CULTURAL RESOURCE ASSESSMENT PROPOSED CROTON WATER TREATMENT PLANT VAN CORTLANDT PARK, CROTON WOODS SITE BRONX, NEW YORK

CEQR NO. 98DEP027
SEQR NO. 98PRO056

DRAFT

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EXECUTIVE SUMMARY

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Introduction

The New York State Department of Health and the United States Environmental Protection Agency have mandated the filtration of the Croton Water Supply to comply with the standards set in state sanitary codes and the Federal Surface Water Treatment Rule. Therefore, the New York City Department of Environmental Protection Bureau of Water Supply (NYCDEP), proposes to design and construct a new water treatment plant at one of seven locations. One of these is the Croton Woods site in Van Cortlandt Park, Borough of the Bronx, City of New York. Van Cortlandt Park is an important element of New York City's park system in the Bronx, and its establishment in the late nineteenth century reflects the growing public park movement in the United States.

Croton Woods is located in the northeast section of the park. It is bounded by the Old Croton Aqueduct to the west and the Major Deegan Expressway to the east. A significant part of the park, the woods represent one of the few remaining undisturbed wooded areas in the Bronx. While a few hiking trails are present, no standing structures are located within the project site.

Proposed Construction

Currently there is a single proposed alternative for the Croton Woods site. The proposed project includes the design, construction, and operation of a Water Treatment Plant (WTP) beneath the woodland in this location. After construction, the surface would be altered, to a grass-covered environment, also suitable for recreational activities (picnicking). Associated construction parking, hauling roads, and staging areas will be chosen prior to the implementation of the construction phase of the project.

Cultural Resource Assessment

The **project site** includes a large section of the Croton Woods in Van Cortlandt Park. The **impact area** is limited to those areas within the project site which will be directly disturbed by the proposed construction. Archaeological potential is assessed both for the project site and the impact area.

The **study area**, as per suggested New York City Environmental Quality Review (NYCEQR) Manual guidelines, included both the project site and areas within 400 feet of the DEP boundary fence. Architectural features are assessed for those on-site buildings and structures which will be directly impacted, and for those buildings and structures within the larger study area which may experience secondary impacts.

The cultural resource analysis assessed the potential for prehistoric and historical cultural resources, both archaeological and structural, to have initially been deposited or built on the project site, and whether there are any potentially significant resources remaining intact.

Existing Conditions

The physiographic characteristics of the park, together with the information extracted from the documentary record and the number of prehistoric sites explored archaeologically in the area suggests that the proposed project site was also likely exploited by Native American peoples. The project area was used as farmland and later parkland during the nineteenth and twentieth centuries. Therefore, much of this locale may not have been altered by widespread development. While the introduction of the two aqueducts, railroad tracks with associated bridges, and paved roads and/or paths have transformed many areas within the park, the majority of the eastern section has not changed significantly. The more recent introduction of passive recreation trails has also done little to change the appearance of the project site. As a result, the potential for prehistoric site sensitivity may be high.

While no historic buildings are located on the site, the existing New Croton Aqueduct may be eligible for listing on the National Register of Historic Places. The proposed water treatment facility site is visually and physically separated from any other historic structures. Therefore, the proposed construction would not impact any standing historic and/or National Register structures, such as the Van Cortlandt Mansion, located approximately one mile away in the southwestern section of the park.

Impacts and Recommendations

Potential prehistoric archaeological resources may exist within the Croton Woods site. This potentially sensitive location, which would otherwise remain undisturbed *in situ*, would be adversely impacted by the construction of the proposed WTP, adjoining parking, and access roads. Therefore mitigation in the form of completing a Phase 1B archaeological reconnaissance, designed to ascertain the presence/absence of archaeological resources through the shovel-excavation of a series of test pits. This should be completed according to NYCEQR standards.

Any disturbance to the existing landscape caused by the creation of parking, hauling roads, and staging areas may also have a negative impact on archaeologically sensitive areas, and thus would require mitigation. A mitigation plan should be formalized when the final sites for these activities are selected. Mitigation plans may include completing a Phase 1B archaeological reconnaissance survey.

The construction of the proposed WTP at the Croton Woods Site in the Bronx would not have an impact on a landmarked or National Register eligible property, but it would entail the destruction of a portion of the forest that gives this location its distinct character. Therefore it would be difficult to devise a mitigation plan for this site. Because construction will take place above the site of a National Register eligible feature (New Croton Aqueduct) proposed impacts to this historic feature should be limited.

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INTRODUCTION

In order to meet the water needs of the City of New York and comply with state drinking water standards and the Federal Surface Water Treatment Rule, the New York City Department of Environmental Protection (DEP) proposes to design and construct a water treatment plant (WTP) that would provide filtration for the Croton water system. One of the seven alternative sites under consideration for the proposed WTP is situated east of the Old Croton Aqueduct and partially above the New Croton Aqueduct (1884-1890) in the Croton Woods region of Van Cortlandt Park (Figure 1). The parcel is currently wooded parkland west of the Major Deegan Expressway in the northeastern section of the park. Walking trails are located to the east, near the Old Croton Aqueduct and to the west, along the path of the Expressway.

The proposed project includes the design, construction, and operation of a WTP beneath the woodland in this location (Figure 2). After construction, the surface would be altered, to a grass-covered environment. Because of the mandated environmental review process, a cultural resources study has been conducted. The purpose of this study is to identify the significant archaeological and historic resources in or around the immediate vicinity of the proposed water treatment facility and to address any potential impacts caused by the proposed installation and associated infrastructure connections. If significant adverse impacts are identified, the study is to also delineate appropriate mitigation measures.

METHODOLOGY

The purpose of this "Cultural Resources Assessment Report," is to determine the presence, type, extent and significance of any cultural resources which may be present in the location of the proposed Croton Woods WTP site (Figure 1). To complete this study various sources of documentary data were consulted. Primary source material on the project site, including historical maps and documents, were examined in order to determine the sites topography over time and to compile an overall site history.

Cartographic Analysis. In order to determine the original topography and compile a disturbance record for the Croton Woods WTP site, cartographic resources were examined. Information collected included data on the site's possible land-use over time and building history. Historical maps were examined at the Map Division of the New York Public Library and the Westchester County Historical Society.

Review of Primary and Secondary Sources. Many local and regional histories were examined for relevant data to help place the site within a historical context. These include works such as Stephen Jenkins' *The Story of the Bronx*, Robert Bolton's *The History of the Several Towns, Manors, and Patents of the County of Westchester*, J. Thomas Scharf's *History of Westchester County, New York, Including Morrisania, Kings Bridge, and West Farms*, and Shonnard and Spooner's *History of Westchester County*, as well as more recent works such as John McNamara's *History in Asphalt*. For the prehistoric period, archaeological literature, such as William Ritchie's *The Archaeology of New York State* provided an overview of the lifeways of the Native inhabitants of New York. In addition, Robert Steven Grumet's *Native American Place Names in New York City*, and Reginald Bolton's *Indian Life of Long Ago in the City of New York* furnished valuable information on Native American settlements.

Site Files Review. Historic resources within the study area that are either listed, or eligible for listing, on the State and/or National Register of Historic Places were also researched. All available site reports and journal publications relating to archaeological sites were researched for data specific to Van Cortlandt Park and the northern section of the Bronx. Finally, the data files at the New York State Museum (NYSM) and the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) were examined for information regarding recorded sites in and around the project area.

Field Visit. A field visit was also conducted during which the current conditions were recorded via notes and photographs (See Photographs).

ENVIRONMENTAL SETTING

Three known glacial periods were responsible for the creation of the present topography of the New York City area over the last one million years. Hills or moraines running north-south through the Bronx were formed by the buildup of glacial debris and the irregular erosion of the surrounding valleys and were a direct result of the retreating continental glaciers. Geologically, the borough of the Bronx lies within the Hudson Valley Region and is considered to be part of the New England Upland Physiographic Province, which is a northern extension of the Great Appalachian Valley (Schuberth 1968: 10, 74). The substratum is made up of "gneiss and mica schist with heavy, intercalated beds of coarse-grained, dolomitic marble and thinner layers of serpentine" identical to what underlies Manhattan Island (Scharf 1886:6-7).

Water from the melted ice floes was directed along the moraines in the area forming many rivers and creeks, including the nearby Tibbetts Brook, which flows just west of the project site (Figure 1). These watercourses have further eroded limestone belts still exposed between the glacial deposits, creating a varied landscape of hills and valleys. In low-lying areas, lakes and ponds were formed and in the locations with poor drainage, swamps and marshy areas covered the landscape.

Nineteenth and early twentieth-century topographic maps depict the project area as open farmland and woodland with Tibbetts Brook located to the west. The present topography of the project site is woodland. Several narrow dirt paths are present within the project site boundaries. A recent U.S.G.S. topographical map shows the project area as a park and recreation setting on a slight east west slope with elevations between 150 and 170 feet above sea level (Figure 1).

HISTORICAL CONTEXT

To understand the development and utilization of the project site over time, it is necessary to establish a historic context for the project area. Generating this framework provides a comprehensive overview as well as a comparative tool assisting in the evaluation of site significance. The information provided here establishes a contextual framework for both the prehistoric and historical eras pertinent to the project site.

- **Prehistoric Era**

Much of the knowledge and understanding of Native Americans in the Bronx and Hudson Valley area is derived from three sources: ethnographic reports, Native American artifact collections, and archaeological investigations. Archaeologists have devised a cultural chronology for the North American prehistory in which the Prehistoric era is divided into four main periods, the Paleo-Indian (c. 12,000-10,000 years ago), Archaic (c. 10,000-2,700 years ago), Woodland (c. 2,700-500 years ago), and Contact (500-300 years ago). Settlement types, subsistence, cultural systems and characteristic artifacts changed during each of these stages. In order to present a comprehensive overview of the prehistoric era and to fully evaluate the potential of recovering prehistoric cultural remains, each period will be reviewed with regard to 1) the environment during the time period, 2) the characteristics illustrative of the phase, and 3) any recovered archaeological sites within the region. This examination was completed in order to assess the potential that indigenous groups would have had for exploiting the project locale in general as well as the actual project site.

Prehistoric sites are characterized by their proximity to a water source, fresh game, and exploitable natural resources (i.e., plants, raw materials for stone tools, clay veins, etc.). These sites are often divided into three types, primary (campsites or villages), secondary (food processing, tool manufacturing), and isolated finds (a single recovery of artifacts either lost or discarded). The examination of primary habitation sites indicates that they are often situated in locales that are surrounded by a number of exploitable resources. In addition, these sites are located in areas easily defended against both nature (weather) and enemies. Secondary sites are often found at the location of an exploitable resource (e.g., lithic quarry site).

Paleo-Indian Period

The earliest period of human occupation, the Paleo-Indian Period, is characterized by the presence of small bands of large- game hunters scattered over large areas of territory. Following the big-game animals that made up the major portion of their diet (e.g., mastodon, bison, caribou), these nomadic hunters moved seasonally across the landscape. Originally, these bands crossed the narrow land bridge from the Old World to the New, and although the population was small in number, they eventually spread over the wide expanse of territory now known as North America.

During the early Paleo-Indian Period the northeastern area of North America was evolving into a more favorable deciduous forest environment. Paleo-Indian sites have been recovered in well-elevated fertile areas situated close to a water source, which is typical of most prehistoric sites in all subsequent phases. The remains of big-game animals have been recorded in large numbers on the west side of the river in Orange County (Ritchie 1994: 10- 11). While this verifies that the locale surrounding the project area may have provided a food source for the Paleo-Indian hunters, no "kill sites" have been recovered. The fact that these sites have not been found may be the result of the flooding of coastal sites as the glaciers continued their retreat, or may be due to the estimated small site size during the early Paleo-Indian period.

With the exception of stone tools, artifactual material from this early period, has not survived well in the archaeological record. Extensive research indicates that the diagnostic artifact of the nomadic Paleo-Indian hunters was the fluted point. By the late Paleo-Indian Period, however, small leaf shaped or bifacial knives, scrapers, and borers had become part of the hunter's tool kit. As the climate became warmer, the environment in the Northeast became more advantageous to prehistoric peoples. In addition, small game animals more suited to the temperate environment replaced the larger fauna that were rapidly becoming extinct.

Following the final retreat of glacial ice, the area now known as the Bronx flourished with plants suited to arctic and tundra conditions. Eventually, the locale became a forest composed of deciduous trees and conifers. The fluctuating floral and faunal communities eventually stabilized over the last 12,000 years, resulting in an environment often characterized as a climax forest, comprised of oak, hemlock, beech and chestnut trees.

While no Paleo-Indian sites have been recovered in this section of the Bronx, there are reports of sporadic finds of fluted points in the Croton Point area to the north in Westchester County (Crichton 1986). A number of archaeological investigations in Westchester County during the mid-1980s noted a distinct level of Paleo-Indian occupation (Crichton 1986). To the south, a small campsite (Port Mobil), was recovered in Staten Island (Ritchie 1994: 1, 3, 7).

Archaic Period

Data regarding the Archaic period indicates that the quantity of recorded archaeological sites is much larger then those dating to the Paleo-Indian Period, thus suggesting a significant increase in the population of native peoples. The Archaic period is also characterized by an overall shift in the environment, an expansion of the lithic tool kit, and the exploitation of defined territorial boundaries.

By the Early Archaic the environment in the Northeast had developed into a deciduous woodland forest. A gradual warming trend allowed new resources to establish themselves in the river valley. The Archaic peoples subsistence was "based on hunting, fishing and gathering of wild vegetables" (Ritchie 1994:31). They hunted smaller game animals (deer, rabbit, beaver, and wild turkey) and gathered a variety of wild plants, as well as exploited the marine environment (fish

and shellfish gathering). Artifacts attesting to the expanded subsistence economy include fishing implements, and the mortar and pestle.

During the Period, the expanding exploitable resource base may have initiated the significant increase in population. The Archaic hunters also began exploiting a well-defined territory, often reoccupying favored sites. Because of the repeated occupation of these Archaic sites as well as the seasonal rounds made within specific territories, archaeologists have been able to recognize several identifiable cultural traditions in New York State (Ritchie 1994). The change in the number of sites recovered also indicates that Archaic peoples had a greater impact upon the landscape. Typical with all prehistoric sites, river valleys and coastal areas were the preferred locale for primary camp sites. This environment supported the game, plants, and marine resources desired by Archaic peoples.

Additions to the tool kit of the Archaic hunter include the narrow bladed projectile point, grooved axe, and beveled adz. Archaeologist Robert Funk has suggested that the Laurentian, Susquehanna, and small stemmed cultural traditions persisted in the Hudson River Valley during the Archaic period (Funk 1976: 250). In his reassessment of the distribution of Late Archaic (or Transitional Archaic 4,000-3,000 years B.P.) projectile points, Snow alternatively suggests that the Susquehanna tradition, represented by the Snook Hill, Perkiomen and Susquehanna Broad points, was dominant in the first half of the period and the Orient Complex in the latter (Snow 1980: 237). In the Hudson River Valley, where a number of Archaic sites have been investigated, Orient Points have been radiocarbon-dated to approximately 4,000 to 2,800 years B. P. To date, however, the exact sequence of cultural traditions and representative complexes for the Archaic period is still undefined and a constant source of debate.

The Native American population had increased significantly in the Hudson River Valley region by the Late Archaic period. The variety of recovered sites from this period include rockshelters, open woodland camps, and secondary processing locations overlooking the various water sources. In a section of the Bronx's Riverdale Park. excavations were conducted on a series of prehistoric sites (DeCarlo 1990: 5). Archaeologists recovered a Late Archaic assemblage of oyster shells, fire cracked rocks, scrapers, bifaces, lithic debitage and diagnostic projectile points suggesting that this location may have been used for hunting and shellfish procurement from the Hudson River (Lenik 1992: 24).

Woodland Period

The Woodland Period is characterized by the introduction of pottery and horticulture, the appearance of large semi- permanent or permanent villages, and the establishment of clearly defined trade networks which marked the transition to a more settled culture. As with the earlier prehistoric periods, archaeological evidence suggests a marked preference for large-scale primary habitation sites within the vicinity of a fresh water source (e.g., rivers, lakes, streams, and ponds). In the majority of cases, secondary sites, where specific activities occurred (e.g., shellfish

collecting and/or processing, butchering, and stone tool-making), were situated near the location of the exploited resource.

The first appearance of pottery was during the Early Woodland in New York State (ca. 1000 B.C.) when crude, undecorated pottery, called Vinette 1, was first produced. This type of pottery has been recovered from sites on major waterways and tributaries. As the Woodland period progressed, regional variations in ceramic styles became common. Other innovations during the Woodland period reflect different cultural styles that archaeologists have been able to identify with specific native groups. A few of these include the introduction of the bow and arrow, pipe-smoking, and mortuary ceremonialism.

During the Woodland Period, fish and shellfish continued to provide a stable and reliable resource. In the smaller tributary rivers fish weirs were used for the recovery of large quantities of anadramous fish (Brumbach 1986:35). The introduction of horticulture in the New York area also signaled the advent of larger and more permanent settlements. Large tracts of land were cleared in locations nearby the primary settlements. Some of the native villages settled during this period were fortified and situated on "high ground." By the Late Woodland Period, Native paths were established connecting permanent villages, creating a trail to exploitable resources, and providing a link for the distribution of trade goods.

Contact Period

Documentary and archaeological sources have provided much of what is known about the Contact Period. Archaeologists and historians have carefully examined historic documents in order to understand the native cultures that were living along the Hudson River when Europeans first arrived. Legal documents and ethnohistorical accounts and have provided valuable details about the past lifeways of native peoples. Because information about the settlements, appearance, and behavior of ancient peoples cannot be reconstructed from the recovery of a few artifacts, these additional resources have provided the means by which archaeologists can assemble more complete data about past cultures.

When the first Europeans arrived it was noted that Native American groups living along the shores of the Hudson River had developed complex group dynamics. The first contact between Europeans and Native Americans occurred when Henry Hudson docked his vessel near the present day Yonkers, just north of the project site in Westchester County. Initial trade between the two cultures began along the Hudson River before moving inland. Furs and wampum were used as a medium of exchange for European goods. In 1625, Johannes de Laet, one of the early travelers to the area wrote that the natives he encountered were "divided into many nations and languages" (Bolton 1972: 16). Descriptions like this were often repeated by many describe many of the diverse groups encountered. While initial contact was primarily peaceful, large scale conflicts erupted following the arrival of Governor Willem Kieft in 1638. Kieft was notorious for his harsh policies against the local tribes. By the mid- to late seventeenth century, many of these peoples were subsequently decimated by local hostilities and European-introduced diseases.

Historic documents indicate that when the first Europeans arrived there was a large number of native peoples occupying the locale along the Hudson River in the northwest Bronx. Early historical records (deeds, treaties, and maps) identify the indigenous people that inhabited this section of New York City. One early document, the Hendricks Map of 1616, depicted a group called the Wikagyl, subsequently identified as the Wiechquaesgeek, as the inhabitants of the northern Bronx and lower Westchester County (Bolton 1934: 128; Grumet 1981: 59-60). The Wiechquaesgeek were able to exploit the rich environment of the northwest Bronx between the Hudson and Bronx Rivers, including the area just north of the site identified as the "Indian Field" (Figure 3). The area provided an optimal locale for deer, raccoon, fox rabbit, and waterfowl. Historic documents indicate that many of the surviving native peoples eventually sold their land or moved to the north (Grumet 1981: 60-62; Ruttenber 1982).

Reported Prehistoric Sites in the Vicinity. Prehistoric archaeological sites have been recovered throughout the northwestern region of the Bronx. Primary sites (villages), secondary sites (tool manufacturing, food processing), and isolated finds (single items or features) have been investigated in the area surrounding Van Cortlandt Park. Some of the prehistoric sites identified within roughly 2 miles of the present project location include several shell middens and prehistoric quartz processing sites (Beauchamp 1900:10; Lenik and Gibbs 1994: 55).

Several prehistoric sites have been identified within the confines of Van Cortlandt Park. A map depicting Native American sites in the Bronx indicates that the village called Keskeskick was at one time located in Van Cortlandt Park (Figure 3; Bolton 1972: 136; Anderson 1991: 4). Historical deeds from the seventeenth century also describe this village when it was sold to the early Dutch settlers of the Bronx (Grumet 1981: 19). Reginald Bolton's research further indicates that this "extensive and probably permanent village" was located close to the Van Cortlandt mansion, to the west of Van Cortlandt Lake and to the southwest of the present project site. The examination of documents also indicates that the area surrounding the mansion was where some of the village inhabitants had large planting fields (Grumet 1981: 15). Grumet's research also identified that another "Indian field" was located on the eastern side of the park, just to the south of the current project site.

A native trail, identified by Reginald Bolton and confirmed by Robert Grumet's research, extended south from Westchester County along the western boundary of Van Cortlandt Park (Figure 3). This trail, which traveled roughly north-south along what is now Broadway (Old Post Road), curved eastward into the park near its southwest corner before turning south again following the path of the present day Deegan Expressway (Bolton 1972: 136; Grumet 1981: 69). The trail likely gave access to the many primary and secondary sites located throughout the park.

The earliest archaeological exploration within Van Cortlandt Park was conducted in 1890 by J. B. James, who recovered pottery, fire pits, lithic material, burials, and other traces of the long-term occupation of this locale (Anderson 1991: 4; Bolton 1972: 141; Storch Associates: 36). Additional material has been recovered from sites all over the park including storage pits, pottery

fragments, shell middens, burials, and lithic material (Bolton 1934: 141; Tieck 1968: 3; Skinner 1915: 55).

More recent investigations within Van Cortlandt Park (NYSM #2387, #2823, #4057, and #7727) have identified a camp, village, shell midden, and campsite in locales throughout the park. During the early 1990s several archaeological investigations were conducted within the park. Bankoff and Winter recovered a storage pit containing shell, ash, and lithic material. The archaeological examination of the Chapel Farm site (A005-01-00079, NYSM #7729) identified a prehistoric lithic workshop (Kearns and Kirkorian 1991). Furthermore, a quartz quarry site was identified nearby. One relatively recent archaeological investigation, however, did not turned up any additional prehistoric material. The two sites closest to the current project area NYSM#7727, within Van Cortlandt Park, and NYSM#2837, east of the park and the Major Deegan Expressway, are described by Arthur C. Parker as prehistoric camp sites.

- **Historical Era**

The initial European settlement of the New York City area was marked by misunderstandings and hostilities between the native groups and the Dutch colonists. Following a short but bloody "war," which ended in 1645, Adriaen van der Donck purchased 24,000 acres of land from the Wiechquaesgeek Indians along the Hudson River. This large tract of land, granted to him by the Dutch prior to his purchasing it from the sachem Tacharew, encompassed what is now Van Cortlandt Park (Anderson 1991: 12; Pons 1994: 2). Much like the earlier Dutch Settlers, Van der Donck took advantage of the areas already cleared by the Native Wiechquaesgeek and established a farm that included large corn fields in the locale of what is now the Van Cortlandt Mansion. Van der Donck maintained a good relationship with the native inhabitants until his death in 1655. Over ten years later, his widow and her second husband sold a large portion of land (most of the south half of present day Van Cortlandt Park) to her brother, Elias Doughty, who in turn sold the land to William Betts and his son-in-law George Tippett in 1668. The water source in the center of the property eventually became known as Tibbetts Brook, an alteration of the Tippet family name.

In 1670, the property was again sold to Frederick Philipse, who had amassed a large estate extending from the north Bronx up through much of Westchester County. Large sections of the Manor of Philipsburgh, located in what was then Westchester County, were leased to tenants. Jacobus Van Cortlandt purchased fifty acres of land from his father-in-law Frederick Philipse in 1699. The property then became known as Van Cortlandt Manor. Eventually, Tibbetts Brook, located to the west of the present project site, was dammed to create present day Van Cortlandt Lake. It was there that in ca. 1700 Stephanus Van Cortlandt constructed a saw mill. A large manor house, which is still standing, was built near the lake in 1748 by Frederick Van Cortlandt (Jenkins 1911: 352). Nearby, the family vault was constructed on what has become known as "Vault Hill." Both the mansion and the vault are located in the southwestern portion of the park, removed from the present project site.

American Revolution. During the American Revolution, Van Cortlandt Manor became the center of action on several occasions. In fact, the municipal records of the City of New York were hidden by Agustus Van Cortlandt inside the family vault in 1776. In an effort to recapture Fort Independence, American soldiers marched south from Yonkers to the high ground above the Van Cortlandt house on January 18, 1777. Although this attempt failed, George Washington used the main house for his headquarters and ordered his troops to cut down much of the forage in the fields surrounding the manor in order to prevent surprise attacks by British soldiers.

A major battle took place within the confines of the park during the following year. A small group of American soldiers accompanied by several Stockbridge Indians sympathetic to the American cause attacked a battalion of British troops on August 20, 1778. After forcing a retreat, they were ambushed by British, Tory and Hessian troops. The small band was driven across Van Cortlandt's woods to what is now the eastern portion of the park. Thirty-seven of the Indians, including their leader Ninham, were slaughtered near what was thereafter called Indian Field (Jenkins 1912: 162-164; Storch Associates: 44). The site of the ambush is said to be near the corner of East 233rd Street and Van Cortlandt Park East (Pons 1994: 13). The remains of these peoples were buried a few days later near the site of the ambush, south of the present project site.

Nineteenth Century. The review of nineteenth century maps indicates that much of the northwestern area of the Bronx was still being used as farmland and woodland. The population of New York City was rising steadily during the early part of the century. Water resources and transportation networks became priorities for city officials. In order to provide an ample supply of water to the populace, resources in Westchester County were explored. It was determined that the Croton River would be able to provide enough water via an aqueduct to insure an abundant water supply. Acting on this notion, the Croton Aqueduct Commission was established in 1833. Over the next nine years, construction plans were established and the aqueduct was completed in 1842. In order to build the aqueduct a large tract of land was cleared along its route. Now known as the "Old" Croton Aqueduct, it ran north-south paralleling the Hudson River. A portion of this aqueduct runs through Van Cortlandt Park and can be found to the east of Tibbetts Brook, and west of the Croton Woods WTP project site.

By 1868 much of the former Van Cortlandt property was divided into smaller parcels (Figure 4). At that time, however, the project site was still owned by the Van Cortlandt family. No structures were shown in the location of the project site. The 1874 Viele topographic map gives a clear indication of the hillside sloping down toward Tibbetts Brook in the late nineteenth century (Figure 5). A small stream is also depicted at the southern end of the project site. At that date no structures were identified as present within the project site.

History of New York's Water Supply. The intense demand for water had exceeded the potential of the aqueduct by 1875 and plans were once again formulated to build a second, larger, aqueduct from Croton to New York City. The segment of the New Croton Aqueduct that flows through Van Cortlandt Park is a masonry brick-lined tunnel found at an average depth of 125 feet

below the surface. This new conduit that runs partially beneath the project site was completed in 1891. An 1891 Atlas of the Hudson River Valley depicts both the Old and New Croton Aqueducts as well as the boundaries of the newly formed Van Cortlandt Park. The only buildings shown are the historic Van Cortlandt mansion and surrounding structures.

A third construction project that affected the terrain of Van Cortlandt Park was the introduction of the New York City and Northern Railroad Line in 1872. The line, completed in 1880, provided a link between New York and Boston. The route of the railroad, with it's many bridges, passed directly through the eastern portion of the park, parallel to Tibbetts Brook, and altered the drainage patterns within the park creating a series of marshy areas. Passenger service on this railroad, by then called the Putnam Line, ceased by 1958.

The last Van Cortlandt moved out of the mansion house in 1888. One year later, a large section of land, including the former Van Cortlandt Manor, was acquired for public parkland in the northwestern section of the Bronx. At the time of acquisition, half of the acreage within the park was meadowland and the other half woodland. Only approximately 40 acres was identified as vegetable gardens. That same year the Van Cortlandt mill, located within the park, ceased operation and the Parade Ground near the mansion house was opened to the public. The extensive woodland in this section of the Bronx, was one of the main reasons that park advocates were in favor of the City acquiring the former Van Cortlandt estate for a park site.

During the late nineteenth and twentieth centuries most of the physical changes made to the park were near the locale of the Van Cortlandt house and lake. The southern and central areas of the park were used for picnics, outdoor games, and the creation of the first municipal golf course (Van Cortlandt Links Golf Course). A series of trails, picnic areas, and the Mosholu Golf Course (1914) were also established on the eastern side of the park.

Through the twentieth century, a number of major roadways were built beginning with the Grand Concourse Extension (later called the Mosholu Parkway Extension) in 1931. This was followed by the Henry Hudson Parkway in 1935 and the Major Deegan Expressway, which constitutes the western boundary of the WTP site, in 1948.

EXISTING CONDITIONS

The site of the proposed WTP is situated east of the Old Croton Aqueduct, and above the New Croton Aqueduct in Croton Woods at Van Cortlandt Park. The parcel is currently comprised of woodland and trails. No structures were observed within the project impact area.

- **Archaeological Resources**

Potential Prehistoric Archaeological Resources. Archaeologists and historians have collected a large body of evidence suggesting that the Bronx, especially in the vicinity of Van Cortlandt Park, was the location of a considerable Native American presence during the prehistoric era. In order to assess the potential for the survival of prehistoric cultural resources, archaeologists rely on several sources of data including, information regarding the physical locale over time, the documentary record, and previous archaeological investigations within the area.

Based on information garnered from archaeological investigations and the documentary record, the preferred location for primary prehistoric sites (camps and villages) were well-elevated areas close to a fresh water source. Early historical records and cartographic sources suggest that the environment within Van Cortlandt Park was particularly suited for settlement by prehistoric peoples. Several prominent knolls were present within the park and Tibbetts Brook (called "Mosholu" by the native peoples) flowed north-south through the center of the park. In addition, the surrounding forests and rivers provided ample raw materials needed to sustain a steady population (e.g. game animals, lithic quarries, fish, and shellfish).

Documentary research found that the project site is in an area of high sensitivity for prehistoric resources. The site file search and assessment of sensitivity conducted at the NYSM and the NYSOPRHP reported eight known prehistoric sites within a two-mile radius of the proposed facility. The well-documented presence of a nearby native pathway and the permanent village of *Keskeskick* within the park indicates that the village site may have been extensive and/or occupied over a long period of time. The physiographic characteristics of the park, together with the information extracted from the documentary record and the number of prehistoric sites explored archaeologically suggests that the proposed project site was also likely exploited by Native American peoples.

The project area was used as farmland and later parkland during the nineteenth and twentieth centuries. Therefore, much of this locale may not have been altered by widespread development. While the introduction of the two aqueducts, railroad tracks with associated bridges, and paved roads and/or paths have transformed many areas within the park, the majority of the eastern section has not changed significantly. The more recent introduction of passive recreation trails has also done little to change the appearance of the project site. As a result, the potential for prehistoric site sensitivity may be high.

Potential Historical Archaeological Resources. Nearby excavations have been conducted by both avocational and professional archaeologists on sites that have been dated to the historical period. In 1910, a foundation for what may have been van der Donck's house was uncovered by workmen excavating for a new sewer near the Van Cortlandt Manor Mansion. The subsequent excavation revealed a large amount of domestic debris dating to the seventeenth century. Archaeological excavations in other areas surrounding the Manor house have also been conducted.

The historic Van Cortlandt Mansion, now a museum, and Vault Hill are in the southwestern section of the park and therefore well outside of the proposed WTP site. When this area was part of Philipsburgh Manor and Van Cortlandt Manor, large portions of these estates, including the park property, were likely leased to tenant farmers. Small farm houses with their associated outbuildings and cultivated fields were likely present up until the Revolutionary War. Some of these dwellings may have been situated in the northeastern section of the park in the location of the former native planting grounds. The woodland in the northern area of the park would have provided timber and possibly small game for the inhabitants of the Manor.

The Revolutionary War events that took place within the grounds of Van Cortlandt Park most likely did not leave a significant below ground imprint except in the eastern area of the park, near the present project site, where the Stockbridge Indians were ambushed and buried. No historical structures were depicted in the Croton Woods WTP site location on any of the historical maps reviewed. In addition, a visit to the proposed Croton Woods WTP project site yielded no evidence of visible historical remains.

No dwellings, barns, or other historical structures were depicted in the location of Croton Woods on any of the historical maps reviewed. As a result, the potential for historical site sensitivity is low.

- **Historic Resources**

According to the current design plan, the proposed WTP would be located to the east of the New Croton Aqueduct and the Major Deegan Expressway. While no historic buildings are located on the site, the existing New Croton Aqueduct may be eligible for listing on the National Register of Historic Places.

The main body of the wooded area is located to the west of Jerome Avenue. On the east side of Jerome Avenue, to the southeast of the project site, is Woodlawn Cemetery. This historic cemetery has numerous extravagant mausoleums, memorials, and tombstones in which several affluent citizens of New York are interred. Woodlawn is also noted for the elaborately groomed grounds and manicured lawns. Because the proposed site is located west of Jerome Avenue, construction at Croton Woods would not visually impact the cemetery.

The proposed water treatment facility site is also visually and physically separated from any historic structures. Therefore, the proposed construction would not impact on standing historic and/or National Register structures, such as the Van Cortlandt Mansion, located approximately one mile away in the southwestern section of the park. The mansion is now operated by the National Society of Colonial Dames.

THE FUTURE WITHOUT THE PROJECT

If the proposed WTP is not constructed at the Croton Woods site, the wooded public parkland would remain in place and would not be developed by alternative interests. Therefore, any potential archaeological resources would remain undisturbed *in situ*, with only the limited disturbances that are caused by passive park use (e.g., hiking). If no other development is enacted on this site, no other visual or structural impact is anticipated.

If future plans call for the placement of additional walking and bicycle paths either along the route of the Old Croton Aqueduct or along the eastern boundary of the park, prehistoric resources within the park would not be adversely impacted if these paths were situated in previously disturbed locations. Any existing below ground cultural resources that survived the discreet impacts of the nineteenth and twentieth century (e.g., Old and New Croton Aqueduct construction), exist under stable conditions. These potential archaeological sites will likely remain intact and protected because they are located within a public park with little chance of unregulated construction activity.

PROBABLE IMPACTS OF THE PROPOSED PROJECT

- **Archaeological Resources**

The physiographic characteristics of the park, together with the information extracted from the documentary record and the number of prehistoric sites explored archaeologically suggests that the proposed project site was likely exploited by Native American peoples. Because this area was used as farmland/woodland and later parkland/woodland during the nineteenth and twentieth centuries, much of this locale has not been altered by widespread development. While the introduction of the two aqueducts, railroad tracks with associated bridges, and paved roads and/or paths have transformed many areas within the park, the area around the project site has not changed significantly. Therefore, potential prehistoric archaeological resources may exist within the Croton Woods site. This potentially sensitive location, which would otherwise remain undisturbed *in situ*, would be adversely impacted by the construction of the proposed WTP, adjoining parking, and access roads.

When construction parking, hauling roads, and staging areas are chosen, if they fall outside of existing parking areas, and grading the existing landscape is required, this may create an impact to archaeologically sensitive areas.

- **Historic Resources**

The land that now comprises Van Cortlandt Park was acquired by New York City as parkland in 1888. The property was sought for park use because it was relatively undeveloped and contained vast areas of woodland that retained much of its natural character. Today, the park is one of the City's largest and most heavily used and is a significant component of the extensive park system in the borough of the Bronx. The construction of the proposed WTP, adjoining parking, and access roads on thirteen of the approximately thirty acres of Croton Woods would have a seriously negative impact on one of the major historic landscape components of Van Cortlandt Park. The project would add a major built element into this natural environment and would result in the loss of almost one third of the woodland.

The proposed WTP would be constructed to the east of the Old Croton Aqueduct and would have no direct impact on this historic feature. However, because the proposed WTP would be constructed above the New Croton Aqueduct, which is eligible for listing on the National Register of Historic Places, construction might have a negative impact on this historic resource. The proposed WTP would be visually and physically separated from any other historic and/or landmarked structures within the park (e.g., Van Cortlandt Mansion, Vault Hill).

When parking, hauling roads, and staging areas are chosen, if they fall outside of existing parking areas, and grading the existing landscape is required, this may create a temporary visual impact to the woods in the existing parkland.

CONCLUSIONS AND RECOMMENDATIONS

Information collected during background research indicates that the project site may have high potential for the presence of prehistoric cultural material. The woodlands of Van Cortlandt Park were characterized by their proximity to several favorable resources (fresh water, game animals, and other exploitable natural materials). These are all desirable traits associated with prehistoric sites and a variety of site types have been recorded in the surrounding area (habitation sites, rockshelters, middens).

Tibbetts Brook, the former "Mosholu," which travels roughly on a north-south basis to the west of the project site provided an ample water supply as well as grassland well-suited for supporting game animals and agricultural activity. The well-documented presence of the nearby native path and the permanent village of Keskeskick within the park indicates that the village site may have been extensive and/or occupied over a long period of time. Topographic maps from the nineteenth and twentieth centuries indicate that the terrain found in the eastern section of the park is characterized by low hills with a few bedrock outcrops. These attributes likely provided an ideal locale for primary and secondary prehistoric sites. In fact, to the south and west of the Croton Woods WTP site at Van Cortlandt State Park several primary, secondary and isolated prehistoric sites have been identified. Further, several well-known prehistoric sites, identified in Van Cortlandt Park have been recorded by the NYSM and OPRHP giving the site a high probability of prehistoric occupation.

Mitigation

Archaeological Resources. Potential prehistoric archaeological resources may exist within the Croton Woods area. Therefore, prior to the construction of the WTP, adjoining parking and access roads, mitigation for these potential resources is recommended for the Croton Woods site. Surveying should entail completing a Phase 1B archaeological reconnaissance, designed to ascertain the presence/absence of prehistoric and historic archaeological resources through the shovel-excavation of a series of test pits. This should be completed according to NYCEQR standards.

Any disturbance to the existing landscape caused by the creation of parking, hauling roads, and staging areas may also impact archaeologically sensitive areas, and thus would require mitigation. A mitigation plan should be formalized when the final sites for these activities are selected. Mitigation plans may include completing a Phase 1B archaeological reconnaissance survey.

Construction will take place above the site of a National Register eligible feature (New Croton Aqueduct). Efforts should made to minimize disturbance to it. Connections to the aqueduct should be undertaken as carefully as possible so that little of the historic construction is disturbed or damaged.

Historic Resources. The construction of the proposed WTP at the Croton Woods Site in the Bronx would not have an impact on a landmarked or National Register eligible property, but it would entail the destruction of a portion of the forest that gives this location its distinct character. Therefore it would be difficult to devise a mitigation plan for this site. Because construction will take place above the site of a National Register eligible feature (New Croton Aqueduct) proposed impacts to this historic feature should be limited.

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Figure 1 Current U.S.G.S. Topographic Map Yonkers Quadrangle. 2,000 feet equal approx. 1 inch.

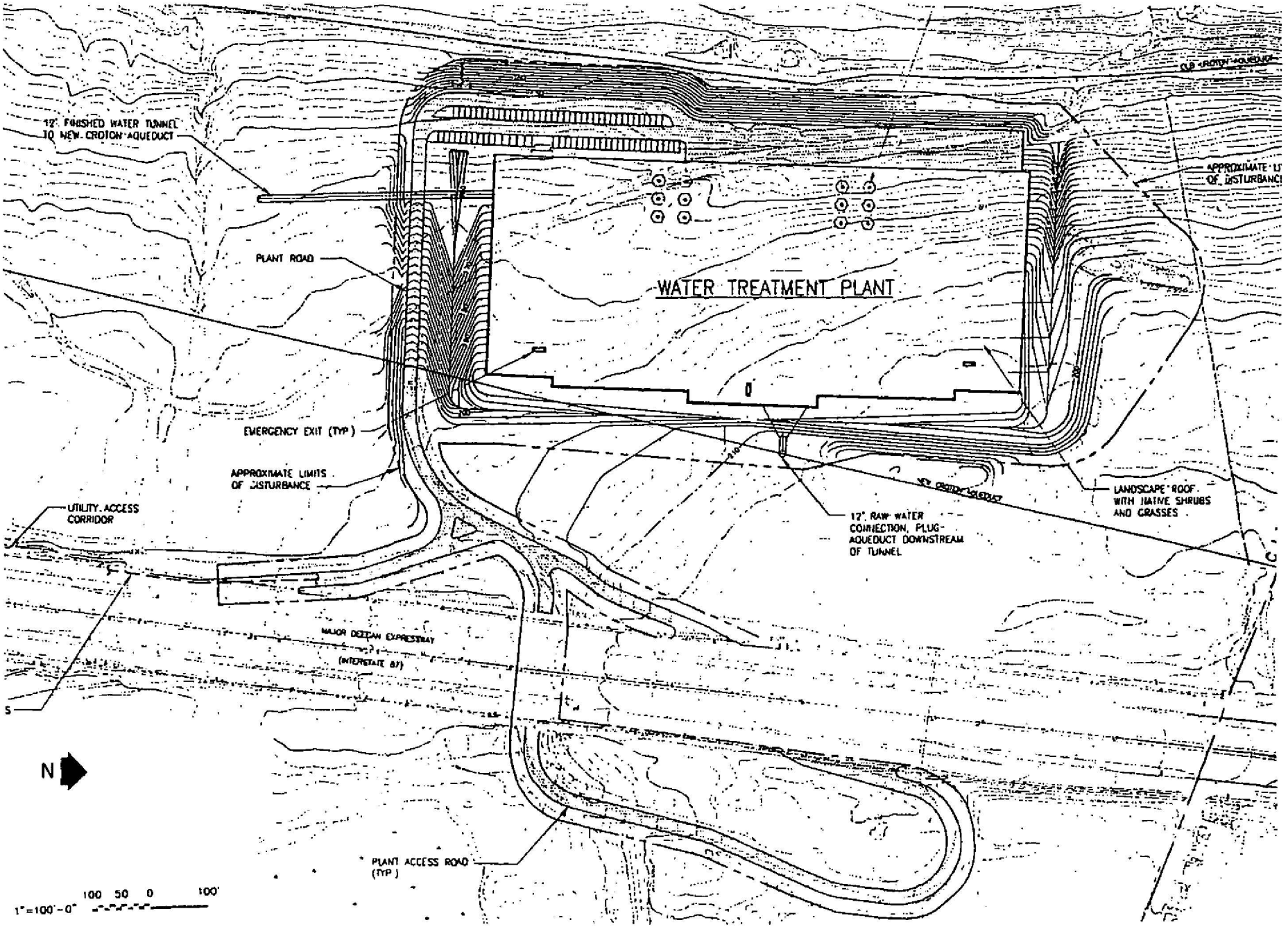


Figure 2 Proposed Croton Woods WTP site. Source: Hazen & Sawyer, February 1998

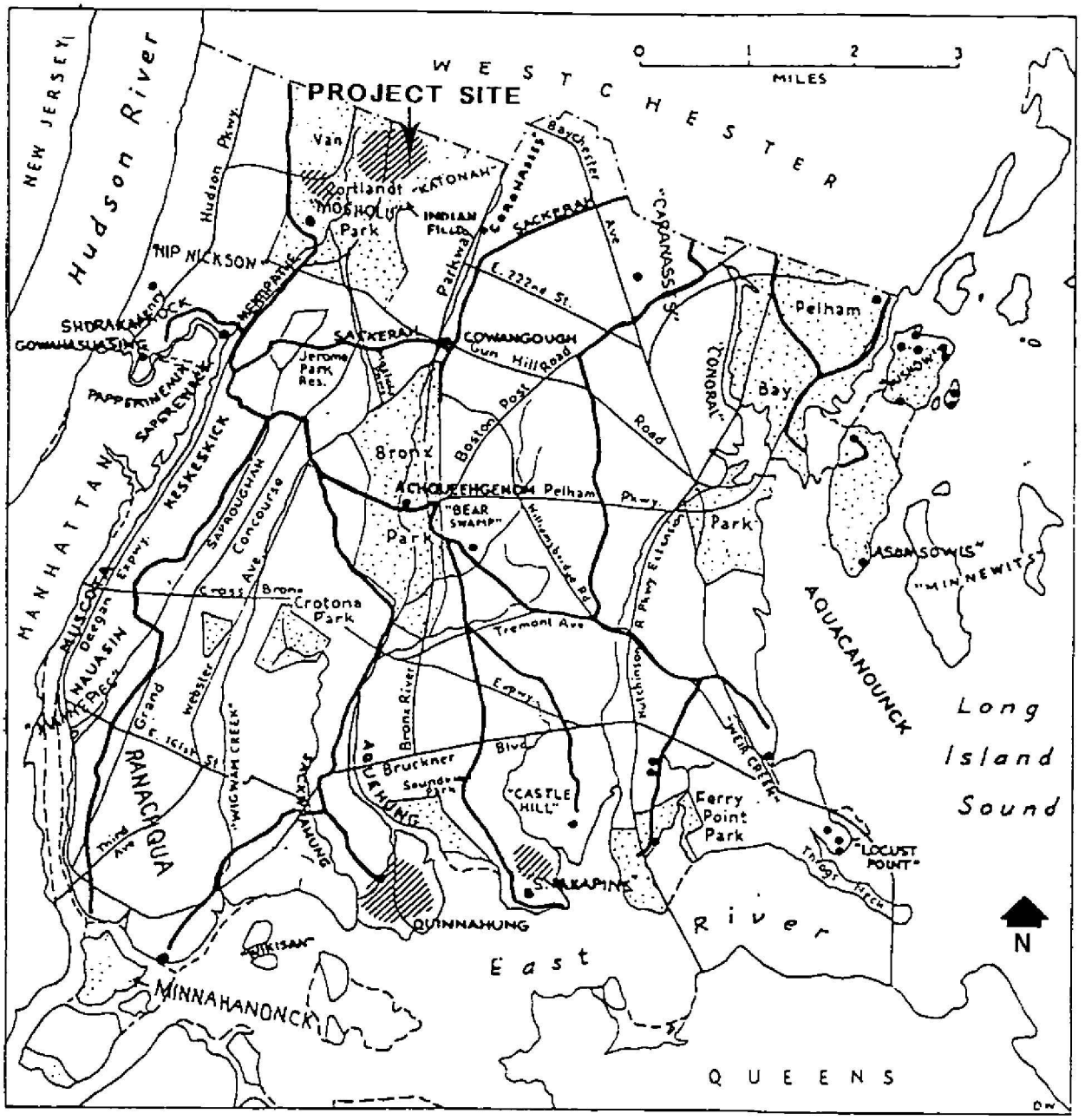


Figure 3. Grumet's Native American Place Names in the Bronx.

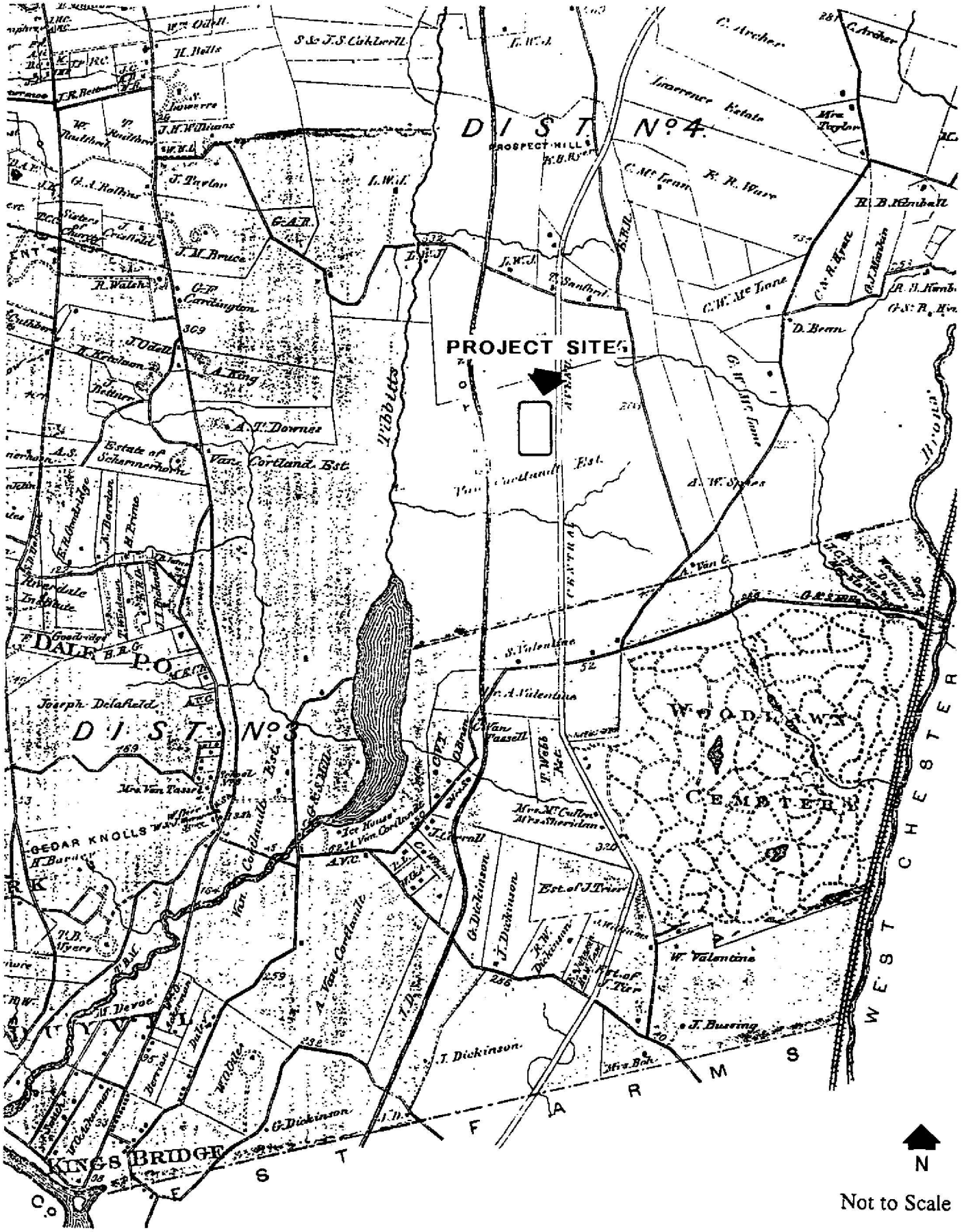


Figure 4. Beers Atlas of New York and Vicinity, 1868.

Figure 5. Viele's Topographical Atlas of the City of New York, 1874.

Photograph 1 Walking path through Croton Woods, Van Cortlandt Park, Bronx, New York
Facing south

APPENDIX

HARTGEN ARCHEOLOGICAL ASSOCIATES, INC.
Cult ıral Resource Specialists
27 Jordan Road
TROY, NEW YORK 12180

(518) 283-0534 FAX (518) 283-6276

LETTER OF TRANSMITTAL

DATE	JOB NO.
3/24/98	904
ATTENTION: Coe Saunders	
RE: CWTP/ NYCDEP	

TO Historical Perspectives

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO	DESCRIPTION
			7 NYSM Sites
			1 SHPO Archeological Site
			1 Previous Survey
			NYSM Sensitivity evaluations are
			no longer available. We now
			look up NYSM Sites at the
			SHPO office. (The SHPO now has

all of the NYSM Site files)

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☑ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☑ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Please call with any questions or comments.

Thank you

COPY TO _____

SIGNED: Jennifer Geraghty

CONFIDENTIAL

NEW YORK STATE PREHISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only - Site Identifier A00501.000791

Project Identifier Chapel Farm II (93P21565) Date January 30,1991

Your Name Faline Schneiderman-Fox, S.O.P.A. Phone (203) 698-1147
Address P.O. Box 331
Riverside, CT 06878

Organization (if any) Historical Perspectives, Inc.

1. Site Identifier(s) Chapel Farm II,
2. County Bronx One of the following: City New York
Township
Incorporated Village
Unincorporated Village or Hamlet Riverdale

3. Present Owner Robert Kahn
Address 390 West 253rd Street
Bronx, New York 10971

4. Site Description (check all appropriate categories):

Site

__Stray find	__Cave/Rockshelter	X Workshop
__Pictograph	__Quarry	__Mound
__Burial	__Shell midden	__Village
__Surface evidence	__Camp	X Material in plow zone
__Material below plow zone	__Buried evidence	__Intact occupation floor
X Single component	__Evidence of features	__Stratified
	__Multicomponent	

Location

__Under cultivation	__Never cultivated	__Previously cultivated
__Pastureland	X Woodland	__Floodplain
__Upland		__Sustaining erosion

Soil Drainage: excellent___ good X fair___ poor___
Slope: flat X gentle___ moderate___ steep___
Distance to nearest water from site (approx.) ?
Elevation 180 ft.

5. Site Investigation (append additional sheets, if necessary):
Surface--date(s) _____
__Site Map (Submit with form*)
__Collection
Subsurface--date(s) 12/11-12/14/1990
Testing: shovel X coring__ other_____ unit size 50x50cm.
no. of units 3 (Submit plan of units with form*)
Excavation: unit size 1x1m. no. of units 15
(Submit plan of units with form*)

Investigator Historical Perspectives, Inc.

Manuscript or published report(s) (reference fully):

City/Scape: Cultural Interpretations
Revised Cultural Resources Report for Chapel Farm II, Riverdale, New York. June 1990.

Hartgen Archeological Associates, Inc.
Archeological Field Reconnaissance SEQR 1B, Chapel Farm II, Bronx, New York. Prepared for Kahn Associates, Bronx, New York. October 1990.

Present repository of materials: Historical Perspectives, Inc., to be transferred to Mr. Robert Kahn.

6. Component(s) (cultural affiliation/dates):

Probably Late Archaic due to predominance of quartz material (no diagnostics, no charcoal samples).

7. List of material remains (be as specific as possible in identifying object and material):

The prehistoric site consisted only of lithic material, predominately quartz. Of the 15 1x1 meter units, a total of 264 +/- lbs. of quartz, and 2.5 +/- lbs. of quartzite was recovered. The majority of quartz fragments were blocks and trim which appeared to result from primary lithic reduction. Only a few identifiable biface-reduction flakes represent secondary processing. The following was noted during an examination of the lithics:

Quartz Flakes:	329
Quartz Bifaces (whole or fragmented):	44
Quartz Large Cores/Cobbles:	8
Quartz Tools (ie. scrapers):	9
Quartzite Flakes:	3
Quartzite Large Cores/Cobbles:	1
Sandstone Flake:	1
Sandstone Gouge Tip (possible):	1
Hammerstone:	1

If historic materials are evident, check here and fill out historic site form. X

Scattered secondary deposits of 20th century cultural materials not considered potentially significant.

8. Map references: Map or maps showing exact location and extent of site must accompany his form and must be identified by source and date. Keep this submission to 81/2" x 11", if possible.

USGS 71/2 Minute Series Quad. Name Yonkers

For Office Use Only - UTM Coordinates _____

9. Photography (optional for environmental impact survey): Please submit a 5" x 7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

See Appendix E.

[redacted]

Project Name CWTP/NYCDEP - Yonkers Raceway & Croton wood Project Number ______ Client Hist Perspectives

Village ______ Town Yonkers, Riverdale County Westchester, Bronx

Quadsheets Mt Vernon

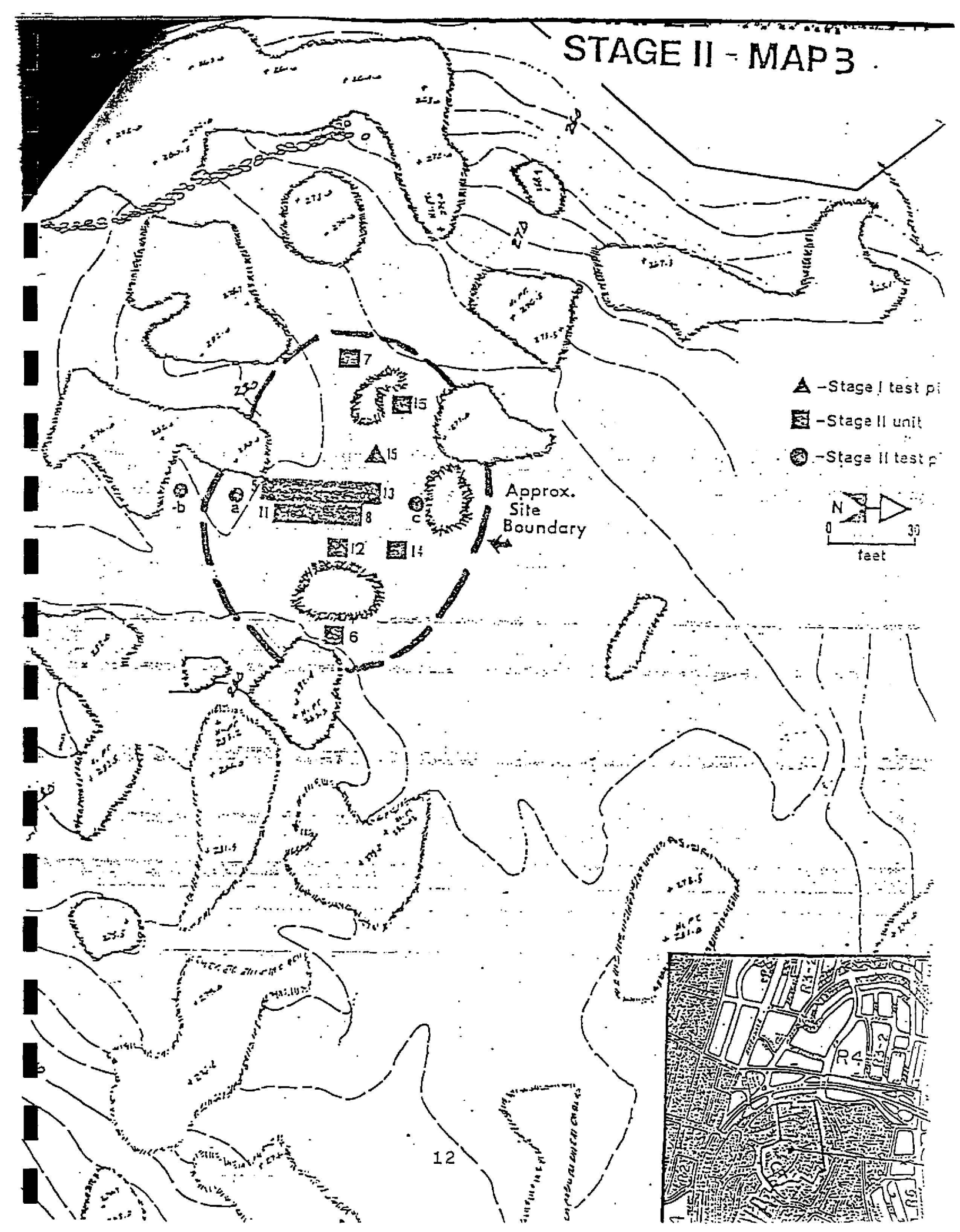
NEW YORK STATE MUSEUM conducted by: ______ Date ______ Site Sensitivity requested no longer Available # Sites 7

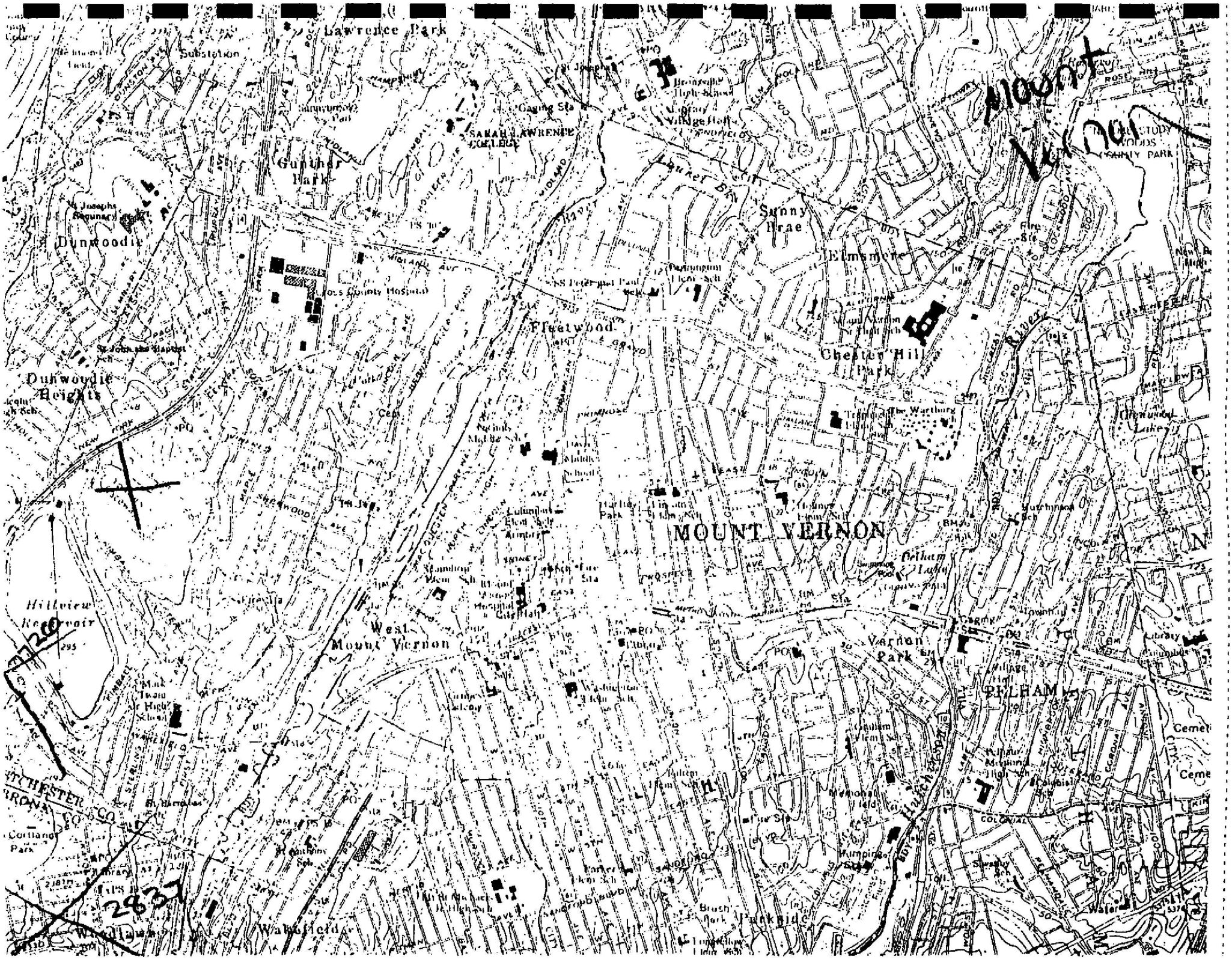
NYSM#	Other#	Name	Period	Type	Comments
2823	ACP Brnx 1A			Village	ACP in Van Cortland Park on W. Side of lake. ACP Plate 14? Detail Map 'After Blackie' has firepits to east of village, Parker 1922
2837	ACP Brnx 15			Camp	Parker AC 1922
4057	ACP NWYRK 7, Brnx no#			Shell middens	E of Fieldstone Rd N of W. 247 St Parker 1922
7725	ACP Brnx no #			Burial Site	Parker 1922 on Parker Bronx map, but in Westchester Co.
7726	ACP Brnx no#			middens (Shells, kitchen)	Parker 1922 on Parker Bronx map. but in Westchester Co.
7727	ACP Brnx NO # Brnx 1B			Camp	ACP Detail Map for Bronx #1 'After Blackie' shows 'firepits' in this local. Parker 1922
7729		Chapel Farm II		workshop, quarry	quartzite quarry ? workshop Hartgen, Guillet 1992 (Schneiderman-Fox, F)

MAP 2

CHAPEL FARM II
PROJECT LOCATION
USGS YONKERS, N.Y.-N.J. 1979

SCALE 1" = 2000'


STAGE II - MAP 3
-Stage I test pi
-Stage II unit
-Stage II test p
Approx. Site Boundary
N
0
30
feet
7
15
15
13
8
12
14
6
a
b
c
11
R4


Lawrence Park
Substation
SARAH LAWRENCE COLLEGE
Gunther Park
Bronxville High School
Village Hall
Bronxville
Sunny Brae
Elmsmere
Fleetwood
Chester Hill Park
Dunwoodie Heights
MOUNT VERNON
Hillview Reservoir
West Mount Vernon
Vernon Park
PELHAM
Wakefield
Pinkside
Mount Vernon

MAR-30-98 08:58 PM P.01