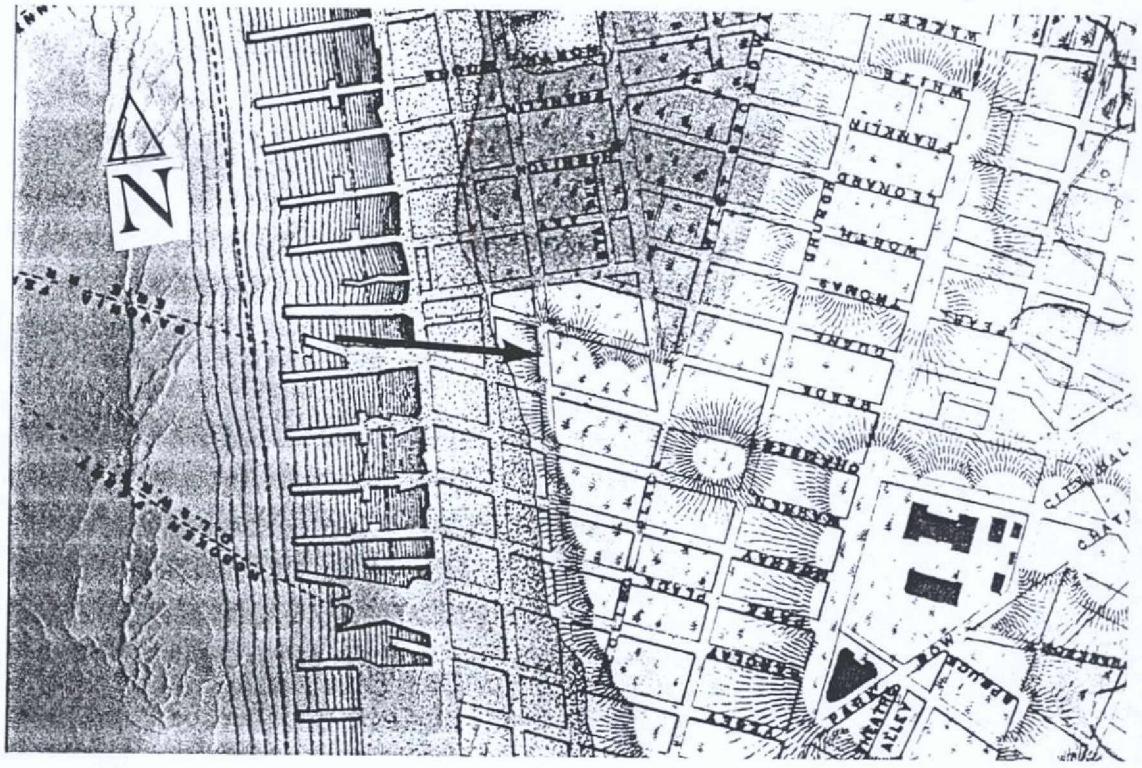


Figure 13. Viele, Topographical Atlas of the City of New York, 1874
(Arrow shows project site location)

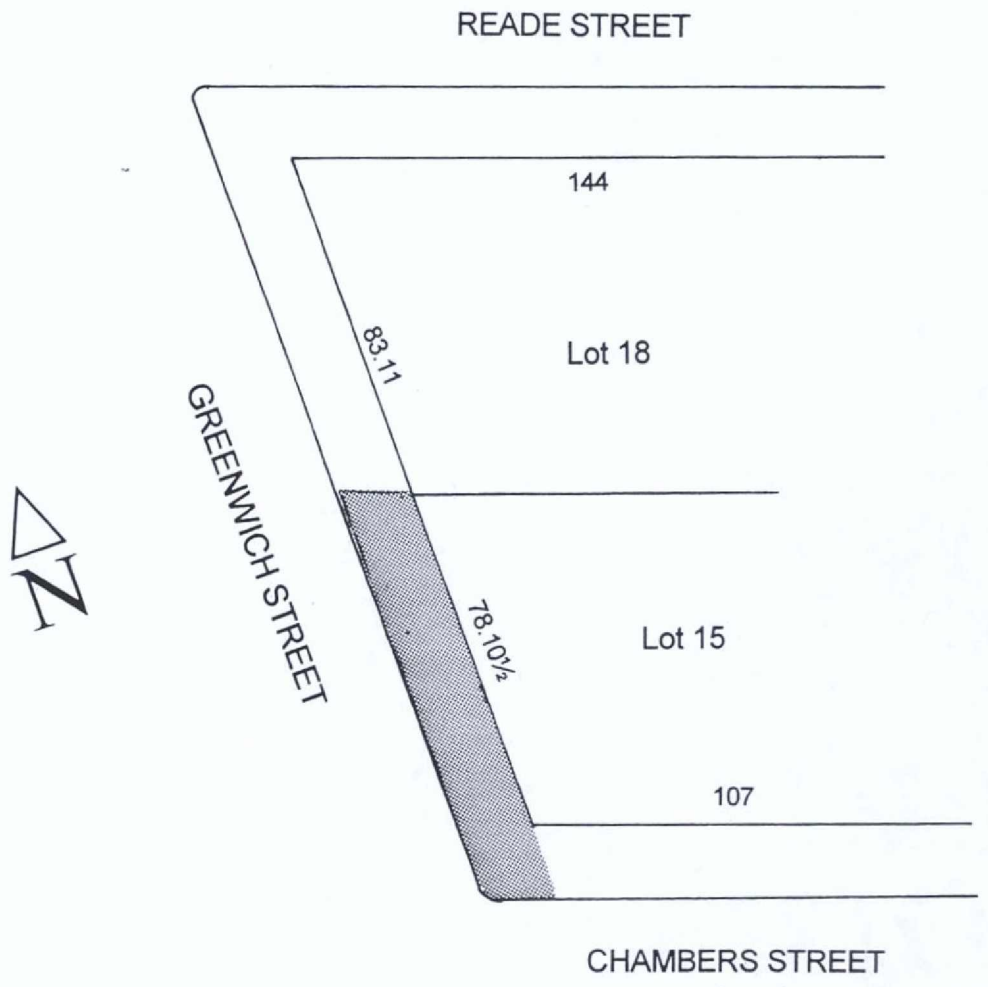


Figure 14. Map Showing Area of Potential Archaeological Sensitivity
(Base map: 1989 Sanborn. Scale: 1 inch = 40 feet)

– Shading indicates area of potential archaeological sensitivity