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**PHASE IA CULTURAL RESOURCES SURVEY FOR THE
PROPOSED M29 TRANSMISSION LINE PROJECT,
WESTCHESTER, BRONX AND NEW YORK COUNTIES, NEW
YORK**

Prepared for:

Consolidated Edison Company of New York, Inc.
4 Irving Place
New York, New York 10003

SEP - 5 2006

Prepared by:

TRC Environmental Corporation
1200 Wall Street West
Lyndhurst, New Jersey 07071

TRC Project 52147

OPRHP Project 06PR03887

Raymond D. Pasquariello and Alyssa Loorya

July 2006

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MANAGEMENT SUMMARY

TRC Environmental Corporation (TRC) has been contracted by Consolidated Edison Company of New York, Inc. (Con Edison) to perform an initial assessment of the proposed M29 Project; an approximately 9.5-mile, 345 kV high-pressure fluid filled (HPFF pipe-type), primarily underground, transmission line connecting Con Edison's existing Sprain Brook Substation in the City of Yonkers, Westchester County, with the new Academy Substation to be located in the Inwood section of upper Manhattan, in the City of New York (the Project). As part of this assessment, TRC performed a Phase IA survey of the Project.

The preferred transmission line route and the existing substation sites were reviewed to determine the presence or likely presence of archaeological and historic structures, artifacts, sites, and areas, and the impact of the proposed facilities on these resources. Cultural resources refer to both historic and archaeologically sensitive places. Due to intensive development within the area during the first quarter of the twentieth century, the majority of the recorded archaeological sites have been destroyed. Other sites in the Project area are likely compromised due to continued extensive development of the area. Though a few sites, discovered during the early twentieth century, are within the immediate Project area, it is highly unlikely that any intact archaeological deposits would remain due to extensive disturbance by utility services (including water, sewer, electrical, gas and telephone). Construction of the proposed transmission line and upgrades to the existing substations will therefore have no impact on cultural resources.

The proposed transmission line will be installed primarily within the curb-to-curb portion of the rights-of-way of public roadways. Prior disturbance along these rights-of-way essentially eliminates the potential for encountering significant archaeological sites along these routes. Furthermore, even though the proposed transmission line will occur adjacent to numerous National Register Listed properties, because the transmission line will be installed below grade or affixed to existing bridge structures, the Project poses no adverse direct or visual effect to these properties.

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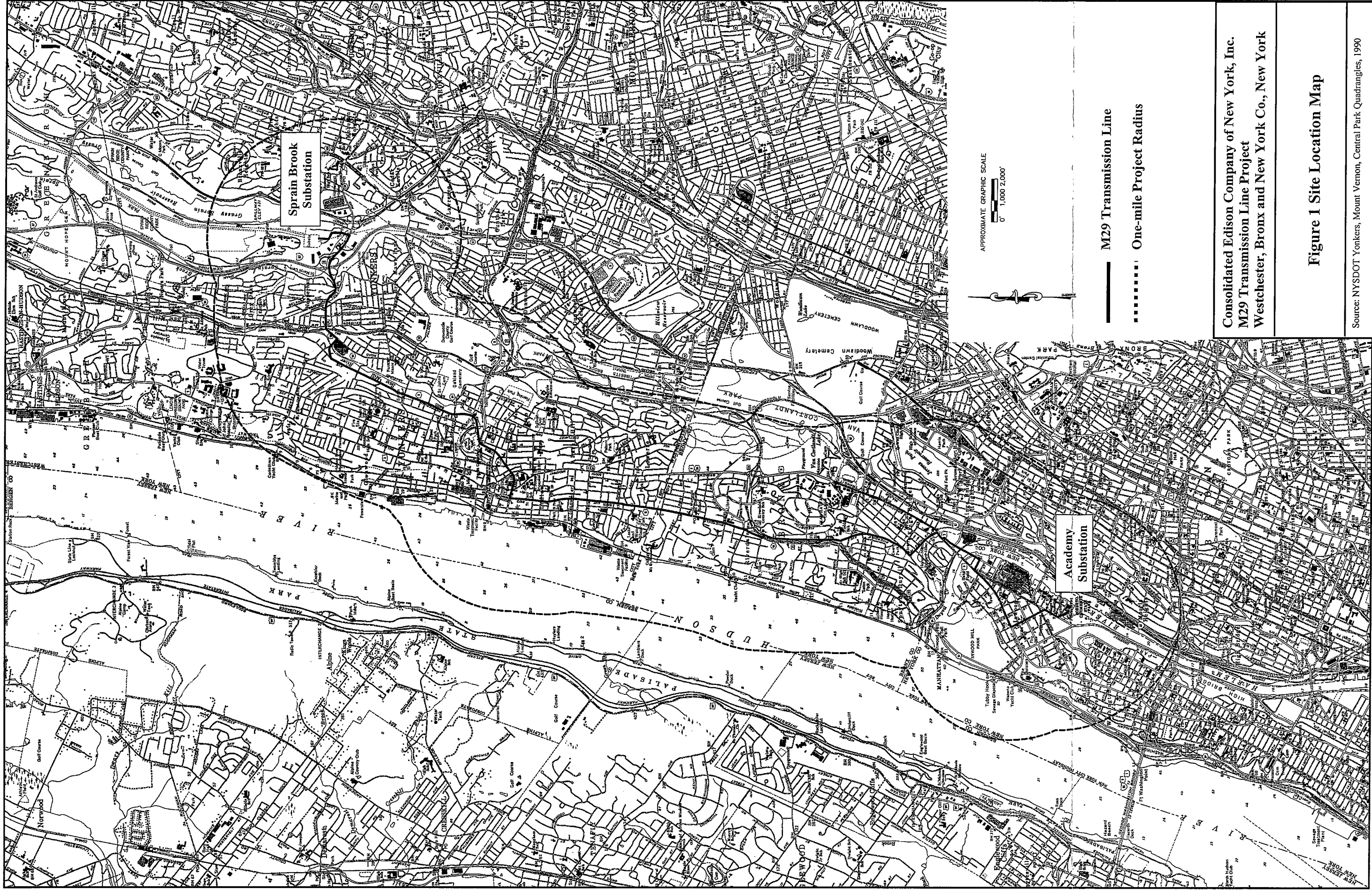
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1.0 INTRODUCTION

TRC conducted a Phase IA cultural resource survey of the proposed M29 Project in Westchester, Bronx and New York Counties (Figure 1). The Project involves an approximately 9.5-mile, 345 kV high-pressure fluid filled (HPFF pipe-type), primarily underground, transmission line connecting Con Edison's existing Sprain Brook Substation in the City of Yonkers, Westchester County, with the new Academy Substation to be located in the Inwood section of upper Manhattan, in the City of New York (the Project). The proposed transmission line will be installed primarily within the curb-to-curb portion of the rights-of-way of public roadways.

The following chapters document the methods and results of the Phase IA survey. Chapter 2 presents the project setting. Chapter 3 contains the cultural background of the region. Methods are described in Chapter 4. Results and recommendations are reported in Chapter 5. A list of references cited in the report concludes the report.



APPROXIMATE GRAPHIC SCALE
 0 1,000 2,000'



- M29 Transmission Line
- - - - - One-mile Project Radius

Consolidated Edison Company of New York, Inc.
 M29 Transmission Line Project
 Westchester, Bronx and New York Co., New York

Figure 1 Site Location Map

Source: NYSDOT Yonkers, Mount Vernon, Central Park Quadrangles, 1990

2.0 PROJECT INFORMATION

2.1 General Information

TRC has been contracted by Con Edison to perform an initial assessment of the proposed M29 Project; an approximately 9.5-mile, 345 kV, primarily underground, transmission line connecting Con Edison's existing Sprain Brook Substation in the City of Yonkers, Westchester County, with the new Academy Substation to be located in the Inwood section of upper Manhattan, in the City of New York. The transmission line will be installed primarily below grade, primarily within publicly-owned street rights-of-way and previously developed Con Edison property. Equipment required to accommodate the new transmission line will be added at both the Sprain Brook Substation and new Academy Substation. The interconnection of the proposed 345 kV transmission line at the Sprain Brook Substation will include the installation of new 345 kV circuit breakers, 345 kV disconnect switches, 345 kV pothead structures, "A" frame towers, related equipment and a pressurizing plant with a tank that will hold 20,000 gallons of dielectric fluid. At the new Academy Substation, which is planned as an indoor, gas-insulated type station ("GIS"), the major equipment that will be installed includes 345 kV circuit breakers, 345 kV disconnect switches, 345 kV pothead structures, 345 kV/138 kV autotransformers, 138 kV phase angle regulators, and related equipment. The substation will contain a pressurization plant with two tanks for dielectric fluid with a total capacity of 30,000 gallons. The work at the existing Sprain Brook Substation will be completed within its existing fence and property lines, and the connection of the new line to the Academy Substation will occur within the former Sherman Creek Generating Station property, in previously disturbed areas historically used for power plant operations.

The proposed transmission line will be installed primarily underground (primarily within public roadway rights-of-way and previously developed Con Edison property) with the exception of four bridge crossings where the line will be mounted to the underside of the bridges or installed within the bridge roadway. The four bridge crossings are:

- Tuckahoe Road Bridge over the New Croton Aqueduct;
- Old Nepperhan Avenue Bridge over the Saw Mill River;
- Nepperhan Avenue Bridge over the Saw Mill River; and
- West 252nd Street Bridge over the Henry Hudson Parkway.

Along most of the proposed route, the M29 Transmission Line, as it is designated, will be installed within an open-cut trench. This will require an approximate two- to five-foot wide by four- to eight-foot deep excavation. The width and depth of the excavation will vary depending on the location along the preferred transmission route (i.e. state right-of-way vs. non-state right-of-way) and proximity to existing underground utilities. Generally, a four- to five-foot deep trench will be required within the boundaries of the City of New York and a seven- to eight-foot deep trench will be required within the City of Yonkers. Where the line crosses the Harlem River into upper Manhattan, the pipe-type cable feeder will be installed using horizontal directional drilling ("HDD").

The installation of the M29 Transmission Line and associated upgrades at the existing Sprain Brook Substation and the new Academy Substation will allow Con Edison to meet expected electrical load growth in the East 179th Street load area, which includes portions of the Bronx and upper Manhattan. The Project will also improve reliability on the Con Edison electric transmission and distribution system. First contingency overload conditions, as reflected in Con Edison's most recent Ten-Year Load Relief Forecasts for the Sherman Creek Substation, serving the Bronx and upper Manhattan, will be relieved through construction of the Project. The Project will also provide electric system reliability benefits to portions of Westchester County within Con Edison's Dunwoodie North load area. Additionally, the Project would increase Con Edison's ability to import power into New York City by about 300 MW, thereby allowing the increased delivery of economy power to its in-City customers.

2.2 Area of Potential Effect

The Area of Potential Effect (APE) for a project is defined as that geographic area or areas within which construction, operation or maintenance of a project may directly or indirectly cause alterations in the character or use of historic properties (per Section 106 regulations, 36 CFR Part 800 Section 16(d)). There are a variety of potential effects a project may have on historic properties, including physical effects (such as ground disturbance or destruction), noise effects or visual effects of aboveground structures on the setting of historic properties. The APE for this project is the proposed route, which is primarily located within paved, urban roadways.

3.0 CULTURAL RESOURCES

In accordance with PSL §122(1)(c) and 16 NYCRR §§86.3(a)(1)(iii) and 86.5(b)(2)(i), this chapter includes a study of the cultural resource impacts resulting from the construction and operation of the Project (see Figure 1). Cultural resources include archaeological and historic architectural resources. This chapter reviews the preferred transmission line route and the existing substation sites to determine the presence or likely presence of archaeological and historic structures, artifacts, sites, and areas, and the impact of the proposed facilities on these resources. Cultural resources refer to both historic and archaeologically sensitive places.

Laws, Policies, and Regulations

The following describes the federal, state, or local laws, policies, and regulations applicable to cultural resources.

a. Public Service Law

Article VII of the PSL governs the siting of major utility transmission facilities in the State of New York. PSL §122 sets forth the requirements for an application seeking issuance of a Certificate of Environmental Compatibility and Public Need. The requirements applicable to this Section are set forth in PSL §122 (1)(c), and mandate a description of the studies that have been made of the environmental impact of the transmission facilities.

b. Article VII Regulations

The Project is subject to 16 NYCRR Part 86, which requires that an Article VII application include studies of the expected environmental impact of the proposed facilities and identify changes that the construction and operation of the facilities might induce. The Project is subject to 16 NYCRR §§86.3(a)(1)(iii), which requires that an Article VII application provide a map showing "any known archaeological, geologic, historic or scenic area, park, or untouched wilderness within three miles of the right-of-way." Considering that the proposed transmission line will be underground and the work at the existing substations will be within existing fence lines, Con Edison has requested that the Commission waive the requirement of 16 NYCRR §86.3(a)(1)(iii) requiring a map showing these resources within three miles of the right-of-way and allow Con Edison to provide the DOT map showing these resources (architectural only; location information for archaeological sites is considered privileged and confidential) within one mile of the proposed facilities.

c. National Historic Preservation Act of 1966 (Public Law 89-665; 80 Stat 915, 16 United States Code ("USC") 470 as amended)

The most important legislation with regard to cultural resources protection is the National Historic Preservation Act ("NHPA"). The NHPA establishes a broad policy of historic preservation and encourages state and local efforts to preserve historic resources.

Section 101 of the NHPA directs the Secretary of the Interior to expand and maintain a National Register of Historic Places ("NRHP" or "National Register") and establishes criteria for NRHP eligibility. Section 101 also establishes a State Historic Preservation Officer ("SHPO") within each state and territory. The SHPO serves as the liaison agency between the federal and state governments. In New York, the Office of Parks, Recreation and Historic Preservation ("OPRHP") is the agency delegated to implement this federal review process. The Director of the OPRHP acts as the New York State SHPO.

Section 106 of the NHPA instructs every federal agency having direct or indirect jurisdiction over a proposed federal, federally assisted, or federally licensed undertaking to "take into account the effect of the undertaking on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register." The federal agency "shall also afford the Advisory Council on Historic Preservation ("Advisory Council") an opportunity to comment with regard to such undertaking." The Advisory Council outlined the procedures for meeting the Section 106 requirements in Chapter 36, Part 800 of the Code of Federal Regulations (36 CFR 800). Section 106 and the Advisory Council's 36 CFR 800 regulations, together, establish the method for professional review of cultural resources that are included in or eligible for inclusion in the National Register during the active planning stages of all federal, federally assisted, or federally licensed undertakings. These requirements are not directly applicable to the Project because no federal permit or approval is necessary to authorize its construction.

d. New York State Historic Preservation Act of 1980 – Article 14 of the Parks, Recreation, and Historic Preservation Law

The State Historic Preservation Act (“SHPA”) establishes the guidelines, procedures, and criteria for eligibility for the New York State Register of Historic Places (“NYSRHP”). Similar to the NHPA, projects that require permitting by state agencies must be reviewed to determine compliance with the SHPA. Under Section 14.09, the OPRHP makes a determination regarding the impacts of a project on properties listed or eligible for listing on the NYSRHP.

3.1 Existing Setting

The proposed route of the Project is located primarily within the curb-to-curb portion of the rights-of-way of public roadways. Equipment to be added to the existing Sprain Brook Substation Street and the new Academy Street Substations will occur within the existing fence lines of each property. Accordingly, there will be a limited need to acquire additional easements or rights-of-way for the Project.

The proposed route, which constitutes the APE for the Project, is located in a highly urbanized area, which includes major transportation corridors, high-density residential developments, and commercial and industrial land uses. The infrastructure to support this development, including electric distribution lines, storm and sanitary sewer lines, natural gas lines, water lines and telecommunication facilities, are located primarily underground within the same roadways and streets that would provide the right-of-way for the proposed electric transmission line. Accordingly, the construction required for installation of the proposed Project will occur within previously disturbed contexts.

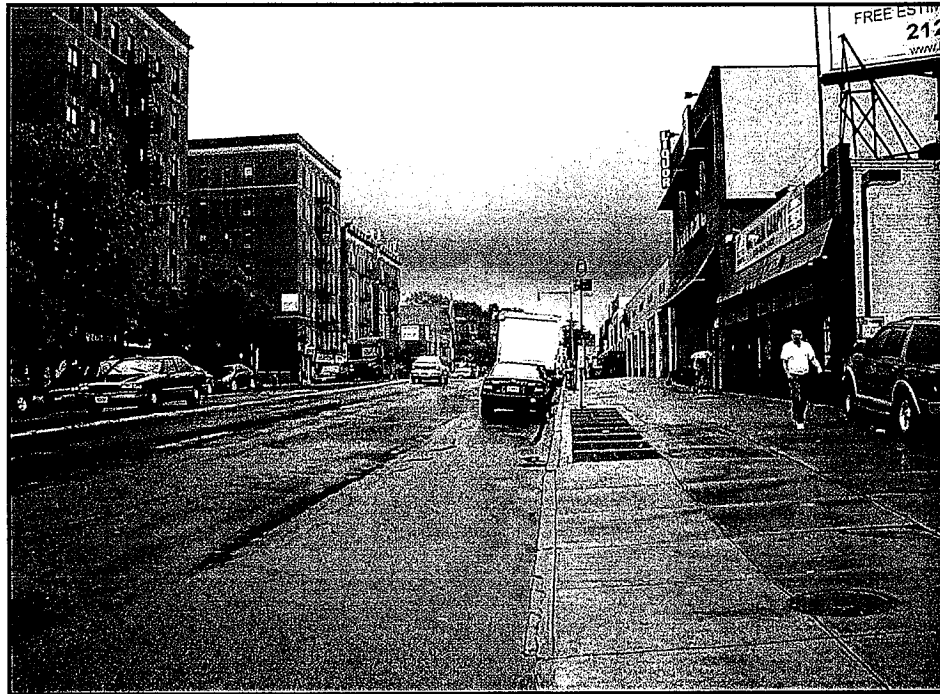
The following images are representative of the present day streetscape in the project area.



Photograph 1: Tenth Avenue at West 201st Street in upper Manhattan. (facing west toward the Dyckman Houses)



Photograph 2: West 204th Street at Post Avenue in upper Manhattan. (facing west)



Photograph 3: Broadway north of West 204th Street in upper Manhattan. (facing north)



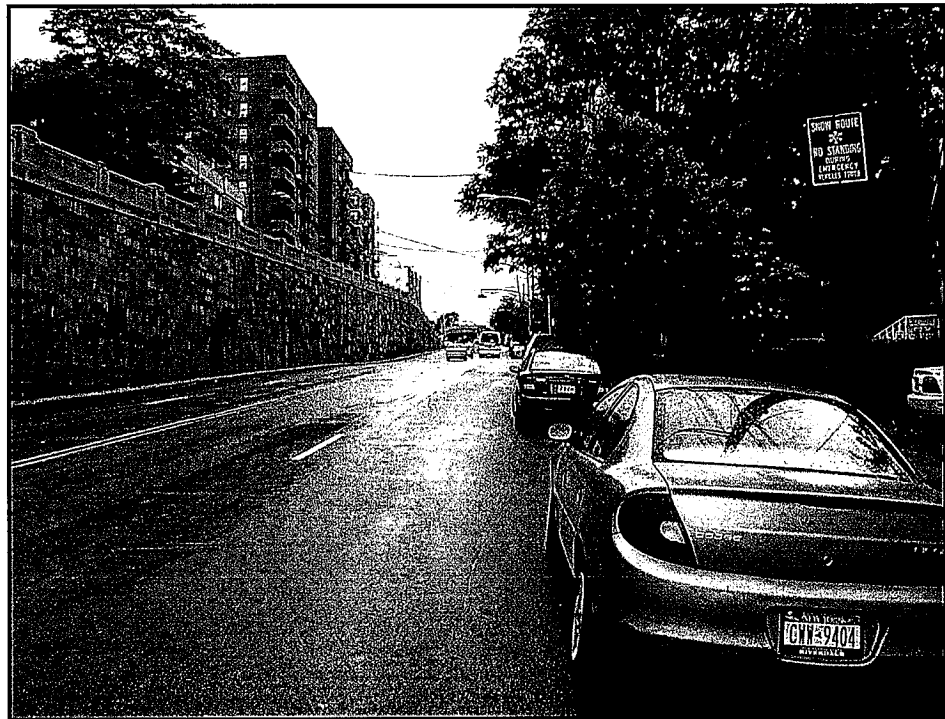
Photograph 4: Parking lot/HDD staging area, south of the Harlem River looking towards Ninth Avenue, in upper Manhattan. (facing south)



Photograph 5: Marble Hill Houses parking lot/HDD staging area in the Bronx. (facing north)



Photograph 6: West 230th Street at Broadway in the Bronx. (facing south toward the Marble Hill Houses)



Photograph 7: Riverdale Avenue south of Greystone Avenue in the Bronx. (facing north)



Photograph 8: Riverdale Avenue adjacent to the Henry Hudson Parkway in the Bronx. (facing north)



Photograph 9: Nepperhan Avenue at Waverly Street, in Yonkers. (facing south)



Photograph 10: Nepperhan Avenue south of Orchard Street in Yonkers. (facing north)

To address the potential impacts on historic and archaeological resources, a Phase IA cultural resources survey was conducted within the right-of-way for the proposed route and at the locations of the existing substation sites.

3.2 Paleoenvironment

Before the initial Paleoindian colonization of the Northeast, the area experienced cyclic Late Pleistocene glacial climates. As the glacial ice retreated north, a cold, dry tundra was established. Fossil pollen samples collected from across the northeast (Bernabo and Webb 1977:90) indicate that the tundra was replaced by spruce woodlands around 12,000 years ago. The appearance of spruce across the Northeast indicates “a climatic amelioration...that allowed spruce to grow in regions where it was previously limited by climate” (Davis 1983:179). The changes in the pollen record during this period were broad and rapid. This trend in the pollen record continued until 7,000 B.P. (before present), when the remnants of the continental glacier that had lingered south of Hudson Bay finally melted. After this occurrence, both the speed and the magnitude of the changes in the pollen assemblages decreased (Bernabo and Webb 1977:90).

Although some investigators have attempted to identify the spruce woodlands of the Late Pleistocene–Early Holocene as an unproductive environment that would have limited the potential for human colonization (Fitting 1968; Ritchie and Funk 1971), more recent palynological studies have suggested otherwise (Snow 1980:166). Davis (1983:176) notes that “even at sites where the pollen influx indicates the presence of spruce trees, the continuing presence of herb pollen in high percentages suggests a partially open vegetation, not a closed forest like the modern boreal forest in Canada.”

Davis (1983:176) also indicates that “about 10,000 years ago, forests of variable composition developed in the North, and forests underwent a series of changes as new species migrated northward.” Changes in the distribution (in range and in altitude) of white pine and hemlock led Davis to suggest the following climatic trends:

The opening of the Holocene at about 10,000 years ago was marked by a change to essentially modern climate (though not of vegetational composition). Soon afterward, at least by 9000 B.P. the climate became warmer than today. Temperatures warmer than present appear to have persisted until the time of the Little Ice Age (A.D. 1450–1850) [Davis 1983:176].

A number of temperate forest species also were present at the opening of the Holocene, and the range of these trees soon expanded northward. The earliest Holocene forests included oak, elm, ash, birch, ironwood, and sugar maple (Davis et al. 1980). Davis (1983:174) has described the pollen assemblage for the early Holocene as resembling modern assemblages from the northern Great Lakes region. Significantly, ironwood was present in higher percentages than at any later time. Its presence “suggests a forest with a diffuse canopy and well-lighted forest floor” (Davis 1983:174). These early forests, however, lacked chestnut, hickory, and red maple, which became dominant in late Holocene forests. With their importance as a food source to contemporaneous populations in other areas, particularly the Southeast, the slow migration of nut-bearing trees into the region is perhaps one of the most significant factors effecting both human and animal populations.

The modern vegetation patterns in the Northeast include a pine-dominant conifer/hardwoods region in the northern sections, and oak-dominant, deciduous forests in the southern portions. The modern ecotone extends from southern Maine west along the Massachusetts/Vermont border, then southwest across southern New York, and then west across northern Pennsylvania to Lake Erie.

3.3 Prehistoric Perspective

3.3.1 Paleoindian Period (ca. 12,000–9,500 b.p.)

The Paleoindian period represents the earliest human occupation in the northeastern United States. This occupation began in the Late Pleistocene, soon after the continental ice sheet began to recede northward, once again exposing land. Approximately 15,000 years ago, the southern edge of the glacier was positioned along a line running east/west across Nantucket, Martha’s Vineyard, Long Island, and Staten Island. Glacial landforms known as moraines on these islands mark the southern extent of the ice sheet.

Over the next 4,000 years, the ice melted and retreated northward towards Canada, exposing the land surface of most of New York and New England in the process. The new landscape was dotted by postglacial lakes that changed size and shape relatively quickly as the surface of the land adjusted to the loss of pressure from the ice sheet (Isachsen et al. 1991:178–179). During this time, approximately 12,000 to 13,000 years b.p., humans began moving into northeastern North America. These occupations in the terminal Pleistocene epoch indicate an adaptation to cooler climatic conditions and a different physiographic regime than those found in the modern Holocene. Archaeological sites dating to this time period are most commonly recognized by the presence of distinctive projectile points called fluted points. Because Paleoindian sites are so old, they are relatively rare and often have been disturbed by more recent natural events and human activity.

Aboriginal groups of the period were likely small, mobile bands dependent on a hunting and gathering economy. Although they may have hunted some of the mega fauna that became extinct at the end of the Pleistocene, such as mastodon (*Mammuth americanum*), bison (*Bison antiquus*), and ground sloth (*Megalonyx* sp.), it is likely that the subsistence base was varied and included a number of plant and animal foods. West of the Mississippi River, the association between fluted points and extinct Pleistocene megafauna has led to the notion of Paleoindians being “big game hunters.” However, the small number of associations in the eastern United States has led many to question the importance of the mega fauna in the subsistence of Paleoindians (McNutt 1996:189).

The oldest evidence of human occupation in the Northeast comes from the sites and assemblages associated with the Paleoindian Bull Brook phase, which dates ca. 10,600–10,200 b.p. These sites include Bull Brook, Bull Brook II, and Wapanucket #8 in Massachusetts, and the Whipple site in southwestern New Hampshire (Curran 1999). One undisturbed Paleoindian site in Connecticut, 6LF21, was excavated in 1977 and produced a radiocarbon date of 10,190 B.P. The remainder of the evidence for Paleoindian occupation comes from isolated finds of local variants of the fluted point tradition known as Clovis, which occur in scattered locations around the northeast. Many of these

finds appear to be associated with former postglacial lake basins (Lavin 1984). In particular, surveys by the American Indian Archaeological Institute (AIAI) near Robbins Swamp, located along the Housatonic River in Canaan, Connecticut, have identified numerous Paleoindian sites around the margins of this rich ecological zone (Nicholas 1988). Although several of the sites have produced fluted points, the results of more detailed investigations are not yet available.

3.3.2 Archaic Period (ca. 9,500–3,000 b.p.)

The Archaic period is subdivided into the Early, Middle, Late, and Terminal Archaic. Current archaeological evidence suggests that the youngest fluted point sites date to no later than approximately 9,500 years ago, marking the beginning of the Early Archaic. The Early Archaic period is not as poorly represented in the archaeological record as the preceding Paleoindian period. Most of the Early Archaic sites have been identified by the presence of projectile points analogous to dated types found in stratified Southeastern sites. In upstate New York, Funk and others excavated and dated several Early Archaic assemblages in the Susquehanna Valley (Funk and Wellman 1984), and Snow's research near Lake George in the Upper Hudson drainage identified an Early Archaic component at the Harrisena site (Snow 1980). On Staten Island, several sites have yielded Early Archaic projectile points such as Hardaway, Palmer, Kirk, and LeCroy Bicurvate types in association with early radio carbon dates (Ritchie and Funk 1971). Funk (1976:233) notes that bicurvate base projectile points are "widely but thinly spread along the Hudson Valley," but no component has been excavated in this region.

Although projectile points similar to southeastern Middle Archaic types had been found in isolated contexts throughout the Northeast, clear identification of the chronological position of the northern analogs was not established until Dincauze (1971, 1976) reported on the excavations at the stratified Neville site on the Merrimack River in New Hampshire. These excavations documented the existence of the Neville stemmed point type dating between about 7,800 and 7,000 b.p., and the Stark stemmed projectile point dating between about 7,600 and 6,400 b.p. (Dincauze 1976). In addition, the Merrimack point type was identified as dating to the end of the Middle Archaic period. The Neville and Stark point types are similar in style and age to the Stanly and Morrow Mountain types that Coe (1964) defined earlier in the Southeast.

The accumulated data for the Middle Archaic period in the Northeast suggest that its inhabitants were forming distinct bands and were settling into defined territories. These bands were establishing base camps and were occupying a greater variety of special purpose sites in a carefully planned seasonal round (Snow 1980:183). Evidence for the first uses of coastal resources such as shellfish dates to this period; however, intensive exploitation of this resource base did not occur until the Late Archaic period. Several new tool types were developed during this period, including woodworking tools such as gouges and axes, and large ground stone semi-lunar knives (commonly know by their Inuit name ulu). The adaptive strategy employed during this period is generally perceived to have been a diffuse adaptation, oriented towards generalized hunting and gathering and the seasonal exploitation of resources (Dincauze and Mulholland 1977:441; McBride 1984a:96, 238). According to Dincauze (1974:45), the preference for riverine, lacustrine, and bog settings during the Middle Archaic suggest an orientation towards the exploitation of anadromous fish runs in the spring and eastern flyway bird migrations during the spring and fall.

Throughout the Northeast, archaeologists recognize the Late Archaic period as one in which the numbers and types of sites increase dramatically—what Snow (1980:187) describes as the Late Archaic "florescence." Unlike with earlier time periods, interpreters of Late Archaic assemblages have to contend with a sometimes confusing and complex array of data. In New York, Ritchie (1980) recognized two major Late Archaic components, the Lamoka and the Laurentian, which can overlap in time and space. The Lamoka tradition is associated with the small, narrow-stemmed projectile points that are found across the northeast, such as the Sylvan and Wading River forms from Long Island and southeastern New York and the Squibnocket complex from southern New England. Snow (1980:226) calls the Laurentian complex and its related assemblages in northern New England and the St. Lawrence drainage the "Lake Forest Archaic" and the Lamoka/Sylvan/Squibnocket complexes of central and southern New York and New England the "Mast Forest Archaic." Pfeiffer (1984) has compiled evidence that the Lake Forest Archaic is a widespread tradition firmly dated to the period between 5,000 and 4,200 b.p. The "Late Archaic period also witnessed an increase in the importance of gathering activities, the employment of storage, and an expanded duration of settlement" (Pfeiffer 1984:85).

In the St. Lawrence and upper and Middle Hudson drainages, the late Archaic begins with the Vergennes phase of the Lake Forest Archaic, which is followed by the somewhat nebulous Vosburg phase. Towards the middle of the Late Archaic, Snow notes there appears to have been northward expansion of the Sylvan Lake Complex of the Mast Forest Archaic from the lower Hudson Valley such that by about 4,200 B.P. this complex was established throughout the Hudson Drainage. Artifacts comparable to the Sylvan complex on Long Island have been found at sites such as Stony Brook and Wading River (Ritchie 1959).

The final Archaic period also has been called the Transitional period, in reference to its presumed transitional status between the Archaic and Woodland periods. Since research has continued to indicate that there is actually a great deal of cultural continuity between the Archaic and Woodland periods, Snow (1980:235) has suggested that the label "Terminal Archaic" is more appropriate. In southern New England, the Susquehanna tradition (broad-stemmed projectile points and their associated assemblages) marks the early part of the Terminal Archaic. These points include a number of regional varieties, including the Genesee, Perkiomen, Snook Kill, and Susquehanna Broadspear types. Characteristics of the Susquehanna tradition include a marked preference for a riverine adaptation and a predilection for the fine-grained lithic resources of the Piedmont province, including rhyolite, felsite, argillite, and slate (Dincauze 1975:27; Turnbaugh 1975:54). The shift in settlements from inland wetlands to riverine zones coincides with an inferred economic shift from a diffuse adaptation in the interior to a focal adaptation in the floodplain locales.

The latter half of the Terminal Archaic period is marked by the appearance of narrow, tapered Orient Fishtail projectile points. Named for the original type locations at Orient Point on eastern Long Island, Orient Fishtail Points tend to be found on Long Island, the Hudson Valley, and in southern New England. Another hallmark of the Terminal Archaic period is steatite cooking vessels, which occur towards the end of the Susquehanna Tradition and throughout the Orient Tradition. The existence of these large steatite vessels suggests that the "people who made, traded, and used them had reached a point in the evolution of their settlement and subsistence systems where the use of heavy cooking vessels was advantageous" (Snow 1980:240), implying that the people lived in more sedentary settlements and utilized foodstuffs that required long processing with heat.

Pfeiffer (1984) has labeled the corresponding tradition in southern New England as the "River Plain Tradition," which is derived from its apparent settlement pattern focus along the floodplains of the major river systems. Radiocarbon dates for this tradition place it between 3,600 b.p. and 2,700 b.p. Pfeiffer (1990) describes it as the direct descendant of the Late Archaic Lake Forest adaptation of southern New England.

3.3.3 Woodland Period (ca. 3,000–450 b.p.)

Like the Archaic period, the Woodland period also is divided into four subperiods: the Early, Middle, Late, and Final Woodland. Some evidence of a population decline in the region exists for this time period (Hoffman 1985). Subsistence data from Martha's Vineyard for the Early Woodland period indicate dependence on shellfish, including clams, oysters, and scallops (Ritchie 1969:87, 224).

Two Middle Woodland phases have been identified: the Roaring Brook phase (ca. 2,000–1,250 B.P.) and the Selden Creek phase (ca. 1,250–1,000 B.P.). The Roaring Brook phase is characterized by a continuation of the quartz cobble lithic industry and an increase in the utilization of nonlocal materials. Other attributes include rocker and dentate stamped ceramics. The Selden Creek phase is identified by ceramics of the Sebonac phase of the Windsor tradition.

Site distribution during the Middle Woodland period exhibits a significant rise in frequency and occupation area, with particular increase in coastal/riverine locations and a corresponding decrease in upland base camps (Lavin 1988a:110; McBride 1984a 135, 306–315; McBride and Dewar 1981:49). McBride's research suggests that, by the end of the Middle Woodland period, "major subsistence and settlement changes were taking place as people began to aggregate along major rivers for the entire year" (Juli and McBride 1984:96). Subsistence during the Middle Woodland period of the Northeast consisted primarily of a hunting, fishing, and collecting economy, with shellfish comprising a significant part of the diet for the inhabitants of coastal sites (Ritchie 1969:227).

During the Late Woodland period (ca. 1,000–450 B.P.) the antecedents of the historically recognized Native groups become recognizable. North, central, and western New York and the Mohawk Valley were occupied by groups of

Iroquoian speakers, and in these areas large, nucleated, semi-permanent sedentary villages developed. In contrast, southern New York and New England was occupied by Algonkian speakers living in smaller, less permanent settlements. Late Woodland-period characteristics include increased village sizes, increased sedentism, increased trade networks, and the utilization of cultigens such as maize, squash, and beans. Distinguishing trademarks of this period include Levanna and Madison projectile points and an increased use of non-local lithic material. Other characteristics include a highly variable ceramic assemblage that includes plain, cord-marked, fabric-impressed, brushed, stamped, and incised surface decorations.

The overall increase in site frequency, size, and length of occupation for sites in the Late Woodland period continued, with the largest sites located in coastal and estuarine settings (Lavin 1988b:110; McBride 1984a:320, 324). Settlement patterns were characterized by semi-sedentary villages or base camps located on floodplains or terraces immediately adjacent to major drainages, with temporary and task-specific camps located in the uplands (McBride 1984a:139, 322-330; McBride and Dewar 1981:49).

The subsistence system of the Late Woodland period included hunting terrestrial animals and migratory fowl, fishing, shellfish collecting, and gathering wild plants (McBride 1984a:325). In addition, cultivated foods such as maize, beans, and squash became a part of the subsistence regime for the first time in prehistory. The earliest radiocarbon dates in the Northeast for the presence of cultigens are ca. A.D. 1100 (Mulholland 1988:146), and evidence for the exploitation of these cultigens is not abundant before the Final Woodland period, ca. A.D. 1500 (McBride and Dewar 1987:305). In addition, the earliest dates are generally associated with inland sites.

Settlements of the Final Woodland period were similar to the preceding period, and were characterized by large permanent and semi-permanent settlements in riverine areas, with small seasonal camps and a high frequency of task-specific camps located in the uplands; no temporary sites have been identified for this period (McBride 1984a:146, 337-341). With the exception of the intensification of horticulture, there were no significant changes in the subsistence economy of the Final Woodland period.

3.4 Historical Overview

Sustained European-Native American contact in the Hudson River Valley dates to 1609 when Henry Hudson sailed up the Hudson River. On September 13, 1609, Hudson anchored his ship near present-day Yonkers. He and his crew encountered Algonquian-speaking Native American people who lived in the lower Hudson Valley.

The first permanent and lasting European settlement of what became New York State was directed by the Dutch West Indian Company, which was founded in 1621. Military outposts were established at New Amsterdam and Fort Orange in 1624. European settlements increased in the Hudson Valley after 1638, and there was a dramatic decrease in the Native American population. The Dutch Colonial period lasted from 1624-1664 when the English took control of what is now New York. Westchester became a separate county in 1683. European land holding in Westchester County was concentrated in six manors: Pelham (established 1666), Fordham (1671), Philipsburgh (1693), Cortlandt (1697), Morrisania (1697), and Scarsdale (1701). The feudal landlord-tenant pattern of manorial land holding, unlike the situation further upriver, did not last long in the lower Hudson Valley. Within 20 years, much of the land of the manors had been sold.

During the American Revolution, partisans for both sides lived in Westchester County. Called the Neutral Ground, Westchester separated American troops from British forces, which occupied New York City. The county was the scene of battles at Pelham and White Plains in 1776.

In the early nineteenth century, the local economy depended on farming and increasing industrial activity. Quarries, iron furnaces, and brick manufacturing plants operated. Railroads opened in 1841. Access to urban areas by railroad encouraged farmers to produce dairy products and vegetables for quick transportation and sale. At mid-century, much farmland was flooded to create reservoirs for New York City's water supply. Later, European immigrants settled in the southern communities of the county in new industrial centers, such as Yonkers. Roads also helped to move city residents to the suburbs, with suburbanization the main trend of the twentieth century.

Refer to Appendix A for a collection of historic maps of the project area.

Manhattan

The Dutch settled New Amsterdam in 1624 with the arrival of thirty families in New Netherland (Burrows and Wallace 1999:36). Soon after their arrival then Governor Peter Minuit “purchased” Manhattan Island for what was determined to be twenty-four dollars worth of material goods (O’Callaghan 1864; Homberger 1994). The colony was established as part of the Dutch West India Company, which provided many incentives to encourage settlement in the New World.

By 1664, the Dutch had surrendered control of New Amsterdam to the English who renamed the colony New York. Within a short period of time the Great Dock was built along the East River firmly establishing the city’s position as a base for commercial and capital activity in the New World. By 1680, the City of New York, at this time solely Manhattan Island¹, contained approximately 400 buildings. Many of the houses were built in the Dutch style and the Stadt Huys building, the original Dutch City Hall, continued to serve in that function. Toward the end of the seventeenth century the City’s population reached approximately three thousand. Although immigration from the Netherlands had steeply declined the number of English settlers increased (Burrows and Wallace 1999; Cantwell and Wall 2001; Rothschild 1990; Brodhead 1871; Jameson 1909).

The City of New York continued to grow during the first half of the eighteenth century. However, the majority of that growth was confined to the southern tip of the island and the majority of Manhattan Island remained sparsely populated above present day Canal Street. Mercantilism, consumerism and agrarian ways of life were the norm until the Revolutionary period when New York became an occupied city (Burrows and Wallace 1999; Cantwell and Wall 2001; Rothschild 1990; Brodhead 1871; Jameson 1909). Northern areas of the city remained farmland well into the nineteenth century.

The northern most areas of the island were subject to a series of failed attempts at settlement due to unsettled relations with local Native American groups. It wasn’t until after 1691 that settlement within northern Manhattan was successful. A 1707 survey of the “King’s Way”, a former Indian trail that became the Kingsbridge Road, now part of Broadway indicates that the area between West 160th and Nagel and Dyckman farms at West 200th Street was undeveloped (Geismar 1995).

The King’s Way followed the aforementioned Native American trail. The route provided easy access along Manhattan Island connecting the settlement of New Amsterdam with the mainland north of Spuyten Duyvil Creek. It was a key contact point for any northern settlements (Geismar 1995).

The two major farm properties within the project area were the Nagel and Dyckman farms. The farms were established by Jan Dyckman and Jan Nagel when they began to acquire property beginning in 1671. Together they owned a large portion of northern Manhattan Island. Following Jan Nagel’s death in 1689, Jan Dyckman married his widow Rebecca increasing his property holdings. The area of two farms was commonly known as Round Meadow and was comprised of “rolling meadow and marsh lands between Inwood hill and the Harlem River, extending north from Sherman Creek, to 211th Street, together with strips of woodland across Inwood hill” (Bolton 1924:25, 37, 186). The farm area totaled over 300 acres (Stone 2003).

The original Dyckman farmhouse, built by Jan Dyckman, was located near the Harlem River and 210th Street. Excavations by Claver and Bolton discovered the foundation remains of this house (Bolton 1924). After Jan Dyckman’s death in 1719 the combined land holdings were divided between both the Dyckman and Nagel children. Jacobus Dyckman and his stepbrother, Jan Nagel Jr. bought out their siblings shares of the property. Jacobus’ son, William, inherited his father’s property upon his death in 1774, built a new home at Tenth Avenue and 208th Street (Stone 2003).

¹ The incorporation of the outer boroughs, The Bronx, Queens, Richmond (Staten Island) and Kings (Brooklyn), which would form the greater City of New York, did not occur until 1898.

During the revolutionary period all of Manhattan Island was under control of the British. The British overtook the island following the disastrous defeat of the Colonials during the Battle of Long Island. Washington and his troops retreated to Manhattan but were soon driven into the Bronx by the advancing British forces. Several of the northern farmhouses became temporary headquarters for the British military and several encampments were established in the area. The British seized complete control of the Island (and area overall) during this campaign. During this period they also constructed a series of defensive works including Fort George. The proximity of the King's Way was a key strategic resource as it allowed for the easy movement of troops and supplies (Panamerican 2003; Burrows and Wallace 1999).

During this period William Dyckman and his family relocated to Peekskill, NY. The area of Dyckman farm became a key defensive stronghold for the British after a troop of 2000 British and Hessian soldiers captured the area on November 16, 1776. The area of Dyckman Park, which lies directly in the project area, was the site of the first and second attacks (Greenhouse 2003; Stone 2000).

At present day 204th Street along Payson Avenue following to Academy Street a large encampment had been built (Bolton 1918). It is believed that the Americans originally built the encampment (Stokes 1915:V:1027) but it was later used and enlarged by the British Seventeenth Foot Regiment (Bolton 1914:7). The encampment contained semi-subterranean winter quarters that had been dug into the hillside. When Prescott Avenue was graded in 1901 extensive remains of the camp were uncovered. The remnants of the winter camp site, along Payson Avenue off of Beak Street, were excavated by Bolton and Calver in 1912 along. The excavation uncovered the foundation of at least fifty of the semi-subterranean huts that housed the troops; brass pins, a tailor's scissor, thimbles and an abundance of liquor bottles and an iron funnel. Buttons from several regiments were also uncovered. Bolton and Calver determined the extent of the camp to have been "two hundred feet in width and eight hundred feet in length, from Academy Street to 204th Street, along the steep side of the easterly part of Inwood Hill, approximately between Prescott Avenue and Seaman Avenue: (Bolton 1918:89). This places the camp approximately 450 feet from the present day Dyckman House (Greenhouse 2003; Stone 2000).

William Dyckman and his family were known patriots during the Revolution. For this, the British burned his house, destroyed the associated outbuildings and cut down the orchard and other trees for timber. Upon returning at the end of the War the property was cleared and a new house, which survives today within Dyckman Park and has been the subject of archaeological testing in association with renovation and conservation projects, was constructed (Greenhouse 2003).

The areas of Washington Heights and Inwood remained sparsely developed prior to the turn of the twentieth century. Due to this there are few historic sites in the northern area of Manhattan. In addition to the British and Hessian Revolutionary War camp and the Dyckman Farmhouse are a series of foundation walls of some of the earlier Dyckman and Nagel structures and an enslaved person's burial ground, located at Tenth Avenue at 211th Street, and discovered by James Finch in 1903 (Historical Perspectives 1998).

Bronx

The Dutch West India Company made the first official land purchase in the area of the Bronx from Natives Americans in 1639. Two years later Jonas Bronck became the first European settler in the area when he purchased 500 acres between the Harlem and Bronx Rivers. The land west of the Bronx River belonged to the townships that would eventually form Bronx County, while the land to the east was part of the County of Westchester. It would remain in Westchester's possession until the mid nineteenth century. Bronx County, and eventually New York County, challenged Westchester County's claim to the land that would eventually become the eastern portion of The Bronx for almost one hundred and fifty years before succeeding (Hermalyn and Ultan 1998:65; Ricciardi 2001a, 2001b). Historically the area of the present day Bronx was a series of Townships before becoming annexed to New York City in 1874 and incorporated as a borough in 1898. It wasn't until the period of annexation that development of the area began in earnest. Until that time the area consisted mainly of farmland or small towns (City/Scope 1990; Historical Perspectives 1998; Bosech 1994).

The historic settlement of the Bronx County began soon after the founding of New Amsterdam in 1626 on the Island of Manhattan. The first lands in the area were purchased in 1639 from the local sachems. A transfer of land

stretching from the Kil running behind Manhattan Island (The Harlem River) and the Great Kil (the Hudson River), was made in consideration of a certain lot of merchandise. Soon after this purchase the flats of the area were occupied by bouweries, farms (Jenkins, 1912). Jonas Bronck, for whom the County and the river would eventually be named, purchased land from Andreas Hudde, who purchased the land from three Indian Sachems (Taaffee 1891:18; Historical Perspectives 1993a:11) in 1641, along the shores of what would become known as the Bronx River (Jenkins 1912:381 and Taaffee 1891:18 as cited in Historical Perspectives 1993a:11). Bronck, originally from Sweden, established a settlement, along with his wife and a handful of German, Dutch, and Danish indentured servants.

Early settlement of the area was fraught with conflict between settlers and the Native Americans. The earliest formal settlement in The Bronx was located along the Harlem River in 1639, in what is now Mott Haven. Bronck soon began to sell off his initial land purchases and by 1640 the Town of Vredeland in Oostdorp (Westchester) was settled (Jenkins 1912:1). Settlement by Europeans occurred in various forms including trading villages, towns, and county estates. Patents, purchases from the various Native American tribes, and sales between residents soon "opened" the area to settlement (Ricciardi 2001a, 2001b). In 1642, John Throckmorton and Anne Hutchinson both came, separately, from Rhode Island with a group of settlers. Throckmorton settled on Throg's Neck and Hutchinson along the banks of the river that was later named for her. Indian uprisings caused Throckmorton and his settlers to flee and Hutchinson was killed (Bolton 1848 and Cook 1913).

Prodded by Thomas Pell of Fairfield, Connecticut, 15 men settled at the head of Westchester Creek and founded the first village in the area, Westchester, 1654. This became the first permanent European settlement in The Bronx (Cook 1913). The town of Eastchester in the northeast Bronx was established next. Ten families, abetted by Thomas Pell, settled the town in 1663. Three years later Thomas Pell received a patent from the colonial governor making his land in the northeast Bronx a manor, later called Pelham. In 1671 John Archer received a patent from the colonial governor for the manor of Fordham, which included almost all of today's western Bronx (Jenkins 1912). This distinguished the settlement of Bronx County from that of Western Long Island. Whereas Western Long Island was settled as a series of small rural towns or villages, the Bronx was largely settled as a series of manors by wealthy landowners with extensive business interests in shipping or trade.

By 1673 the Albany Post Road was laid out through the Bronx. The road crossed the Harlem River at Kingsbridge near the intersection with the Boston Post Road. This provided an important connection for Manhattan with the Fort Orange trading post located at present day Albany. Soon after, the area of Kingsbridge was formally laid out in the West Farms Township. It was named for the first bridge to span the Harlem River. The bridge was constructed in 1693 by Frederick Philipse (Ultan 1983) and connected Manhattan Island with the mainland Bronx. Philipse, a wealthy Dutch landowner, charged local farmers a toll to use the bridge (City/Scape 1990; Historical Perspectives 1998; Boech 1994).

The proximity of the Bronx to Manhattan allowed for a greater interaction of the respective residents. Many wealthy Bronx residents had direct political and economic ties to Manhattan since the eighteenth century. Some even maintained residences in Manhattan in addition to their Bronx homes (Loorya 1995 and Ricciardi 1996).

During the American Revolution the bridge was of great strategic importance to both the British and the American militia. As a result extensive fortifications were built in the vicinity, on both sides of the bridge (Ultan 1989). On the Bronx side of the bridge five redoubts and three forts were built on Spuyten Duyvil and Tippet's Hill. These were captured by the British in November 1776 (City/Scape 1990; Historical Perspectives 1998; Boech 1994).

The largest of the forts in the area was Fort Independence located between the Boston and Albany Post Roads on lands that belonged to Captain Richard Montgomery. Montgomery was a former British Army officer who served as a Patriot during the Revolution. He was charged with surveying the area for defensibility at the onset of the War (Jenkins 1912:127). Fort Independence was a "square palisades earthwork redoubt protected by a ditch" (City/Scape 1990:21).

The site of Fort Independence, part of the Montgomery property, was purchased by William Giles in the nineteenth century. Reportedly, when Giles built his house he encountered remnants of the fort including canons and other various military artifacts (Jenkins 1912:127). When the Giles house was demolished in the 1950s, archaeologists uncovered further evidence of military occupation including the foundation remains of two structures believed to be

quarters, hearths, a refuse dump and a significant amount of military artifacts (Lopez 1978 and Historical Perspectives 1998).

The fall of Kings County in August of 1776 and the subsequent movement of General Howe and his troops up The Bronx River (see Ricciardi 2001:16 for further discussion of this incident) and towards Throgs Neck, where much of the fighting in the area would eventually take place (Doherty n.d.:8) forced the American troops, under the direction of General Heath, to take up positions along Westchester Creek (Roberts 1991:4 and McNamara 1990:5). The British eventually landed some 4,000 troops at Pell's Point (modern day Pelham Pay Park) and begin to march west towards the interior of Westchester and Bronx Counties (Roberts 1991:4; McNamara 1991:5). Fort Independence was abandoned by the Americans as Hessian soldiers approached from New Rochelle in 1776. British troops held the fort until 1779 (City/Scape 1990; Historical Perspectives 1998; Boesch 1994). Queens, Kings, Richmond, New York and Bronx counties remained in British control throughout the War.

Another major historic period site within the Bronx portion of the project area is Van Cortlandt Mansion and Park. This area was occupied from the initial settlement of the Bronx by Adriaen Van der Donck in the seventeenth century through the turn of the twentieth century.

Oloff Stevens Van Cortlandt arrived from Holland in 1638 and was the third richest man in the area by 1674. His son, Jacobus Van Cortlandt successfully managed the family's shipping business and in 1694 he purchased his first plot of land in Kingsbridge, the area that would later become Van Cortlandt Park (Herrick 1992; Ricciardi 1997). The family money was largely invested in shipping, exporting and importing "various" goods and they began farming, brewing and milling grain on the Kingsbridge property for domestic and overseas sales. (Mursburger 1990 and Fabend 1991).

Early in the eighteenth century Jacobus began civic service to New York and he was elected mayor for a two year term in 1710. He succeeded his brother, Stephanus, who was the first native-born mayor of New York (Wilson 1893: II). By 1732, Jacobus had systematically purchased all the lands originally owned by Adrian Van der Donck in the then town of Kingsbridge (Ricciardi 1997). The property would eventually total 800 acres encompassing a large portion of what would become known as the present day Bronx and Yonkers. This land, had been owned by the Weckquaskeck family of the Mohegan tribe of the Algonquin nation, and had been occupied since the late Woodland Period (Mursburger 1990). The Van Cortlandt property is reported to have been occupied a fourteen acre Native American settlement that included a burial area. The property also included Tibbetts Brook. Frederick Van Cortlandt, Jacobus' son, constructed the "large stone dwelling house" on the Kingsbridge property (Mursburger 1990a) that is presently standing in Van Cortlandt Park, east of Broadway at approximately 245th street (Ricciardi 1997).

In the latter half of the eighteenth century the Van Cortlandt family and their home played a role in the War for Independence. In 1776, the grounds were used to house troops and the records of the City of New York were hidden in the family's burial vault at Vault Hill. After New York fell, the Van Cortlandt house became the headquarters for British General Sir William Howe. For the remainder of the war the property remained either behind or close to British lines. Despite this many of the Van Cortlandts remained in the family home (Ricciardi 1997) and unlike many families, they avoided having their lands confiscated at the end of the war (Bankoff and Winter 1991).

Following the War of Independence and into the early nineteenth century the Van Cortlandts intensified farming on the lands, which now house the baseball fields (Mursburger 1990 and Ricciardi 1997). However, the growth of New York City would affect the Van Cortlandt property. To provide more "fresh water" to the city, a new aqueduct system was set to run along the northern ridge of the Van Cortlandt grounds in 1842. "It was decided to run rail lines through the family grounds just north of the lake" to gain access to Albany and New England (Ricciardi 1997). Trains ran on these lines until the late 1880s. In 1874, the Van Cortlandt lands, west of the Bronx River within the southernmost part of Westchester, were annexed to the City of New York by Augustus Bibby Van Cortlandt. In 1889, the Van Cortlandt family deeded the mansion house and the remaining lands to the City of New York with the intention of turning it into a public park (Ricciardi 1997).

Early in 1990 Mary Ellen Hern, then director of the Historic Houses Department of the New York City Parks Department, discussed conducting archaeological excavations at Van Cortlandt Park Brooklyn College of the City

University of New York. Excavations occurred in many different areas of the grounds. Excavations investigated an area that is shown in nineteenth century illustrations to have been the site of a large barn and recent excavations for an electrical conduit line, at the south edge of the baseball field, had exposed elements of a fieldstone wall. The excavation revealed two subterranean stone structures. These features had been filled with a mixture of rock, rubble, cut field stones and earth amongst which were deposited a collection of reconstructible bottles, plates and other artifacts. Excavations also uncovered the foundation of the seventeenth century home of Adriaen Van der Donck as well as a late Woodland Native America shell pit (Ricciardi 1997).

At the turn of the nineteenth century another bridge linking Manhattan, the Bronx and the lower portion of New York State was constructed. The Harlem Bridge (today known as the Third Avenue Bridge) was built over the Harlem River and a new Boston Post Road led directly to it (Jenkins 1912 and Cook 1913). Although directly linked with New York, throughout the first half of the nineteenth century, life did not appear to change much for the residents of the Town of Westchester. Nevertheless, small scale agriculture as well as ship manufacture and repair continued to take place along Westchester Creek (McNamara 1990:8).

Recent immigrants to The City of New York began to spread out into the outer counties. The Town of Westchester saw a large increase in both Irish and Italian immigrants with the founding of St. Raymond's Church soon after the turn of the nineteenth century (McNamara 1990:8).

The development of the New York-New Haven-Harlem River (and subsequently Metro-North) passenger/freight rail lines beginning in the 1840s brought rail service into, and through, the area (Allison 1896). Adjacent to the project area the rail system acquired land and built a service station/train yard and commuter rail lines in the 1850s. This was the first railroad in the Bronx and it resulted in a significant population increase in the western portion of the Bronx (Jenkins 1912 and Cook 1913).

The introduction of train service in the area aided the growth of the town and the area surrounding the project area. However, the landscape of the project area itself had not changed up to the late nineteenth century (Allison 1896). According to the Viele 1874 map, the project area was a marshy, tidal overflow area. It does not appear to have been filled until some time between 1874 and the 1890s (Viele 1874 and LPC Site File Map n.d).

Following initial population increases additional public services were brought into the area. The Croton Aqueduct, designed by early American engineer John B. Jervis was completed in 1848. The monumental High Bridge, in the shape of a Roman Aqueduct, was part of the Croton Aqueduct construction. The bridge traversed the Harlem River, and was used as a footpath to Manhattan. By 1861 gas lighting had already been introduced into The Bronx. By 1886 the elevated subway line was extended into the Bronx providing easier commuter services for residents to travel into Manhattan. One year later, electricity was brought into the Bronx (Tieck 1968).

Though today's Bronx was officially part of Westchester County as per the counties that were officially created in 1683 colonial New York, areas of the Bronx were being annexed to the City of New York by the last quarter of the nineteenth century. This was an early step toward the incorporation of the other counties around the City of New York. The towns of Morrisania, West Farms and Kingsbridge, all of which were west of The Bronx River, were the first to be annexed to the City in 1874 (Tieck 1968 and Burrows and Wallace 1999).

In the 1890s there was strong support in parts of Eastchester, Pelham, and the Village of Wakefield for consolidating the area east of The Bronx River with New York City. This support extended to a call for the incorporation of the towns and villages of Kings, Queens, and Richmond Counties to create Greater New York. In 1894 a nonbinding referendum on consolidation was passed by voters in New York City and its outlying areas but defeated overwhelmingly in the city of Mount Vernon and by one vote in the town of Westchester. The state legislature defeated a bill inspired by the referendum but in 1895 passed another bill annexing to the city the area east of The Bronx River, parts of the towns of Pelham and Eastchester, the village of Wakefield, and the town of Westchester, which because of its central location was included despite its negative vote in 1894. In 1898, all of the areas that had been annexed in 1874 and 1895 became the borough of The Bronx.

On January 1, 1898, the five counties of New York (Manhattan), Richmond (Staten Island), Bronx, Queens, and Kings (Brooklyn) were united into the City of Greater New York City (Winter 1981:57; Ment 1979:67). The newly created city had a population of over three million people, and an area of over three hundred square miles (Burrows

and Wallace 1999:1235). The outlying sections of the City of New York would soon be the subject of massive waves of citizens emigrating from Manhattan looking for places to live (Burrows and Wallace 1999:1235 and Manbeck 1998). This expansion brought about the continued modernization of the five boroughs of Greater New York (Hermalyn and Ultan 1998:64; McNamara 1990:8; Ricciardi 2001). With the incorporation first into The Bronx County and then into The City of New York, the area began to become urbanized with the laying of a street grid, New York City water and sewer lines, and electrical and telephone lines (McNamara 1971).

Yonkers

For much of the early historic period the Bronx was part of Westchester and areas of present-day Yonkers were considered part of the Bronx. It wasn't until the nineteenth century that Bronx County took on its current political boundary separating it from Yonkers. Therefore much of the early history of Yonkers is similar to if not identical to that of the Bronx.

Present-day Yonkers was part of the land purchased by Adriaen Van Der Donck on the seventeenth century. Van Der Donck constructed a sawmill at the junction of the Hudson and Nepperhan Riveres. In the latter part of the century much of Van Der Donck's "Yonkers" holdings passed to the Philipsburg family. Philipse Manor Hall was constructed in the area of the mill. This colonial era manor house was constructed in 1862 by Frederick Philipse, a wealthy Dutchman who married into the Van Cortlandt family of the Bronx. Philipse established a large estate that included all of present-day Yonkers.

During its first two hundred years Yonkers was a small farming town with an active waterfront. In the nineteenth century industry would arrive in Yonkers, leading an expansion. The village of Yonkers was incorporated on April 12, 1855 with a population of approximately 7,500. Less than twenty years late the population of Yonkers nearly tripled. In 1872 Yonkers received a city charter from the State of New York.

4.0 METHODS

The Phase IA survey was designed to collect specific types of information to assist in the identification, evaluation and management of cultural resources present within proposed impact areas. This survey involved the collection and interpretation of historic and archival research, including a review of all known archaeological, historic and National Register Listed and Eligible sites in the vicinity of the project area, a review of previous cultural resource surveys conducted in the area, a review of environmental data, and a thorough site inspection of the project area. The methods employed followed guidelines set forth in the *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (New York Archaeological Council 1994).

The cultural resource investigations involved three tasks: (1) preliminary research, including a literature, records, and map search; (2) project area inspection and documentation; and (3) and reporting.

4.1 Literature and Records Search

A thorough records and literature search of maps and reports on file at the OPRHP and the Landmarks Preservation Commission (LPC) and online at the State Preservation Historic Information Network (SPHINX) was conducted to identify the following:

- (a) Previously recorded New York State Museum (NYSM) archaeological sites within a one-mile radius of the project area;
- (b) Previously recorded OPRHP archaeological sites within a one-mile radius of the project area;
- (c) Previous Archaeological Surveys conducted within a one-mile radius of the project area;
- (d) National Register Listed properties within a one-mile radius of the project area;
- (e) National Register Eligible properties and Building Inventories within or adjacent to the project area; and
- (f) Nineteenth Century maps of the project area.

4.2 Inspection of Project Area

In order to document current conditions, TRC conducted a pedestrian survey of the proposed transmission route and existing substations. With most of the proposed construction occurring within curb-to curb portion of the rights-of-way of public roadways and existing substation sites, this inspection focused on the accuracy of route mapping in relation to adjacent historic properties.

4.3 Curation of Project Materials

All written records, Photographs, and project materials are currently being curated at the TRC Environmental Corporation office in Providence, Rhode Island.

5.0 RESULTS AND RECOMMENDATIONS

5.1 Results

5.1.1 Archaeological Sites

Prehistoric

A total of 53 recorded prehistoric and 19 recorded historic archaeological sites were identified within one-mile of the proposed transmission line route. The prehistoric sites are summarized in Table 5.1. The historic sites are summarized in Table 5.2.

Table 1 Prehistoric archaeological sites within one-mile of the project.

Site Name	Time Period	Site Type	Location	Distance from APE	NYSOPR HP Site #
Kappock			Yonkers	n/a	NYSM 709
Mount Saint Vincent			Yonkers	n/a	NYSM 710
West 218 th Street				1000 feet	NYSM 711
		Stray find	Bronx	<100 feet	NYSM 2218
		Village	Bronx	½ mile	NYSM 2823
		Village	Bronx, mouth of Tibbet's Brook	¾ mile	NYSM 2838
		Village	Bronx, Sedgewick Avenue	½ mile	NYSM 2839
	Woodland	Shell midden, disturbed	Manhattan, Inwood, foot of Dyckman Street	¼ mile	NYSM 4051
		Shell midden, destroyed	Manhattan, 220 th Street & Kingsbridge Road	750 feet	NYSM 4052
Harlem River Shell Heap	Woodland	Village and shell midden	Manhattan, Inwood Hill Along Harlem River 209 th to 211 th Street	¼ mile	NYSM 4053
Seaman's Garden	Historic	Village	Manhattan, Seaman Avenue and Isham Street	1000 feet	NYSM 4054
	Late Woodland	Stray find	Manhattan, 214 th Street and 10 th Avenue	1000 feet	NYSM 4055
		Indian trail	Manhattan	0	NYSM 4056
		Shell midden	Bronx, East of Fieldston Road & North of W. 247 th Street	1000 feet	NYSM 4057
		Shell midden	Bronx, N. of 247 th Street & West of Pascal Avenue	¼ mile	NYSM 4058

Site Name	Time Period	Site Type	Location	Distance from APE	NYSOPR HP Site #
		Village	Manhattan	1 mile	NYSM 4066
		Shell midden	Manhattan	1 mile	NYSM 4067
		Village	Manhattan	1250 feet	NYSM 4068
		Traces of occupation	Manhattan	0-1500 feet	NYSM 4069
		Village	Yonkers	0-1/4 mile	NYSM 5195
		Burial	Yonkers, Blackwell's Hill	¼ to 1 mile	NYSM 5196
		Burial	Yonkers at Grassy Sprain Valley	0-1/2 mile	NYSM 5197
		Traces of occupation	Yonkers	1 mile (and beyond)	NYSM 5221
		Traces of occupation	Yonkers	½ to 1 and ½ miles	NYSM 5223
		Traces of occupation	Yonkers	0-1/2 mile	NYSM 5228
		Traces of occupation	Bronx	0-1/2 mile	NYSM 5320
		Traces of occupation	Bronx	0-1/2 mile	NYSM 5321
		Traces of occupation	Bronx	¾ mile	NYSM 5322
Sprain Reservoir vicinity	Late Archaic	Traces of occupation	Yonkers	½ - 1 mile	NYSM 6799
George Rockshelter		Rockshelter	Yonkers	½ mile	NYSM 6872
		Fishing Camp	Manhattan	1 mile	NYSM 7250
		Burial	Yonkers	1 mile (and beyond)	NYSM 7725
		Camp	Bronx	¾ mile	NYSM 7727
Chapel Farm II		Workshop/Quarry	Bronx	¼ mile	NYSM 7729
		Rockshelters	Manhattan	¾ mile	NYSM 8368
		Shell midden	Manhattan	0	NYSM 8369
		Camp	Manhattan	¼ mile	NYSM 8370
		Camp	Manhattan	<1/4 mile	NYSM 8371
Nipnichsen	Late Woodland	Village	Manhattan, atop Spuyten Duyvil Hill	½ mile	NYSM 8375
King's Redoubt				½ mile	A005.01.00 053
		Shell midden		½ mile	A005.01.00 068

Site Name	Time Period	Site Type	Location	Distance from APE	NYSOPR HP Site #
Site 0069		Flake site		½ mile	A005.01.00 069
Site 0068	Woodland			½ mile	A005.01.00 072
				1000 feet	A061.01.00 533
	Late Archaic	Cave and shell midden		0	A061.01.00 532
Shora Kapok/Cold Spring	Archaic, possible	Shell heap		½ mile	A061.01.00 123
Dongan Place		Shell midden		1000 feet	A061.01.00 534
Isham's Garden	Early Woodland	Village, possible	Manhattan	1000 feet	A061.01.00 537
Muscoota/Inwood		Rockshelters and various site types	Manhattan	¼ mile	A061.01.00 121
Inwood Park		Shell midden	Manhattan	¼ - ½ mile	A061.01.00 538
Harlem River deposit	Late Archaic - Woodland	camp		¼ mile	A061.01.00 116
Brook Crossing		Burial		750 feet	A061.01.00 119
Seaman Avenue	Woodland	Shell heaps/dog burial	Manhattan	1000 feet	A061.01.00 114

Manhattan

On Manhattan Island the local Native American groups are referred to as the Munsees, who were part of the Delaware Nation, part of the Algonkian language group. The Munsees were organized as a series of autonomous groups (Bolton 1920, 1922, 1934; Lenik 1992; Smith 1950, 1980).

The area was known as Muscoota to the local Native American group that inhabited the northern Manhattan portion of the project area (Bolton 1924:25; Kraft 1986). Available evidence suggests that subsistence and occupation among Native American groups in the area was seasonal and that they practiced a hunting and gathering economy that utilized the abundance of water resources in the area (Ceci 1977, 1982). During the summer months, groups would aggregate in large base camps that spilt during the other seasons to occupy smaller hunting, fishing, or plant procurement locations. Agriculture became predominant during the Late Woodland period (1,000 A.D. – European Contact) (Ceci 1979-1980). By the time of European settlement in the early seventeenth century, the local Native Americans kept fields in which they grew a triad of corn, beans, and squash, along with some other domesticated plants (Truex 1982).

Several prehistoric sites were excavated during the early part of the twentieth century in the northern section of Manhattan. The majority of these sites were excavated by Alanson Skinner and Reginald Bolton. "This general region was highly favorable for aboriginal occupation, having both fertile soil for raising maize and waters that provided sea food. Its high rock cliffs permitted fortified positions, while the many waterways made it possible for journeys to the surrounding countries" (Parker 1922:626). Bolton's map of Washington Heights in Indian Possession before 1600 shows quite a few site locations, not all of which have been reported on in detail.

Inwood Hill Park was known as "shorakapkok," which is translated as "the sitting down place." The Mohican "showaukuppock" translated as "cove." According to Bolton another term used by local Native Americans was "saperewack," which meant "the glistening place." It was a forested oasis that is today bounded by the Hudson

River, Harlem River Ship Canal, Dyckman Street, and Payson and Seaman Avenues. One of the tribal groups that lived in the area, the Rechgawawanc, had made their home here in the sheltering hillsides and close proximity to the fishing and hunting spots (Bolton 1920, 1922, 1934; Bolton 1881).

Based on a review of Cultural Resource Management reports in the library of the LPC, recorded Native American sites within Manhattan are most common at the northern end of the island. A number of site types have been identified within the area of Inwood as well as nearby Washington Heights including camps, villages, rock shelters, shell middens and burial sites. An overview of the various sites within this area follows:

- Tubby Hook: A late archaic shell midden excavated in the early twentieth century by Alanson Skinner and Amos Oneroad. Prior to development the area was a rocky ravine close to the river. Today it is a busy commercial street in the Washington Heights neighborhood.
- Broadway and Isham Street near 207th Street: This was the location of a large Woodland period settlement. The area was excavated in 1919 by Alanson Skinner. Among the artifact remains were food refuse including deer, muskrat and fish bones, clam and oyster shells and pottery shards.
- Tenth Avenue at 211th Street: At this site Bolton and Calver uncovered several shell pits and a ceremonial site in 1904. Today the area is a series of used car lots and subway yards.
- Inwood Park: Located at the northern tip of Manhattan Island, several sites from the late Archaic to the Woodland period have been identified within Inwood Park and its immediate vicinity. These were excavated during the early twentieth century revealing several site types. In the early 20th century several late archaic shell middens and rock shelters were excavated by Alanson Skinner and Amos Oneroad in and around Inwood Park. Among the artifacts recovered were oyster shell, spear points, knives and stone axes.
- Shorakapok Rock was the location of a Native American settlement excavated by Skinner and Oneroad in 1918. The site revealed several shell middens that stretched to the shore; hearth and storage pits; pottery shards; cups and dishes carved from turtle shell, spear and arrow points and a variety of tools. At the time of the excavation, the site had already been heavily compromised due to looting. Even so the archaeologists were able to uncover information about domestic routines for local native groups.
- Located near the entrance to Inwood Park, at Seaman Avenue and 204th Street, is a site excavated by Bolton in the early twentieth century. Excavation uncovered artifacts and a refuse pit; analysis suggested this area was a planting field.
- Along Seaman Avenue several other Native American sites have been uncovered. Near Academy Street remnants of a late Woodland settlement that included trash, storage and hearth pits were discovered. At 204th and Seaman Avenue, currently the site of a large pre-war apartment building, several Native American burials were uncovered. Slightly further along Seaman Avenue, near Corbets Gardens, eleven Native American dog burials from the late Woodland period were uncovered.

The Bronx

The area of the Bronx was occupied by the Manhattans and the Weckquaesgeeks north of the Harlem River and to the east the Siwanoy. This group was part of the Mohegan Nation (Bolton 1920; 1922; 1934; Lenik 1992; Smith 1950 and 1980).

In the area of the Bronx fresh water and coastal resources were abundant and easily accessible. Various game was plentiful and nearby trails and lithic quarries made the area conducive to settlement (Boesch, Bianchi and Perazio 1993; Ricciardi 2001a, 2001b).

The lower Hudson Valley has been occupied since the Early Archaic Period of Native American history (Lenik 1992) and possibly since the Paleo-Indian period (Ritchie 1969). However, little has been recovered from the Paleo-Indian to the Early/Middle Archaic Periods within the project area, or the region. It is theorized that this is due to

the drastic changes that occurred to the landscape during the last Ice Age when sea levels rose by at least three hundred feet (Wall and Scheerer 200; Ricciardi 2001a, 2001b 0).

Based on historical and archaeological data it appears that Native Americans chose to locate their semi-permanent and permanent settlements along the many rivers and estuaries in what is now The Bronx (Smith 1982; Saxon 1973). An ample food supply and transportation were two reasons for locating along these waterways. Several cultural resource surveys have confirmed this hypothesis (see: Historical Perspectives 1993a; Pickman 1990; Rothschild and Matthews 1993 for examples). Boesch states that there is a high potential for the recovery of Native American sites/artifacts along all of the riverfronts in the Bronx (Boesch 1994), particularly those rivers that are fresh water such as The Bronx River (Ricciardi 2001a, 2001b).

While there is minimal information on Early and Middle Archaic occupations, Late Archaic sites are relatively well represented. For example, Late Archaic and Terminal Archaic sites have been recorded along major streams in the New York Botanical Gardens and the Bronx Zoological Park, including rock shelters (Kazimiroff 1959), lithic sites (Historical Perspectives 1993), Late Woodland sites (Hermalyn 1982; Bolton 1920 and 1922; Westchester County Historical Map 1978), and a petroglyph site (Lenik 1988) have also been recorded (Ricciardi 2001a, 2001b).

Shell midden features represent the majority of Woodland Period sites. Just outside the project area in the southern boundary of the Bronx Zoological Park several shell middens and campsites have been uncovered. The most significant one identified as site 113x, was noted on a historic map, the Map of Westchester County Showing Indian Occupation (Westchester Historical Society 1978). According to the New York City Landmarks Preservation Commission Report on Native American occupation in the Bronx, there were several camp sites located along the Bronx River between the project area, extending north to the New York Botanical Gardens (NYC Landmarks Preservation Commission 1991:33). Other waterway sites in the Bronx include those from Pelham Bay Park (Skinner 1932; Harrington 1909) and Throgs Neck (Lopez 1955, 1956, 1957, 1958).

A literature review identified the following Native American sites within the Bronx portion of the project area:

- Shorakapkok: Located near 230th Street and Broadway this was a Native American village (Tieck 1968:58; Bolton 1920:307).
- Nipinichsen: This palisaded fort site was located in the Riverdale area near 230th Street (Bolton 1934:140; Skinner 1915:56).
- Gowahasuasing: Located on Tibbets Neck (Grumet 1981:69).
- Keskeskick is a prehistoric village site, estimated to be fourteen acres, located within present day Van Cortlandt Park (Bolton 1934:141).
- Saperewack: Located on the Harlem River at Marble Hill (Grumet 1981:49, 68).
- Kingsbridge Post Office at 5517 Broadway near 230th Street: This site, excavated by Tieck yields projectile points, pottery, shell and a Native American burial (Tieck 1968:56).
- 231st Street and Kingsbridge: A prehistoric hearth containing a clay pot was excavated by Bolton (Bolton 1934:12).
- Ewen Park at 231st Street: Shell and ashes led to discovery of a food storage pit by Bolton (Bolton 1934:140).
- Marble Hill, Broadway and 230th Street: An area of shell and other prehistoric artifacts (Bolton 1934:135).
- Papparinem Island: This was a large site found on high ground near 231st Street but the exact location is not provided. The site contained small temporary encampments (Bolton 1934:134, 139).

- Tibbett's Neck: Several extensive shell middens were identified below the bluffs (Jenkins 1912:329).
- Spuyten Duyvil Hill: Skinner located several small shell deposits in this area (Skinner 1915:56).
- Van Cortlandt Park: Located east of the project site Van Cortlandt Park contains several sites. This includes an extensive two to three foot thick shell midden and several burials over fourteen acres in the southwestern section of the park; shell pockets near the mansion and the parade ground has once been used as planting fields. Throughout the area storage pits, pottery and stone tools have been reported (Bolton 1934:141; Tieck 1968:3; Bankoff and Winter 1991 and Ricciardi 1997).
- Chapel Farm site: Located in Riverdale archaeological investigations at the Chapel Farm site have identified an extensive prehistoric quartz quarry on the highest knoll in the Bronx (Historical Perspectives 1990, 1993).

Yonkers

From a modern historic perspective the area of Yonkers was very much part of the Bronx (and vice versa) in terms of prehistoric history. Separating the Bronx and Yonkers culturally is impossible as they are modern political boundaries and not cultural ones with regard to the prehistoric period.

A literature and site file review identified several sites in the Yonkers portion of the project area. However little information was available for a majority of them. Two sites are in the immediate project vicinity, NYSM site #'s 5195 and 5197. Site 5195 is a village site, no further information was available. Site 5197 was a burial site located at the mouth of Grassy Sprain Valley. Other sites in the large project area include traces of occupation, a camp site and George Rockshelter.

Contact Period

At the time of European contact as many as fifteen thousand Native Americans inhabited the New York City area (Burrows and Wallace 1999:5). The Native American settlement located in the vicinity of Inwood Park was at the northern end of north-south foot trail that lay within the project area. This trail traversed the Island, extending from Battery Park to Inwood. (Lenik 1992; Burrows and Wallace 1999). Soon after the arrival of the Europeans a majority of the Native American population was decimated by a combination of war and disease (Burrows and Wallace 1999:8; Ritchie 1958; Levin 1980).

Historic

Table 2 Historic archaeological sites within one-mile of the project.

Site Name	Time Period	Site Type	Location	Distance from APE	NYSOPRHP Site #
Peene's Wharf	Mid 19 th century	Wharf, buried traces	Yonkers	<1/2 mile	A11940.001090
Peene's Pier			Yonkers	¼ mile	A11940.001089
Copcutt Carpentry Mill	c. 1886	Mill	Yonkers	1500 feet	A11940.001073
Negro Graveyard		Graveyard	Manhattan	500 feet	A061.01.00115
Ft. Tryon			Manhattan	½ mile	A061.01.00112
Fort Washington			Manhattan	¾ mile	A061.01.00120
Site 0071		Fieldstone foundation	Bronx	½ mile	A005.01.00071
Canal House – Feature 2	1830s-1950s		Bronx	½ mile	A005.01.00067
Lime Kiln Site – Feature 1			Bronx	½ mile	A005.01.00065
FT.#8	c. 1777-1782		Bronx	¼ mile	A005.01.00055

Site Name	Time Period	Site Type	Location	Distance from APE	NYSOPRHP Site #
Fort #4	c. 1777-1779		Bronx	¼ mile	A005.01.00056
Fort #6			Bronx	¼ mile	A005.01.00054
Van Donop Musketeers Camp Ground (Murray's Farm)	c. 1779		Manhattan	n/a	A061.01.00027
Blue Bell Tavern	c. 1724-1900		Manhattan	¾ mile	A061.01.00020
Barrier Gate	c. 1779-1783		Manhattan	¾ mile	A061.01.00125
Nagel House (Century House)	c. 1640-1903		Manhattan	1000 feet	A061.01.00127
Hessian Hut Camp			Manhattan	1 mile	A061.01.00118
Bennett Avenue Barbette Battery (Ft. Washington)	c. 1778		Manhattan	1 mile	A061.01.00118
Fort George	c. 1779		Manhattan	< ½ mile	A061.01.00111

5.1.2 Architectural Properties

National Register of Historic Places ("NRHP")

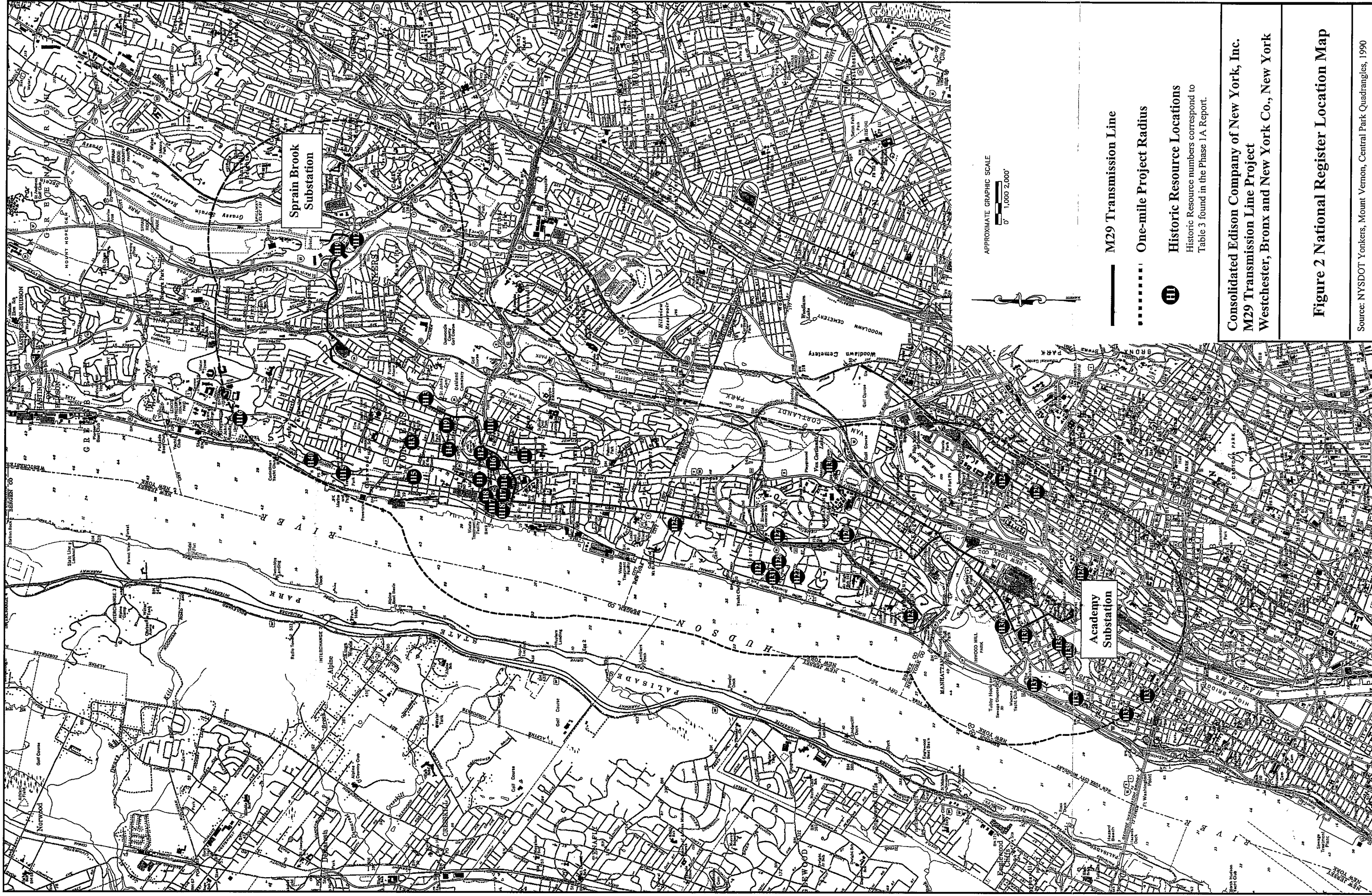
In accordance with 16 NYCRR §§86.3(a)(1)(iii), all National Register Listed (NRL) properties within one-mile of the project have been identified (Table 5.3) and mapped (Figure 2). The proposed transmission line construction will occur adjacent to numerous National Register Listed properties. However, due to the construction design (the transmission line will be buried under existing road surfaces) the proposed project poses no adverse direct or visual effect to these properties.

Table 3. National Register listed properties within one-mile of the project.

Reference No. ²	Site Name and Address
H1	Bell Place – Locust Avenue Historic District: Cromwell Place, Locust Hill Avenue, Baldwin Place and North Broadway – City of Yonkers
H2	John Copcutt Mansion: 239 Nepperhan Avenue – City of Yonkers
H3	Delavan Terrace Historic District: Delavan Terrace, Palisade Avenue, Park Avenue – City of Yonkers
H4	Ethan Flagg House, Blessed Sacrament Monastery: 23 Park Avenue – City of Yonkers
H5	Halcyon Place Historic District: Halcyon Place – City of Yonkers
H6	Mott Mill: 11-23 St. Casimir Avenue – City of Yonkers
H7	Philipsburg Building: 2-8 Hudson Street – City of Yonkers
H8	Philipsburg Manor Hall: Warburton Avenue and Donck Street – City of Yonkers
H9	Public Bath House No. 2: 27 Vineyard Avenue – City of Yonkers
H10	Public Bath House No. 3: 48 Yonkers Avenue – City of Yonkers
H11	Public Bath House No. 4: 138 Linden Street – City of Yonkers
H12	Sherwood House: 340 Tuckahoe Road – City of Yonkers
H13	Alexander Smith Carpet Mills Historic District: Saw Mill River Road, Orchard Street, Lanke Avenue, Ashburton Avenue – City of Yonkers
H14	St. John's Protestant Episcopal Church: One Hudson Street – City of Yonkers

² Reference numbers (Ref. No.) correspond to locations on Figure 2-1

Reference No. ²	Site Name and Address
H15	John Trevor Bond House: 511 Warburton Avenue – City of Yonkers
H16	Untermeyer Park: Warburton Avenue and North Broadway – City of Yonkers
H17	U.S. Post Office – Yonkers: 79-81 Main Street – City of Yonkers
H18	Yonkers Trolley Barn: 92 Main Street – City of Yonkers
H19	Yonkers Water Works: Saw Mill River Road, Grassy Sprain Road, Gilmare Drive – City of Yonkers
H20	Christ Church Complex: 5030 Riverdale Avenue – Bronx County
H21	Robert Colgate house: 5225 Sycamore Avenue – Bronx County
H22	William E. Dodge House: 690 West 247 th Street – Bronx County
H23	Edgehill Church of Spuyten Duyvil: 2550 Independence Avenue – Bronx County
H24	Eight Regiment Armory: 29 West Kingsbridge Road – Bronx County
H25	Fonthill Castle and the Administration Building of the College of Mount St. Vincent: West 261 st Street and Riverdale Avenue – Bronx County
H26	Hall of Fame Complex/Bronx Community College Complex – Bronx County
H27	Riverdale Presbyterian Church Complex: 4761-4765 Henry Hudson Parkway – Bronx County
H28	Henry F. Spaulding Coachman's House: 4970 Independence Avenue – Bronx County
H29	St. James Episcopal Church and parish House: 2500 Jerome Avenue – Bronx County
H30	Frederick Van Cortlandt House: Van Cortlandt Park at 242 nd Street – Bronx County
H31	Wave Hill: 675 West 252 nd Street – Bronx County
H32	181 st Street Subway Station (IND): Fort Washington Avenue, West 181 st and 185 th Streets – New York City
H33	181 st Street Subway Station (IRT): Fort Washington Avenue, West 180 th and 181 st Streets – New York City
H34	190 th Street Subway Station (IND): Fort Washington Avenue, Fort Tryon Park and West 190 th Street – New York City
H35	Dyckman Street Subway Station (IRT): Hillside Avenue, Nicholas Avenue, Dyckman Street and Nagle Avenue – New York City
H36	William Dyckman House: 4881 Broadway – New York City
H37	Fort Tryon Park and the Cloisters: Broadway and Dyckman Street – New York City
H38	Substation 17: 127-129 Hillside Avenue – New York City
H39	U.S. Post Office – Inwood Station: 90 Vermilyea Avenue – New York City
H40	Old Croton Aqueduct



APPROXIMATE GRAPHIC SCALE
 0 1,000 2,000'



— M29 Transmission Line

- - - - - One-mile Project Radius

Ⓜ Historic Resource Locations
 Historic Resource numbers correspond to
 Table 3 found in the Phase 1A Report.

Consolidated Edison Company of New York, Inc.
 M29 Transmission Line Project
 Westchester, Bronx and New York Co., New York

Figure 2 National Register Location Map

Source: NYSDOT Yonkers, Mount Vernon, Central Park Quadrangles, 1990

5.3 Recommendations

Due to intensive development within the area during the first quarter of the twentieth century the majority of the recorded archaeological sites (see Tables 5.1 and 5.2) have been destroyed. Other sites in the project area are likely compromised due to continued extensive development of the area. Though a few sites discovered during the early twentieth century are within the immediate project area, it is highly unlikely that any intact archaeological deposits would remain due to extensive disturbance by utility services (including water, sewer, electrical, gas and telephone).

Construction of the proposed transmission line and upgrades to the existing substations will have no impact on cultural resources. The proposed transmission line will be installed primarily within the curb-to-curb portion of the rights-of-way of public roadways. Prior disturbance along these rights-of-way essentially eliminates the potential for encountering significant archaeological sites along these routes. To provide for the protection of any unknown archaeological resources, the Applicant has developed an Unanticipated Discovery Plan as part of its Phase IA survey to provide for the identification, protection and documentation of archaeological resources discovered during construction.

The proposed transmission line construction will occur adjacent to numerous National Register Listed properties (see Table 5.3). However, due to the construction design (the transmission line will be buried under existing road surfaces) the proposed project poses no adverse direct or visual effect to these properties.

6.0 REFERENCES

Allison, The Reverend Charles Elmer.

1896 *The History of Yonkers, Westchester County, New York*. W.B. Ketcham, New York, New York.

Anonymous.

1872 "The Van Cortlandt House". *Appleton's Journal*, 8(193):617-618, December 7.

1916 unknown author map - New York Public Library Map Room, New York, New York - most likely mid to late nineteenth century.

n.d. Fort Independence Map.

n.d. unknown author map - New York Public Library Map Room, New York, New York - most likely mid to late nineteenth century.

n.d. unknown author map - New York Public Library Map Room, New York, New York - most likely mid to late nineteenth century.

Armbruster, Eugene L.

1918 *The Indians Of New England And New Netherland*. Eugene L. Armbruster, Brooklyn, New York.

Bank of New York Trust.

1914 *Historic Buildings Now Standing In New York Which Were Erected Prior To 1800*. The Bank of New York Press, New York.

Bankoff, Arthur and Frederick Winter.

1991 *Van Cortlandt Excavations, 1990 and 1991*. Brooklyn College Press, Brooklyn, New York.

Beauchamp, William.

1900 "Aboriginal Occupation Of New York." *Bulletin of the New York State Museum* 32(7).

Beers, Frederick.

1868 Map of Bronx County. F.W. Beers and Company, New York, New York.

1891 Map of Bronx County. F.W. Beers and Company, New York, New York.

Berger, Louis and Associates, Inc.

1985 Archaeological Testing of the Proposed Egress Stair and Dry Well Excavation, Van Cortlandt Mansion - Van Cortlandt Park, Bronx, New York (Project No. 1016). Report on file with the New York City Landmarks Preservation Commission.

1987 Phase I Archaeological Investigation of the Proposed Sewer and Plumbing Lines and Seepage Basin at Van Cortlandt Mansion - Broadway and 242nd Street, Van Cortlandt Park, Bronx, New York. Report on file with the New York City Landmarks Preservation Commission.

Beveridge, Charles E. and David Schuyler.

1977 *The Papers of Frederick Law Olmstead, Volume III, Creating Central Park: 1857-1861*. Johns Hopkins University Press, Baltimore, Maryland.

Bien, Joseph.

1893 *Atlas of Westchester County*. New York, New York.

- Boesch, Eugene J.
 1996 *Archaeological Evaluation and Sensitivity Assessment of the Prehistoric and Contact Period Aboriginal History of the Bronx, New York*. Report on file with the New York City Landmarks Preservation Commission. New York, New York
- Boesch, Eugene J., Leonard Bianchi and Philip A. Perazio.
 1993 Phase 1A Cultural Resource Investigation of The St. Raymond's Cemetery Expansion Area, Bronx County, New York: CEQR #92-612x. Report on file with the New York City Landmarks Preservation Commission. New York, New York
- Bolton, Reginald.
 1920 *New York City In Indian Possession*. Museum of the American Indian. New York, New York.
 1922 *Indian Paths In The Great Metropolis*. Museum of the American Indian. New York, New York.
 1934 *Indian Life of Long Ago In The City of New York*. Joseph Graham (Boltons Books), New York, New York.
- Bolton, Robert.
 1881 *The History of the Several Towns, Manors, and Patents of the County of Westchester from its First Settlement to the Present Time – Volumes I and II*. C.F. Roper, New York, New York.
- Brennan, Louis.
 1977 "The Midden Is The Message: An Investigation Into The Age Relationship Of Oyster Shell Middens Along The Lower Hudson River And The Cultural Materials Found On And Inn Them. *Archaeology Of Eastern North America*, 5, Fall.
- Bridges, William.
 1814 Map of New York. New York, New York.
- Briggs
 1905 Topographical Survey Bronx County, New York. New York, New York.
- British Headquarters Map.
 1782 Map of New York and vicinity. London, England.
- Brodhead, John Romeyn.
 1853 *The History of New York 1609 to 1691 (Volumes 1 and 2)*. Harper and Brothers, Publishers, New York, New York.
- Bromley, George W. and Walter S. Bromley.
 1881 Maps of Bronx and Westchester County. Bromley and Bromley, Philadelphia, Pennsylvania.
 1889 Maps of Bronx and Westchester County. Bromley and Bromley, Philadelphia, Pennsylvania.
- Bronx County Historical Society.
 n.d. West Farms and East Tremont History Folders. Bronx County Historical Society, Bronx, New York.
- Burr, David H.
 1829 Map of the County of New York and Westchester. Stone and Clark, Ithaca, New York.
 1839 Map of the County of New York. Stone and Clark, Ithaca, New York.
- Burrows, Edwin G. and Mike Wallace.
 1999 *Gotham: A History Of New York City To 1898*. Oxford University Press, New York, New York.

- Butler, Joseph T.
 1983 *Sleepy Hollow Restoration*. Sleepy Hollow Press, Tarrytown, New York.
 1978 *Van Cortlandt Manor*. Sleepy Hollow Restorations, Tarrytown, New York.
 1967 *The Family Collections At Van Cortlandt Manor*. Sleepy Hollow Press, Tarrytown, New York.
- Cantwell, Anne-Marie and Diana diZerega Wall.
 2001 *Unearthing Gotha: The Archaeology of New York City*. Yale University Press. New Haven, Connecticut.
- Ceci, Lynn.
 1977. The Effect Of European Contact And Trade On The Settlement Pattern Of Indians In Coastal New York, 1524-1665: The Archaeological And Documentary Evidence. Doctorial Dissertation, Department of Anthropology, The City University of New York - Graduate Center. New York, New York,
 1979-1980 Maize Cultivation In Coastal New York: The Archaeological, Agronomical, And Documentary Evidence - Part I. *North American Archaeologist* 1(1):45-74.
 1982 Method And Theory In Coastal New York Archaeology: Paradigms Of Settlement Pattern. *North American Archaeologist* 3(1):5-36.
 1990 Maize Cultivation In Coastal New York: The Archaeological, Agronomical, And Documentary Evidence - Part II. *North American Archaeologist* 11(2):147-176.
- City/Scape: Cultural Resource Consultants.
 1990 Stage 1A Revised Cultural Resource Report for Chapel Farm II - Riverdale, New York (SEQRA#85-325X0). Report on file with the New York City Landmarks Preservation Commission.
 1993 Chapel Farm Estate: Riverdale. Bronx, New York (SEQRA#89PR111 & CEQRA#85-325X) Cultural Resource Investigation - Stage 2 and Quarry Investigation Survey (QIS). Report on file with the New York City Landmarks Preservation Commission.
 n.d. Chapel Farm Estate: Riverdale. Bronx, New York (SEQR#89PR111 & CEQRA#85-325X) Cultural Resource Investigation - Stage 2 and Quarry Investigation Survey (QIS). Report on file with the New York City Landmarks Preservation Commission.
- Colton, Henry.
 1836 Map of New York. New York, New York.
 1838 Map of New York. New York, New York.
 1849 Map of New York. New York, New York.
- Cook, Henry T.
 1913 *The Borough of the Bronx: 1639-1913*. Bronx Historical Society, Bronx, New York.
- Corning, Amos.
 1817 Map of lots laid out for Richard Amos by Amos Corning. 02-21-1817, File No. 290, Register Office, Municipal Building, New York.
- Croton Aqueduct Department.
 1853 *Annual Report of the Croton Aqueduct Department*. Spedon and Baker, New York, New York.

- DeCarlo, Valerie.
1985 Riverdale Park Archaeological Project - Draft Report - Documentary Research and Field Strategy. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- Doggett, John.
1851-1900 *Street Directory*. John Doggett, New York, New York.
- Doherty, Coralie Ferris.
n.d. The Old Town Of Westchester. Manuscript on file with the Bronx County Historical Society, Westchester Square History Folder, Bronx, New York.
- Dripps, Matthew.
1851 Map of the County of New York. New York, New York.
- Dzodin, Joel S.
1987 Cultural Resources Management Survey – 1987 Highway Program: Hunt’s Point Access PIN X730.17.111 Borough Of The Bronx, Bronx County. Public Archaeology Facility, Binghamton, New York and New York State Museum, Albany, New York.
- Earth Tech.
2005 Addendum to Cultural Resources Survey - Alexander Hamilton Bridge and Highbridge Interchange Ramps Rehabilitation I-95 Corridor Between Amsterdam Avenue in New York County and Undercliff Avenue in Bronx County. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- Eddy, John H.
1811 Map of New York. New York, New York.
- Ellis, et al.
1957 *A History Of New York State*. Cornell University Press, Ithaca, New York.
- Fabend, Firth H.
1991 *A Dutch Family In The Middle Colonies, 1660-1800*. Rutgers University Press, New Brunswick, New Jersey.
- Ferris, Mrs. Morris Patterson.
1897 *Van Cortlandt Mansion*. New York, New York.
- Funk, Robert E.
1960 “Significance of Three Radiocarbon Dates from the Sylvan Lake Rockshelter”
The Bulletin of the New York State Archaeological Association, 36:18-26.
1968 “New Middle Woodland Complex in Eastern New York”.
The Bulletin of the New York State Archaeological Association, 44:1-7.
1976 *Recent Contributions To Hudson Valley Prehistory*. New York State Museum Memoir 22, Albany, New York.
- Gallo, Daniel R. and Frederick A. Kramer.
1981 *The Putnam Division: New York Central's Bygone Route Through Westchester County*. New York, New York.

- Garvin, Agnes.
n.d. *West Farms In The 1890s*. Manuscript on file with the Bronx County Historical Society, Bronx, New York.
- Geismar, John H.
1995 1A Archaeological Assessment of the 33rd Precinct Project Site - Block 2112, Lots 10-42, Manhattan (CEQR # 93-NYP001M). Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- Greene, Nelson.
1931 *History of the Valley of the Hudson - River Of Destiny 1609-1930 - Volume 1-2*. The S.J. Clarke Publishing Company, Chicago, Illinois.
- Greenhouse Consultants, Inc.
1982 Archaeological Monitoring Report - Community Hospital, Baker Field, Manhattan, New York. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
1997 Archaeological Data Recovery Excavation Report - Frances Scervier Home and Hospital - 2975 Independence Avenue - Borough of the Bronx, New York (CEQR # 96DCP020X). Report on file with the New York City Landmarks Preservation Commission. New York, New York.
1998a Archaeological and Historic Sensitivity Evaluation - Babies and Children's Hospital of New York - West 165th Street and Broadway - Manhattan, New York. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
1998b Phase 1A Historical/Archaeological Sensitivity Evaluation - Yeshiva of the Telshe Alumni Campagna Mansion - Bronx, New York (CEQR# 99DCP066X). Report on file with the New York City Landmarks Preservation Commission. New York, New York.
2002 Memoranda Regarding Reconstruction of Marble Hill and Vicinity, Inspection of 16 Fort Charles Place. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
2003 Report on Phase 1A - Archaeological Documentary Research and Phase 1B Archaeological Testing of the Dyckman Farmhouse Museum Park - Located at 204th Street and Broadway - Block 2241, Lots 33, 34, 35 and 40 - Manhattan, New York. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- Griffin, Ernest Freeland.
1946 *Westchester County and Its People*. Lewis Historical Publishing Company. New York, New York.
- Grumet, Robert S.
1981 *Native American Place Names In New York City*. Museum of the City of New York, New York, New York.
- Haley, Jacquetta M.
n.d. *Farming in Eighteenth Century Westchester*. Bronx County Historical Society Files, pages 55-66.
- Harrington, Mark R.
1909 "Ancient Shell Heaps Near New York City". *American Museum of Natural History - Anthropological Papers*, 3:1-16.

Hartgen Archaeological Associates, Inc.

- 1990 Archaeological Field Reconnaissance - CEQR Parts 1B & 3 - Chapel Farm II - Bronx County, New York - CEQR # 85-325X. Report on file with the New York City Landmarks Preservation Commission. New York, New York.

Hays, Charles F.

- 1961 "Approach to Iroquois - White Acculturation Through Archaeology".
The Bulletin of the New York State Archaeological Association, 22:15-18.
- 1964 "Projectile Point Classification".
The Bulletin of the New York State Archaeological Association, 32(6):17.

Hermalyn, Gary.

- 1982 "A History of the Bronx River." *Bronx County Historical Society's Journal*, 19(1):1-22.

Hermalyn, Gary and Lloyd Ultan.

- 1998 "100 Years of the Bronx." *Bronx County Historical Society's Journal*, 35(2):63-69.

Herrick, Pamela.

- 1992 "Van Cortlandt Tour Manual".
unpublished manuscript on file at New York City. Parks Historic Houses Division.

Historical Perspectives

- 1987 Tibbett Gardens. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- 1988 Archaeological Assessment Report for the Board of Education Project: Finast Site - CEQR # 88-123X). Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- 1993a *Stage 1A Archaeological Assessment: New York Botanical Garden, Bronx, NY.*
Report on file with the New York City Landmarks Preservation Commission, New York, New York.
- 1995 Stage 1A Archaeological Assessment - Russian Federation Housing - Riverdale, Bronx, New York. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- 1998a Cultural Resource Assessment - Proposed Croton Water Treatment Plant - Van Cortlandt Park, Jerome Park Reservoir - Kingsbridge, Bronx, New York (CEQR # 98DEP027 and SEQR # 98PRO56). Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- 1998b Cultural Resource Assessment - Proposed Croton Water Treatment Plant - Van Cortlandt Park, Croton Woods Site - Bronx, New York (CEQR # 98DEP027 and SEQR # 98PRO56). Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- 1998c Cultural Resource Assessment - Proposed Croton Aqueduct Rehabilitation Shaft Sites - Westchester, Bronx and New York County, New York (CEQR # 04DEP134X). Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- 1998d Cultural Resource Assessment - Proposed Croton Water Treatment Plant - Van Cortlandt Park, Shandler Recreation Area - Bronx, New York (CEQR # 98DEP027 and SEQR # 98PRO56). Report on file with the New York City Landmarks Preservation Commission. New York, New York.

- 2004 Cultural Resource Assessment - Croton Water Treatment Plant - Mosholu Gold Course, Van Cortlandt Park - Bronx, New York (CEQR # 98DEP027. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- 2006 Phase 1A Documentary Study - Proposed Boricua Village Project Site - Block 2367, Lots 10, 11, 37 and 50 - Bounded by Washington, Brook, Elton and Third Avenues, and East 162nd and East 163rd Streets - Bronx, New York. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- Homberger, Eric.
1994 *The Historical Atlas of New York City*. Henry Holt and Company, New York, New York.
- Hufeland, Otto.
1926 *Westchester County During The American Revolution*. Otto Hufeland, New York, New York.
- Hyde, David.
1900 *Maps of Bronx County*. Hyde and Company. New York, New York.
- Jaffe, Herman J.
1977 The Canarsee Indians of Brooklyn: Ethnic Group or Community? Paper presented at the Northeastern Anthropological Association, Providence, Rhode Island.
1978 Coastal Algonkian Social Stratification: Land Tenure Systems, Political Power, and Kinship Among The Canarsee Indians Of Brooklyn. Paper presented at the Northeastern Anthropological Association, Quebec City, Quebec, Canada.
1979 The Canarsee Indians: The Original Inhabitants. In *Brooklyn USA: The Fourth Largest City In America*, edited by R. S. Miller, pp. 45-60. Brooklyn College Studies On Society In Change. vol. 7, Brooklyn College Press, Brooklyn, New York.
- Jameson, John Franklin. (editor)
1909 *Narratives of New Netherland 1609-1664*. Scribners, New York, New York.
- Jenkins, Stephen.
1912 *The Story of the Bronx*. The Knickerbocker Press, New York, New York.
1958 "Milo Rock Site, Pelham Bay Park, Bronx County, New York." Bronx County Historical Society - Westchester Creek File Folder, Bronx, New York.
- Jervis, John B.
1971 *The Reminiscences of John B. Jervis: Engineer of the Old Croton*. Syracuse University Press. Syracuse, New York.
- Jonas, Uncle.
n.d. The Bronx In Years Gone By. Manuscript on file with the Bronx County Historical Society, Westchester Square History Folder, Bronx, New York.
- Judd, Jacob.
1976 *Correspondence of the Van Cortlandt Family of Cortlandt Manor Volume 1*. Sleepy Hollow Press, Tarrytown, New York.
1977 *Correspondence of the Van Cortlandt Family of Cortlandt Manor Volume 2*. Sleepy Hollow Press, Tarrytown, New York.
1978 *Correspondence of the Van Cortlandt Family of Cortlandt Manor Volume 3*. Sleepy Hollow Press, Tarrytown, New York.

- 1978 *Correspondence of the Van Cortlandt Family of Cortlandt Manor Volume 4.* Sleepy Hollow Press, Tarrytown, New York.
- Kazimiroff, J.
1959 *Nature Trail April 15th.* The New York Botanical Garden, New York, New York.
- Kraft, Herbert C.
1996 *The Dutch, the Indians, and the Quest for Copper: Pahaquarry and the Old Mine Road.* Seton Hall University, South Orange, New Jersey.
- Lamb, Mrs. Martha. J. and Mrs. Burton Harrison.
1877, 1880 and 1896 *The History of the City of New York: Its Origin, Rise and Progress* Volumes I-III. A.S. Barnes and Company, New York, New York.
- LaPorta Associates.
1993 Chapel Farm Estate - Riverdale - Bronx County, New York - Field Investigation and Geological Reconnaissance (SEQR # 89PR111 and CEQR # 85-325X). Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- Latham, Roy.
1954 "Marine Shells in the Prehistoric Sites on Eastern Long Island, New York".
The Bulletin of the New York State Archaeological Association, 2:11.

1956 "Cache of Graphite Found on Long Island, New York".
The Bulletin of the New York State Archaeological Association, 6:14-15.
- Lavin, Lucianne and Morese Brigit Faber.
1985 "Ceramics Assemblages from the Rye Marshlands Area of Southern New York".
The Bulletin of the New York State Archaeological Association, 91:13-25.
- Lees, Carlton.
1980 *A Report on the Status of Grounds, Gardens and Living Conditions of the New York Botanical Gardens.* New York Botanical Gardens, Bronx, New York.
- Leggett, Rev. Theodore A.
1913 *Early Settlers of West Farms, Westchester County, New York, New York.* Bronx Historical Society, Bronx, New York.
- Lenik, Edward J.
1975 "Riddle of the Prehistoric Walls, Ramapo, New York".
The Bulletin of the New York State Archaeological Association, 63:1-14.

1992 "Native American Archaeological Resources In Urban America: A View From NYC".
Bulletin, The New York State Archaeological Association, 103:20-29, Spring.
- Levine, Gaynell Stone. (editor)
1977 *Readings in Long Island Archaeology and Ethnohistory: Volume I: Early Papers In Long Island Archaeology.* Suffolk County Archaeological Association, Stony Brook, NY.
- Levine, Gaynell Stone and Nancy Bonvillain. (editors)
1980 *Readings in Long Island Archaeology and Ethnohistory: Volume IV: Language and Lore of the Long Island Indians.* Ginn Custom Publishing, Lexington, Massachusetts.
- Lewis, Samuel.
1807 Map of New York. New York, New York.

- Loorya, Alyssa.
1995 "Dinner Or Tea?: The Ceramics From The Van Cortlandt Park Estate".
On file at the Brooklyn College Archaeological Research Center, Brooklyn, NY
- Lopez, Julius.
1955 "Preliminary Report on the Schurz Site (Throgs Neck, Bronx County, NY)." *Bulletin of the Nassau County Archaeological Association*. 1(1):6-22.
1956 "Pelham Boulder Site, Bronx County, NY: An Abstract". *Eastern States Archaeological Federation Bulletin*. 15:15.
1957 "Some Notes on Interior Cord-Marked Pottery from Coastal New York." *Pennsylvania Archaeologist*. 27(1):23-32.
1958 "Milo Rock Site, Pelham Bay Park, Bronx County, New York." *Pennsylvania Archaeologist*. 28:3-4.
1978 "The History and Archaeology of Fort Independence on Tetard's Hill, Bronx County, New York". *The Bulletin of the New York State Archaeological Association*, 73:1-28.
- Manatus Map.
1639 Map of New York. New York, New York.
- McAuley, Kathleen.
n.d. *Treamont - The Bronx*. Manuscript on file with the Bronx County Historical Society, Bronx, New York.
- McNamara, John.
1971 *The Bronx in History*. Manuscript on file with the Bronx County Historical Society, Bronx, New York.
1990 The History of Westchester Square. Lecture presented to the Westchester Square Library on September 10, 1990. On file with the Bronx County Historical Society, Westchester Square History Folder, Bronx, New York.
1991 *History In Asphalt*. Bronx County Historical Society, Bronx, New York.
- Ment, David
1979 *Building Blocks of Brooklyn: A Study of Urban Growth*. Brooklyn Educational and Cultural Alliance, Brooklyn, New York.
- Mitchell, Samuel.
1890 Map of New York. New York, New York.
- Mursberger, Julie.
1990 "□. Van Cortlandt Family History". Unpublished manuscript on file at the Van Cortlandt Mansion. Bronx, New York.
- National Society of Colonial Dames of the State of New York.
1911 *The Story of Van Cortlandt Park*. Colonial Dames Society, New York. New York.
- New York (City) - Commissions Plan.
1811 Map of New York. New York, New York.

New York (City) – Landmarks Preservation Commission.

1991 *Resources on The Bronx County, New York.*
New York City Landmarks Preservation Commission, New York, New York.

n.d. Bronx County Site File Maps.
New York City Landmarks Preservation Commission, New York, New York.

New York (State) Commission.

1884 *Report To The New York Legislature Of The Commission To Select And Locate Lands For Public Parks In The Twenty-third and Twenty-fourth Wards Of The City Of New York And In The Vicinity Itself.* Martin B. Brown Publishers, New York, New York.

New York (State) Supreme Court.

1911 Supreme Court Partition sale: Adam Wiener, referee of the Van Cortlandt Estate. New York Supreme Court; New York.

1912 Terms of Sale: New York Supreme Court, New York County: Augustus Van Cortlandt, Jr., plaintiff, against Augustus Van Cortlandt, and others, defendants. New York Supreme Court, New York.

New York Central.

1918 Railroad Map of New York. New York Central. New York, New York.

Nichollas Map.

1668 Map of New York. New York, New York.

O'Callaghan, Edmund Bailey.

1846 *History of New Netherland; or New York Under the Dutch (Volumes 1 & 2).*B. Appleton and Company, New York, New York.

1848-1851 *The Documentary History Of The State Of New York (Volumes 1-4).* Weed, Parsons And Company, Printers, Albany, New York.

1861-1865 *Documents Relative To The Colonial History Of The State Of New York: 1657-1678 (Volumes 1-16).* Weed, Parsons and Company, Printers, Albany, New York.

1865 *Calendar Of Historical Manuscripts In The Office Of The Secretary Of State, Albany, New York: 1630-1664.* Weed, Parsons And Company, Printers, Ridgewood, New Jersey.

1979 *Lists of Inhabitants of Colonial New York.* Genealogical Publishing Company, Inc., Baltimore, Maryland. (reprint)

Olmstead, Robert.

1989 "A History of Transportation in the Bronx." *Bronx County Historical Society's Journal*, 26(2):68-91.

Parker, Arthur C.

1922 The Archaeological History Of New York – Parts I and II. *The New York State Museum Bulletin*, 237-238, (September-October).

Parson Engineering Science.

2000 Archaeological Monitoring at the Old West Farms Soldier Cemetery, The Bronx, New York. Report on file with the New York City Landmarks Preservation Commission. New York, New York.

- Pickman, Arnold.
 1990 Stage I Archaeological Investigation: Reconstruction of Electric Feeder System, Van Cortlandt Park, The Bronx, New York. Report submitted to: Valquest Contracting Company, New York, New York.
- Reynolds, Cuyler.
 1914 *The Genealogical and Family History of Southern, New York Volume. III.* Lewis Historical Publishing Company, New York, New York.
- Ricciardi, Christopher and Alyssa Loorya.
 1995 The Archaeological Remains from Van Cortlandt Park, Bronx, New York. Document on file at Brooklyn College Archaeological Research Center. Brooklyn, New York.
- Ricciardi, Christopher.
 2001a Phase 1A Archaeological Survey and Documentary Research Study East River CSO Facility Planning Project – P.I.N. X027.05 P.C.N. Bronx River Greenway Adjacent To I-895 Bronx, New York. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
 2001b Phase 1A Archaeological Survey and Documentary Research Study - East River-Westchester Creek CSO Storage Tank Bronx Psychiatric Center Campus, Bronx, New York. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
 1997 *From Private to Public: The Changing Landscape of Van Cortlandt Park; Bronx, New York in the Nineteenth Century*, MA Thesis – Department of Anthropology, Syracuse University, Syracuse, New York.
- Ritchie, William.
 1954 "The Abstract of The Enigmatic Orient Culture". *The Bulletin of the New York State Archaeological Association*, 2:11-13
 1969 *The Archaeology of New York State*. Natural History Press. New York, New York.
 1971 "The Archaic of New York". *The Bulletin of the New York State Archaeological Association*, 52:2-12.
- Ritchie, William A. and Robert E. Funk.
 1973 *Aboriginal Settlement in the Northeast. New York State Museum Memoir, 20*, Albany, New York.
- Rothschild, Nan A.
 1990 *New York City Neighborhoods In The Eighteenth Century*. Academic Press, San Diego, California.
- Rothschild, Nan and Christopher Matthews.
 1993 Phase 1A and 1B Archaeological Investigations for the Proposed Area of Construction of Six Tennis Courts on the Parade Ground of Van Cortlandt Park, Bronx, New York. Report submitted to: New York City Department of Parks and Recreation, New York, New York.
- Roberts, William I.
 1991 Archaeological and Historical Sensitivity Evaluation of the Benson Street Demapping Project – Westchester Square, The Bronx, New York: CEQR #91-028x. Report on file with Greenhouse Consultants, Inc., New York, New York.
- Robinson, Edward.
 1888-1900 Various Maps of Bronx County. E. Robinson, New York, New York.

- Roth, Ronald O.
1990 *Starlight In The Bronx: From World's Fair to Amusement Park: 1918-1846*.
Bronx County Historical Society, Bronx, New York.
- Salwen, Bert.
1982 "Sea Levels And Archaeology In the Long Island Indians". in James E. Truex (editor),
The Second Coastal Archaeology Reader 1900 To The Present, Volume 5. Suffolk County
Archeological Association, Stony Brook, New York, p. 35-43.
- Sandborn Insurance Company.
1888-1960 Various Insurance Maps of the City of New York – The Bronx
Sanborn-Perris Company, New York, New York.
- Saxon, Walter.
1973 "The Paleo-Indians On Long Island". *Bulletin, The New York State Archaeological Association*,
57, March.
- Scharf, J. Thomas.
1886 *The History of Westchester County, New York, Volumes I-II*. Picton Press, Camden, Maine.
- Schuyler, Robert L.
1977 "Archaeology of the New York Metropolis". *The Bulletin of the New York State Archaeological
Association*, 69:1-19.
- Sheffield Archaeological Consultants.
1994 An Evaluation of Prehistoric Cultural Resources at the Chapel Farm Estate Property - Bronx, New
York. Report on file with the New York City Landmarks Preservation Commission. New York,
New York.
- Skinner, Alanson.
1919 "Exploration of Aboriginal Sites at Throg's Neck and Clason's Point, New York City."
Museum of Natural History, Anthropological Papers. 43(2).

1932 The Indians of Manhattan Island and Vicinity. *The American Museum of Natural History, Guide
Leaflet Series, Number 11*. American Museum of Natural History, New York, New York.
- Smith, Carlyle S.
1950 "The Archaeology Of Coastal New York".
The Anthropological Papers of the American Museum of Natural History, 43(2).

1982 "Revised Chronology Of Coastal New York". in James E. Truex (editor), *The
Second Coastal Archaeology Reader 1900 To The Present, Volume 5*. Suffolk
County Archeological Association, Stony Brook, New York, p. 238-240.
- Smith, James Reuel.
1938 *Springs And Wells Of Manhattan And The Bronx, New York City - At The End
Of The Nineteenth Century*. The New York Historical Society, New York.
- Stokes, I.N.P.
1915-1928 *The Iconography Of Manhattan Island, 1498-1909*.
Dodd, Mead and Company, New York . Arno Press, New York (1967).
- Stone, Linda.
2000 Report on Archaeological Testing in Advance of Fire Suppression Sprinkler Installation at the
Morris-Jumel Mansion - West 160th Street at Jumel Terrace - Manhattan, New York (Contract
#M073-299). Report on file with the New York City Landmarks Preservation Commission. New
York, New York.

- 2003 Report on the Phase 1A Archaeological Documentary Research And Phase 1B Archaeological Testing Of The Dyckman Farmhouse Museum Park Located at 204th Street And Broadway (Blocks 2241, Lots 33, 34, 35 and 40), Manhattan, New York. Report on file with the New York City Landmarks Preservation Commission. New York, New York.
- Tieck, William A.
1968 *Riverdale, Kingsbridge, Spuyten Duyvil - New York City - A Historical Epitome of the Northern Bronx*. 428 of 987 ed. Fleming H. Revell Company, Old Tappan, New Jersey.
- Truex, James E. (editor)
1982 *Readings in Long Island Archaeology and Ethnohistory: Volume V: The Second Coastal Archaeology Reader: 1900 To The Present*. Suffolk County Archaeological Association, Stony Brook, New York.
- Ultan, Lloyd.
1983 *A History Of Van Cortlandt Park - Borough Of The Bronx - New York, New York*. Draft on file with the New York City Parks Department, July.
- 1989 "Jonas Bronck an the 1st Settlement of the Bronx." *Bronx County Historical Society's Journal*, 26(2):53-67.
- United States (Government).
1866 Coast Survey Map of New York. Washington, DC.
- URS Consultants, Inc. and Lawler, Matusky and Skelley Engineers.
1993 *East River combined Sewer Overflow Facility Planning Report*. URS Consultants, Inc., Paramus, New Jersey.
- URS Corporation.
2001 Subsurface Investigation - Bronx River Combined Sewer and Overflow Storage Conduit, Bronx, New York. URS Corporation, Wayne, New Jersey.
- van Laer, A.J.F.
1932 *Correspondence Of Jeremias Van Rensselaer, 1651-1674*. The University of the State of New York, Albany, New York.
- Viele, Robert.
1874 *Topographical Atlas of The City of New York including Annexed Territories - Bronx County Map Number 5*. E.L. Viele and Company, New York, New York.
- Viriden, Dr. John E.
1928 *Old Westchester: Notes from an Address by: John E. Viriden*. Manuscript on file with the Bronx County Historical Society, Westchester Square History Folder, Bronx, New York.
- Wall, Robert and Madeleine Scheerer.
2000 Phase 1A Archaeological Survey and Documentary Research Study - East River CSO Facility Planning Project - Bronx River CSO Storage Conduit, Bronx, New York. Report submitted to: New York City Department of Environmental Protection, New York, New York and URS Greiner Woodward and Clyde, Florence, New Jersey.
- Watson, Gaylord.
1875 *Map of New York*. New York, New York.

Wells, James L. (editor)

1927 *The Bronx and Its People: A History, 1609-1927, Volumes I-IV.*
Lewis Historical Publishing Company, New York, New York.

Westchester County Historical Society.

1978 Westchester Heritage Map: Indian Occupation, Colonial and Revolutionary
Names, Structures and Events – Roads Originally Surveyed by Robert Erskin in
1778-1780. The Junior League of Westchester-on-Hudson. Westchester County
Historical Society, New York.

Wilson, James Grant.

1893 *The Memorial History Of The City Of New York: From Its First Settlements To The Year 1892.* 1-
4 vols. New York History Company, New York, New York.

Zaboly, Gary.

1977 "The Indian Field Massacre".
The Bronx County Historical Society Journal, 14:63-68, Fall.

APPENDIX A

Historic Maps

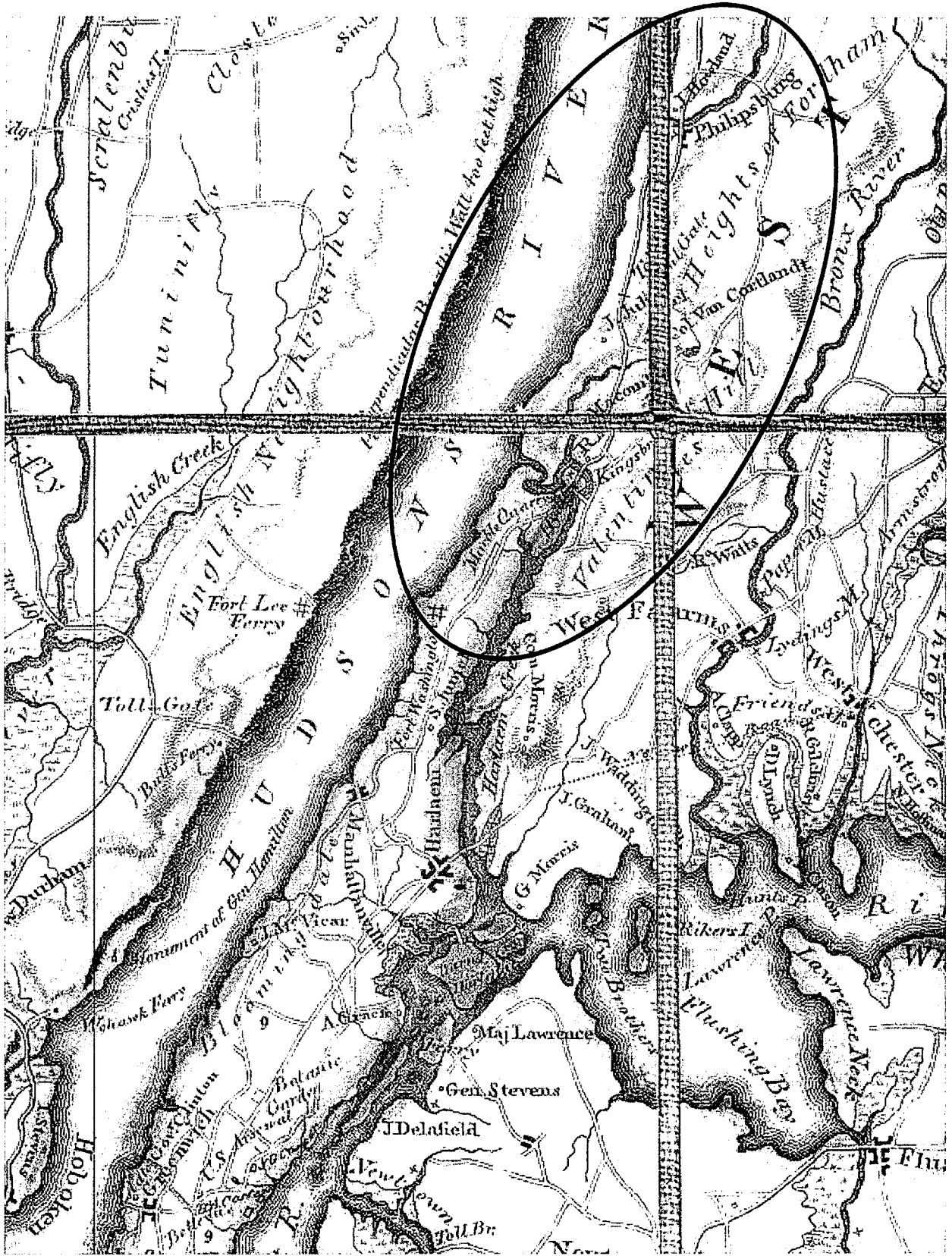


Figure 1: Manhattan and Bronx - Eddy 1811

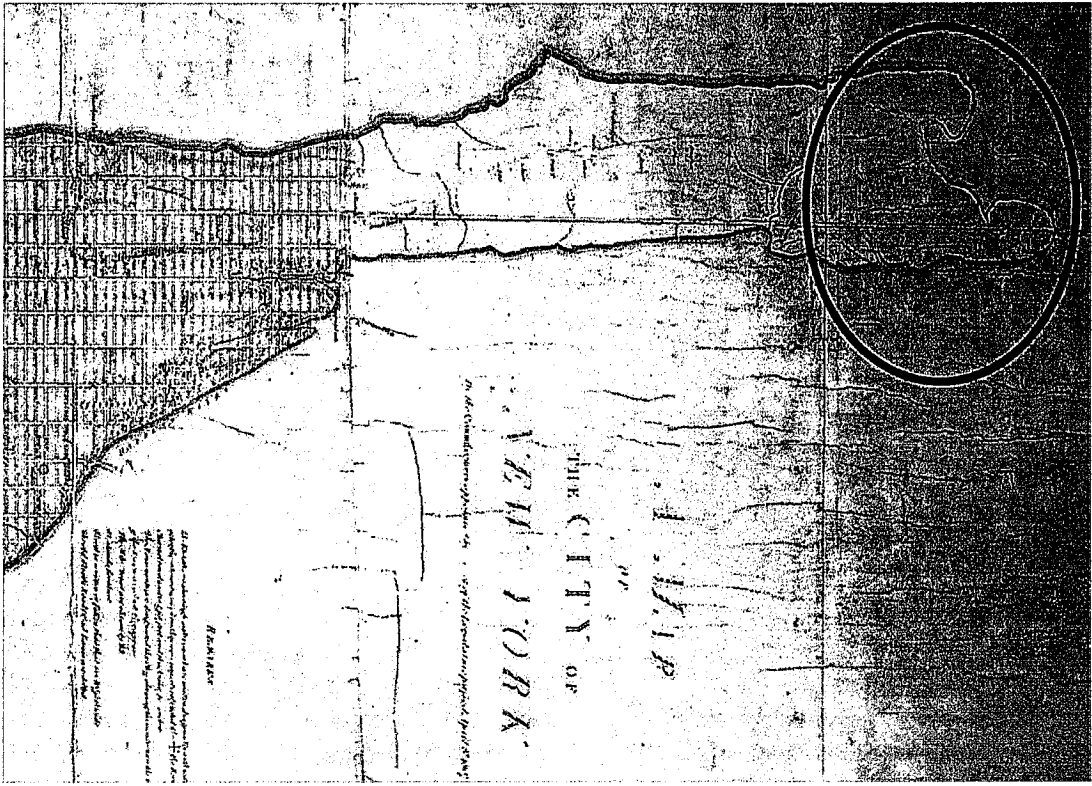


Figure 2: New York City Commissioners Plan 1811

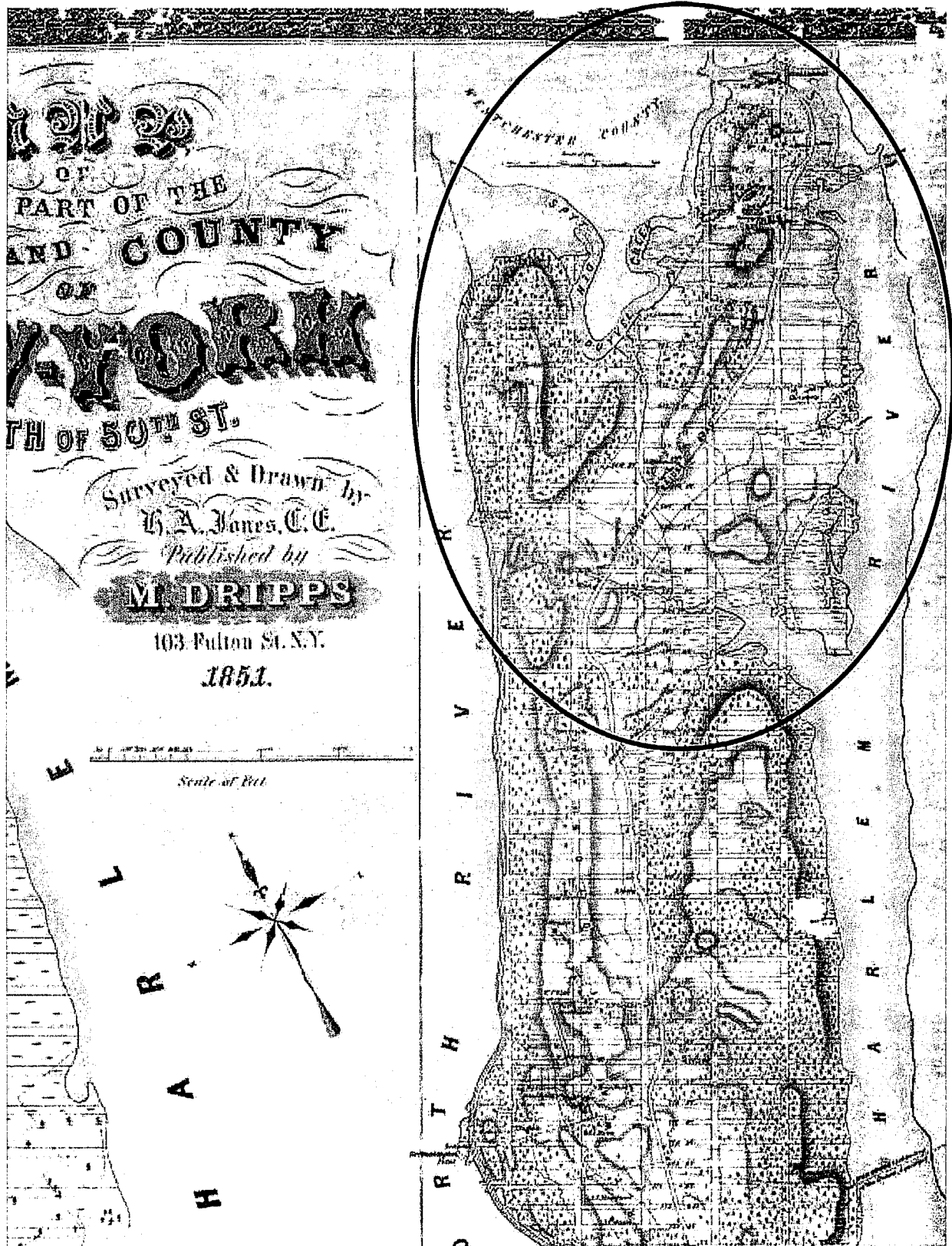


Figure 3: Manhattan - Dripps 1851

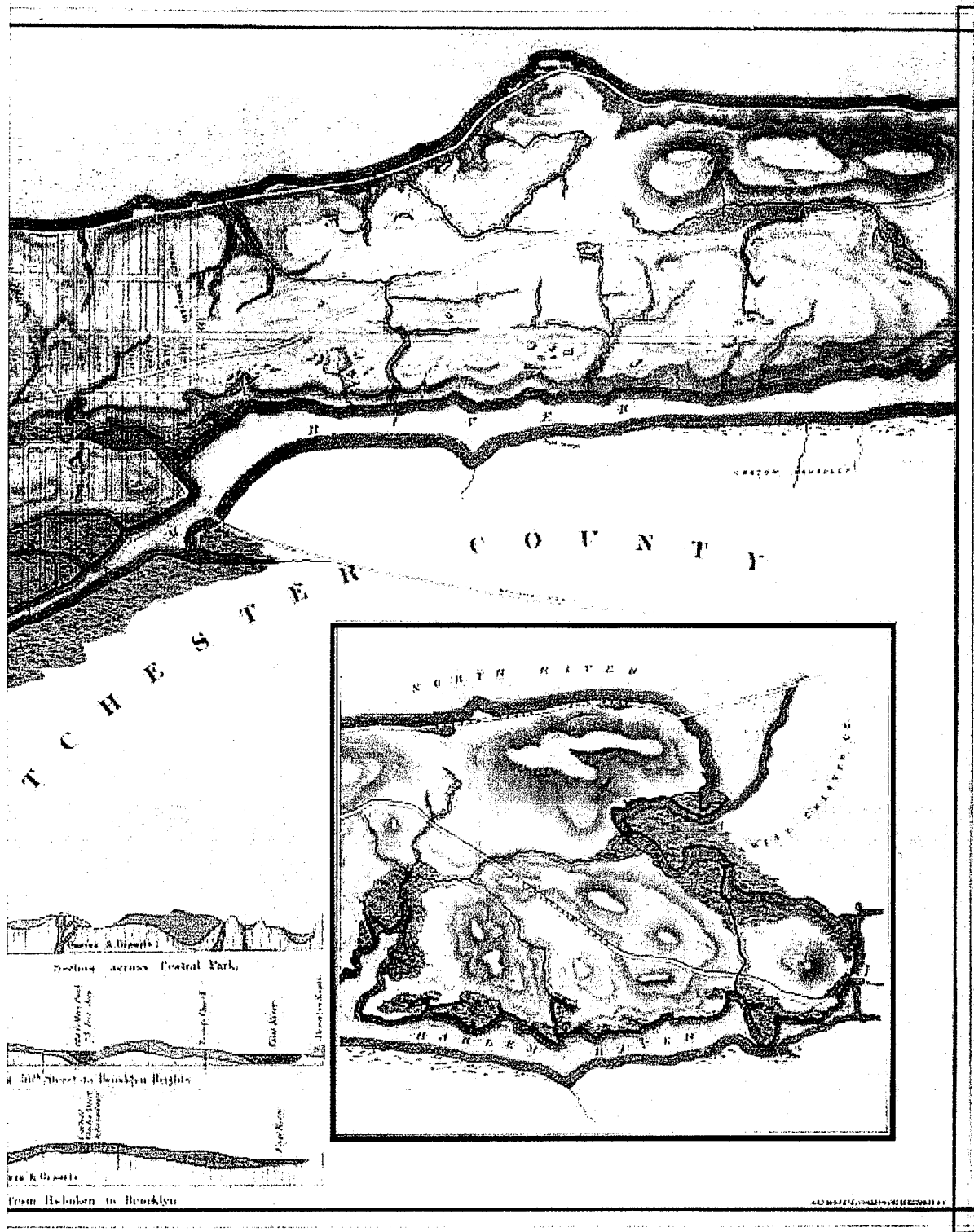


Figure 4: Manhattan - Viele 1865

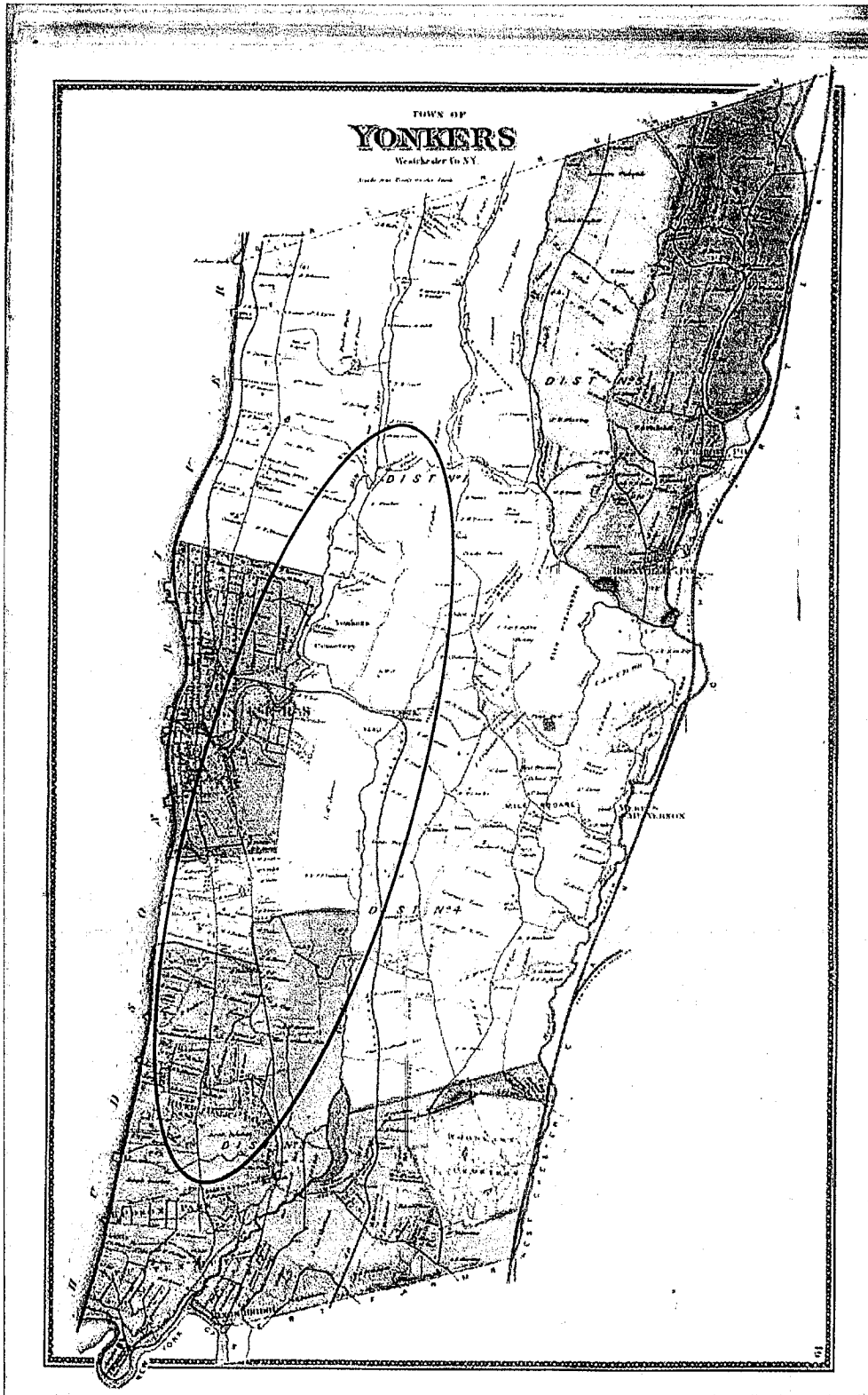


Figure 5: Yonkers - Beers 1868

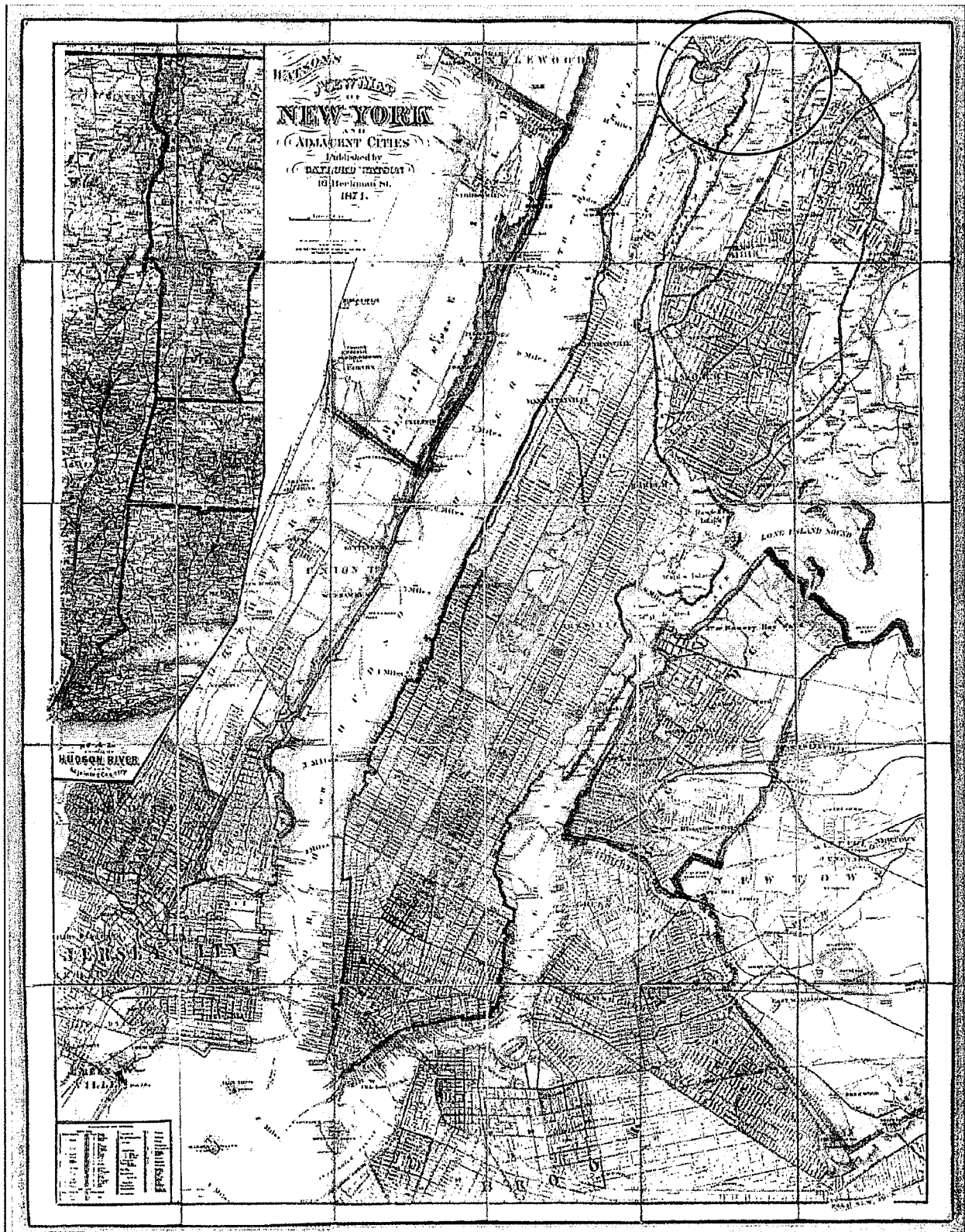


Figure 6: Manhattan - Watson 1875

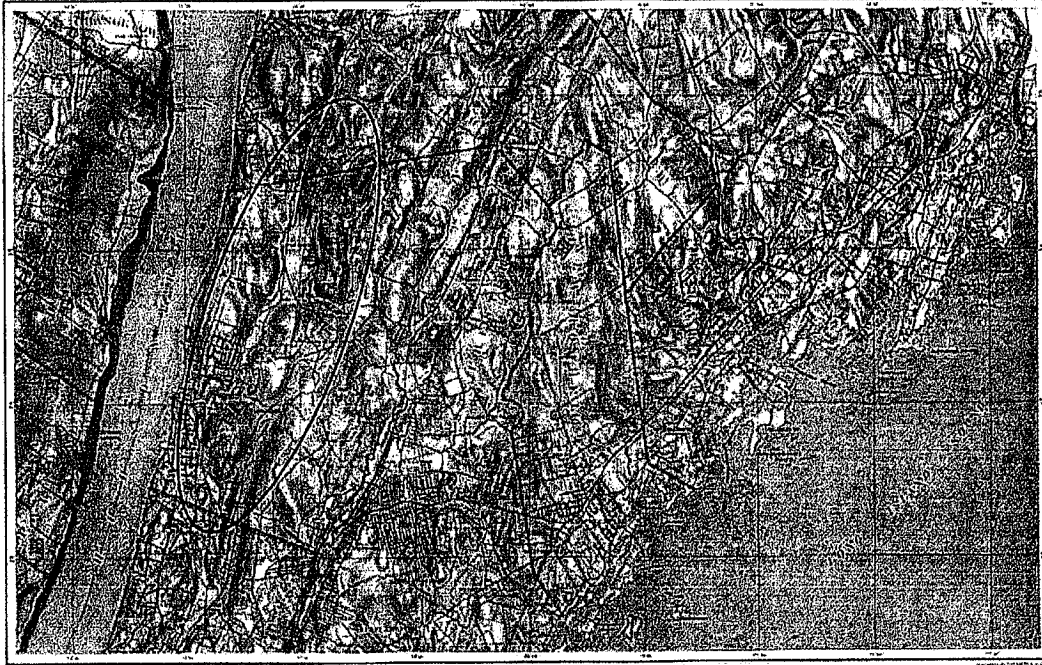


Figure 7: Yonkers - Bien 1891



Figure 8: United States Geological Survey Manhattan and Bronx - 1900

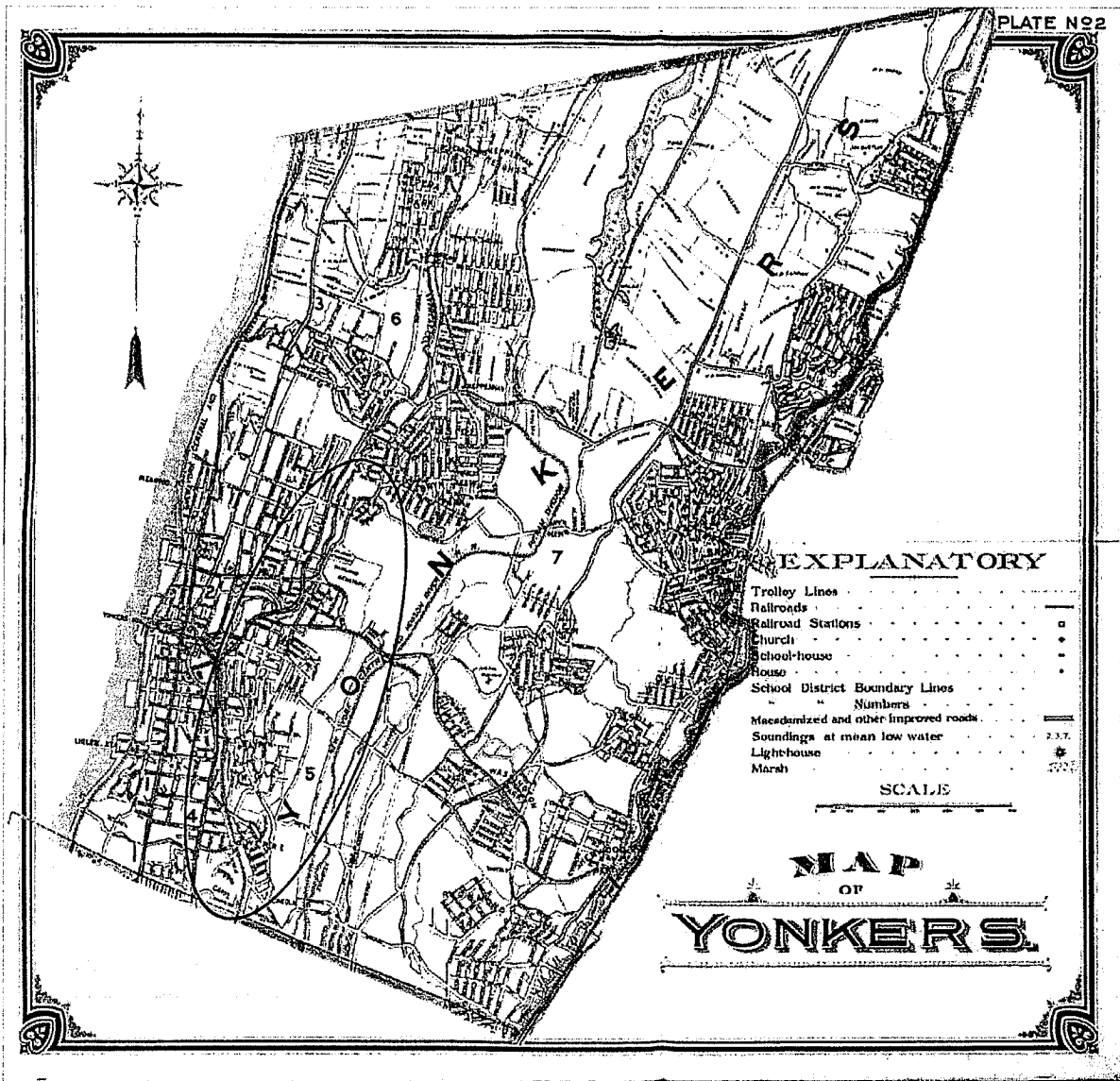


Figure 9: Yonkers - Hyde 1900