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TIBBETT GARDENS

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ARCHAEOLOGICAL
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PHASE IA ARCHAEOLOGICAL ASSESSMENT REPORT

for the

TIBBETT GARDENS PROJECT

BRONX, NEW YORK

**FOR: Allee King Rosen and
Fleming, Inc.
117 East 29th Street
New York, NY 10016**

**BY: Historical Perspectives
P. O. Box 331
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I. INTRODUCTION

A. Project Description

The Real Estate Board Housing Development Fund Corporation proposes to construct a 1001 unit, middle-income housing project on a site in the Kingsbridge section of the Bronx. The proposal is referred to as Tibbett Gardens. The parcel is bounded by 230th Street on the north, John F. Kennedy High School on the south, Johnson and Irwin (Ewen) Avenues on the west, and Tibbett Avenue Extension on the east. (See Figures 1 and 2). The proposed not-for-profit development would include landscaped open space, retail and community space as well as the residential units. Disposition of the property and rezoning of a portion of the site requires discretionary approval from the city; therefore, an Environmental Impact Study, of which this study is a part, has been prepared.

This report presents the results of a Phase IA archaeological assessment survey of both the project site and the primary and secondary study areas of the proposed Tibbett Gardens development. The purpose of this survey, which was conducted by Historical Perspectives of Riverside, Connecticut, is to evaluate the archaeological potential of the project site and the study areas. This documentary study aims to locate or determine the possible existence of prehistoric or historic sites and cultural remains within the project and study areas that might be affected by the proposed construction of the residential complex, and to recommend appropriate measures with respect to such sites if they exist.

Archaeological remains are vital and non-renewable resources for future research and for an objective approach to cultural interpretation of any community or region. Historic or prehistoric sites represent the tangible remains of past ways of life, the study of which can provide us with a better understanding of human culture in this area of the Bronx.

B. Study Area

The project site and the study areas are situated near the Harlem River in the northwest Bronx, directly across from the northernmost tip of Manhattan Island. (See Figure 3). With the exception of a gasoline station on 230th Street, the site, which is adjacent to the John F. Kennedy High School, is vacant. The high school and its playing fields lie between the site and the Harlem River to the south. On the east is an extension of Tibbet's Avenue used for access to the high school from 230th Street to the north. On the west is a stone wall separating the project parcel from Johnson Avenue which slopes steeply uphill from north to south. The parcel itself is generally level, though there are ditch-like depressions in some places, espe-

cially along the 230th Street line. The center portion, especially, seems to have been graded. There are piles of undoubtedly recently deposited waste material at some places. The tract is damp. Mark Yudman, owner of the Citgo Station on the corner of the site, commented that there were chronic water problems - especially on the west side - on the parcel. He also reported that about two years ago a contractor did a lot of dumping and "ruined the grade." (Personal communication December 22, 1986). (See photographs).

Prior to the twentieth century when extensive land filling was undertaken, the project site was part of the Spuyten Duyvil Creek with small elevated portions of stream bank/marsh along the eastern, western, and northern borders of the parcel.

The surrounding study areas are mixed residential and commercial use. To the west, there are apartment buildings as well as houses on the hilly terrain. Two-hundred thirtieth Street and the area around it are generally more commercial. Marble Hill, to the east, is largely residential.

II. ARCHAEOLOGICAL RESEARCH DESIGN

This cultural resource survey was carried out in three basic steps:

A. Background Research

In an attempt to identify known or potential prehistoric and historic cultural resources, an intensive search of the literature was carried out at the Bronx County Historical Society, the New York Public Library, the Museum of the American Indian, the New York Historical Society, the Sterling and Anthropology Libraries at Yale University, and the Connecticut State Library. Site file searches were requested of the New York State Historic Preservation Office and the New York State Museum. Cartographic resources of the nineteenth and twentieth centuries were studied in detail. From the outset, the accumulation of historical documentation of all types pertaining to the study area was considered to be of primary importance.

Several contacts were made with individuals knowledgeable in the history and prehistory of the area. Interviews were conducted with historians Rev. William Tieck and John McNamara, archaeologists including Valerie DeCarlo of Wave Hill, and Bronx Borough agency personnel. Fred Rovey, executive with Penn Central, and Mark Yudman, owner of the Citgo Gasoline station on 230th Street, contributed their personal knowledge of the site.

Soil borings logs were prepared under contract to the Department of General Services (DGS).

B. Field Survey

Field visits and a photographic record were made in an attempt to locate and identify any existing cultural resources on the project site and to evaluate its archaeological potential.

C. Environmental Analysis

The prediction of prehistoric site locations involves the use of various kinds of information including environmental, archaeological, historic, and ethnohistoric data. At this particular site, environmental and geomorphological conditions were important in developing a hypothesis regarding the presence or absence of prehistoric cultural resources. In making this determination, the following environmental factors were considered:

1. Topography: Variables within this category include landform and elevation. This information was primarily derived from

historic maps, the U.S.G.S. topographic map, the field reconnaissance, and data from soil borings logs.

2. **Geology and Soils:** The factors considered here are type and areal extent of bedrock formation and soils, and the presence and significance of peat found at specific levels as recorded in soil borings logs.
3. **Water:** The facts considered here are the necessity for prehistoric peoples to locate near a fresh water source and the probability in this instance of their exploitation of the confluence of two water systems.
4. **Availability of Floral and Faunal Resources:** The availability and utilization of the natural resources within the area would have been of crucial importance to prehistoric groups. Prehistoric peoples' search for subsistence resources was continual. They naturally chose those areas in which food resources appeared in greatest abundance such as alluvial or lacustrine sites like those present on the project parcel.
5. **Paleoenvironmental Conditions:** The environmental context in which prehistoric peoples lived must be considered in the search for prehistoric occupation/procurement zones within the project area.
6. **Historic and Current Land Use:** Known land alterations, which have been extensive on the Tibbet Gardens site, must be considered in order to assess the extent of potential disturbance to any cultural remains that may have been deposited over thousands of years by prehistoric peoples. Such environmental factors could equally affect the cultural deposits of the more recent historic populations as well. (Lenik, 1986:p.4-6)

III. ENVIRONMENTAL SETTING

The surface of the Bronx bears marked evidence of glaciation. "The glacier was an effective agent of erosion, altering the landscape wherever it passed. Tons of soil and stone were carried forward, carving and planing the land surface. At the margins of the ice sheet massive accumulations of glacial debris were deposited, forming series of low hills or terminal moraines." (Eisenberg, 1978:p.19). These ridges run north-south. The Riverdale Ridge lies between the Hudson River and Fordham, partly in the project study area. The rocks of the Borough consist mainly of gneiss, schist and white crystalline limestone. The rivers and streams, which were important factors in the settlement patterns of both prehistoric and European peoples, drain to the south and southeast. Tibbet's Brook, whose mouth was once in the project site, drained to the south into the Spuyten Duyvil Creek and was one of the principal waterways of the area.

The terrestrial plant habitats of the Tibbet's Gardens study area formerly consisted of salt marshes, fresh water marshes, swamps, shallow mud flats, meadows, and forested uplands. However, these landforms and their associated vegetation have been drastically modified due mainly to extensive land filling and development in historic times. But alluvial deposits affected the topography even earlier with natural landfilling. Such areas as this "are lifted gradually toward the water level by slow accumulations of sediment. They are invaded by grass (Spartina patens, Ait), which, growing thicker and thicker, entraps more and more silt, and gradually creates a land surface below the water, to become a widely extended swamp bed" in places such as Kingsbridge. (Gratacap, 1909:p.28).

Today the topography of the Tibbet Gardens is generally level and there is no stream to be seen because of the twentieth century landfill. However, there is standing water at intervals all over the parcel, and the ground feels wet and spongy. The vegetation presently found is typical of disturbed or waste disposal places. There are two portions - in the northwest corner and along the western boundary - that are slightly elevated.

IV. THE PREHISTORIC PERIOD

A Cultural Framework for Interpreting West Bronx Prehistory

The term "prehistory" refers to the time span before the advent of written records. In coastal New York, it applies to the chronology and lifeways of the local American Indian cultural groups prior to European settlement of the region. There is no published synthesis of the prehistory of the Spuyten Duyvil section of the Bronx. In fact, a search fo the literature revealed no publication of a professional archaeological excavation in the West Bronx. Consequently, we must rely on cultural sequences formulated for adjacent regions to help us understand the cultural history of the area.

In eastern North America, archaeologists divide prehistory into three main stages: Paleo-Indian, Archaic, and Woodland. The Archaic and Woodland stages are further divided into temporally distinct cultural periods, based on changes in projectile point and pottery styles, and/or the addition of new artifacts or activities. (See Figures 4, 5, 6)

Paleo-Indian Stage (10,000-7,000 B.C.)

The earliest settlers of North America and the ancestors of present-day Native Americans are called Paleo-Indians. "Paleo" comes from the Greek word for "ancient" or "old." These people crossed over the Bering Land Plain that connected Siberia to Alaska during one or more of the glacial maxima, when sea levels were at their lowest and the plain was exposed as dry land. Little is known about the Paleo-Indians. It is believed that they were big-game hunters and gatherers whose economy and settlement patterns revolved around the migratory habits of such big-game as caribou, mammoth, mastodon, and bison, which inhabited the trundras and spruce woodlands of early post-glacial North America. The characteristic artifact of the Paleo-Indian period is the fluted point. No fluted points have been reported from the west Bronx. During excavation of the Harlem River Canal, however, a mastodon tusk was recovered from an ancient bog (Tieck, 1968:p.134) demonstrating that the area supported the big-game thought to be a major food source for Paleo-Indians.

Archaic Stage (7,000-1,000 B.C.)

Environmental changes during the Archaic stage brought about concurrent changes in Indian culture.

With the warmer and drier climate, the tundra and spruce forests disappeared and deciduous woodlands gradually appeared. The Pleistocene big-game either became extinct like the mammoth and mastodon, or moved northward like the caribou and musk ox. The oak and hickory woodlands of coastal New York attracted mast-eaters like the white-tailed deer and wild turkey. During this later post-glacial period, the melting ice no longer poured large amounts of meltwater into local rivers and streams. The slower stream flow allowed the growth of marsh area and mud flats that encouraged the influx of migratory waterfowl and the growth of numerous edible plant species and shellfish. The subsistence and settlement systems of Archaic groups were based on a restricted wandering system which consisted of seasonal movements to and from base camps located near these resources. The group would move from one camp to another as each major resource became seasonally available.

Very little is known about the Early and Middle Archaic periods in coastal New York. Occupation sites are virtually unknown. By the Late Archaic stage, the exploitation of shellfish resources was in full force; the coastal shell middens (refuse piles of discarded shells) still found today in the northwest Bronx are a testament to this activity. The recovery of an atlatl (spear thrower) weight at 232 Street and the Hudson River indicates Archaic occupation near the study area.

Woodland Stage (1,000 B.C.-European settlement)

The Woodland stage is identified mainly by the production of clay pots. Other attributes are the advent of horticulture, large semi-permanent or permanent villages, pipe smoking, the bow and arrow, and extensive trade networks. Fragments of prehistoric pottery vessels found at numerous sites indicate that the study area was heavily populated by Woodland groups, into the historic period.

The goals of the prehistoric portion of our study are (1) to identify the locations of known prehistoric sites and the location of areas with a high potential for prehistoric occupation (that is, areas whose physical attributes would have attracted aboriginal settlers and so signal the possible presence of as yet undetected prehistoric sites below ground), and (2) to assess the impact of Tibbett Gardens on these potentially important and irreplaceable cultural resources. We obtained the information necessary for this study in a number of ways. They include a search of the literature, interviews with local informants and amateur collectors, analysis of museum and private archaeological collections from the project area, physical environmental data,

and field reconnaissance. The following synthesis of the Tibbett Gardens' prehistoric past is organized according to the various resources tapped.

Literature Search

Pertinent literature includes early ethnohistoric accounts by European traders and settlers, legal documents, site reports, museum and catalog files, and maps relating to the study area. Research was conducted at The Bronx County Historical Society, the Bronx Borough President's Office, the Museum of the American Indian, Heye Foundation, the Sterling and Anthropology Libraries at Yale University, Wethersfield Public Library, and the Connecticut State Library. When spanning thousands of years and three centuries of record keeping, there is a degree of unavoidable duplication of effort and reporting.

The earliest documented evidence for aboriginal habitation of the study area is the Hendricks Map of 1616, which shows the Wikagyl (Wiechquaesgeek) Indians inhabiting the southern New York mainland just north of the Manhattes Indians on Manhattan Island. The Wiechquaesgeek (with several variations on the spelling of the name) are identified as the group of Indians living in northern Manhattan, Bronx County, and southern Westchester County in a number of seventeenth century Dutch and English manuscripts, deeds, treaty, and maps. (Bolton, 1934: p.128b; Grumet, 1981: p.59-60) Wiechquaesgeek villages are mentioned often in these documents. According to seventeenth and eighteenth century documents at least five major settlements are thought to have been located within or near the Tibbett Gardens study area. They are:

- (1) Shorakapkok: near 230 Street and Broadway or on Tibbett's or Berrien's Neck. (Tieck, 1968: p.56; Bolton, 1920: p.307; Fluhr, 1960: p.10; Jenkins, 1912: p.21; McNamara, 1984: p.497)
- (2) Nipinichsen: a palisaded fort variously located on Tibbett's Neck, Riverdale area, and Spuyten Duyvil Hill - which, according to the official Bronx Historian William Tieck, was the hill located west of Johnson Street overlooking 230 Street and the project site. (Bolton, 1906, 1920, 1934: p.140; Fluhr, 1960: p.10; Jenkins, 1912: p.21; Skinner, 1915: p.56)
- (3) Gowahasuasing: on Tibbett's Neck, apparently destroyed during excavation of the Harlem River Canal. (Grumet, 1981: p.69; Kearns and Kirkorian, 1986: n.p.)
- (4) Keskeskick: in Van Cortlandt Park. (Bolton, 1934: p.141)

- (5) Saperewack: located on the Harlem River in the Marble Hill area. (Grumet,1981:pp.49,68)

The review of literature based on ethnographic reports further revealed that a major Indian trail paralleled the eastern boundary of the secondary study area. (See Figure 7) Known as the Weckquaesgeek Path, it ran from the Bowery in southern Manhattan to Broadway in the Bronx, eventually connecting coastal groups with the Mohawk region of interior New York. (Bolton,1920, 1934:pp.61-62) Most probably this Native American path crossed the Harlem River near the junction of Broadway and 230 Street - an important low tide crossing area referred to as "the Wading Place," by early European settlers. (Fluhr,1960:p.6; Jenkins, 1912:p.181)

As late as 1817 Indians were camping on the Bolton estate in the primary study area. (Skinner,1915:p.57) A map, based on late eighteenth and early nineteenth century surveys, places the John and Curtis Bolton estate in the southeastern section of Marble Hill.

Numerous prehistoric sites within and near the study area are reported in more recently published literature, supporting the ethnohistoric documentation listed above. It is most probable that certain of these recently discovered sites are, in fact, part of the same camps and/or villages reported on in the earliest sources. They include, as shown on Figure 8 :

- (1) Kingsbridge Post Office, 5517 Broadway (near 230 Street): projectile points (that is, the tips of arrows, spears, and darts), pottery, shell, and an Indian burial were uncovered. Tieck suggests that it might be the site of the "lost" village of Shorakap-pock. (Tieck,1968:p.56; See Figure 9)
- (2) 231 Street, Kingsbridge section: a hearth containing a prehistoric clay pot was found. (Bolton,1934:p.12)
- (3) Ewen Park, along the 231 Street line: "shell and ashes" were reported. Nearby, on the William Muschenheim estate, close to the Henry Hudson monument, a "food pit" was uncovered. (Bolton,1934:p.140)
- (4) Marble Hill: shell and prehistoric artifacts have been found near and at "the Wading Place," approximately Broadway at 230 Street. (Bolton,1934:p.135)
- (5) Papparinem Island: large site on high ground that was originally Papparinem Island, near 231 Street. Smaller temporary prehistoric sites are also reported for the Island area, but their exact location is not given. (Bolton,1934:pp.134,139)

- (6) Tibbett's Neck: "very extensive shell middens" were located below the bluffs. (Jenkins,1912:p.329)
- (7) Spuyten Duyvil Hill: several small shell deposits were found. (Skinner,1915:p.56)
- (8) Van Cortlandt Park: several sites were located, including extensive two to three foot thick shell middens and burials covering fourteen acres in the southwestern section of the park, and shell pockets near the mansion. The parade ground once had been Indian planting fields. Pit features, pottery, and stone tools were reported. (Bolton,1934:p.141; Tieck, 1968:p.3; Skinner,1915:p.55)

The size and number of prehistoric sites in the metropolitan area indicates an extensive Indian population. Bolton reports 94 sites in the "greater city," several containing evidence of house structures. He estimates a population of several thousand Indians. (Bolton,1934:p.15) For the Wiechquaesgeek group alone, Cook estimates a population of about 900 at the time of European contact. (Cook,1979:p.73)

Informant Interviews

According to Valerie DeCarlo, archaeologist with Wave Hill, Bronx, the study area was once an optimum environment for shellfish. Beds containing huge oysters were located all along the East and Harlem Rivers. On the Manhattan side of the Harlem River Canal huge middens are still extant. They can be seen eroding from the river banks, and are presently being vandalized by "pothunters." Ms. DeCarlo is currently investigating a prehistoric shell midden in Riverdale Park, northwest of the study area. Stone and clay artifacts were recovered, including a Late Woodland Levanna point, cordmarked and cordwrapped stick stamped pottery that may date to either the Middle or Late Woodland period, and incised pottery with collared rims known as Eastern Incised - a very late pottery type that can be dated to the early historic period. (V. DeCarlo, personal communication, January 7, 1987)

Collections Analysis

The following archaeological facilities were contacted for information on sites/artifact collections within the study area: New York State Office of Parks, Recreation and Historic Preservation, Albany, New York; New York State Museum, Albany, New York; Museum of the American Indian, Heye Foundation, New York City. Analysis of the data provided by these institutions substantiates and expands upon the published information. Site files and

artifact catalogs at the Heye Foundation were researched as were artifacts from the area on display at the Museum of the American Indian.

Ten sites were located within or near the primary and secondary study areas on the Bronx side of the Harlem River. Two are Van Cortlandt Park loci, discussed previously in the published literature section. The other eight sites are apparently unpublished. They are:

from the Heye Foundation

- (1) Hudson River at 232 Street: a bannerstone, or atlatl weight (used to weigh down a spear or dart shaft to increase accuracy) was unearthed. (See Figure 8)
- (2) Henry Hudson and Kappock Street: a hammerstone and a pottery fragment were found. (See Figure 8)
- (3) St. Giles and 235 Street: a point and a musketball were recovered.
- (4) Harlem Canal, near Broadway: 15 Indian pottery fragments were found. (See Figure 8)
- (5) Broadway and 230 Street: a projectile point and a chipped stone blank or preform (from which finished tools are manufactured) were discovered. (See Figure 8)

from the New York State Museum

- (6) #709: referred to as the Kappock site, located somewhere in the vicinity of 227 Street, Kappock Street, and Henry Hudson Parkway. This site may be the same site as referenced above in (2).
- (7) #5320: located somewhere in the vicinity of Edsall Avenue, Johnson Avenue, and the Harlem River.
- (8) #2838: located somewhere between Edgehill Avenue, 230 Street and 227 Street, most of which is in the project site. Arthur C. Parker reported this in the early twentieth century as a village site. Based on Parker's information, the Museum is only able to locate this site in a broad and approximate manner.

The site files of the New York State Parks and Recreation Department and those of the Heye Foundation also include a number of sites on the Manhattan side of the Harlem River, directly across from the study area. They include, as see on Figure 8 :

from the New York State Parks and Recreation

- (1) A061-01-0537: a large village site at the northern tip of Manhattan between 196 Street and 219 Street, containing burials and pits, probably Woodland period.

- (2) A061-01-054: Isham Garden area, a Woodland shell midden with points, pottery, netsinkers, and hammerstones.
- (3) A061-01-019: Seaman Avenue Indian burial ground, containing Middle Woodland materials.
- (4) A061-01-0535 and A061-01-0113: 220 Street and Kingsbridge Road, shell midden.
- (5) A061-01-0532: Cold Spring/Inwood Park area, including vicinity of 207 Street and Broadway, shell midden.

from the Heye Foundation

- (6) Broadway and 210 Street: where a hammerstone and point were recovered.
- (7) Cold Spring Shell Heap: Inwood Park at 207 Street, contains points, antler and bone tools, turtle shell cup, hammerstones, celts, gouge, scrapers, grinding stone, faunal remains, stone and pottery pipes, knives, pendants, awls. Pottery indicates a Woodland site; gunflints, trade pipe and other European artifacts suggest an early historic period site.

Physical Environmental Data/Field Reconnaissance/Sensitivity

Prior to European settlement and urbanization, the Spuyten Duyvil section consisted of forested uplands, extensive meadows, salt marshes, fresh water marshes, swamps, shallow mud flats, tidal and fresh water streams, and a number of coves and bays. These landforms existed as late as the turn of the twentieth century, as indicated in old photographs and an old print of the region. (See Figures 10-13) The immediate project site was a combination of creek in the east and south sections, marsh, meadow, and flats along the west and north sections and, in the southwest corner, somewhat higher ground that may have been a knoll. A small island was located in the northwestern quadrant. (See Figures 12 & 14) Figures 12 and 13, which are late nineteenth and early twentieth century photographs of the north and east, and of the west sections of the project site, respectively, show houses built upon the creek bank in these sections. They indicate that the ground was suitable for habitation and could have supported prehistoric camps.

The western end of Spuyten Duyvil Creek was a well-known feeding ground for bass. (Tieck, 1968:p.59) As noted previously, the marshes and mud flats along the creek supported extensive shellfish beds. Shells were uncovered in soil borings taken at the project site area, suggesting the presence of natural shellfish beds and/or culturally produced middens signifying Indian processing stations within the project site. The large number

of microenvironments, with their diverse plant and animal populations, would have made the area attractive to prehistoric Indian populations whose economy was based on exploitation of a large number of such resources. Indeed, the number of sites already known from the primary and secondary study areas substantiates the attraction. Further, Carlyle Smith's archaeological survey of the circum-Long Island Sound region indicates that Indian settlements were located near bays and tidal streams such as were located in the study area. Our field reconnaissance of the project site located five quartz flakes and six split or quartered quartz cobbles scattered about the western and southwestern sections of the site (i.e., the higher meadow/marsh areas). Splitting and quartering beach cobbles with a hammerstone is the first step in prehistoric tool manufacture, known as the quartz cobble reduction technique. (Lavin 1984) The unused flakes are probably by-products of this tool manufacturing technique. The artifacts may represent the remains of a special purpose lithic procurement station, where locally abundant quartz cobbles were collected and worked into blanks or tools and carried back to the base camp for further processing and/or use. Alternatively, they may be the result of secondary deposition due to either alluvial silting or to landfill operations. Although these surface finds are indicative of prehistoric activity, they cannot be definitively associated with the project site.

Recent research by the contributing author suggests a Late Woodland pattern of villages being located close to special food processing camps, such as shell middens. The middens are often located upwind from the village so as to avoid the smell of rotting shell. As noted above, several Late Woodland/early historic villages are thought to have been located south and west of the project site, and downwind from it. In sum, the physical and social environmental relationships of the project site make it a suitable location for prehistoric procurement and processing camps.

Summary

The prehistoric archaeology of coastal New York is still in its frontier stage. Unlike other regions of North America, the cultural chronology, lifeways, and even the cultural affiliations of the Indians who inhabited the area are poorly understood. The often cited synthesis of prehistoric archaeology in the region is Smith's doctoral dissertation THE ARCHAEOLOGY OF COASTAL NEW YORK, which is over 35 years old and predates such presently standard techniques as radiocarbon dating, use wear analysis, regional point typology, geochemical analysis for source identification of stone materials used in tool making, and subsistence/settlement studies, to name a few. Although much of the work is still relevant, it could and should be refined and elaborated upon.

Why is there such an archaeological lag? A major reason is urbanization and industrialization during the nineteenth and twentieth centuries destroyed many of the major sites prior to archaeological interest in the area. Today there are relatively few open, relatively undisturbed lots with archaeological potential in metropolitan New York from which the professional archaeologist might be able to gather fresh data about Indian life prior to European contact, and how it changed after contact. Tibbett Gardens may be such an area.

Our survey of the literature, current archaeological research in the immediate area, archaeological collections, and a field reconnaissance all indicate a high density of aboriginal occupation for the study area, especially during Woodland and early historic times. Its central location to a major Indian trail, extensive shellfish beds and other varied resources, the discovery of numerous archaeological sites within the primary and secondary study areas - including a major village site within or adjacent to the immediate project area - make the study area archaeologically sensitive.

V. THE HISTORIC PERIOD

In 1609 when Henry Hudson anchored the HALF MOON somewhere on what was later named the Spuyten Duyvil Creek opposite the tip of Manhattan, the nearby Tibbett Gardens site was covered with a segment of that creek and small portions of its stream bank and marsh. For the next three hundred years the configuration remained virtually the same. Early in the twentieth century, the area was filled in by the New York Central Railroad to make land for a freight station. The parcel was taken by condemnation by the City of New York (final decree in 1968) in order to build the John F. Kennedy High School. It is the space between the school and 230 Street which comprises the project site. Figure 15 shows the current street plan, while Figure 16 is one example from the range of maps examined from the previous three centuries which shows the path of the stream bed.

Although the project site is situated in what is historically and geographically one of the most fascinating sections of New York City, the reader should keep in mind the fact that the parcel was more than three-quarters under water until the twentieth century as he peruses the following summary. A preliminary examination of the maps in this report may be helpful. Additionally, there is a chart of place names with their changes over time on the opposite page.

Geography

The Borough of the Bronx is bounded on the west side by the Hudson River. The Hudson is joined to the Harlem River, which also runs north-south, by a body of water once known as Spuyten Duyvil Creek* though now more often than not simply referred to as the Harlem River. Presently the Spuyten Duyvil is a fairly

* The etymology of the term Spuyten Duyvil is problematical. Almost everyone has had a theory as to its origin and exact meaning, including Washington Irving who wrote a charming short story to illustrate his explanation. In our opinion, John McNamara's definition merits serious consideration: "SPUIT DEN DUYVIL. This is a 1647 reference to Spuyten Duyvil, and the word 'Spuit' can be compared to the English 'Spate', a freshet, or flow of water. Although not as colorful as the Trumpeter story (see Spakent Heill) this explanation is the most valid one on the meaning of Spuyten Duyvil, thanks to Dr. Ray Kelly who has delved into the 17th-century Dutch origin of the name. He is convinced the early settlers referred to a strong flow of water. The creek, subject to a double tide, was in almost constant flux which was incredible to Hollanders accustomed to the daily ebb and flow of the sea; this spate ascribed to the Devil, which was a common European practice of their day." (McNamara, 1984:p.506)

straight channel, but until this century, it followed a distinctive S curve as it wound its way from the Hudson around a point or peninsula of the Bronx and then turned northward and eastward around a finger of Manhattan known as Marble Hill and thence south to the Harlem. Flowing into the creek at present 230th Street from its source in the hills of Westchester was Tibbetts Brook, named for an early landowner. [Tibbett's Avenue "runs in the valley of the old brook." (Fluhr,1960:p.5)]. But, not only has much of the brook disappeared along with its mouth, "but so too has the stream into which it emptied. This is one of the most confusing items in Bronx geography. For it was in this area that a natural island has disappeared and just to the south a man-made island has also disappeared. And we have the paradox of a part of Manhattan Island being on the Bronx mainland." (ibid,:p.5). The first and northerly island was Papparinemmo, a Weckgausgeek Indian name for the triangular body of land bounded by twin branches of Tibbett's Brook (also sometimes known as the Mosholu or Yonkers River) and Spuyten Duyvil Creek to the south. The western part of the brook was filled in this century; the stream to the east was filled by alluvial deposits by the nineteenth century. The second island was created in 1895 by the Harlem River Ship Canal which separated the Marble Hill finger of Manhattan from its natural position. "But that was a temporary phenomenon. Gradually lowlands were filled; roads were built; railroad tracks were laid. Today, along with Tibbett's Brook, Spuyten Duyvil Creek, and the surrounding meadows, the two islands are no more, and Marble Hill is joined to the Bronx by land." (ibid,:p.6). Figures 17 and 18 are excellent graphic presentations of the above verbal description. Arrows marking the approximate location of the Tibbett Gardens site have been added to the maps.

History of the Area

"The area that is now the Bronx, called Keskeskeck by the Indians, was purchased from them in 1639 by the Dutch West India Company. Two years later, Jonas Bronck, a Scandinavian, became the first white settler of the region when he bought 500 acres between the Harlem River and the Aquahung. The latter stream soon lost its Indian designation and became known as Bronck's River." (WPA,1939:p.510).

In what is today the Kingsbridge, Riverdale, Spuyten Duyvil section - or northwest Bronx - where the project site is located, the political & property divisions have been almost as confusing as the geographical changes. "The first European to settle north of the Harlem River-Spuyten Duyvil Creek [was] Adriaen van der Donck. With practically the whole Hudson valley to choose from he selected an immense tract extending northward from Spuyten Duyvil to be Donck's Colony, or "Colendonck," the name he gave to the patroonship which he patented in 1646." (Tieck,1968:p.3).

"The tract selected by Van der Donck extended north about eight miles from the mouth of Spuyten Duyvil Creek along the east bank of the Hudson, thence easterly to the Bronx River, which was the eastern boundary; the southern boundary ran from the eastern entrance of Spuyten Duyvil Creek east to the Bronx River; the southern boundary was Spuyten Duyvil Creek. The boundaries were about the same as those of the township of Yonkers as formed by the Legislature of 1788. The tract was called 'Nepperhaem' in the deed; but was known popularly as 'Colen Donck' (Donck's Colony), and sometimes as 'De Jonkheer's,' which later by natural corruption became Yonkers, the 'J' in Dutch being pronounced 'Y'." (Jenkins, 1912:p.33). But according to J.H. French, nineteenth century author, Yonkers "is a Dutch word signifying 'gentleman,' or 'country nobleman,' - a title of respect applied first in this place to Adrien Van der Donck, the patentee and first proprietor." (French, 1860: p.707). At any rate, the Township of Yonkers in the County of Westchester encompassed the study area from 1788 until 1874-5 when it became part of the Annexed District of New York City. But these and other complex political changes are somewhat extraneous to the task at hand. Therefore, let us narrow the focus to the general study area where matters of property location and ownership are confusing enough. Returning to the Island of Paparinemo (See again Figure 18), historian Robert Bolton, writing in the late nineteenth century, stated that it was granted by Governor-General Kieft to Matthew Jensen in 1646. However, a historical map prepared by Reginald Bolton in 1906 (printed in Dr. Tieck's 1968 book) shows "Matthys Jensen 1646" on Marble Hill to the south of Paparinemo. (Figure 19 and see also Figure 20 "Borough at the End of the Dutch Period."). Still another authority, George Fluhr, reported that Paparinemo, part of the patroonship of Adrian Van der Donck in 1646, "was later sold to John Archer (or Jan Archer) to become by 1671 a part of the Manor of Fordham." (Fluhr, 1960:p.6).

Another early settler was George Tippet. "In mid-1668 Tippet and his father-in-law, William Betts, bought the extreme southwesterly heights lying between the Hudson and a little stream which used to meander down from Yonkers through Van Cortlandt Lake to a junction with Spuyten Duyvil Creek near modern 230th Street and Riverdale Avenue." (Tieck, 1968:p.12). A corruption of his name, "Tibbett," came to be applied to the brook. The Tippet homesite was once located nearly "a hundred feet north of what is now 231st Street between Arlington and Netherland Avenues. It was undoubtedly destroyed during the Revolution, because there were three forts nearby." (ibid:p.12). The location is several blocks northwest of the project site.

At the southern tip of the island [of Paparinemo] was the "wading place" at which Indians and early settlers crossed from the island of Manhattan at low tide. Here, in 1669, Johannes

Verveelen established a ferry service and constructed a bridge over the meadows to the village of Fordham. At about the same spot [Broadway below 229th Street] the old King's Bridge was erected in 1693. Twenty years later it was moved westward to the foot of Marble Hill, where it played a prominent part in the American Revolution as the main passage from New York City to the mainland. (Fluhr,1960:p.6). One can find these landmarks noted on Bolton's Historic Map in the lower right hand portion. (Figure 19). The King's Bridge which gave its name to this section of the Bronx ran from Marble Hill to the mainland two blocks east of the project site at the current 230th Street and Kingsbridge Avenue. Beginning in 1713 King's Bridge was moved to its present location. (See Figure 16 , a tracing of an 1897 Bromley Atlas when the bridge still stood). It was demolished in 1913. "During excavations in the 1960's, parts of the wooden span were brought to the surface by workmen, and are now in the possession of the Kingsbridge Historical Society." (McNamara, 1984:p.421).

"The Bronx played no outstanding role in the Revolution. The great families were divided in their allegiance, ...the small farmers to a large degree held themselves aloof from the Revolution. A number of forts were built or occupied by the British, and though no large-scale battles took place in the Bronx, there were constant encounters and pillagings." (WPA, 1939:p.511). Several of these fortifications were in the vicinity of, though, of course, not on the watery project site. They were Forts 1,2, and 3, Fort Independence, and Fort Prince Charles and are clearly marked on Jenkins' compilation from the British Headquarters Map. (Figure 21).

As mentioned above, the King's Bridge (two blocks east of the project site) was a principal artery for both sides of the conflict. Washington's defeated army retreated to Westchester from Manhattan over it in 1776, followed shortly by Hessians. In 1783 the victorious Americans re-crossed the bridge, this time heading south to re-occupy Manhattan. In his account of military camp life, Reginald Bolton said that a camp of the Yager corps (Hessians) was located "at the head of the Farmer's Bridge, which is now buried under Muscoota Street or 225th Street" several blocks southeast of the project site. (Bolton, 1915:p.498). These mercenaries were called "Skinners" and skirmished continuously with American gangs (some soldiers) called "Cowboys." Most historians agree that both groups were marauders who preyed on the civilian population as well as each other. (For example, Comfort, 1906:p.18).

So we see that in the neighborhood of the project site there was constant activity during the American Revolution. In his history of Westchester County written in the last quarter of the nineteenth century, Robert Bolton reported that near the King's Bridge, "the remains of a British soldier were recently

disinterred - and, incredible as it may seem, in his full uniform; the brass buttons as perfect as the day they were moulded, containing the number of his regiment." (Bolton, 1881 ed.:p.613) No definite statement one way or the other can be made based only on documentary studies as to whether some physical evidence of the Revolutionary War lies buried on the project site, anaerobically preserved by landfill.

There was little change in the village/farming way of life in the Kingsbridge area from the close of the Revolution until the middle of the nineteenth century, though there were important property transactions. "In 1789, Alexander Macomb purchased the whole island of Kingsbridge [Pararinemo] ...It was later inherited by his grandson, Robert Macomb." (McNamara, 1984:p.412). In 1847 the land was subdivided by Mary Macomb as shown on a property map reproduced in Rev. Tieck's book. (Figure 22). This marked the beginning of the village of Kingsbridge. The significant feature of the map for this study is that the northern portion of the project site is shown and the above ground acreage is labeled "salt meadow." The Tippetts were Loyalists, and after the Revolution their property passed into the hands of Samuel Berrian through confiscation. For many years thereafter, the hilly spit of land jutting out into Spuyten Duyvil Creek was called Berrian's Point.

Berrian's Point in modern times was known as Spuyten Duyvil Point, Hill, or Neck, and was the site of the earliest and largest industrial complex in the area. Shortly after the mid-nineteenth century point, Issac Gale Johnson established a foundry "at the base of the bluff, which was expanded as the years have gone by into an extensive plant which has for a number of years supplied a large number of modern and improved projectiles for the guns of the United States Navy. There has thus grown up near the foundry a small village to accommodate the hands who work in the Johnson mill, and it is here that the stores and post-office are located." (Jenkins,1912:p.330). It was for Johnson, who owned extensive properties in the Spuyten Duyvil neighborhood, that the street that runs in part by the western boundary of the project site was named. Maps made in 1868, 1873, and 1892 show the foundry and mill. (Figures 23, 24, and 25). But even more interestingly, the 1873 and 1892 maps show how the Spuyten Duyvil peninsula would be shaved off by the Harlem River Ship Canal which was dug out for the purpose of making a navigable channel between the Hudson and Harlem Rivers. It was opened in 1895. On the 1873 map, the channel right of way lies between the two lines marked "United States Channel Line." On the 1892 map it is indicated by the two red lines. The excavations for the channel took place south of the Johnson complex which survived until 1923. "Although the foundry was condemned in 1923 to make the ship passage more

navigable, the abandoned peninsula remained until 1937."
(Dublin,1986).

The canal construction also severed the Marble Hill projection of Manhattan from its original position, making it an island. (Note "Government Cut in Progress" on the 1892 map, Figure 25). As the Spuyten Duyvil Creek surrounding all but the southern portion of Marble Hill was filled in starting early in the 1900's Marble Hill gradually became attached to the mainland where it now fits as snugly as a puzzle piece. But the old political divisions still prevail; Marble Hill is in the Borough of Manhattan. A current map shows the smoothed out coast line and the Borough boundary lines. (Figure 15).

Most of these drastic geographic changes took place around the turn of the century. For most of the nineteenth century the neighborhoods adjacent to the project site were fairly representative of the Bronx as a whole. Farms and villages gradually gave way to more urban development as transportation improved and industries attracted workers from the repeated waves of immigrants. The town of Kingsbridge, whose small commercial center clustered around 230th Street between Broadway and Corlear Street, was typical. A photograph taken in 1887 shows the village. An arrow points to the T. and W. Thorn Company. (Figure 12).

"In those days, remember, the creek still encircled Marble Hill on the north, and cargoes such as hay, feed, sand, pig iron, and stone were boated in to the Thorn dock for that concern or others in the vicinity. Small tugs were used in this operation after the ship canal was dredged around Johnson's foundry. Previously barges were borne in from the Hudson by the powerful tide and merely guided by poles in the hands of muscle men who had to have a pilot's mastery of the tortuous channel and treacherous currents. Sloops were towed in by a couple of each vessel's crew manning oars in the ship's yawl. Thorn's Coal Yard at Kingsbridge presents a busy scene,' runs a newspaper item of July 17, 1886. 'There are at present discharging cargo two scows of gravel, two schooners of brick, one cargo of lumber and a cargo of coal.' As many as ten vessels were sometimes tied up in Thorn's Basin, a pond west of the dock formed by the junction of Tibbetts Brooks with Spuyten Duyvil Creek."
(Tieck,1968:p.65).

The transformation of an ancient stream bed into a piece of viable real estate coincided with the dawn of a new century. On an 1897 Bromley Atlas, Tibbett Avenue - the eastern boundary of the project site - is laid out though not yet opened. Between Tibbett and Johnson, south of 230th Street there is a frame building shown for the first time. That portion of the site has heretofore been shown as marsh or salt meadow, but has now been filled in enough to support at least a small structure. Another

tiny building is shown at what would be near the southwest corner of the project site. It is likely that it is the same one captured in an evocative photograph taken c1900. (Figure 13) Note the small boats, the footbridge, and that the house was apparently built on stilts. The outline of Spuyten Duyvil Creek and the mouth of Tibbetts Brook are still the same as shown on earlier maps. (Figure 16). The railroad tracks run alongside the western boundary of the project site and curve northeast at 230th Street. A 1900 atlas looks virtually identical to the 1897.

But on a Hyde and Co. Atlas of 1900, corrected to 1912, the configuration is drastically altered. (Figure 26). In fact, there are double, even triple, correction paste-ons, so change must have been rapid. There are six railroad tracks and several small buildings on the Manhattan side of the parcel where most of the fill appears to have taken place. The tracks belong to the New York Central and the Harlem River Railroads which merged in 1913. The Thorn Company structures are conspicuously absent having been destroyed - along with much of the village of Kingsbridge - in a fire in 1903. Residents of that period described the current conditions: "After Ackerman Street [Corlear] was Water or River Street [Tibbett Ave.]. Both names were used. It faced Tibbetts Brook, with houses only on the side away from the brook. It was here that the tidewaters of the Spuyten Duyvil Creek met with the southerly flow of the brook. The people who lived here were plagued by flooding cellars, especially during neap tides." (Ultan and Hermalyn, 1964:p.17). "Since the opening of the ship canal in 1895, there has been little or no traffic through the stream; and the creek has been filled in from the mouth of Tippetts Brook to the abutments on the west side of the bridge with the materials removed from the excavation at the Grand Central Station." (Jenkins,1912:p.188).

A 1924 Bromley Atlas shows even more change: the entire site is filled in; there are eight tracks, two of them partly in Bronx County; the parcel is labeled New York Central Freight Yard. Both frame buildings have disappeared; there is a rather large iron garage adjacent to 230th Street and a few other small structures. (Figure 27). A 1938 Bromley shows more development on the Tibbett Garden project site. There are numerous railroad tracks. (Figure 28 . The tracing does not continue the tracks southward as they merge to cross the Harlem River.) A large six story warehouse is now present to the east of the project site. A gas station occupies the extreme northwest corner of the site; a gas station stands on the same spot today. A 1963 Atlas looks exactly the same except a few more one and two story buildings from 227th Street and south have been added.

Fred Rovey, executive with the Penn Central Corporation, was kind enough to spend time discussing his knowledge of the

freight yard. He corroborated that much of the fill came from the excavations for Grand Central Station starting in 1903. He said that the area was swamp that had to be built up in order to make tracks for the Kingsbridge Freight Station. He recalled that most of the yard was in Manhattan, though some of it was in the Bronx. The "major" automobile warehouse was owned by the railroad who sold it to U-Haul when they closed the freight yard. The property was ceded to New York City for them to build a high school. The railroad company removed some of the tracks; they got benefit of the salvage. (Fred Rovey, personal communication, January 5, 1987)

The John F. Kennedy High School was built in the early 1970s to the south of the project site, between it and the Harlem River. Since that time, with the exception of the gas station on the northwest corner, there has been no continuous or major use of the parcel.

VI. CONCLUSIONS AND RECOMMENDATIONS

There is strong evidence that the Tibbett Gardens study areas were inhabited by Native Americans. European settlement in this region of the Bronx began by 1645. During the three centuries of cultural evolution since then, the area has hosted farms, villages, estates, industries, and railroad facilities. As presently planned, the deep foundation pilings for the proposed structures would impact any archaeological resources which might exist on the project site. The integrity of any such subsurface deposits is not known at this time. It is not the practice of responsible archaeologists to recommend the excavation of an urban site just because something might be there. There must be the reasonable and demonstrably valid expectation of obtaining data which would fill an important gap in or make a substantive contribution to the existing archaeological record. For example, we know that during the Revolutionary War the King's Bridge, which was located two blocks east of the project site, saw a great deal of action. Because it was so close, there is the possibility that the project site could yield random artifacts from the 1770-80s period. However, excavations designed to seek out such tentative resources would be untenable. The same conclusion applies to all potential historic era archaeological resources. The case for prehistoric resources, however, is different.

As discussed in the Prehistoric Period section of this report, Native Americans undoubtedly occupied the entire vicinity in which the project site is situated. Located as it is near large village settlements and within marsh, meadow and mud flats within what was once a tidal creek, the project site would have been a good location for temporary, special purpose hunting and gathering stations where members of a village could procure food stuffs and raw materials for tool manufacture and return with it to their residence. Tibbett Gardens could provide crucial information on prehistoric culture chronology, lifeways, early Indian-white relations and general processes of cultural change - filling in the lacunae in the archaeological record for southern New York, and in the sometimes contradictory and sometimes biased accounts of the early historic European writers.

Data to help close the gap in the archaeological record may very well lie beneath the surface of the project parcel. But where and how far below the surface and how far below the water table poses enormous problems. This site was made habitable for modern usage by being filled. Five sets of soil borings logs taken between 1965 and 1986 indicate that the juncture between what the soils engineers classify as fill and peat or silt - presumably the original surface - is anywhere from approximately six to more than twenty-five feet below grade. The ground water level - when reported - averages about four to eight feet below

grade with tidal fluctuations. This means that it is possible that archaeologists excavating the site would need a twenty foot deep trench, a trench which would be half full of water. If dewatering procedures were employed, there is still the major problem of how to dispose of the gallons of water continually filling the trench. Concomitant with dewatering would be the necessity to sheet the sides of the trench to prevent wall collapse. In many cases, the layers of fill act as a protective mantle over subsurface resources; however, the filling process itself could have distorted the stratigraphy and disturbed the context of any potential artifacts.

In this instance, then, preliminary testing or sampling, which ordinarily precedes full mitigation of an archaeological site, would entail the same extensive field procedures as outlined above involving an extraordinary methodology, expense, and safety hazard. It is possible that these negative factors can be ameliorated by using other methods of testing. We feel that it would be more expedient and cost effective to gather data from soil borings already taken, slated to be done, or, if necessary, undertaken for purely archaeological purposes. Used for archaeological purposes, soil borings can provide a kind of remote sensing to predict possibilities of what may lie below ground surface.

(Naturally the most pressing need is to find out if there are any borings scheduled. If so they should certainly be monitored by qualified archaeologists and the procedure modified if necessary. The adjustments would be: 1) a continuous sample taken in specific locations; 2) the use of at least a 3 inch diameter tube; 3) wet screening of the samples; and 4) the possible addition of extra borings locations as determined by archaeologists.)

In our opinion, a useful strategy for this site would be one similar to that used at the Kelly Island Sewer Project in Buffalo, N.Y. (as described by Ed Curtin, NYS Department of Environmental Conservation, "Summary: Archaeological Use of Soil Cores and Augers, New York State," 1984). In the Preliminary Appraisal phase of that project, borings were taken for geological-engineering needs; no archaeologists were present. (The same circumstances pertain to the five - that we know of - sets of borings performed on the Tibbett Gardens site since 1965). Sometime later that data from the soil cores was used "to reconstruct former landscapes, dry land areas, shorelines, and potential prehistoric site locations" presumably by archaeologists and soil engineers working together. Will Dann with the Liebman Melting Partnership (architects and planners) stated that a soils engineer had not yet been called in, but would be at a later phase of the project. The logs prepared under contract to the Department of General Services are not

complete; in some cases the copies furnished are impossible to read; there is wide variation in the reportorial style of those who described the contents of the cores; water levels were infrequently recorded. Nevertheless, there are approximately 300 borings done, and enough pertinent data recorded so that such a reconstruction should be possible. For example, the occurrence and depth of peat and silt is regularly noted; other materials such as "meadow mat" river silts, and shell are mentioned in some instances. A subsequent phase of the Kelly Island project was performed entailing soil borings taken exclusively for archaeological purposes based on the "paleosurface relief reconstructed from previous borings and background research." Thus soil borings data could be of assistance in defining the perimeters of a realistic testing field. If the explorations indicated that landfill is present to a standard depth of, for example, ten feet over the expected higher elevations, then heavy machinery could remove the top nine to ten feet of soil before time consuming hand excavation procedures were begun. If, on the other hand, construction impact stays within the protective mantle of fill in sensitive areas, then there are no further archaeological considerations.

In summary, Historical Perspectives recommends that a soils profile of the Tibbett Gardens site be reconstructed by means of data obtained from existing logs, supplemented if necessary by additional borings to gain further information, in order to ascertain whether or not testing for significant prehistoric archaeological resources should be performed.

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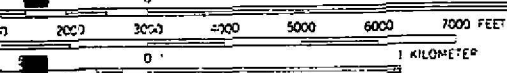
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Figure 1

SCALE 1:24 000



CONTOUR INTERVAL 10 FEET
 NATIONAL GEODETIC VERTICAL DATUM OF 1929
 AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
 RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
 DASHED LINE REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
 RANGE OF TIDE IS APPROXIMATELY 17 FEET

CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
 U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
 TO THE GRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



QUADRANGLE LOCATION

Revisions shown in purple compiled from aerial photographs
 taken 1977 and other source data. This information
 not field checked. Map ed 30 979
 Purple tint indicates extension of urban areas

ROAD CLASSIFICATION

- Heavy-duty ————— Light-duty —————
- Medium-duty ————— Unimproved dirt —————
- Interstate Route U.S. Routes State Routes

YONKERS, N. Y. — N. J.
 NW/4 HARLEM 15' QUADRANGLE
 N4052.5—W7352.5/7.5

1966
 PHOTOREVISED 1979
 AMS 5265 IV NW—SERIES V821

TIBBETT GARDENS PROJECT SITE

Map provided by the Liebman Melting
Partnership

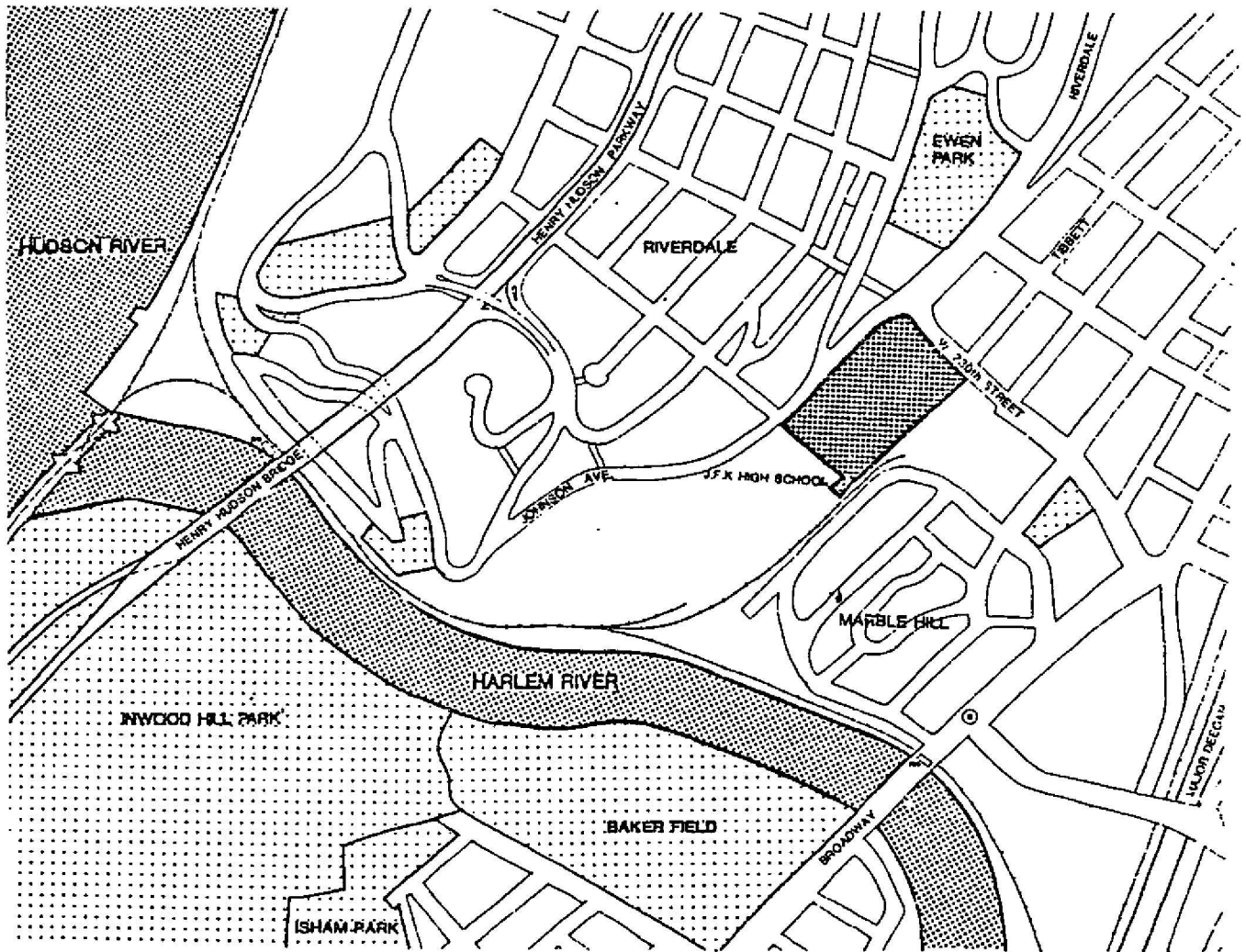
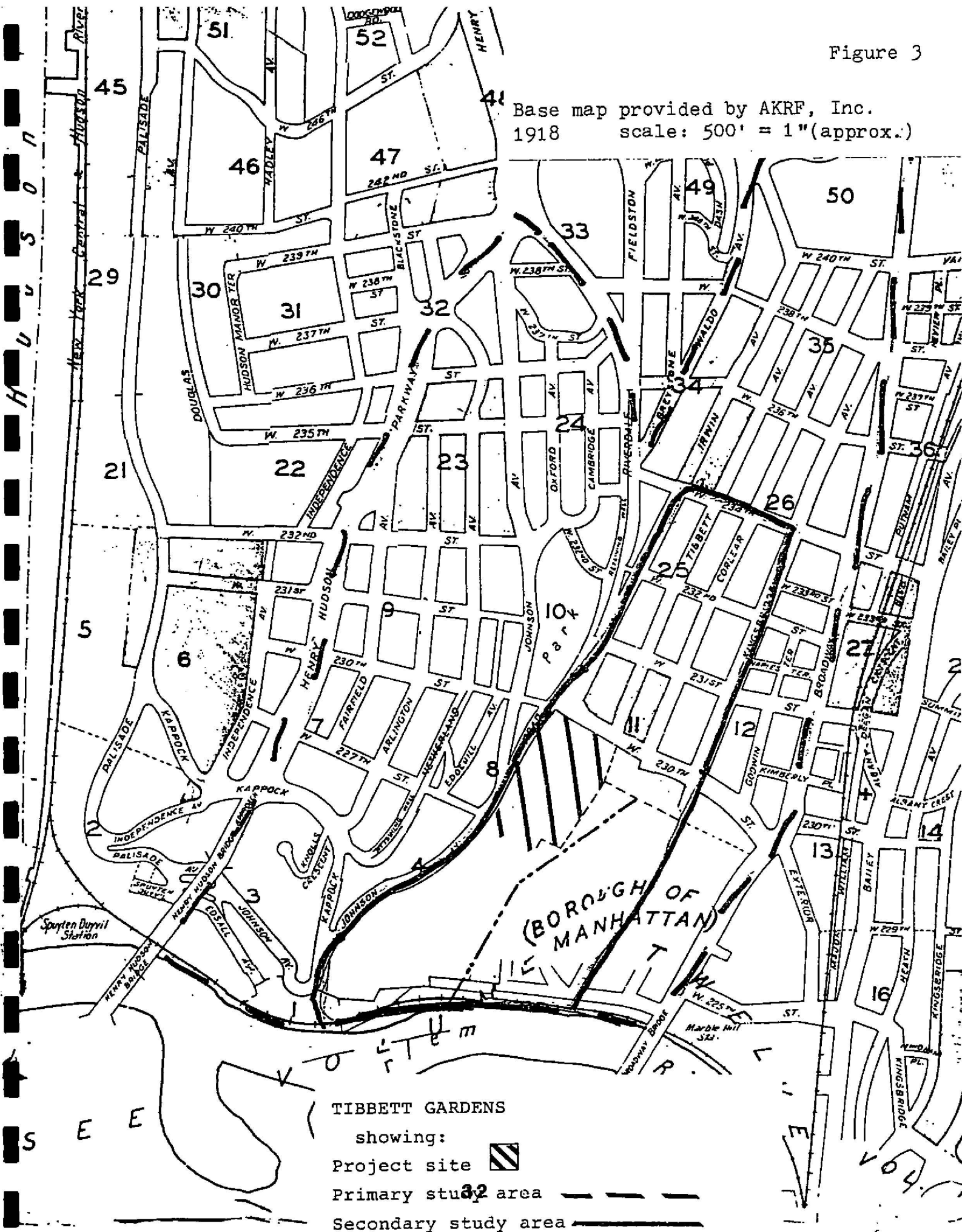


Figure 3

Base map provided by AKRF, Inc.
1918 scale: 500' = 1" (approx.)



TIBBETT GARDENS

showing:

Project site

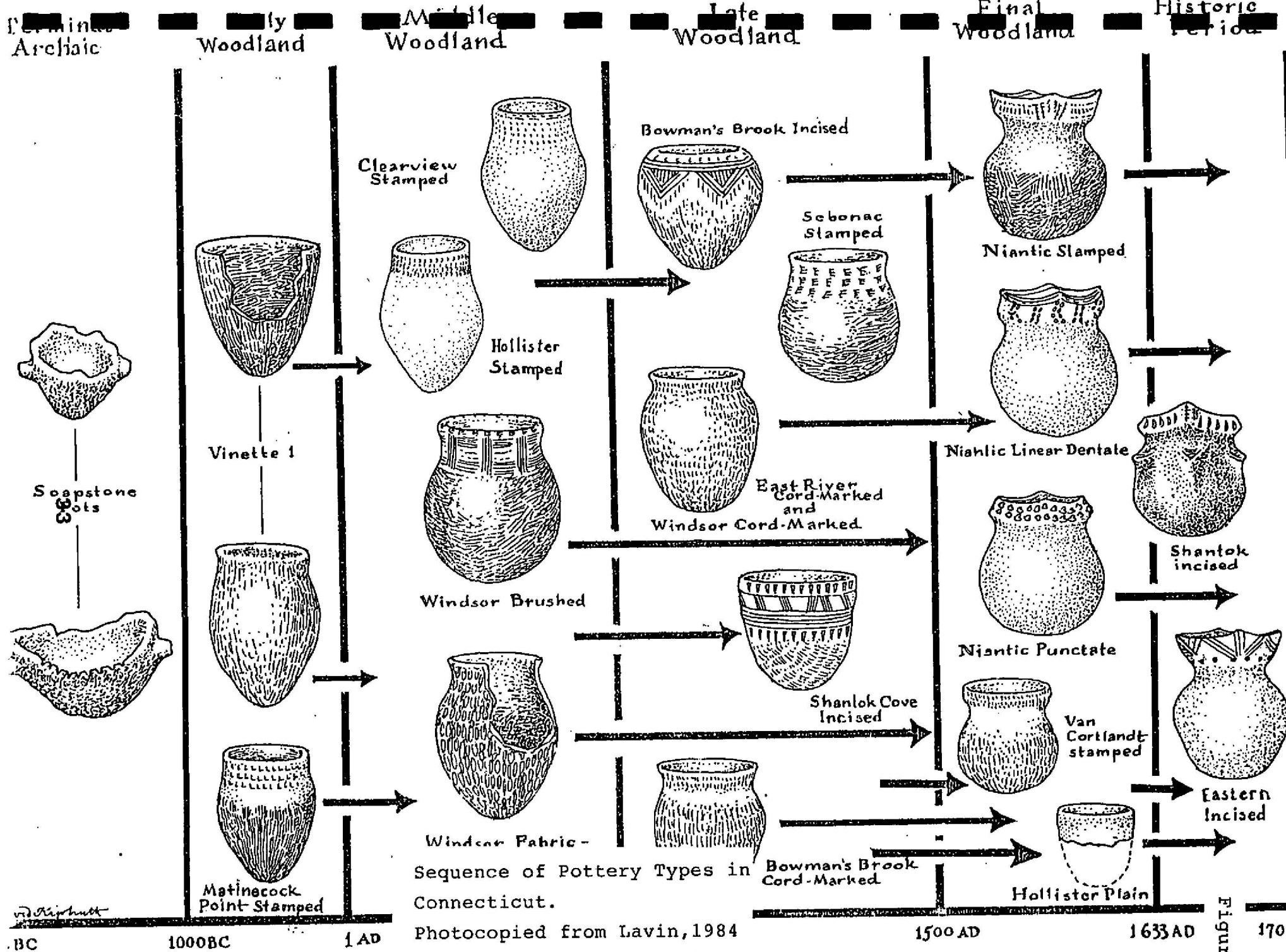


Primary study area



Secondary study area



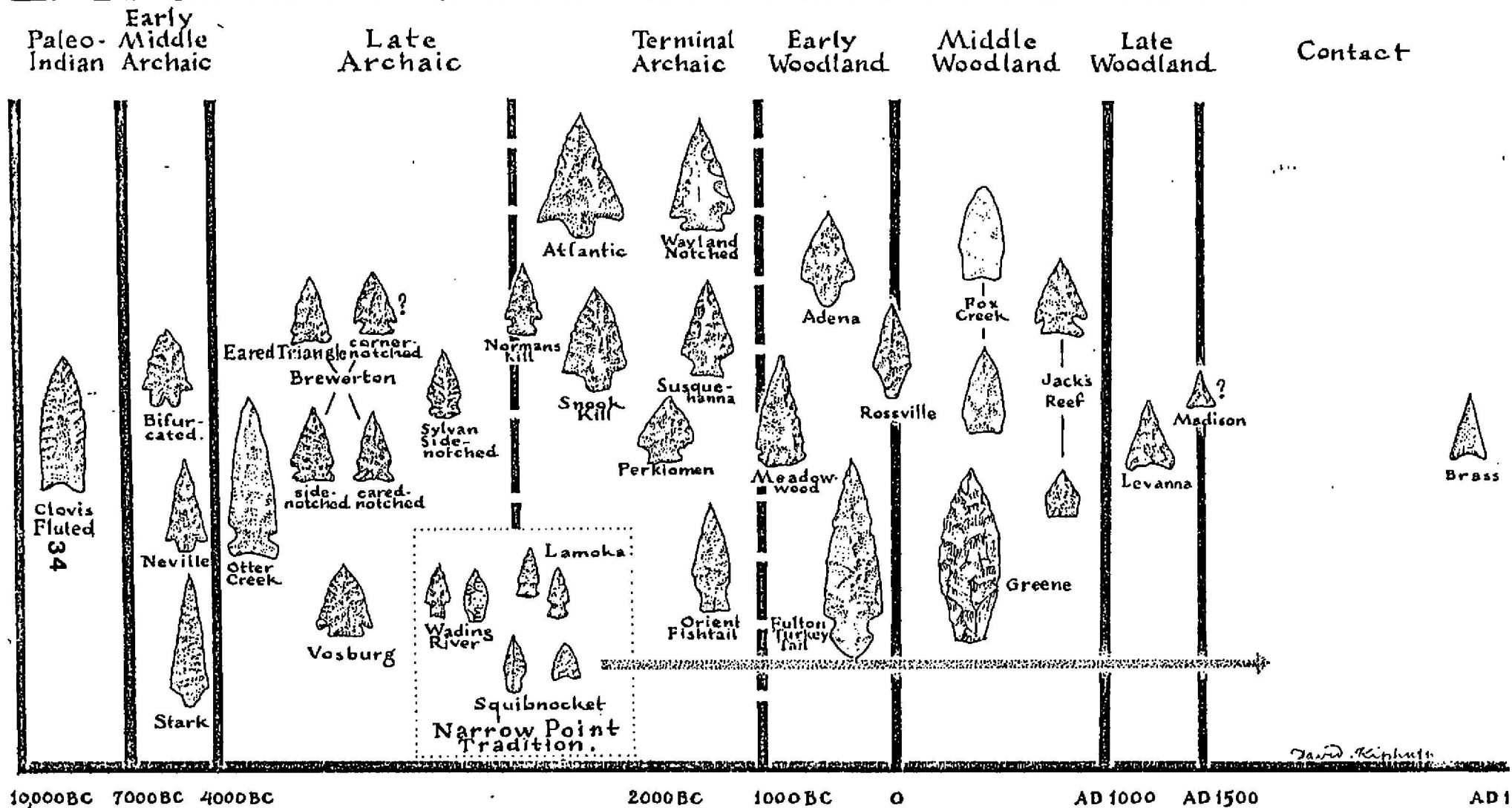


Sequence of Pottery Types in Connecticut.

Photocopied from Lavin, 1984

ARCHAEOLOGICAL SOCIETY OF CONNECTICUT: BULLETIN 47

Figure 4



Sequence of Projectile Point Types
in Connecticut.

Photocopied from Lavin, 1984

CONNECTICUT PREHISTORY: A SYNTHESIS

Figure 6

TIME SPAN	PERIODS	HORIZONS/TRADITIONS
A.D. 1633	HISTORIC	Hackney Pond stage
A.D. 1500	FINAL WOODLAND	Niantic stage, Shantok tradition
A.D. 1000	LATE WOODLAND	Sebonac stage, East River tradition, Clason's Point stage, Bowman's Brook stage, ?
A.D. 1	MIDDLE WOODLAND	Shantok Cove stage, Clearview stage, Point Peninsula tradition
1000 B.C.	EARLY WOODLAND	North Beach stage, Windsor tradition
2000 B.C.	TERMINAL ARCHAIC	Susquehanna tradition
4000 B.C.	LATE ARCHAIC	Laurentian horizon, Narrow Point tradition
6000 B.C.	MIDDLE ARCHAIC	Neville horizon
7000 B.C.	EARLY ARCHAIC	
10,000 B.C.	PALEO-INDIAN	






Cultural Periods and Traditions. Photocopied from Lavin, 1985. PREHISTORY OF CONNECTICUT NATIVE AMERICANS.



TIBBETT GARDENS

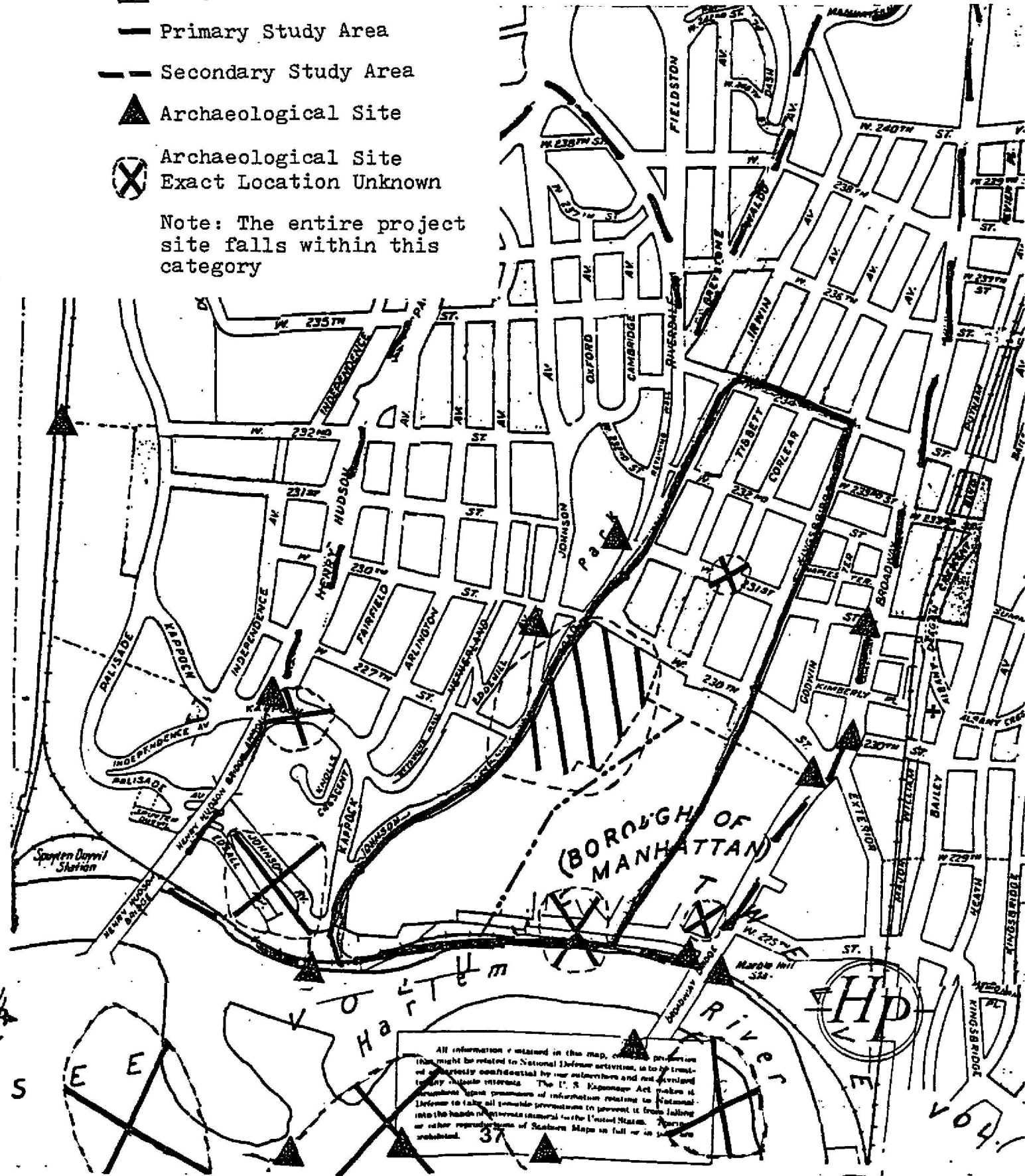
Figure 8

Legend:

-  Project Site
-  Primary Study Area
-  Secondary Study Area
-  Archaeological Site
-  Archaeological Site Exact Location Unknown

Base Map provided by AKRF, Inc.
scale: 500' = 1" (approx.)

Note: The entire project site falls within this category



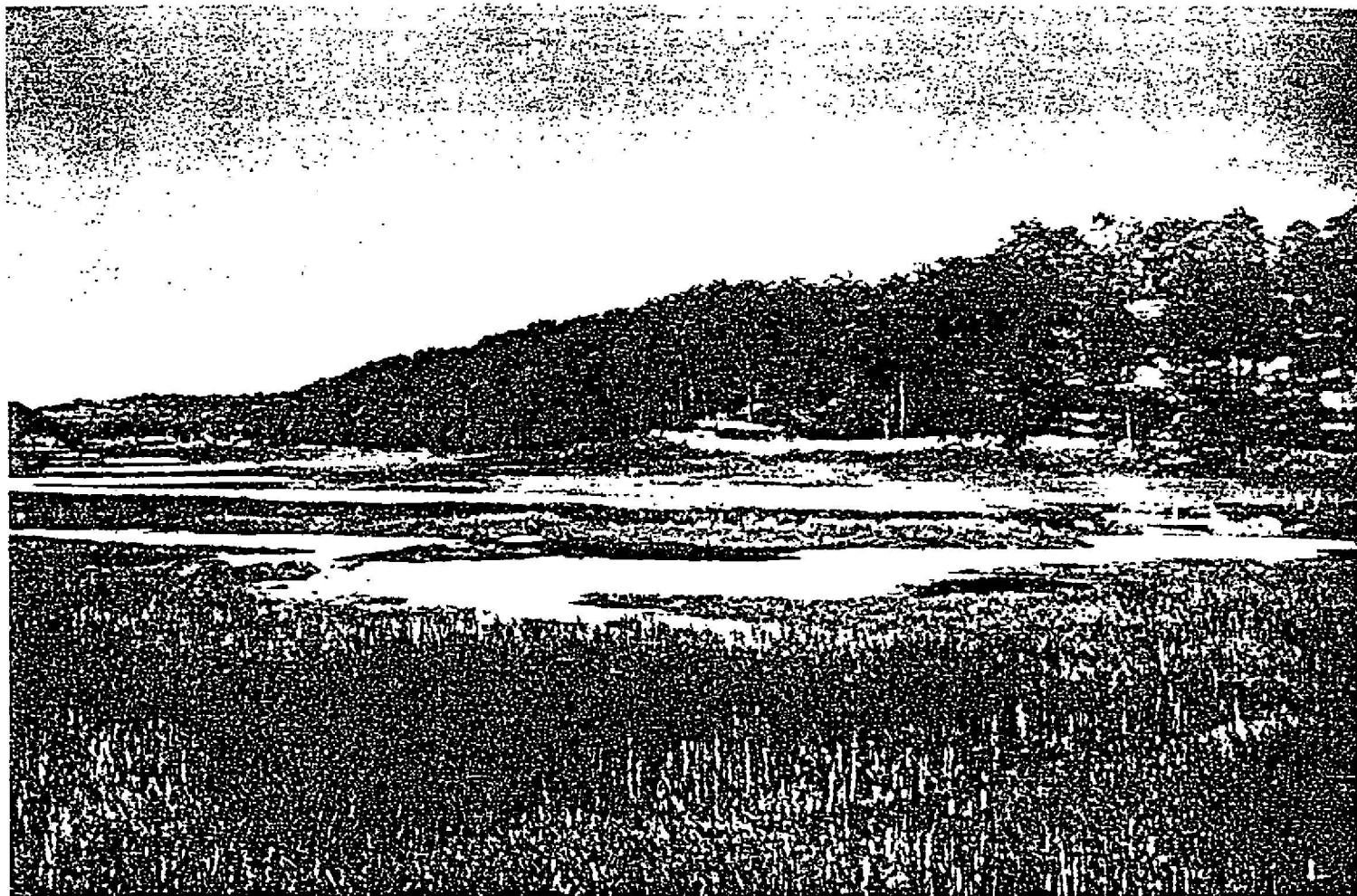
All information contained in this map, including the project site, is the property of the U.S. Government and is not to be distributed outside the United States. The U.S. Espionage Act makes it unlawful to disclose any information relating to National Defense to any unauthorized person. It is the policy of the U.S. Government to take all possible precautions to prevent it from falling into the hands of persons unauthorized to receive it. No part of this map or other reproduction of this map shall be published or otherwise made available to the public without the express written permission of the U.S. Government.



Dr. Theodore Kazimiroff excavating an
Indian skeleton found at the Kings-
bridge post office site, 1951.

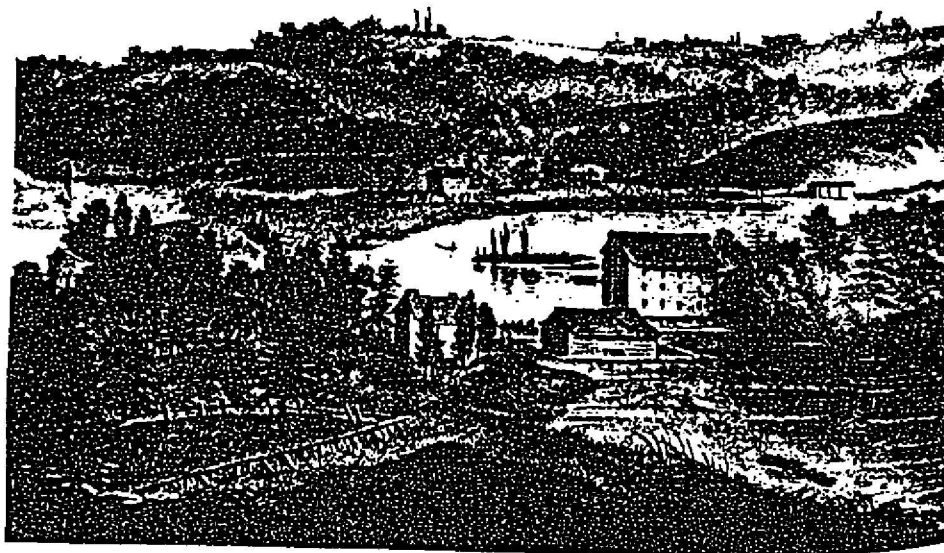
Photocopied from Tieck, 1968,
RIVERDALE, KINGSBRIDGE, SPUYTEN DUYVIL

Schools and School Days



As late as 1906, when this picture was taken, tidewater Tibbetts Brook meandered back and forth across the Kingsbridge meadows just as it did in the days of the Indian. Salt grass abounds. The view is southwest from the vicinity of modern 238th Street and Broadway, with Spuxten Duyvil Hill in the background.

Photocopied from Tieck, 1971
SCHOOLS AND SCHOOL DAYS.



Kingsbridge

From an old print in the Collection of J. Clarence Davies, Esq.

Looking west across Spuyten Duyvil
Creek from Marble Hill to Riverdale.

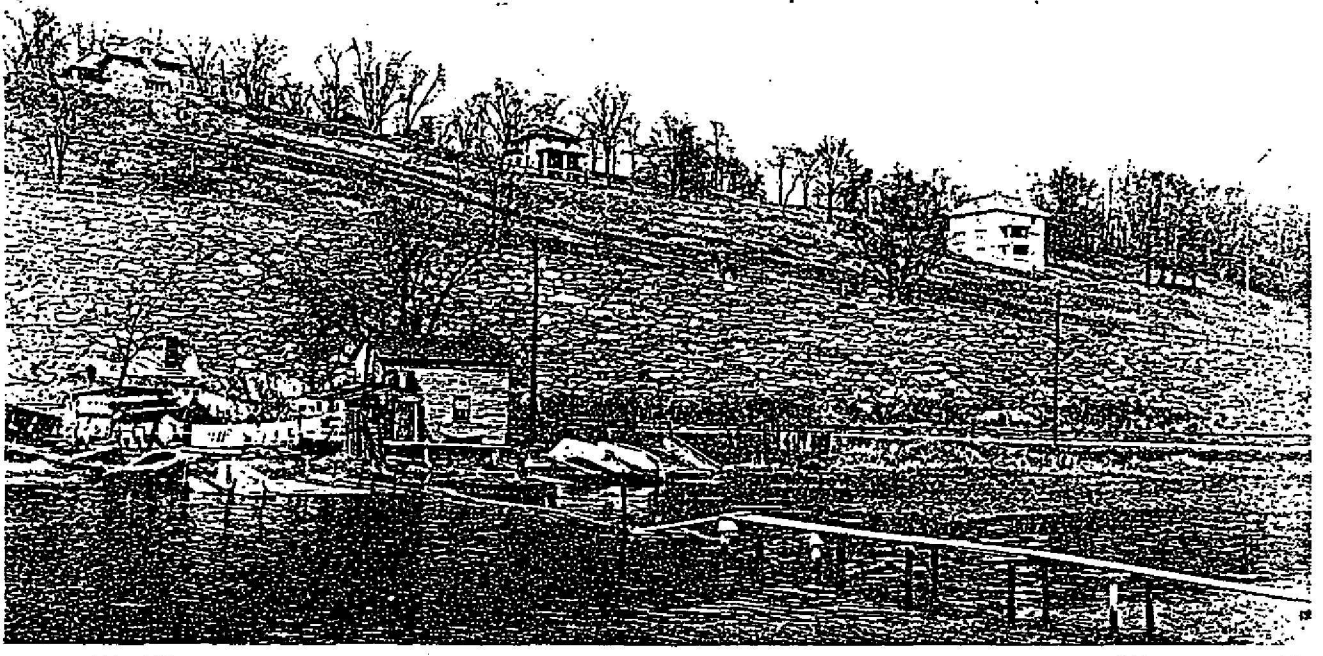
Photocopied from Jenkins, 1912.

THE STORY OF THE BRONX



Looking east across Spuyten Duyvil
Creek. c.1887
· Photocopied from Tieck, 1968

BELOW: This view of Johnson Avenue and West 228th Street circa 1900 is dominated by the Johnson Avenue wall. At the center of the photograph, a policeman on horseback is climbing the hill. The small house beside Spuyten Duyvil Creek could be reached by a footbridge.



Photocopied from Ultan and Hermalyn,
1964. THE BRONX IN THE INNOCENT
YEARS.

MAP OF LAND

In the 12th Ward of the City of

NEW YORK

belonging to

JAMES. M. LEAN
ELISHA. BROOKS
GEORGE H. PECK
JOSEPH H. GODWIN

SPUYTEN DUYVIL

W. K.

Peck m a

1822

227th St.

220th St.

225th St.

Fort Prison Charles.

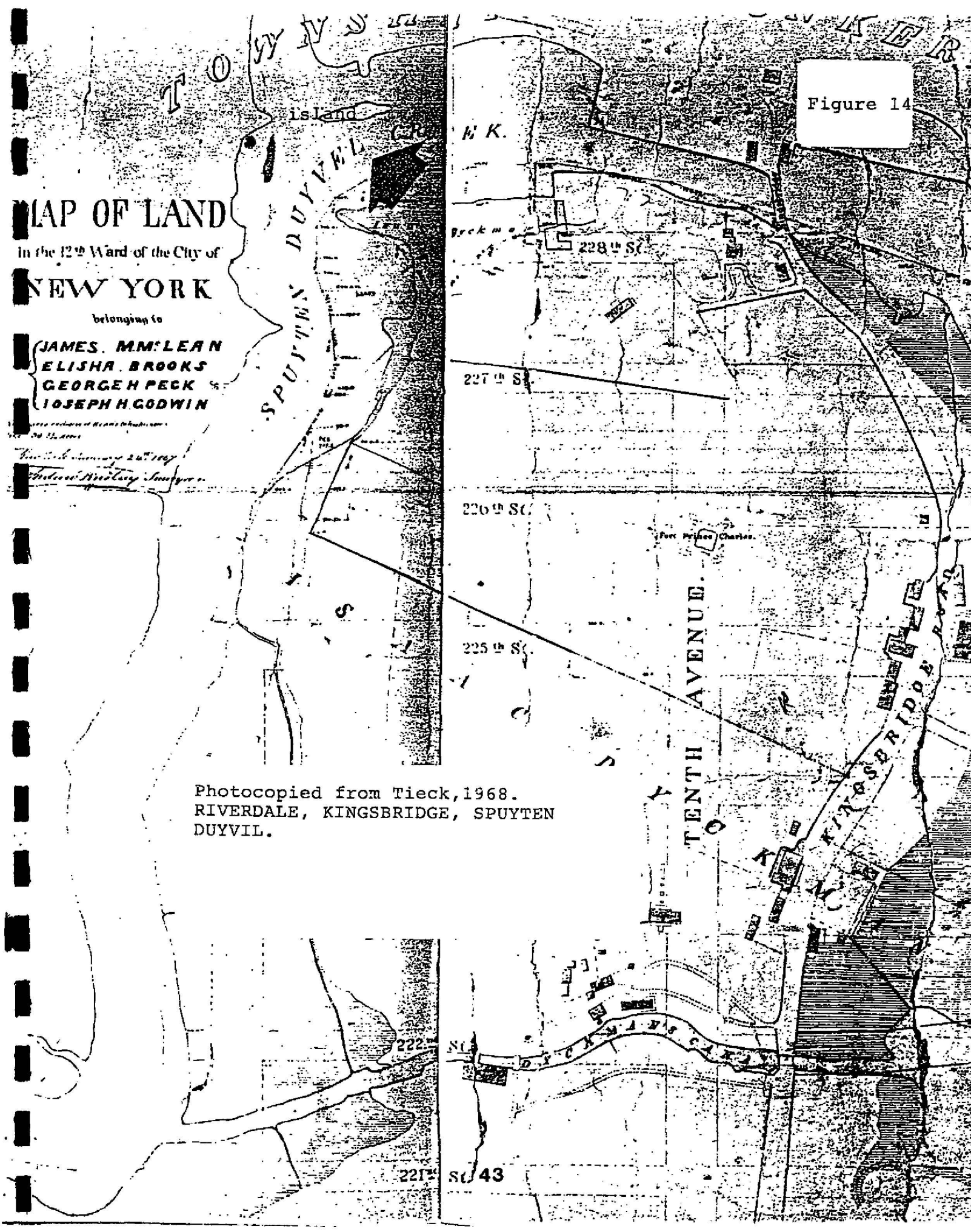
TENTH AVENUE.

Figure 14

Photocopied from Tieck, 1968.
RIVERDALE, KINGSBRIDGE, SPUYTEN
DUYVIL.

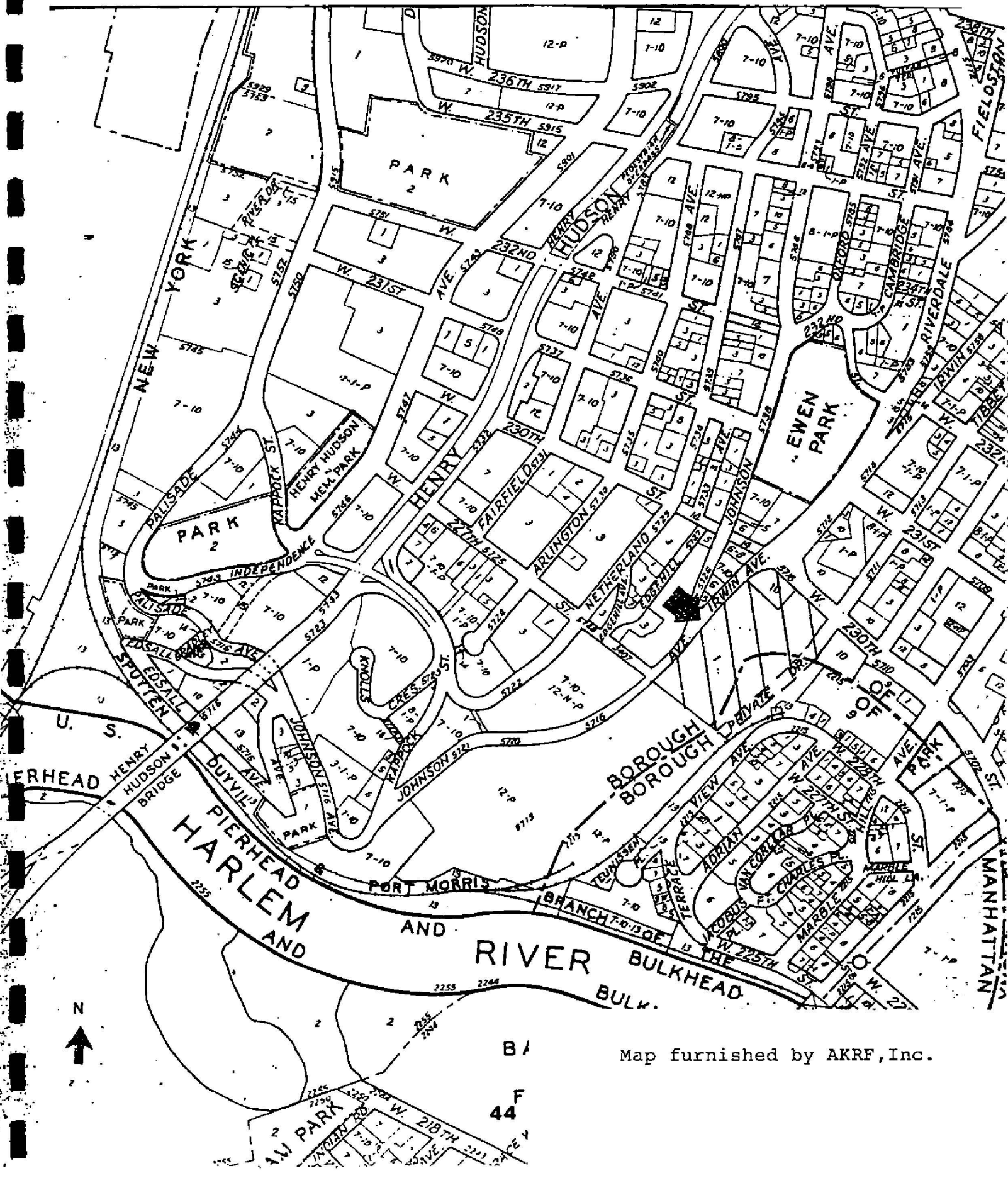
222nd St.

221st St 43



CITY OF NEW YORK
 CITY PLANNING COMMISSION - DEPARTMENT OF CITY PLAN

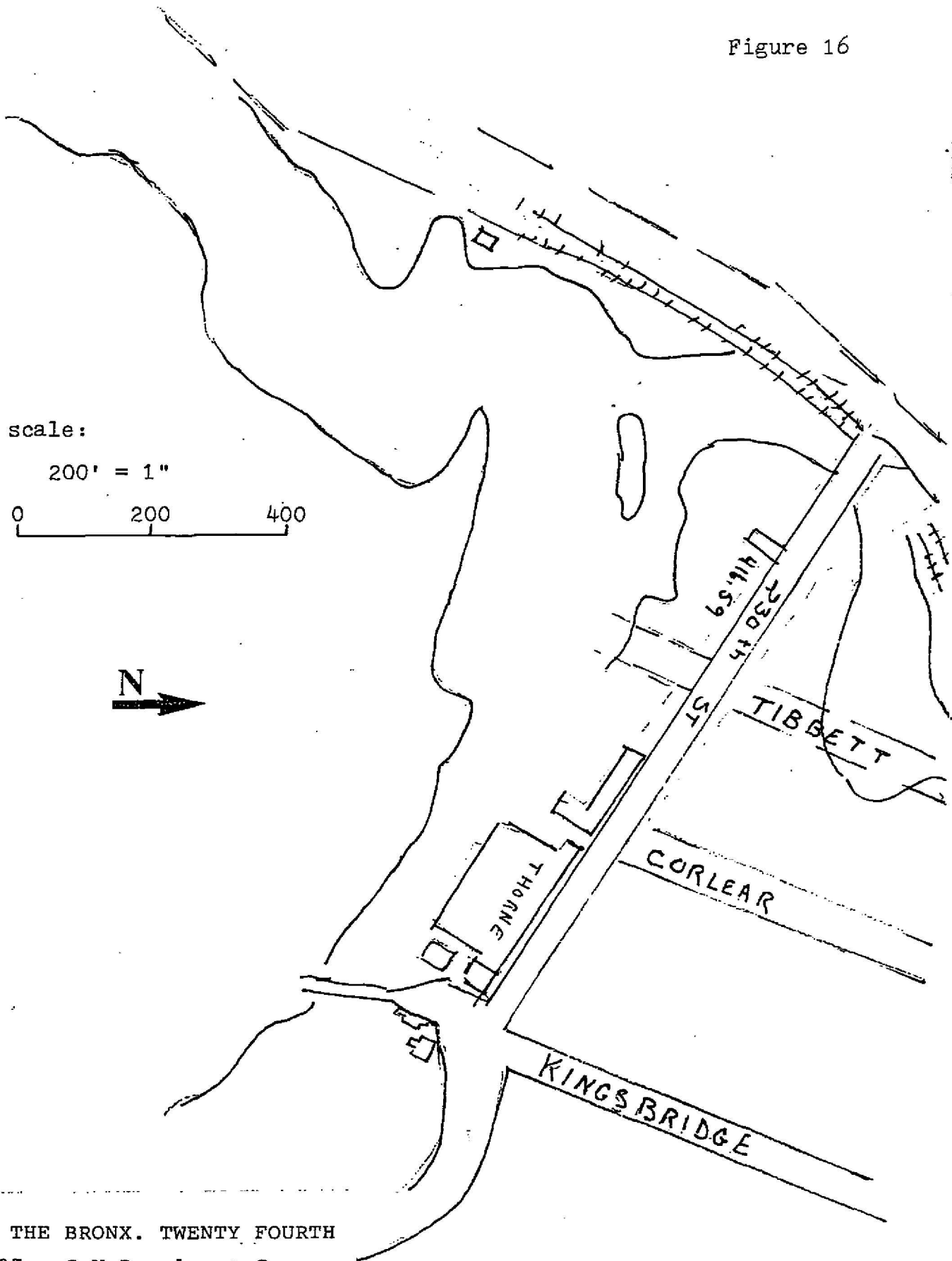
Figure 15



Map furnished by AKRF, Inc.

B/
 44 F

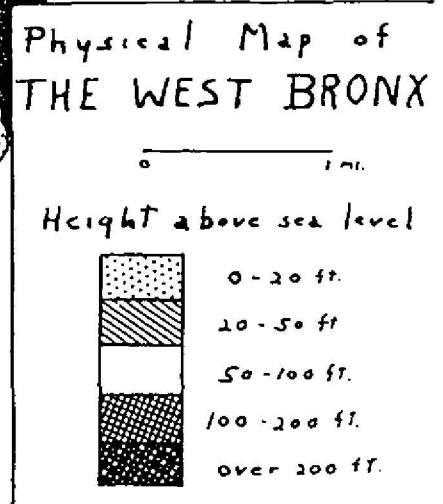
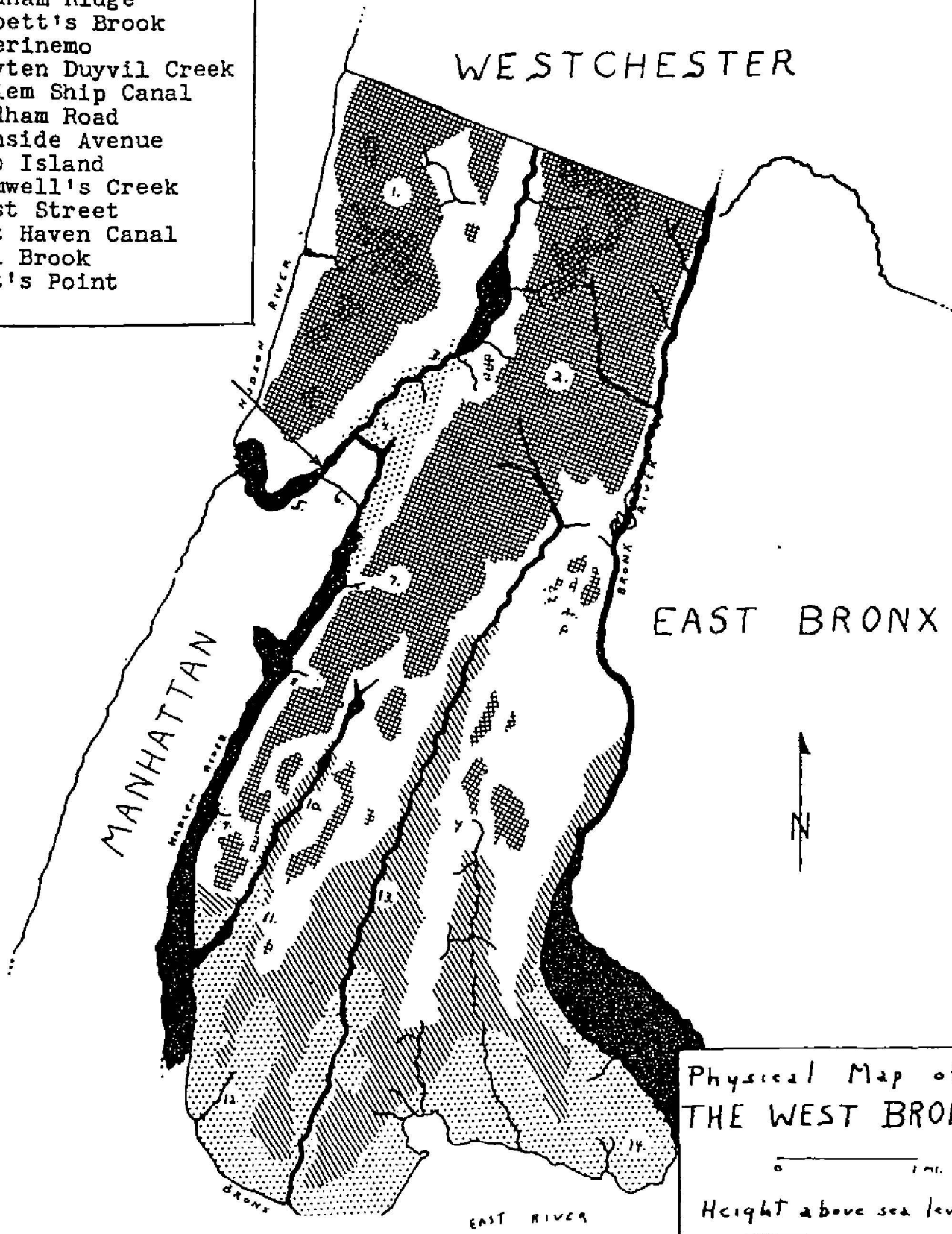
Figure 16



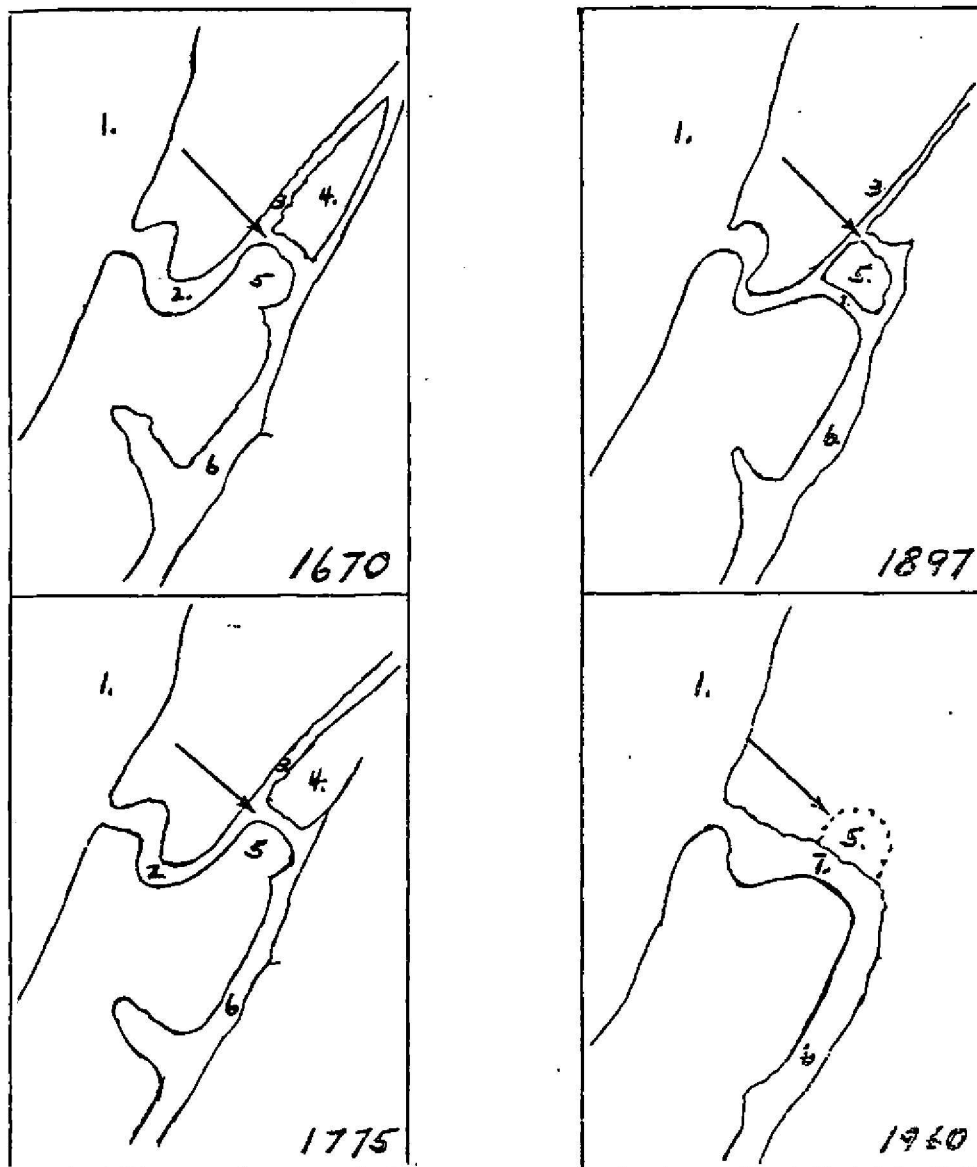
ATLAS OF THE BRONX. TWENTY FOURTH
WARD. 1897. G.W.Bromley & Co.

Tracing.

1. Riverdale Ridge
2. Fordham Ridge
3. Tibbett's Brook
4. Paperinemo
5. Spuyten Duyvil Creek
6. Harlem Ship Canal
7. Fordham Road
8. Burnside Avenue
9. Crab Island
10. Cromwell's Creek
11. 161st Street
12. Mott Haven Canal
13. Mill Brook
14. Hunt's Point



Photocopied from Fluhr, 1960.
HISTORICAL GEOGRAPHY OF THE
WEST BRONX.



Geographical Changes - Spuyten Duyvil Area

- | | |
|-------------------------|----------------------------|
| 1. Hudson River | 5. Marble Hill (Manhattan) |
| 2. Spuyten Duyvil Creek | 6. Harlem River |
| 3. Tibbett's Brook | 7. Harlem River Ship Canal |
| 4. Papparimemo | |

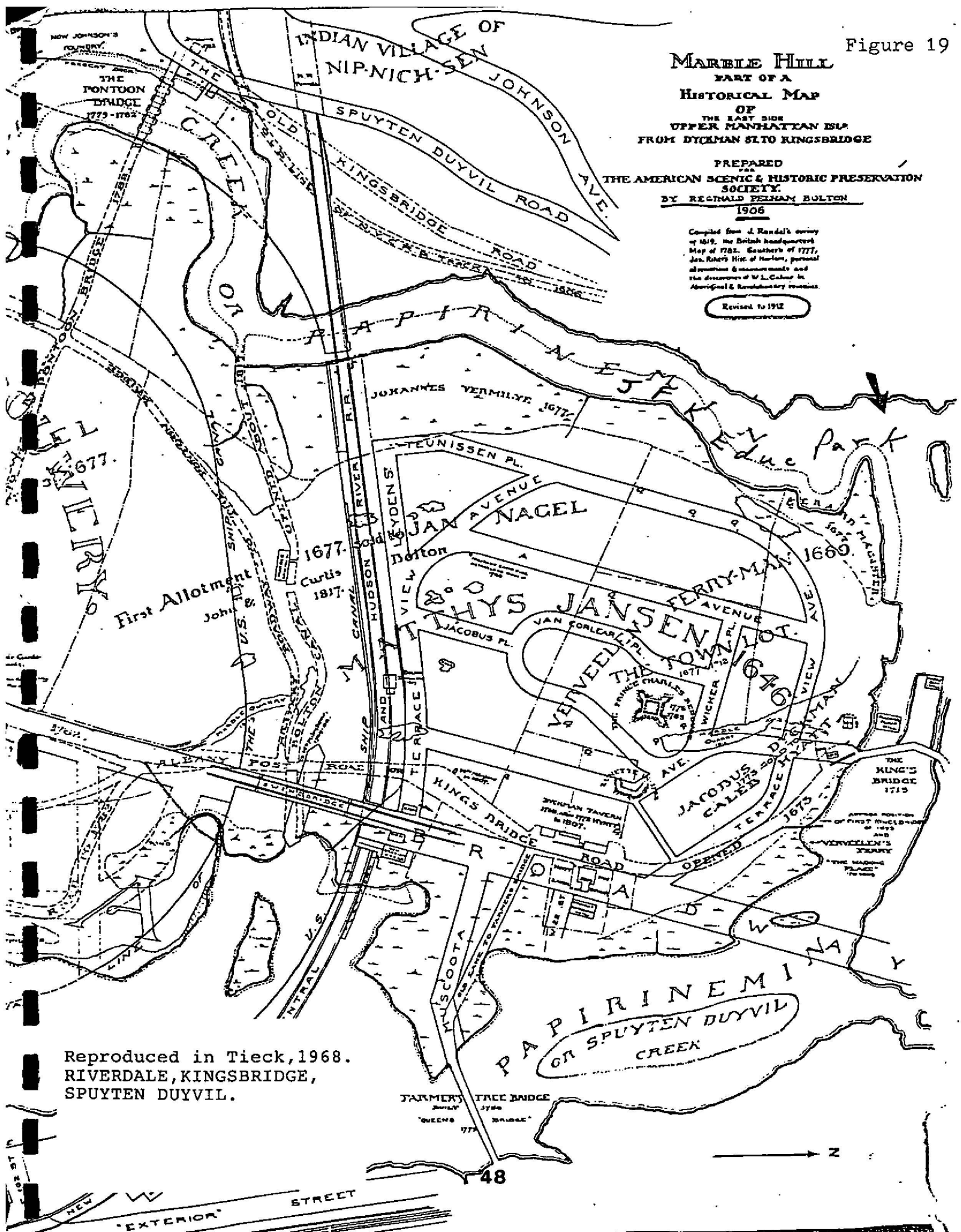
Photocopied from Fluhr, 1960.
 HISTORICAL GEOGRAPHY OF THE
 WEST BRONX.

MARBLE HILL
PART OF A
HISTORICAL MAP
OF
THE EAST SIDE
UPPER MANHATTAN ISL.
FROM DYCKMAN ST. TO KINGSBRIDGE

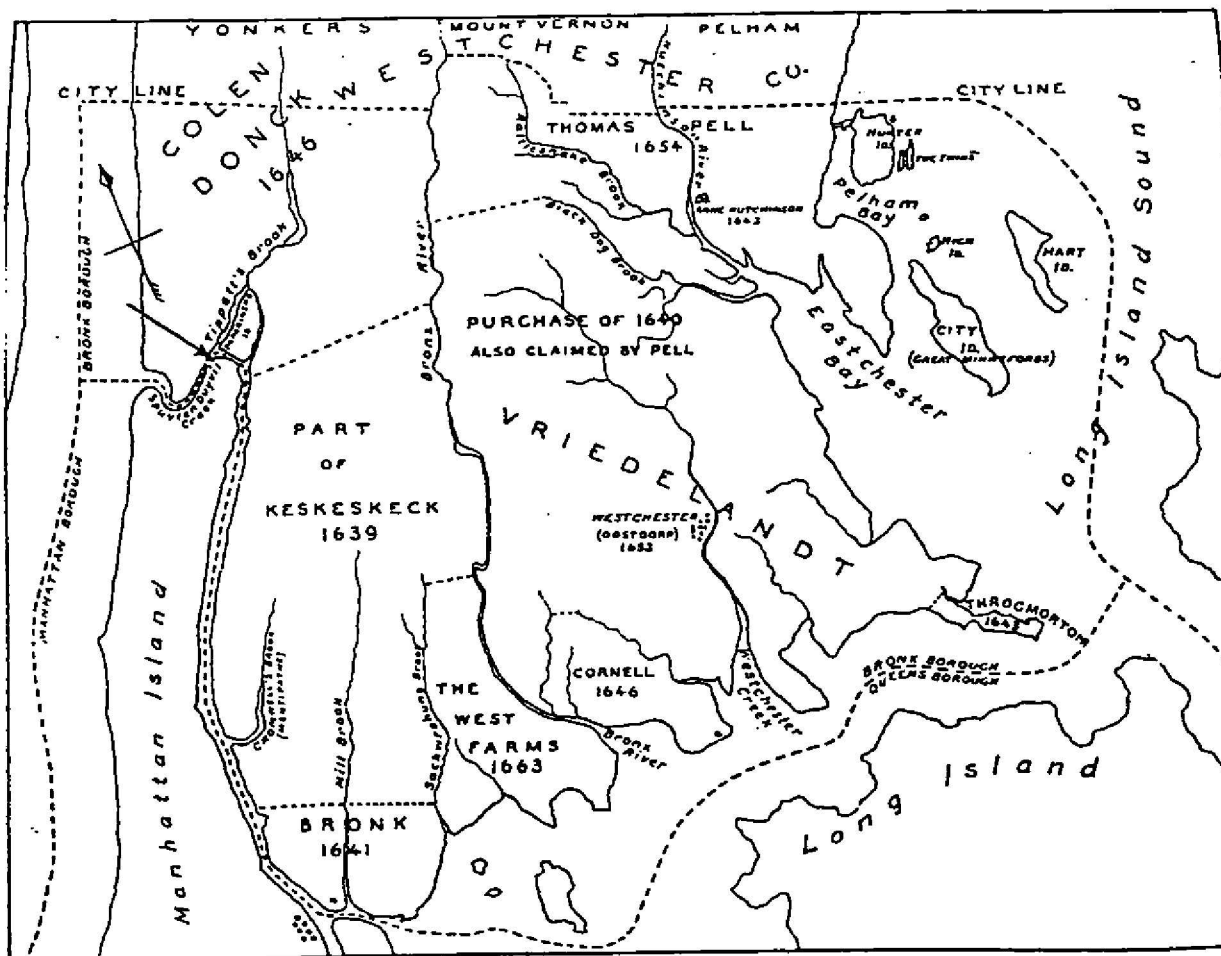
PREPARED
THE AMERICAN SCENIC & HISTORIC PRESERVATION
SOCIETY.
BY REGINALD PELHAM BOLTON
1906

Compiled from J. Randall's survey
of 1819, the British headquarters
Map of 1782, Gaucher's of 1777,
Jan. Robert's Hist. of Harlem, personal
observations & measurements and
the discovery of W.L. Cabot in
Aberdeen & Revolutionary records.

Revised to 1912

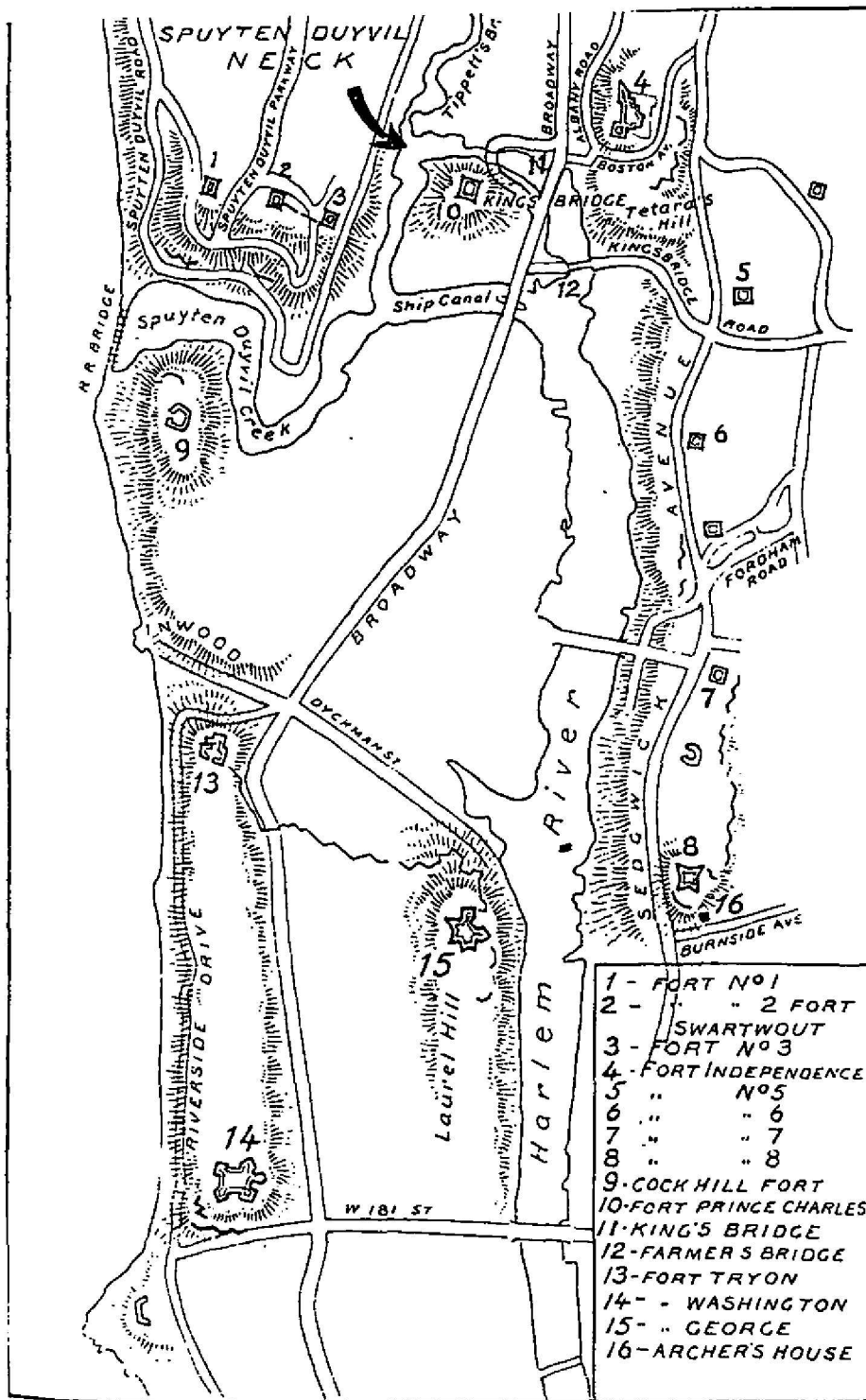


Reproduced in Tieck, 1968.
RIVERDALE, KINGSBRIDGE,
SPUYTEN DUYVIL.



The Borough at the End of the Dutch Period.

Photocopied from Jenkins,
1912. THE STORY OF THE
BRONX.



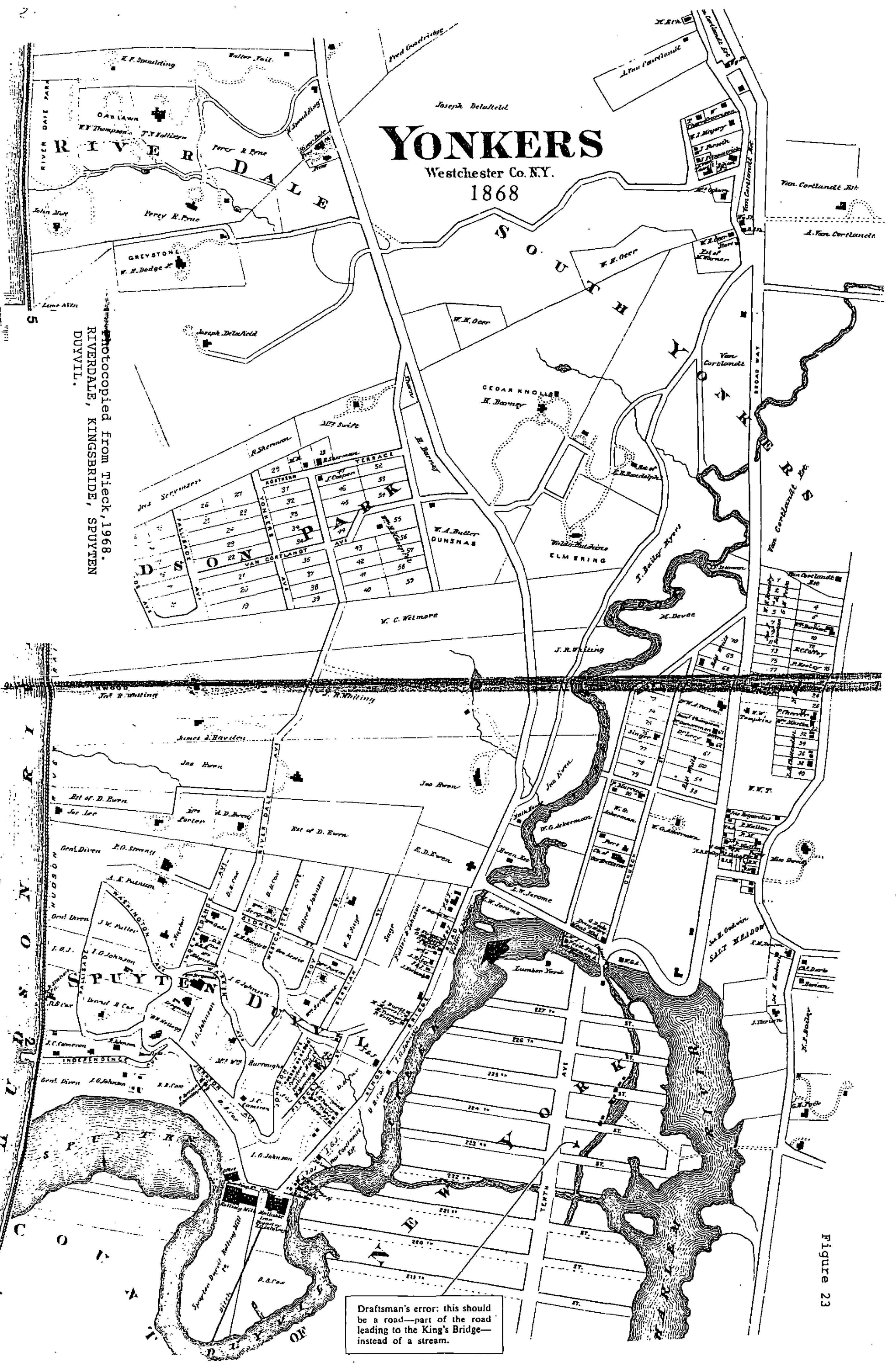
Map Showing the British Fortifications. Compiled from the Headquarters Map and Showing Principal Streets of the Present.

Photocopied from Jenkins, 1912.
THE STORY OF THE BRONX.

YONKERS

Westchester Co. N.Y.

1868

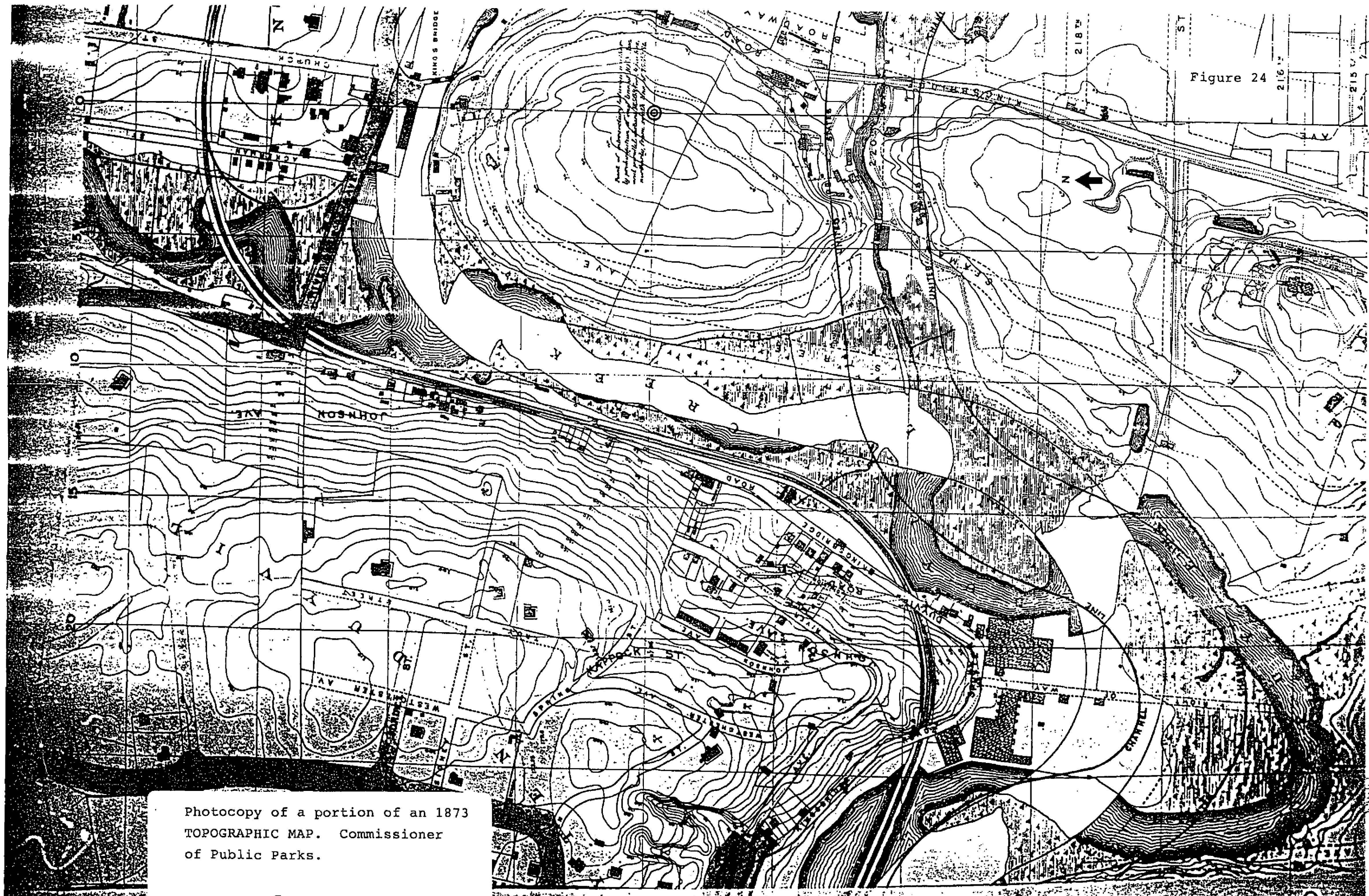


Photocopied from Tieck, 1968.
RIVERDALE, KINGSBRIDE, SPUYTEN
DUYVIL.

Draftsman's error: this should be a road—part of the road leading to the King's Bridge—instead of a stream.

Figure 23

Figure 24



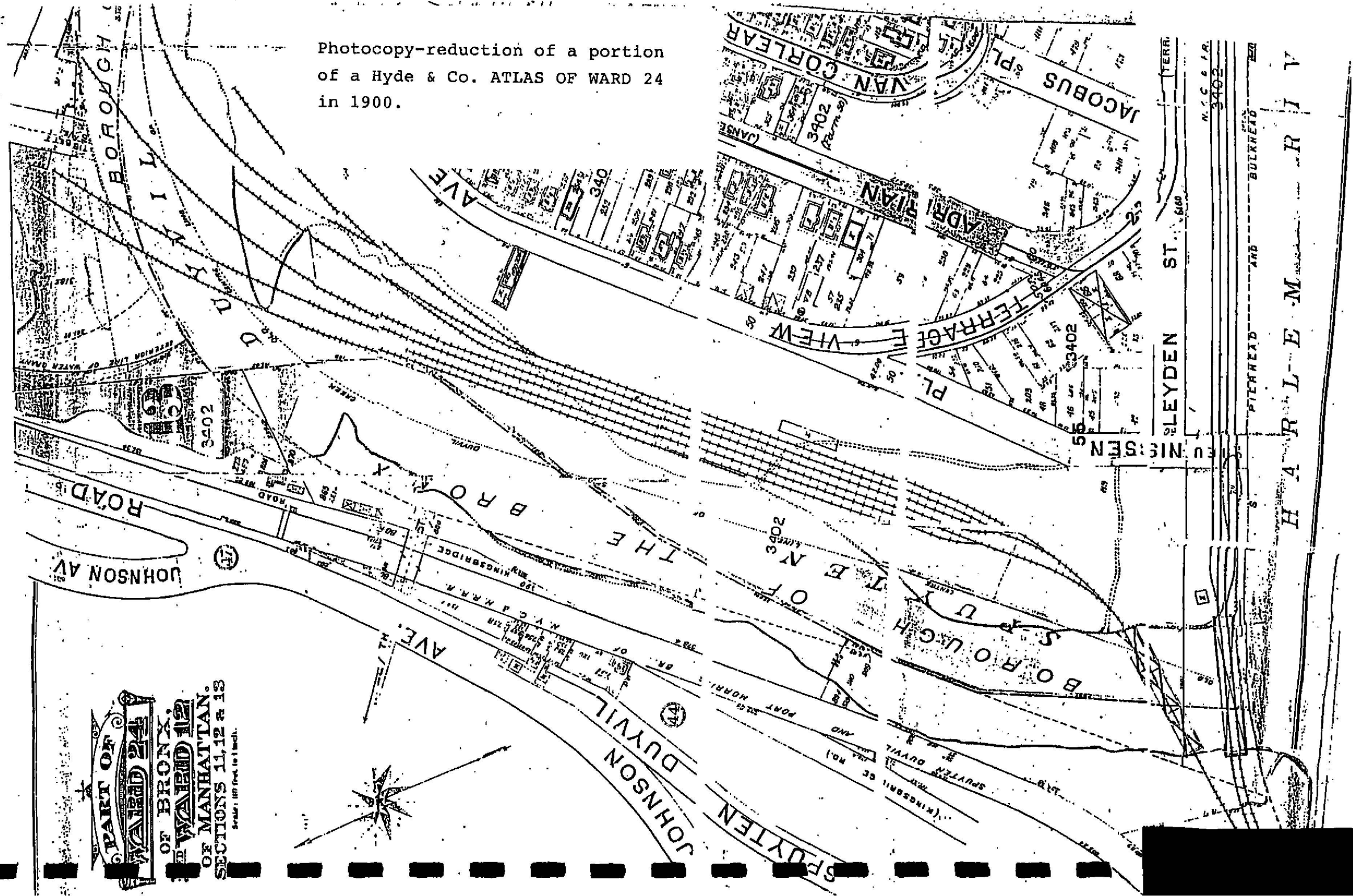
Photocopy of a portion of an 1873
TOPOGRAPHIC MAP. Commissioner
of Public Parks.



Photographic copy of MAP OF THE
HARLEM RIVER AND SPUYTEN DUYVIL
CREEK. Colton & Co. 1892

Figure 26

Photocopy-reduction of a portion of a Hyde & Co. ATLAS OF WARD 24 in 1900.



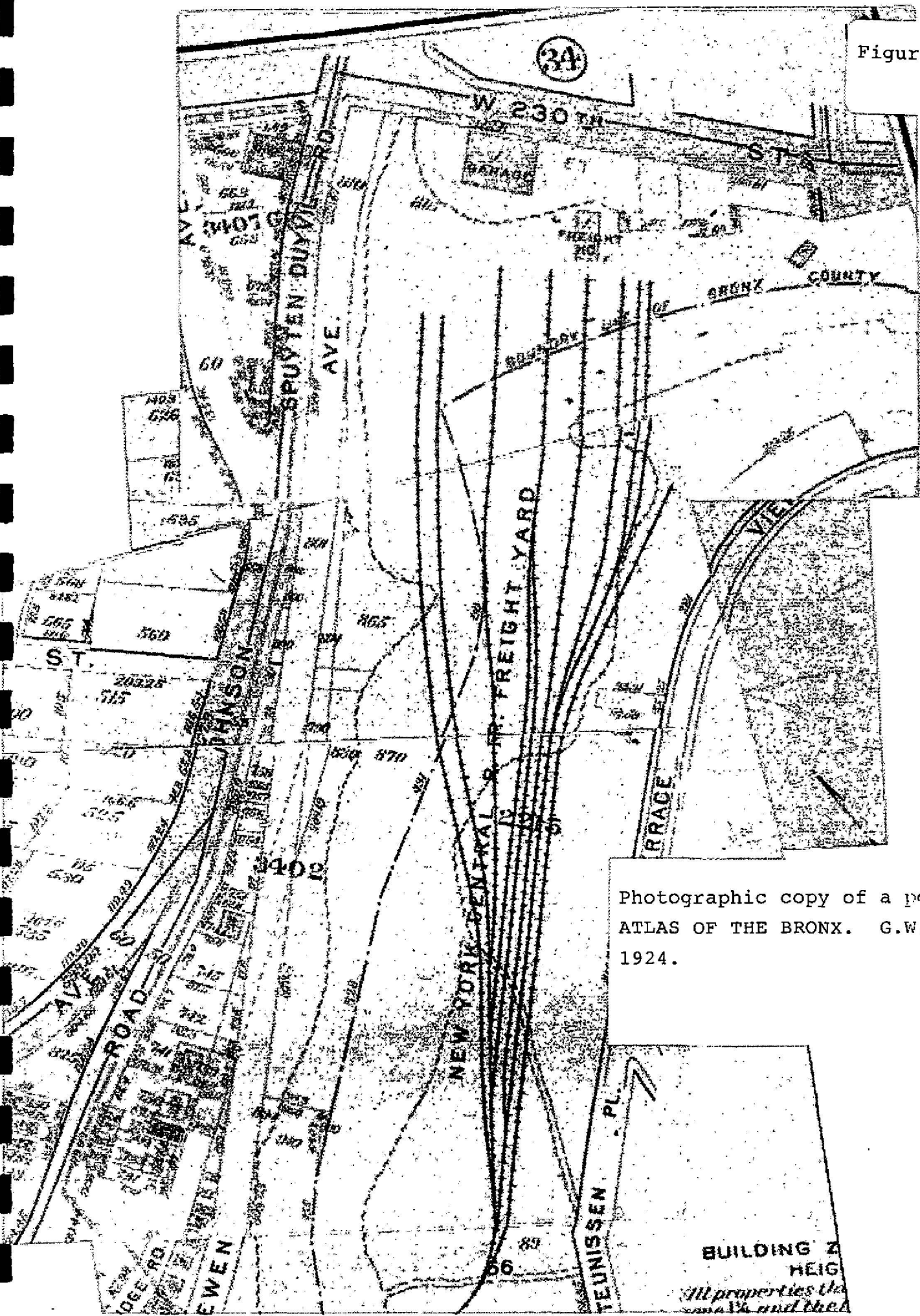
PART OF
WARD 24
 OF BRONX,
 OF MANHATTAN,
 SECTIONS 11, 12 & 13
 Scale: 100 Feet to 1 Inch.

N.C.C. & I.A.
3402

PITCHHEAD AND BULKHEAD

H A R L E M R I V

Figure 27



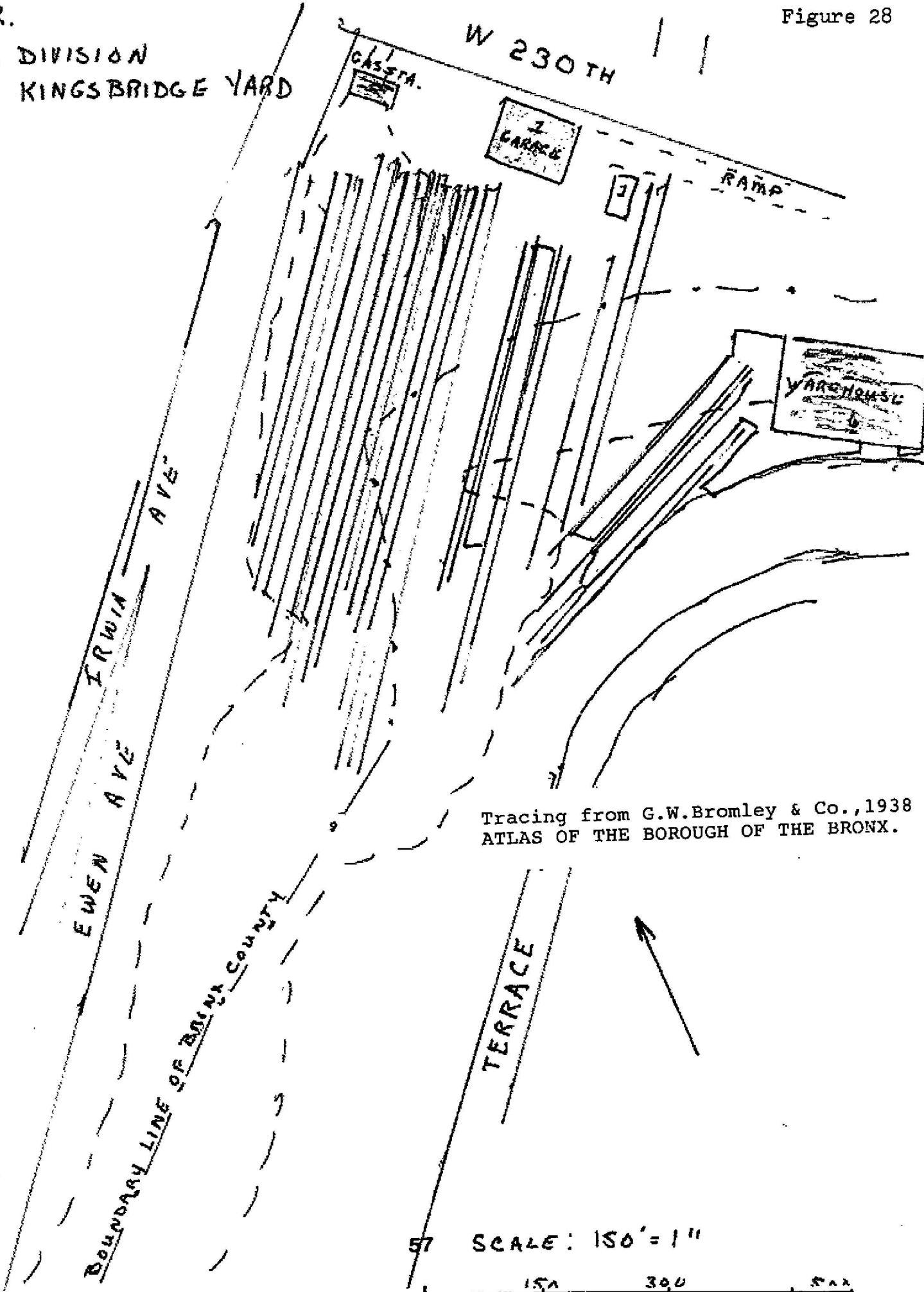
Photographic copy of a portion of
ATLAS OF THE BRONX. G.W.Bromley
1924.

BUILDING Z
HEIG
All properties the
same 1/4 and the

N.Y. R.R.

ELECTRIC DIVISION

MASON KINGSBRIDGE YARD



Tracing from G.W. Bromley & Co., 1938
ATLAS OF THE BOROUGH OF THE BRONX.

57 SCALE: 150' = 1"

150 300 450



PHOTO 1: Looking south along Tibbett's Avenue extension toward JFK High School

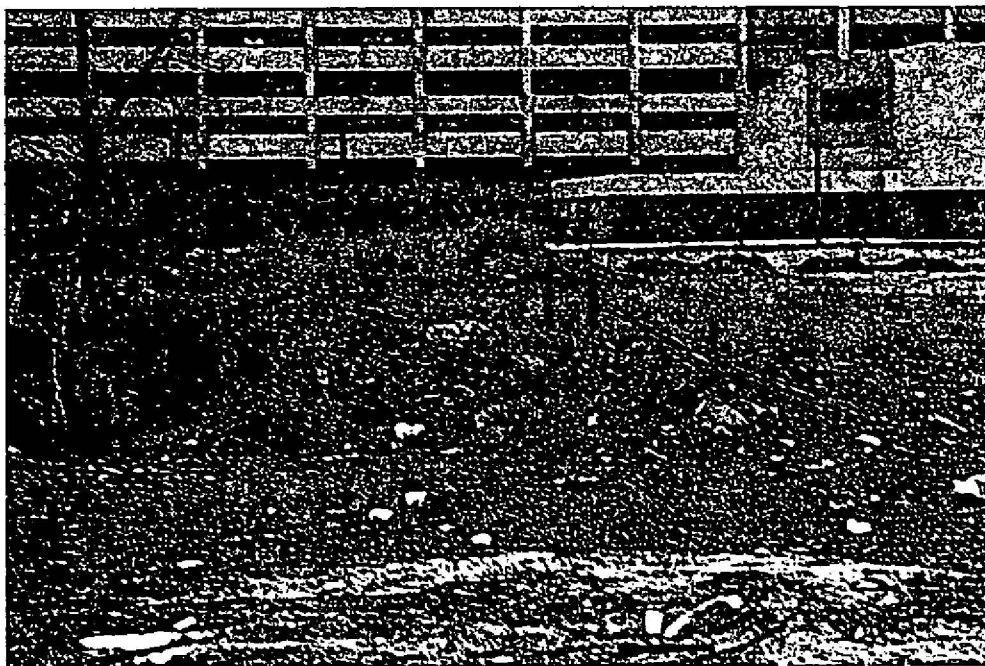


Photo 2: Looking south toward JFK High School
Note recently dumped waste material



Photo 3: Looking south from gasoline station along west side of project site



Photo 4: Looking east across gasoline station from corner of 230th Street



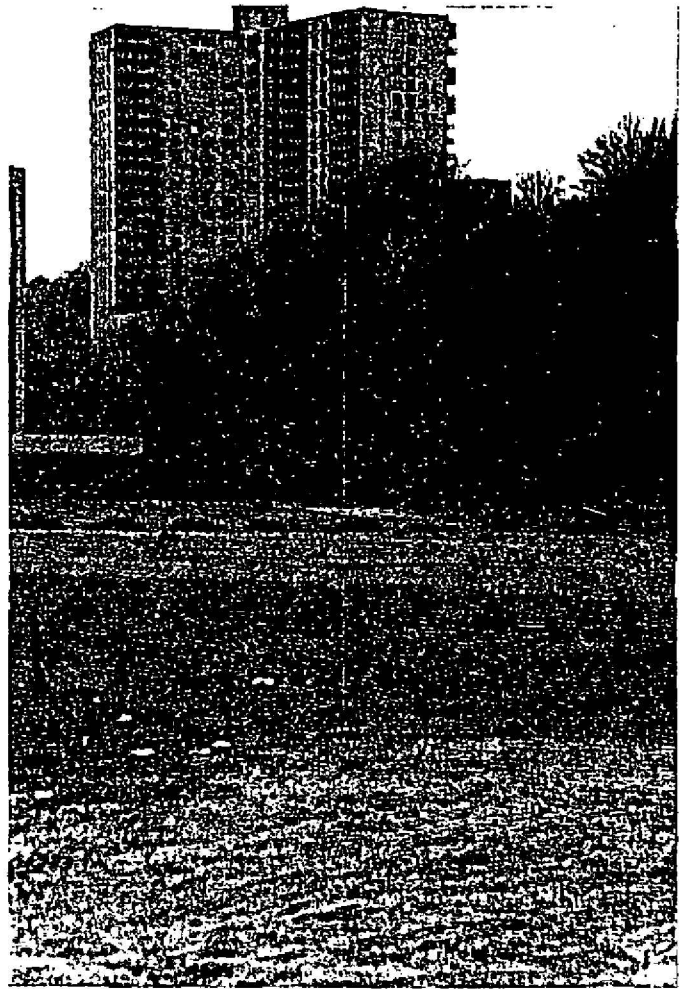
Photo 5: Looking west across project site toward gasoline station on 230th Street



PHOTO 6: Looking southeast across project site from Johnson Street elevation. Note standing water

RIGHT

Photo 7: Looking southwest
across site toward
Johnson Avenue
hill



BELOW

Photo 8: Looking northeast
across site from
Johnson Avenue
elevation toward
230th Street and
Tibbett's Avenue





Photo 9: Looking west along gully that runs adjacent to 230th Street.