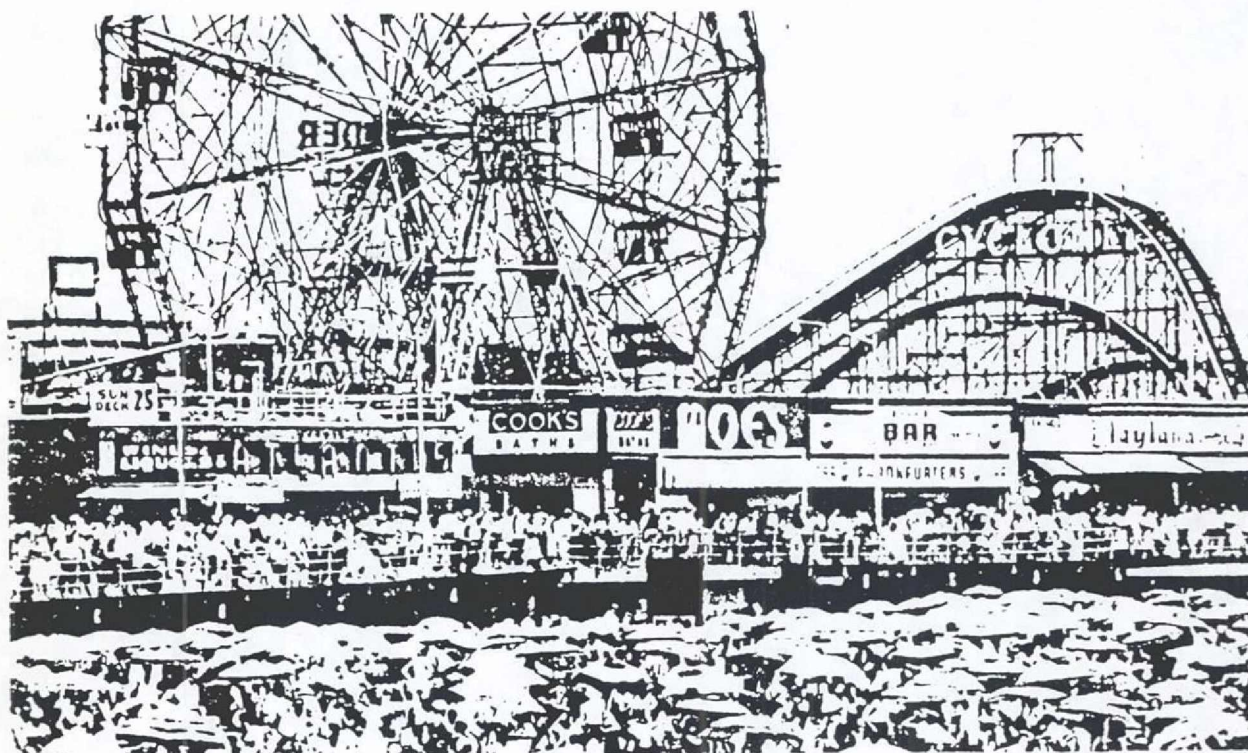


Public Hearing Draft Report
Volume II-Technical Report

June 1980

4956K

201 Facilities Plan for WP-287 The Coney Island W.P.C.P.



City of New York
Department of Environmental Protection

A JOINT VENTURE OF
MALCOLM PIRNIE, INC.

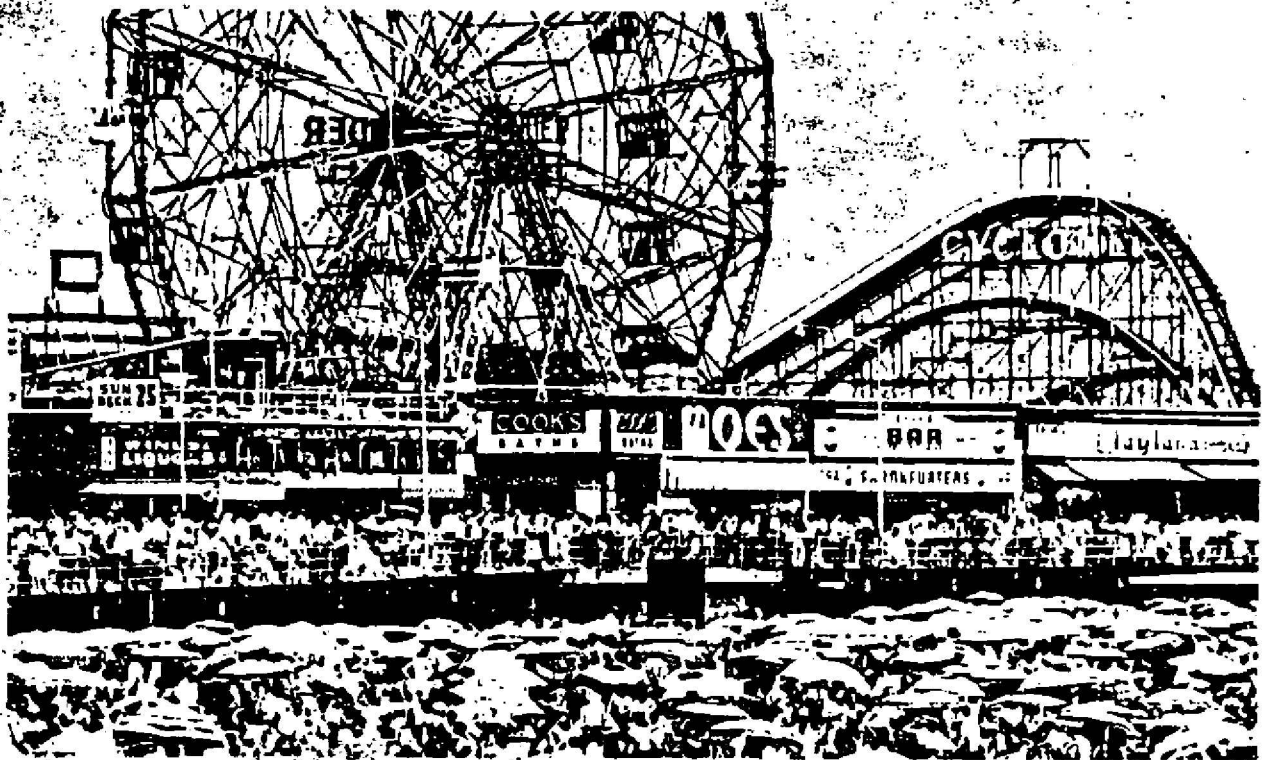
MICHAEL BAKER, JR.
OF NEW YORK, INC.

253

**Public Hearing Draft Report
Volume III-Environmental Assessment**

June 1980

**201 Facilities Plan for
WP-287 The Coney Island W.P.C.P.**



**City of New York
Department of Environmental Protection**

**A JOINT VENTURE OF
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OF NEW YORK, INC.**

2.9 HISTORIC AND ARCHAEOLOGICAL RESOURCES

2.9.1 Introduction

The Historic and Archaeological Resources study for this project was prepared by Historic Conservation and Interpretation, Inc. (H.I.C.) of Newton, New Jersey. This section presents the findings of the Stage 1A Cultural Resources Survey for the proposed Coney Island sewage treatment plant site. The project area is currently the site of the Coney Island Pollution Control Plant, owned and operated by the Department of Environmental Protection of the City of New York.

The procedures followed, and the conclusions and recommendations presented in this report, are designed to comply with the requirements of the National Environmental Policy Act of 1969, the Archaeological Conservation Act of 1974, the Historic Preservation Act of 1966, Executive Order 11593, and the procedures and regulations set forth by the New York State Division of Historic Preservation and the U.S. Environmental Protection Agency, Region II.

Research in primary and secondary sources was conducted during the spring and summer of 1979 at several locations. Documentary research was carried out at the Brooklyn Public Library, the New York Public Library, and at the libraries of the American Museum of Natural History, the Long Island Historical Society and Columbia University. Sources consulted include the National Register of Historic Places, the New York State Archaeological Site Files, and the New York State Historic Buildings Survey at the New York State Division of Historic Preservation. Ron Wyatt provided access to the archaeological site files of the Garvies Point Museum in Glen Cove, New York. The Museum of the American Indian/Heye Foundation was also contacted.

A preliminary field examination of the project area was also conducted (see Figure 2.9-1). This examination was designed to assess the present condition and land use of the project area and to walk over potential locales of archaeological resources identified by the documentary and research phase of this study.

TABLE 2.8-9

LAND USE
NEW YORK CITY AND BROOKLYN - 1975

	New York City		Brooklyn		
	<u>Acreage</u>	<u>% of City Total</u>	<u>Acreage</u>	<u>% of Total Borough Area</u>	<u>Brooklyn percentage of Total Citywide Land Use by Category</u>
Low Density Residential	32,700	17.1	3,000	7.1	9.2
Medium Density Residential	22,000	11.5	10,000	23.5	45.5
High Density Residential	8,500	4.4	2,100	4.9	24.7
Institutional	5,700	3.0	1,100	2.6	19.3
Low Density Commercial	3,600	1.9	700	1.6	19.4
High Density Commercial	600	0.3	0	0.0	0.0
Garages	2,100	1.1	600	1.4	28.6
Warehouses	3,200	1.7	500	1.2	15.6
Manufacturing	5,200	2.7	2,900	6.8	55.8
Transportation, Utilities & Communications	9,900	5.2	800	1.9	8.1
Outdoor Recreation	28,700	15.0	5,500	12.9	19.2
Vehicular	46,700	24.4	12,100	28.4	25.9
Unimproved Land	22,400	11.7	3,300	7.7	14.7
Total	191,300	100.0	42,600	100.0	22.3

Source: Reference List No. 1

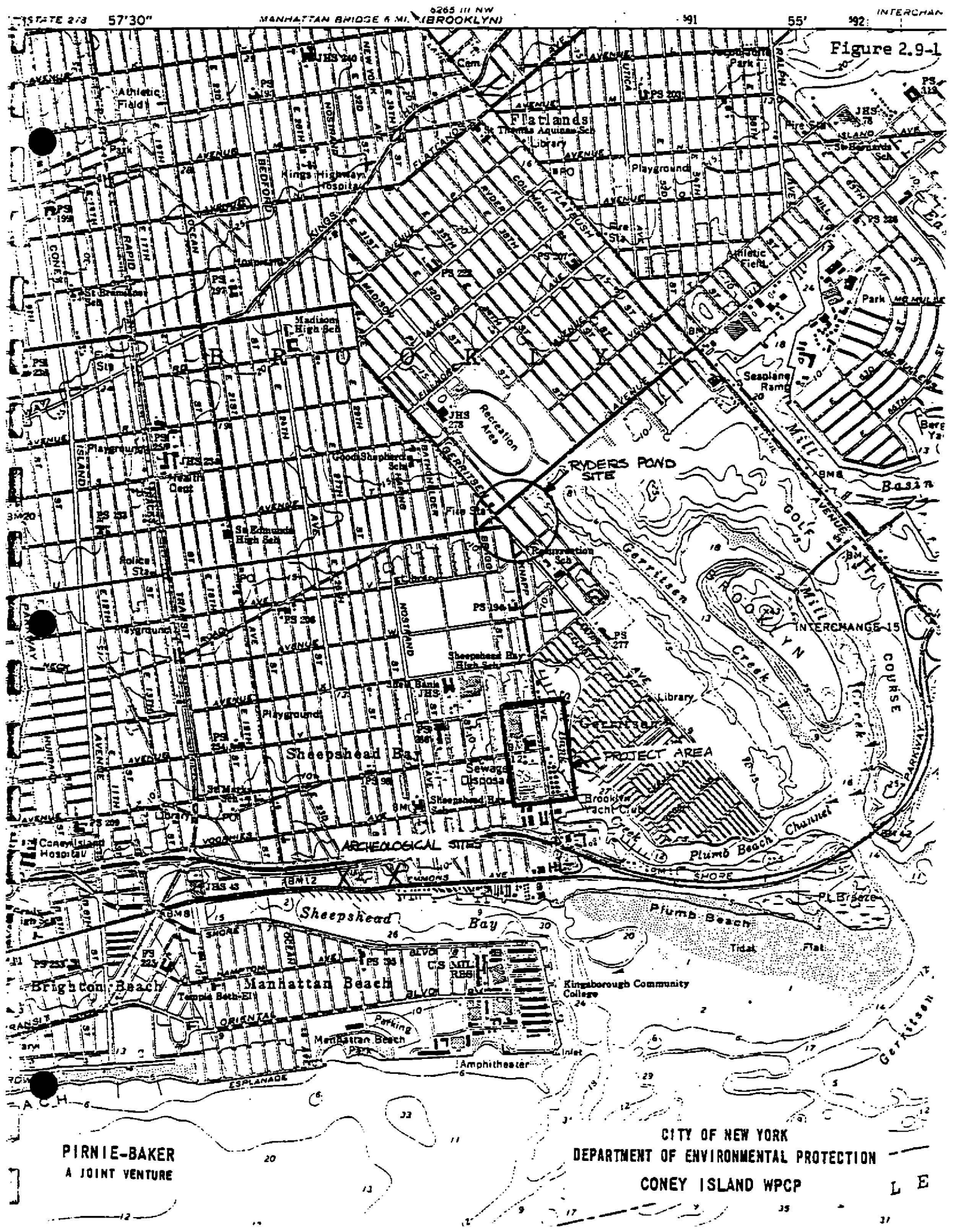


Figure 2.9-1

PIRNE-BAKER
A JOINT VENTURE

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CONEY ISLAND WPCP

The ultimate purpose of this research was the preparation of this final report, delineating previously identified cultural resources and summarizing the physical setting, prehistoric settlement patterns, and historic-period land use within the project area. Recommendations for a subsurface testing program are made for future application.

2.9.2 Physiography

The study area is located on the southern coast of the western end of Long Island (Figure 2.9-2), in the inner part of the physiographic province known as the Atlantic Coastal Plain. Although considered part of this province, most of both the surface and underlying materials are not true coastal-plain deposits, but are of Pleistocene age, the results of morainal and outwash accumulations associated with the cycles of continental glaciation (Fuller 1914: 1; Schuberth 1968: 213).

The ancestral terrain of Long Island was probably created during the Tertiary period, 1.5 million to 65 million years ago. Some of the tougher sand and clay deposits of the Raritan and Magothy formations, laid down during the previous Cretaceous period, resisted the erosive force of the large stream which eventually became Long Island Sound to emerge as a line of hills rising as much as 400 to 600 feet above sea level. This line of hills was the northeastern continuation of the cuesta which forms part of the present-day Coastal Plain of New Jersey. The northern slope, overlooking Long Island Sound, was relatively steep while the southern slope was more gentle (Schuberth 1968: 164-80).

Most of the familiar land features of Long Island are the results of glacial action. Two terminal moraines are evident, both resulting from substages of the last glacier, the Wisconsin, which retreated from this area approximately 15,000 years ago. Evidence of the older moraine, the Ronkonkoma, starts at Montauk Point at the eastern end of Long Island and runs to Lake Success in western Nassau County, where it is crossed and obscured by the younger Harbor Hill moraine. This ridge runs from Orient Point

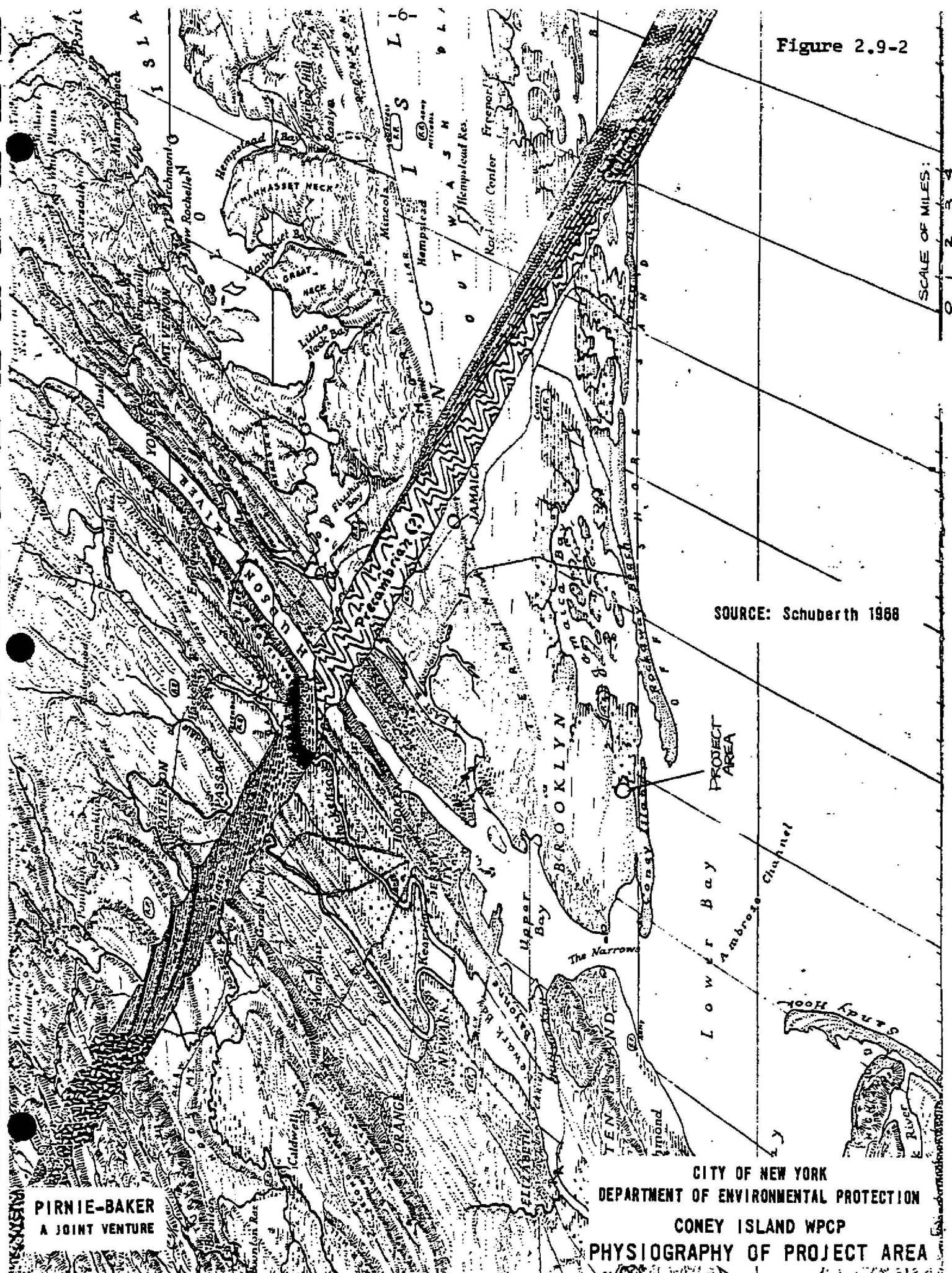
at the northeastern tip of the island to New York Harbor, where it is cut by the channel known as the Narrows, and thence into Staten Island and later New Jersey. These morainal formations create the "backbone" and the two "flukes" of the whale to which the shape of Long Island has long been compared (Schuberth 1968: 184-87).

A vast outwash plain stretches from the morainal ridges southward to the Atlantic Ocean, a distance of up to 11 miles. This plain was formed as streams of meltwater carrying masses of gravel, sand and silt flowed away from the glacier and deposited their debris as they lost velocity (Fuller 1914: 23; Schuberth 1968: 187). At the western end of the island, this outwash rests on the eroded surface of the gravels of the Manhasset formation (left behind by the Ronkonkoma advance of the Wisconsin glacial stage) and ranges from moderately coarse gravel and pebbles at the edge of the moraine to gently sloping fine sand at the south shore (Fuller 1914: 166; Schuberth 1968: 187-88; see Figure 2.9-2).

The plains between the Narrows and Jamaica are low and flat with a lobate fan-shaped outline, with radiating drainage creases converging towards the base of the moraine at several points, one of which is near Prospect Park in Brooklyn. The surface is generally covered by a foot or more of brownish sandy or pebbly loam and clayey sand (Fuller 1914: 172-73).

Post-glacial changes in the landscape consist basically of the formation of the barrier beaches and the growth of vast areas of marsh. The extremely gentle seaward slope of the plains, only 10 to 20 feet to the mile, means that large waves break at a considerable distance from the shore. Wave action tosses sand shoreward and deposits it just landward of the breaker line, creating submerged bars which eventually grow into exposed beaches and islands. Coney Island is the westernmost of the string of barrier beaches which parallel the southern coast of Long Island (Fuller 1914: 178; Schuberth 1968: 200).

Figure 2.9-2



Behind the barrier beaches lagoons were created, cut off from the open sea. Eventually large portions of these lagoons were filled to the high tide level with sediments, either deposited by streams flowing into the lagoons or created by rotting vegetation which took root in the shallow waters; tidal or salt marshes replaced the open water of the lagoons (Fuller 1914: 183-85; Schubert 1968: 206). The addition of this marshland added perhaps as much as 100 square miles to the area of Long Island and created a new and useful natural resource, as immense quantities of salt hay were once harvested from the marshes (Fuller 1914: 176, 183).

Growth of the vast areas of coastal marsh is also correlated to the well documented effects of post-glacial eustatic or world-wide rise in sea level. Since the volume of surface water on the earth has remained unchanged over millions of years, when enormous amounts of water were frozen into expanding glacial ice sheets, sea levels were lowered. With the recession of the glaciers, meltwaters fed back into the oceans and the sea levels rose. For coastal New York and New Jersey this rise in sea level has been estimated at between 3 and 4 feet per century until about 6,000 years ago when the rate slowed to 1 foot per century. About 2,600 years ago this rate slowed again to .45 feet per century (Salwen 1965: 32). The effect of this rise has been the drowning of large coastal areas, many of which may have supported prehistoric inhabitants.

Much of the south shore of the island, especially in the vicinity of Jamaica Bay, has been subject to extensive filling operations in the twentieth century.

The project area is located on what was once a small spit of land, called Hog Point at one time, surrounded by salt marsh and separated from the Atlantic Ocean by Sheepshead Bay and the stretch of barrier beach we now call Coney Island. Although late nineteenth-century maps optimistically show the area covered by a regular grid of streets (see Figures 2.9-6 and 2.9-7), this

marshland apparently still existed as late as 1901, as evidenced by the U.S. Geological Survey map of the area from that year (see Figure 2.9-3).

The extensive twentieth-century growth of the region resulted in reclamation, through filling, of marshy areas such as the project area. Soil borings conducted in several phases since 1934 indicate that between 5 and 17 feet of fill covers the previously undulating, marshy topography of the project area (Meuser, et al. 1979). The former marshland is marked by the presence of a stratum of organic silt and peat below the fill, identified in several test borings from the project area. Figure 2.9-4 outlines the extent of marsh deposits located under the fill. Below the organic silt and peat or directly below the fill where marsh deposits were not identified, is the deep ubiquitous stratum of loose to compact, brown or gray sand with traces of gravel and silt (Meuser, et al. 1979: 6). This stratum is part of the deposition on the vast outwash plain forming the entire southern slopes of Long Island.

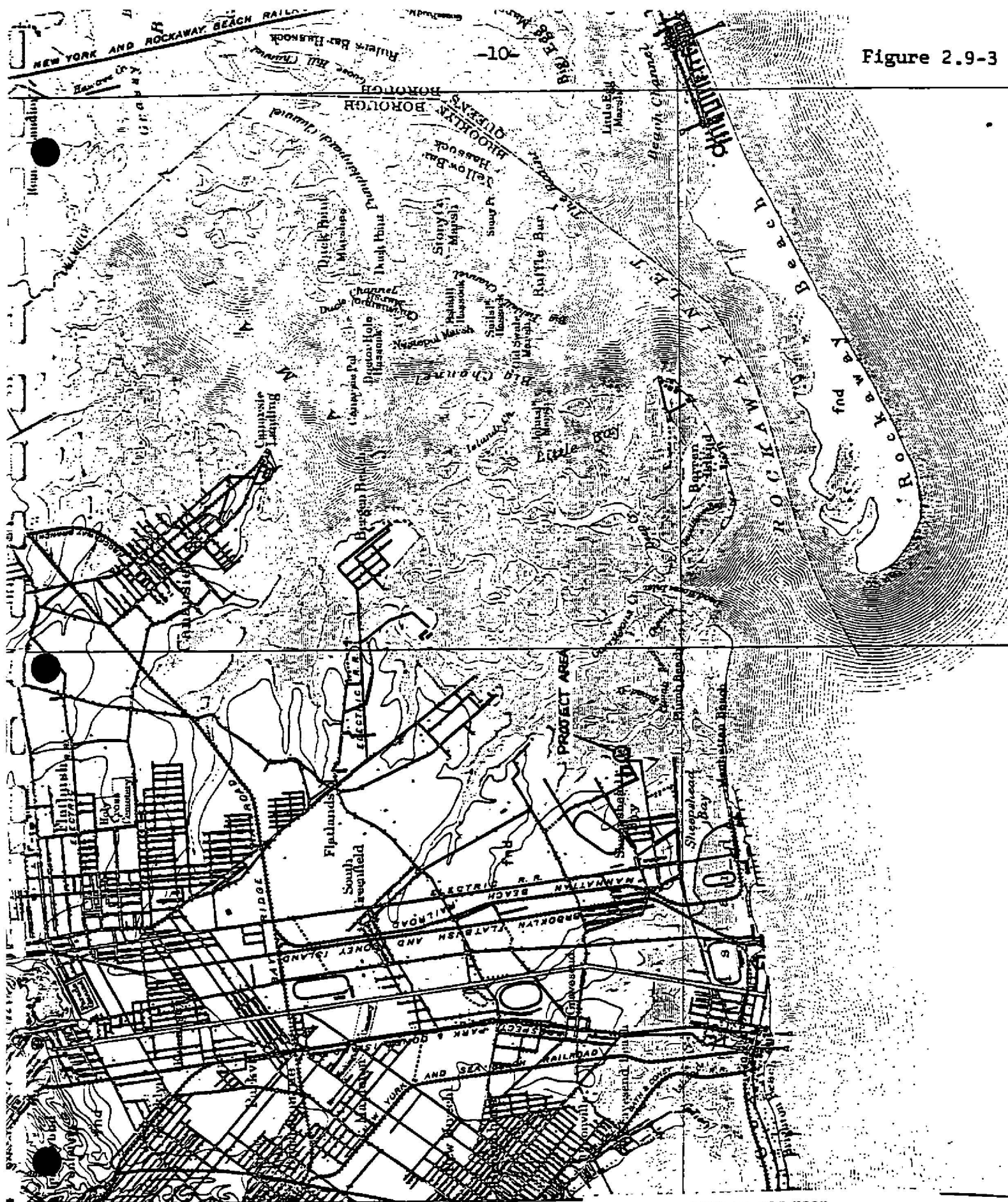
Presently, the intensive filling in the project area has given the property a nearly smooth, level topography, generally 5 to 10 feet above sea level.

2.9.3 Prehistoric Occupation

2.9.3.1 Introduction

Numerous archeological source materials exist for eastern and northern portions of Long Island and the neighboring region of Staten Island. However, less information is available concerning prehistoric occupation in western Long Island or in the specific project area. The New York State Archeological Site Files do reveal three sites within one mile of the project area. These include two undefined sites located along the north bank of Sheepshead Bay and the Ryders Pond Site, a habitation and possible village site located generally near the mouth of Gerritsen Creek and the intersection of Gerritsen Avenue and Avenue U (Figure 2.9-1). The close proximity of known archeological sites, includ-

Figure 2.9-3


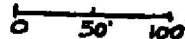



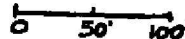
PIRNIE-BAKER
A JOINT VENTURE

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CONEY ISLAND WPCP
PORTION OF BROOKLYN QUADRANGLE, 1901

Figure 2.9-4

Contour Plan of organic silt and peat stratum indicating possible former extent of marshland. Contours shown were determined from levels of organic materials indicated on borings and are necessary interpolations between borings and may or may not represent actual subsurface conditions. Boring logs were supplied by Malcolm Pirnie, Inc. (Meuser, et al. 1979). Organic stratum was identified only in test borings indicated.

 - Test boring
 Scale: 1cm.=50 ft.

 - Test boring
 Scale: 1cm.=50 ft.

VOORHIES AVENUE

KAPP STREET

AVENUE Z

SHELL BANK CREEK

Boring 252
+2' to 0'

2560

WATER
THIS SITE
RECORDED

+2

0

-2

-4

-6

-8

-10

57

55

59

57

14

ing the Ryders Pond site where numerous buried remains, such as lithic 'tools,' and ceramic sherds were discovered, suggests that the project area may contain prehistoric resources. Unfortunately, historic development within the urban region encompassing the project area may have obscured, if not destroyed, many of the potential archeological sites here.

In the following sections a model of the aboriginal occupation of the region will be presented. This model is based on archeological investigations conducted in nearby areas.

2.9.3.2 Paleoindian Stage

Potential Paleoindian occupation within the project area must be inferred from data drawn from other areas in the region. Paleoindians probably exploited the earliest post-glacial environments by remaining in small, family bands of hunters and gatherers. Because these people represented a highly mobile, small population, and because they may have preferred well-elevated locations which were the locations to be first and most extensively developed by historic populations, there is little archeological record of them. Ritchie (1965: xvii) reports that a Paleoindian component was discovered at the Port Mobil Site, Staten Island, New York, a location within ten miles of the project area. Other Paleoindian sites are also reported within inland portions of New Jersey and New York (Ritchie and Funk 1973).

Whether Paleoindians occupied or exploited the project area or the region of western Long Island is problematic. No Paleoindian sites or materials have yet been identified within Long Island.

2.9.3.3 The Archaic Stage

As the post-glacial environment of the Northeast evolved towards more modern conditions, the subsistence and settlement patterns of people occupying this region changed. Newly developed natural resources and an increased knowledge of the environment by its human inhabitants influenced "an early level of culture

based on hunting, fishing, and gathering of wild vegetable foods" (Ritchie 1965: 31). Ritchie adds (1965: 32) that, "Cultures of the Archaic stage in the Northeast area give evidence of mobility, small-band organization, and simple social structuring." Material evidence of people practicing this more balanced economy of hunting, fishing, and gathering is generally associated with dates as early as 6,500 B.P. Within coastal New York, this material evidence has been gathered at several sites on Staten Island and along the northern and eastern shores of Long Island (Ritchie and Funk 1973: 4).

Materials identified at localities in Long Island and Staten Island suggest use of the localities as camp sites by small bands of people seasonally exploiting the abundant shellfish resources as well as practicing some hunting and gathering (Smith 1950: 106). Unfortunately, with the eustatic rise in sea levels that has affected coastal areas since glacial times, many areas potentially sensitive to finds of Archaic materials may be drowned (Salwen 1965).

2.9.3.4 The Transitional Stage

Sites representing human activity during the Transitional Stage have also been identified along the northern and eastern portions of Long Island. Generally, the beginning of this stage (c. 3,300 B.P.) is identified by the presence of stone pots in artifact assemblages similar to those assemblages found at Archaic sites (Ritchie and Funk 1973: 71). Transitional aborigines probably practiced an economy similar to that found for the Archaic, i.e., a balance between shellfish and plant gathering and hunting generally carried on by small, seasonally mobile populations.

Based on finds in northern and eastern Long Island, Ritchie (1965) has defined much of the Transitional in coastal New York as the Orient Phase of cultural development. Associated with the Orient Phase are lithic projectile points of "semi-lozenge" or "heart-shaped" form along with evidence of mortuary ceremonialism

(Ritchie and Funk 1973: 71). Again, cap sites similar to those from the Archaic are potentially within the region of the project area, either near the present shore or below water, as are burial sites within better drained areas.

2.9.3.5 The Woodland Stage

The introduction of the Woodland Stage is marked by the appearance of new traits in the archeological record. Beginning with the Early Woodland (c. 3,000 B.P.) is a pronounced presence of ceramic pottery at archeological sites, as well as other traits such as tubular smoking pipes of clay or stone, birdstones, and boatstones (Ritchie and Funk 1973: 96). Burial ceremonialism, evidence of which first appeared in Transitional sites, became more complex and refined through the Middle Woodland.

Apparently, the subsistence and settlement patterns of the Early and Middle Woodland people remained similar to those of their ancestors. Trash pits and shell middens found throughout coastal New York indicate that Woodland People were subsisting on a variety of food resources but certainly relied heavily on the shellfish resources of the coastal bays and estuaries (Smith 1950: 106; Ritchie 1965: 268).

Later Woodland people continued the use of ceramic pottery, now more elaborate and decorated. However, sites dating near the period of contact with Euro-Americans appear to lack the ceremonialism associated with burials of earlier Transitional and Woodland cultures (Ritchie 1965: 267). Ritchie (1965) has defined two cultural phases of the Late Woodland for coastal New York including western Long Island. The Bowmans Brook and later Clasons Point phases, distinguished by the ceramic and lithic artifacts found at various trash pits, habitation sites, and burials on Staten Island, Long Island, and the lower Hudson Valley, represent cultures of a more sedentary, village population still exploiting the abundant shellfish resources, as well as game found within the surrounding deciduous forests (Smith 1950: 116-17, 120-21; Ritchie 1965: 267-71). Throughout the northeast, similar villages

were also beginning agricultural practices with maize, beans, squash, and other varieties.

The extent of agricultural practice in coastal New York may have been quite minor. Ceci (1977) argues that maize cultivation by the Algonquian Indians of Long Island was never more than marginal due to the generally infertile quality of soils in coastal New York. Village life developed for these Late Woodland people around the production of wampum, the shell currency of the Indians. During the seventeenth century the Canarsie Indians (western Long Island tribe of the Algonquins) became involved in trade with the newly arriving Dutch and later English. Wampum, manufactured by the local Indians, became an important currency in the fur trade and in the acquisition of settlement lands for the Europeans.

However, Late Woodland village life developed, either through the early requirements of agriculture or through the later production of wampum for trade, two villages of the Canarsie Indians existed in the region. The principal village of the Canarsie was near the present Canarsie section of Brooklyn (Bolton 1920: 313; Figure 2.9-3). The second village was the Ryders Pond Site, also called Gerritsen Basin (Bolton 1920: 312; Lopez and Wisinewski 1971). As previously mentioned, this village site is within approximately one-half mile of the project area. Reports of shell banks possibly representing refuse of this village are known for Gerritsen Creek, formerly Strom Kill (Bolton 1920: 274; Van Wyck 1924: 649; Wood 1865). Because the project area is situated on the filled-in banks of a creek named Shell Bank, similar refuse banks might exist there.

Bergen Beach, a few miles northeast of the project area, is also recognized as possibly one of the more important wampum manufacturing sites of the coast (Van Wyck 1924). Undoubtedly, control of this coastal region by the European traders and settlers was important due to the regional wampum production and the proximity of the important inland waterway, the Hudson River.

Seventeenth-century control of western Long Island by Europeans produced a definite decline in the Canarsie culture and eventually crowded the Canarsie out of the coastal region (Smith 1950: 103; Ceci 1977: 264-65).

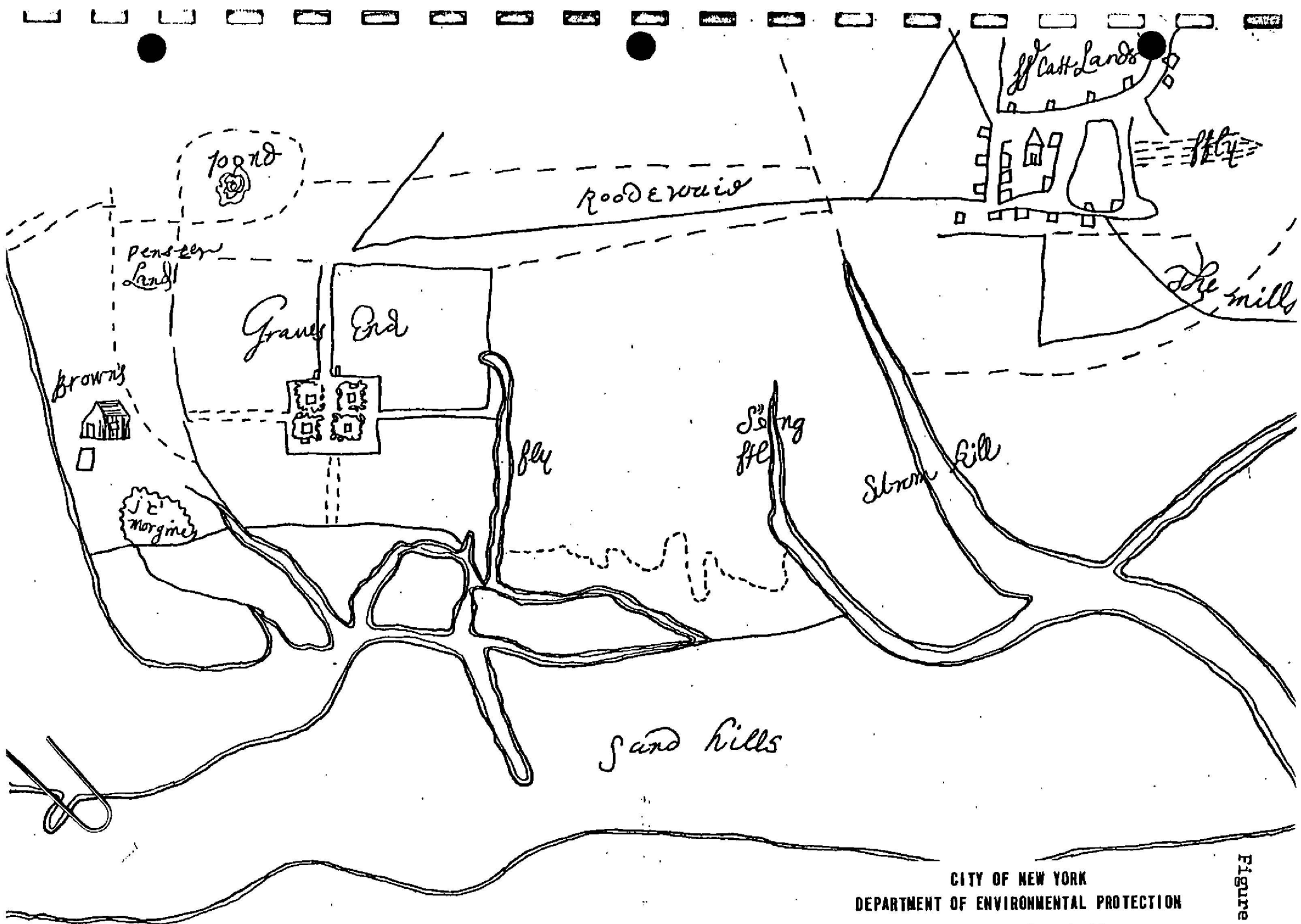
2.9.4 Historical Development

Europeans first discovered New York and Long Island in 1524 when Giovanni da Verrazano briefly visited New York Bay. More extensive exploration occurred in 1609 when Henry Hudson visited the region while searching for a route to the East for the Dutch East Indian Company. By 1614 the first fort and a few dwellings were erected on Manhattan Island to serve the fur traders. From the beginning the Dutch preoccupation was with trade with the Indians. No serious attempts at colonization were made until the late 1630s; the first mention of cattle in the area does not occur until 1638 (Wood 1865: 28). The earliest grants of land within the present Kings County (Brooklyn) were made in 1636 at the site of New Amersfort, later called Flatlands, and in 1636 and 1637 at Gowanus and Wallabout Bay, later Brooklyn (Stiles 1884: 43). In 1639 and 1643, land within what was to become Gravesend was granted to Anthonie Jansen van Salee (Flint 1967: 109), and 1644 Coney Island was granted to Guysbert Op Dyck, who apparently failed to occupy his patent (Stiles 1884: 159, 189). In 1645 a patent was issued to Lady Deborah Moody and others incorporating the town of Gravesend and giving the settlers the right to graze their livestock on Coney Island (Thompson 1849, III: 110; Flint 1967: 114-15). She had apparently been granted a preliminary patent of some sort two years earlier (Flint 1967: 109, Stiles 1884: 157).

Lady Moody had settled in Salem, Massachusetts in 1640, but religious differences with her neighbors there soon led her to seek a home elsewhere (Flint 1967: 105-108). She settled at Gravesend with a group totaling 40 English families, who were granted land by the Dutch on the condition of taking an oath of allegiance to the Dutch government (Stiles 1884: 43).

The towns of Newtown, Flushing, Jamaica, and Hempstead within the present Queens County were likewise settled by the English within Dutch territory (Thompson 1849, I: 151). The granting of these lands to the English was perhaps a tactical error on the part of the Dutch, for the English towns grew and prospered, and eventually became dissatisfied with the incompetent Dutch administration. In 1664 the Dutch were forced to surrender New York to the English, who had claimed the area anyway by right of the discovery by Sebastian Cabot. Except for a short period from 1673 to 1674 when control reverted to the Dutch, New York remained under the domination of the English Crown until the Revolutionary War (Thompson 1849, I: 162-67, 214). In 1665 Long Island and Staten Island were organized into a shire called Yorkshire, and divided into three ridings; Kings County, Staten Island, and the town of Newtown made up the West Riding. These ridings were done away with in 1683 and 12 counties established, at which time Kings County assumed its present form (Thompson 1849, I: 195, 233).

The village of Gravesend was laid out as a square of 16 acres cut by two cross-streets into four smaller squares, each of which was divided into ten house lots. The whole area was surrounded by a palisade as protection from both the Indians and from wolves and other wild animals which might attack the livestock (Figure 2.9-5). A small part of each square was reserved for the public uses of church, school, town hall, and cemetery. The 40 farms, or "planters' lots," of probably only a few acres each, radiated outward from this central square (Flint 1967: 110-11; Stiles 1884: 161-62). Subsequent division of land included only 39 sections, so we may assume that one of the original patentees dropped out for some reason, perhaps, as local historian Henry Stiles suggested, "forfeiting by his profligate life all his right, title and interest, in the property allotted him" (Stiles 1884: 162). In 1664 the land between the village and Coney Island was divided and assigned, and in 1667 another



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Figure 2.9-5

PIRNIE-BAKER
A JOINT VENTURE

The Village of Gravesend, 1666. It is not possible to delineate the project area on this early, but interesting map. Scale 1:35 500 (Hubbard 1966)

1000 acres was divided; the so-called north quarter was divided into 12-acre lots, and the west quarter into 20-acre lots. Stiles described the division in 1668-1669 of the eastern part of the town where the study area is located:

The eastern part of the town, then and since known as the "Neck," was at this time called also "the general corn-field." This seems to have been, as its name indicates, the common property of the town, where, under certain restrictions, each inhabitant was at liberty to choose and cultivate such a number of acres as he could properly manage....this land was also divided, and wither sold or given to the inhabitants. The land on the south side of the present highway leading to "Gerretsen's Mill" Gravesend Neck Road was divided into thirty-nine 12-acre lots, and some of them remain to-day as they were originally laid out (Stiles 1884: 164).

Gravesend remained farm country and grew only slowly throughout the eighteenth century; the population, 210 in 1698, had only reached 520 by 1810 and 695 in 1835 (Stiles 1884: 169-70). In the first half of the nineteenth century the land was described as "well cultivated and productive," with barley, corn, and wheat being produced for market; a surplus of 40,000 bushels was reported in 1824, despite the fact that only about a third of the land was under cultivation. The remainder was mostly salt meadow and marsh, with some forested areas (Spafford 1824: 204). There was apparently an extensive shad fishery as well, and the shores abounded with clams, oysters, and water fowl (Spafford 1824: 204; Gordon 1836: 497). At this time the shore area began to develop a reputation as a seaside resort and hotels made their appearance even though the inland areas remained strictly agricultural (see Figure 2.9-6).

According to an 1824 gazetteer, "Gravesend beach is superseding (sic) Rockaway as a place of resort for the votaries of pleasure from New-York" (Spafford 1824: 204). An 1836 gazetteer commented that "Bath House, a good public house on Gravesend beach, 10 miles from New York, is much frequented for the benefit of sea bathing and air, fowling and fishing" (Gordon 1836: 498).

By 1845 Gravesend had "become a place of great resort in the hot season, for the luxury of sea-bathing, and the enjoyment of the ocean air" (Prime 1845: 333).

Nevertheless, it was not until about 1870 that the pace of development began to quicken. The population of Gravesend in 1880, at over 3,500 was five times what it had been in 1835 (Stiles 1884: 170). Ocean Parkway, "acknowledged to be the finest drive in America," extending from Prospect Park to the Atlantic Ocean, was planned on a grand scale and constructed during the 1870s at a total cost of about \$1 million (Stiles 1884: 172). The laying of the tracks of the Prospect Park and Coney Island Railroad was begun in 1874, the year that large-scale development of Coney Island began, and several other railroads followed shortly. By the mid-1880s, the amusement area was well established (Gabriel 1960: 177-80). It was also during the decade of the 1870s that the modern street grid was envisioned. In 1884 Henry Stiles described the process:

The same session of the legislature which passed the Ocean Parkway act, passed another, appointing commissioners for laying out streets and mapping the towns of Kings county. In 1870 this commission began active operations, and completed the work in about three years. Consequently we find our town covered with streets and avenues on the county map, in many instances sorely conflicting with the existing order of the streets. To meet the present pressing demand for building-lots, many landowners have opened these legalized streets upon their property; and others are opening streets which suit the situation of their land, without regard for the county survey. So we expect it will continue until all our farming-land is turned into building-lots, and we become a constituent part of what is destined to be the largest city in the world. (Stiles 1884: 172; compare Figures 2.9-6 and 2.9-7).

In 1880 the Coney Island Jockey Club was built in the Sheephead Bay section and was proclaimed the most beautiful race track in the country; the surrounding neighborhood became a stylish resort with many large estates and lavish houses. There was little development in the inland sections of Sheepshead Bay

Gravesend, 1873

(Beers 1873: Fig. 12)

circle marks approximate project area

GRAVESEND

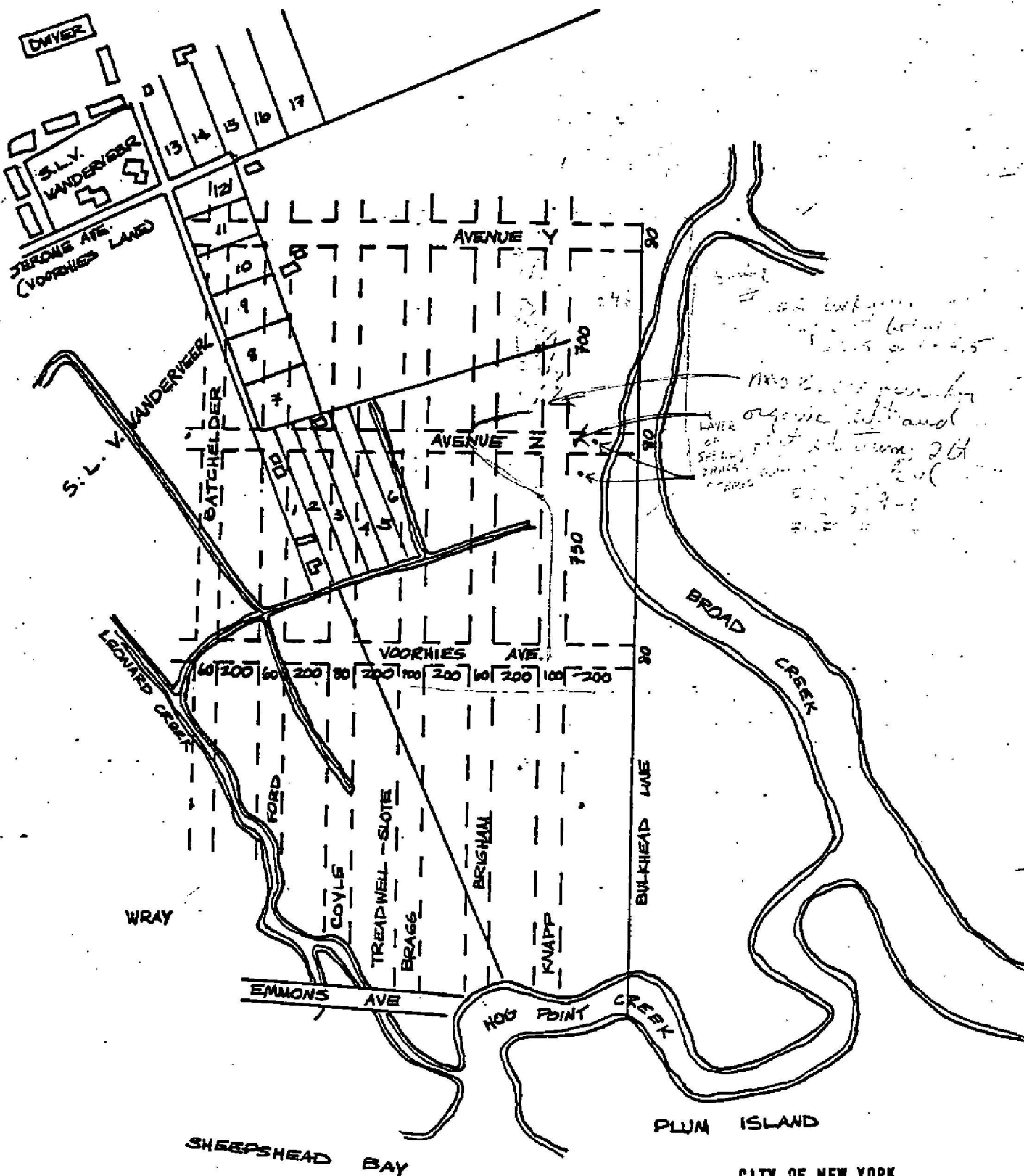
KINGS CO. L.I.

Scale 120 Rods to the inch



Figure 2.9-7

Part of the Town of Gravesend
in the approximate project area
(1889).



until after the first World War (the Coney Island Jockey Club was replaced by row housing in 1922) and in fact much farmland remained until the 1930s. A substantial portion of area housing actually dates from after World War II (Plan for New York City, Vol. 3: Brooklyn; Figure 2.9-7).

2.9.5 Pedestrian Survey of the Project Area

A pedestrian survey of the study area was conducted in October 1979. This survey served as a field check of all cultural resources identified as within the project area by the documentary research, and as a visual inspection of the existing cultural and physical landscape.

The project area is generally of smooth and level contour. A large portion of the area has been previously landscaped as part of the existing wastewater treatment facilities. Along the western margin of Shell Bank Creek is an area of recent fill developed as support for parking facilities and maintenance sheds of a yacht and fishing boat marina. Other than the existing WPCP facility buildings, these sheds are the only structures on the property.

The entire project area is covered by fill. The only vegetation having taken hold within the fill is a few, minor patches of grass within empty lots or along margins of the parking and boat repair lots east of Knapp Street. Filling of the area for the construction of the existing treatment plant facility and the marina has covered any visible traces of the original swamp-dominated landscape.

The documentary research did not identify any known, existing cultural resources in the project area. However, the area may contain prehistoric materials possibly associated with the Archaic or more recent Woodland cultures. Unfortunately, twentieth-century landscaping and filling have destroyed all visual evidence of the potential for these resources. If any prehistoric materials remain with the project area they are below the present ubiquitous mantle of surface fill.

2.9.6 Conclusions and Recommendations

No significant cultural resources were identified as within the project area by the documentary research and infield inspection phases of this Stage 1A survey of the project area. However, the potential for prehistoric materials below the surface fill of the project area does exist. Prior to twentieth-century development, the area was marginal to a broad marsh and estuary environment. Documentary evidence of prehistoric settlement patterns and of the former environment of the project area supports the conclusion that prehistoric materials may exist below the surface fill.

A substance testing program as defined by a Stage 1B cultural resources survey is recommended for the proposed upgrading of the existing sewage treatment facilities. The subsurface testing program should be designed so that, where possible, the potential for prehistoric materials within the subsoils of the project area can be adequately sampled. Placement of machine-dug test excavations to depths below the surface fill should provide an adequate sampling of the potential for prehistoric resources.

A theoretical reconstruction of the former estuarian environment has been established and the presence of historically indicated "shell banks" may help to quickly locate those areas where buried cultural resources associated with the aboriginal culture may exist even though the area is covered with deep fill. The strategy would include test excavations at regular intervals starting at the present water's edge and continuing to the inland edge of the property with further testing at the hypothetical locations of the original shoreline.