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U.S. TRUCK BODY SITE

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PHASE 1A ARCHAEOLOGICAL ASSESSMENT REPORT

for the

U. S. TRUCK BODY SITE

ROCKAWAY PENINSULA, QUEENS, NEW YORK

CEQR 88 - 164 Q

Prepared

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The primary authors are grateful to contributing author Richard Schaefer whose research was valuable in assembling the data and in enabling them to make the archaeological assessment and recommendations for this report.

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I. INTRODUCTION

The U.S. Truck Body Company and the New York City Public Development Corporation propose to develop a 1,073,000 square foot, vacant, City-owned site at the foot of Amstel Boulevard between Vernam and Barbadoes Basins of Jamaica Bay, in Queens, for a truck body manufacturing and assembly facility. As currently planned, construction would include a one-story building, paved parking areas, and landscaping. An additional five acre, vacant tract, on the east side of Barbadoes Basin, is to be included in the proposed development as a graded, unpaved storage yard for truck chassis and completed trucks. Both parcels will host designated wetlands and a wetlands buffer zone.

Various City and State approvals are required for the implementation of the U.S. Truck Body Development, including an Environmental Impact Statement (CEQR No. 88-164Q). One concern expressed by Mark London of the Department of City Planning (3/8/88; letter to Linda Corcoran, Public Development Corporation) is for proper attention to potential archaeological sensitivity, since "The site is adjacent to and may be part of a Native American site as indicated by records on file with New York State." Daniel Pagano, staff archaeologist with the New York City Landmarks Preservation Commission (LPC), further clarified the review agency's questions on prehistoric potential, which was indicated by State inventoried sites on Jamaica Bay (3/22/88). Task 4, Item C, of the U.S. Truck Body EIS scoping document is designed to satisfy these concerns, specifying that an archaeological evaluation shall be conducted in accordance with the LPC Guidelines for Archaeology. The following "Phase IA Archaeological Assessment," prepared by Historical Perspectives, Inc., meets the requirements for a "Pre-Construction: Documentary Research."

II. SITE AREA

The U.S. Truck Body Site (CEQR 88-164Q) is located on the north side of the Rockaway Peninsula, along Jamaica Bay. It consists of two sections, separated by the waters of Barbadoes Basin.

Section 1, referred to as Vernam Barbadoes (Block 16075, Lot 1), comprises the greater part of a small peninsula between Vernam and Barbadoes Basins, an area of just over 24 acres. Formerly two marshy islands, the two were connected to each other and the mainland by fill operations in the early twentieth century.

Section 2, part of Block 16100, is located on the mainland, along the shore of Barbadoes Basin, bounded by Beach 80th Street on the east, and the land containing the present Rapid Transit elevated roadbed, formerly the Long Island Railroad, on the west and south. It was also marsh until filling began in the early twentieth century.

In the late nineteenth century the project parcels were part of the marshy wastelands of Hammels, an unpretentious resort community running from Jamaica Bay to the Atlantic Ocean. The site is presently vacant property within an area dominated by light industry. (See Figure 1).

III. ENVIRONMENTAL SETTING*

The Rockaway Peninsula is a post-glacial barrier beach approximately nine miles long. Such sandy formations along the southern coastline of Long Island are the result of the scouring action of waves as they break a considerable distance offshore and drop loosened sand just landward of the breaker line. "Soon a submarine bar of this material is built up parallel to the shoreline. Growing in height with continual deposition of wave-tossed sand, the submarine bar soon appears above the water surface in various places along its length. When these have joined to make one fairly continuous strip of sand, a barrier beach or barrier island is formed. Behind the barrier beach lies a lagoon or zone of quiet water which no longer is a part of the open sea. Tidal inlets separate the islands into several individual ones." (Schuberth 1968:200; Kearns and Kirkorian 1986a:5). As is typical with barrier beach formation, the Rockaway Peninsula has acted as a fence against the Atlantic Ocean, and has created Jamaica Bay. This zone of calm water undergoes further transformation, for it provides a suitable environment for the growth of eel grass, a plant which prefers still, shallow water. As the eel grass becomes established, dead grass and silt accumulate until the ground level is raised "well above the low water mark." This process continues as marsh grass becomes dominant, and eventually the ground level is high enough so that it is only occasionally inundated by high tides (from M. Fuller, The Geology of Long Island, in Grambo 1984:3-4). Until its filling in, bulkheading and development in the late nineteenth and early twentieth centuries, the U.S. Truck Body Site was such a marsh. To the south of the Site, the terrain was covered with high sand dunes and cedar groves within the hollows.

*Sections of this report are taken from or based on information gathered for a report written for Historical Perspectives, Inc. in 1986 by Betsy Kearns and Cece Kirkorian: "Arverne Urban Renewal Project Cultural Resources Survey," unpublished Mss. on file with the New York City Department of City Planning. Used by permission of the authors, these sections are credited to Kearns and Kirkorian. In addition, passages which were quoted in the "Arverne" report are also accompanied by citations of their original sources.

IV. METHODOLOGY

Archaeological evaluations of a site operate along two parallel avenues of research: (1) the reconstruction of both documented and non-documented, but probable, past exploitation of the site; and (2) the reconstruction of both documented and non-documented, but probable, subsurface disturbances of the site parcel. After these usage and disturbance records are compiled, potential site significance and the decision to field test for the presence/absence of such potential is weighed against a variety of mitigating factors, including the retrieval difficulties imposed by site conditions and the breadth and depth of data on comparable archaeological resources.

"Prehistory" refers to the period before the advent of written records. Therefore, to assess the likelihood that prehistoric peoples exploited the U.S. Truck Body Site ecological biome, we must rely on a compendium of indirect sources, including ethnographic accounts, archaeological reports, paleoenvironmental site conditions and predictive models. "The environmental context in which prehistoric peoples lived must be considered in the search for prehistoric occupation zones within the project area. Prehistoric peoples' search for subsistence resources was continual. They naturally chose those areas in which food resources appeared in the greatest abundance." (Lenik 1986:4-6). Also important in the assessment for the likelihood of prehistoric occupation of an area is the availability of both a fresh water supply and the raw materials needed to fashion tools and other items (ibid.).

Information on the prehistoric era and archaeological reports were gathered from a variety of sources, including the National park Service's evaluation of Jamaica Bay (1981), the Coastal Archaeology Reader (1978), both Reginald Bolton's 1922 and 1934 works and Grumet's later Indian Place Names of New York City, Ritchie (1980), and Solecki (1941). Research was conducted at the Long Island Division of the Queens Borough Public Library, Jamaica. A file search at the New York State Museum/Anthropology Services revealed one prehistoric site in Far Rockaway and the State Historic Preservation Office assessed the Site area as having "no inventoried archaeological sites."

Both primary and secondary sources were tapped to document the historical era cultural resources associated with the Vernam Barbadoes and Block 16100 area. An intensive search of the literature and cartographic resources was carried out at the New York Public Library and the Long Island Division of the Queens Borough Public Library.

Information was sought from individuals knowledgeable in the history and prehistory of the southern shores of Queens. Local historians and archaeologists were contacted to elicit data on the location and nature of prehistoric and historical sites and to determine land use in the Site area.

Reconstructing the disturbance record of the U.S. Truck Body Site necessitated research in the Queens Borough Department of Buildings -- the Record Room, House Numbers Division, Block and Lot Division, and the Bureau of Real Property Assessment. Also contacted were the Queens Historical Society, the Nassau County Museum at Sands Point, the Queens Borough President's Office, the New York Department of Environmental Conservation, as well as the National Park Service. Of particular assistance was the 1987 Storch Associates report, "Site Investigation for Vernam Barbadoes Queens, NY," provided by Allee King Rosen and Fleming, Inc.

A site visit and photographic record of current conditions was made (3/10/88). See photographs 1-10.

V. PREHISTORIC ERA

A. Introduction

Settlement pattern data indicate a prehistoric preference for protected, elevated sites abutting a major marsh resource and a reliable fresh water supply. The U.S. Truck Body Site, on a preliminary examination of nineteenth and early twentieth century maps, appears to have possessed at least a portion of these topographic and environmental features. Additionally, there are documented prehistoric sites on other shores of Jamaica Bay. Therefore, the subject parcel was "flagged" by LPC, and a complete phase IA archaeological assessment has been requested.

There have been no recorded archaeological excavations at the U.S. Truck Body Site or in the immediate vicinity. Therefore, we must rely on comparable site data in reconstructing the prehistoric archaeological potential for the Site. Prehistoric sites located at other loci bounding Jamaica Bay must be assessed critically, for their existence does not necessarily imply that the entire Bay shore was equally attractive to Native Americans. By correlating past environmental site conditions and Native American settlement patterns through time we can approach a realistic estimation of subsurface resources.

New York archaeologists divide Native American occupation prior to European contact into three distinct cultural sequences, each embodying particular technologies and lifeways in a specific environmental context. The following discussion of each of these cultural phases provides a model from which to anticipate the kinds of cultural remains or resources that may be found in the U.S. Truck Body Site area.

B. Culture Periods

Paleo-Indian Stage

The earliest settlers of North America and the ancestors of present-day Native Americans are called Paleo-Indians. "Paleo" comes from the Greek work 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 tundras 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 recorded for either Kings or Queens Counties. Adding to the complexity of trying to locate small and temporary Paleo-Indian sites is the rise in the sea level since 10,000 years ago (roughly 75-80 feet), and to a much lesser degree, crustal subsidence since that time (Kearns, Kirkorian and Lavin 1987:7).

Archaic Stage

By about 5,000 B.C. the modern distributions of both flora and fauna had been achieved. Environmental changes immediately before and after this stabilization are reflected in the Native American Culture of the period, referred to as the Archaic stage (7,000 - 1,000 B.C.). "With the warmer and drier climate, the tundra and spruce forests disappeared deciduous woodlands gradually appeared. 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 melt water 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." (ibid.)

"The Paleo-Indian, Early Archaic, and Middle Archaic cultural periods thus are poorly represented in coastal areas of the Northeast, but by Late Archaic times sea level was so close to present levels that its subsequent small rise has failed to obliterate much of what remains on Long Island from that period." (Gwynne 1982:192). Recently, there has been a demonstrated interest by New York archaeologists to consider the realistic potential for investigating these long-submerged sites (Bert Salwen, personal communication to C. Kirkorian, 3/11/88; see also Kearns and Kirkorian's "East River Landing: Phase IA Archaeological Assessment Report," Mss. on file with Allee King Rosen and Fleming, Inc.). The archaeological record does present a profile of Archaic culture: small, multi-component site usually situated on tidal inlets, coves, bays, particularly at the heads of the latter, and at fresh water ponds on the islands along the New York coastline; and by the late Archaic stage, coastal sites and the exploitation of shellfish resources are heavily represented (Kearns and Kirkorian 1986b:9).

Woodland Stage

From approximately 1,000 B.C. to the arrival of the Europeans, Native Americans of southern New York shared common attributes of the Woodland stage: the advent of horticulture, large semi-permanent or permanent villages, pipe smoking, the bow and arrow, extensive trade networks, and the production of clay vessels. The habitation sites of the Woodland Indians increased in size and permanence as these people learned to extract food more efficiently from their environment. The archaeological evidence from Woodland Stage sites indicates a strong preference for large scale habitation sites to be within very close proximity to a major fresh water source, e.g., a river, a lake, an extensive wetland; and smaller scale extractive-functioning sites to be situated at other resource locations, e.g., quarrying sites, butchering stations, shell gathering localities. Late Woodland stage sites of the East River Tradition in southern New York have been noted on the "second rise of ground above high water level on tidal inlets" and situated on "tidal streams or coves" and on "well-drained sites" (Ritche 1980:16). Carlyle S. Smith, who studied and analyzed the distribution of prehistoric ceramics in coastal New York, states that "village sites" are found on the margins of bays and tidal streams (Smith 1950:130).

The drastic effects of the arrival of Europeans brought an end to the Woodland Stage culture in the Northeast. Decimated by European-introduced diseases to which they had no resistance, and displaced from their land by settlers, the Native American population of Long Island plummeted. By 1660 the number of Indian villages on Long Island had decreased from six to only two (Denton 1902:40).

From a topographical and ecological analysis, the U.S. Truck Body Site would appear to offer some potential for hosting Late Archaic and Woodland period archaeological resources. The lack of definitive data on a natural fresh water supply for both the island and mainland parcels restricts the estimation of potential. Most likely, any potential archaeological artifacts and features would have been deposited on the elevated, dry edges of the wetland and on the flat terraces of the knolls. In the southern New York area archaeological deposits of the Late Archaic and Woodland times are not deeply buried, often being revealed through erosion, plowing, or house construction. Also, it is probable that earlier prehistoric period cultural groups exploited the project area, and resources from this earlier time were deposited on lands subsequently inundated by the rising sea level.

C. Archaeological Sites in the U.S. Truck Body Site Area

The earliest accounts (c.1645) of land transactions in the southern portion of Queens, corroborated by seventeenth century ethnographic studies, definitively show that Native Americans were present at the time of initial European contact. These Native Americans were Algonquian-speaking Upper Delaware Indians. Anthropologists and linguists agree that the name Rockaway (Rackeway, Rahawacke) is derived from the Delaware language, meaning "sandy place" and originally referred to both a geographic location and a culturally similar associated group of Native Americans. "The Rockaway group lived on western Long Island in portions of southeastern Queens and southwestern Nassau Counties. Their main settlement of Rechqua Akie was probably located in the town of Far Rockaway, Queens" (Grumet, 1981:47).

Archaeological reports have identified numerous sites on the north side of Jamaica Bay, and antiquarians have commented on the presence of possible Indian sites (identified by shell refuse heaps) on the southeastern shore of the Bay, grouped at the base of the Peninsula. In the absence of known sites in the immediate vicinity of the project area, the following archaeological evaluation must assess Site prehistoric archaeological potential through the attractiveness of Site resources to the known settlement patterns of Native Americans c.10,000 years ago - c.400 years ago. In his History of the Rockaways (1917) Bellot noted that

Up to twenty years ago there was a number of shell banks in the peninsula. There are still signs of the banks on the marshes of Woodmere Bay. Other banks existed at Inwood, Hog Island and Far Rockaway.

The Far Rockaway shell bank was enormous and must have contained many thousand tons of clam shells. It was located at Bayswater on Judge Healys' property, but was carted away and used for filling in purposes and road making. (Bellot 1917:90)

The presence of shell middens, or shell refuse heaps, is an indicator of Native American exploitation of the shellfish beds in the Bay area. Settlement pattern data indicate that the Indians moved, in different time periods, between settlements of greater and lesser permanency -- to the shore for seasonal harvesting of this important food source, and to large semi-permanent villages located inland within walking distance of the

shellfish collection stations (Lucianne Lavin 11/4/86:personal communication). The shallow water, low salinity and other attributes of the north shore of the Peninsula provide an excellent breeding ground for oysters, mussels and clams (Kochiss 1974:33). The question of whether shellfish served primarily a protein, caloric or other dietary function is still unresolved. What is undisputed is that in coastal New York shellfish represented a viable alternative to terrestrial resources, and during specific cultural periods served as a dietary staple (Erlandson 1988:102-103).

There is no evidence of the presence of shell middens in the project area. The shell fragments found only in soil borings 2, 3, 5 and 6 on Vernam Barbadoes have hardly the shell concentration of a midden (Storch Associates 1987:E-13, 14, Appendix B), and are also on a section of the study area that stood between the two original islands.

Prehistoric settlement research indicates a marked preference for elevated sites, particularly if in some way protected from buffetting winds (e.g. an embayment or a rock outcrop). As illustrated on the current USGS 7.5 minute series (Far Rockaway Quadrangle), the majority of the project area was recorded at no more than ten feet above sea level except at the northern corner of the Site, near Vernam Basin. (See Figure 1.) This does not agree with the 1987 topographic survey done by Storch Associates, which shows that particular area to be less than five feet above sea level, and the rest of Vernam Barbadoes to be generally between four and five feet in elevation, and no higher than 8.32 feet (at the edge of Crugers Road). Also, from the cartographic research it is evident that before the twentieth century, the U.S. Truck Body Site was even lower -- a salt marsh sometimes covered by exceptionally high tides (Wolverton 1891:13; Hyde 1907:index). On the Final Maps of the Borough of Queens: Partial Section 219 and Section 215, surveyed in 1922, the entire U.S. Truck Body Site is depicted at less than 5 feet above mean high water. According to personnel at the Queens Topographic Bureau, the lack of contour lines on this official map indicates that the area was "marshy, too low and not considered real property" at the time of the survey (personal communication, 4/26/88). (See Figure 2.) Furthermore, since it is estimated that the formation of the Rockaway Peninsula did not begin until approximately 5,000 years ago, the project area, and probably the Jamaica Bay shellfish beds did not exist until some time in the Archaic Period (Grambo 1984:3).

Also, the presence of fresh water on the U.S. Truck Body Site is not indicated. Although one atlas labelled Barbadoes Basin "Barbadoes Creek" (Sanborn 1912 corr. to 1926:102) and a

much earlier map referred to it as "Horse Creek" (Dripps 1852; See Figure 3) this is not corroborated by any atlas from the intervening period (e.g. Sanborn 1894:111). The term "creek" was very probably used to mean an inlet, rather than in the sense of a small freshwater stream or brook. The presence of springs on the Rockaway Peninsula seems slim, given the details of its formation. Although the Storch Associates report records a high groundwater level, this water seems to fluctuate with the changing tides, indicating probable contamination from Bay water (Storch Associates 1987:D-3, 13).

Reginald Bolton's early twentieth century research into Indian sites and paths in Queens County also focused on the Far Rockaway area, and the northern side of Jamaica Bay. As can be seen in Figure 4, Bolton's "Indian Paths of the Great Metropolis" Map depicts an Indian trail terminating at Inwood, "thus reaching Rockaway neck, from which point the long stretch of Rockaway Beach would have been accessible by a branch path" (Bolton 1922:181).

As documented in Frederick Black's study for Gateway National Recreation Area (National Parks Service), the archaeological record of the Jamaica Bay area reveals a long and complex aboriginal exploitation of the northern shore of the Bay and an absence of prehistoric sites for the Peninsula. Dr. Ralph Solecki's intensive exploration in Queens during the 1930s and 1940s concentrated on the Aqueduct area which is north of Jamaica Bay (see Figure 5). A review of Solecki's field photo files failed to reveal any Peninsula sites. Recently, Mary Anne Mrozinski of the Queens Historical Society photo-recorded a collection of Indian artifacts (Archaic, Woodland and Contact Periods) collected by John Riemels in the Springfield area, northeast of the Peninsula (J.M. Crane 8/11/86:personal communication).

Inquiries to professional and amateur archaeologists on Long Island (Stan Wisniewski, Mary Anne Mrozinski, Emily Brown, Ben DuBose, Edward Platt, and Donna Ottusch-Kianka) revealed an absence of known and/or anticipated archaeological sites on the Rockaway Peninsula. Daniel Kaplan of the Nassau County Museum at Sands Point found no reported sites in the Hammels area in their files (D. Kaplan 3/16/88:personal communication). William Asadorian, Librarian of the Long Island Division of the Queens Borough Public Library, Jamaica, did report the discovery of one projectile point at Beach 86th street, but the context of was dredged fill material of unknown origin.

Bob Ewing of the State Historical Preservation Office, Albany, reported "no inventoried archaeological sites" in

proximity to the project area, while the Anthropological Services Division of the New York State Museum responded to an archaeological file search request, noting only the location of a prehistoric campsite (#4050) at Inwood (Kearns and Kirkorian 1986a:8-9). According to Steve Feldman, an active Indian relic collector, the extreme eastern shore of Jamaica Bay (Bayswater) is still yielding Woodland Period ceramics, projectile points, and a possible burial (personal communication, 4/26/88).

In spite of the vast shellfish beds in Jamaica Bay, it is evident that the northern shore of the Rockaway Peninsula did not offer sufficient resources to attract any concentration of Native American activity during the Paleo-Indian, Archaic, Woodland, or Contact time periods.

VI. HISTORIC ERA

The first Europeans to visit the area of Long Island now known as Queens were fur traders in the employ of various Dutch trading companies. After 1621, such enterprises were taken over by the Dutch West India Company, which had an official monopoly on all trade in the area (Bachman 1969:3-14). Although the Dutch had cultivated trade relations with the Indians of South Queens, receiving not only furs, but beans, corn, oysters, fish and their "daughters as companions," the two groups had many serious differences, resulting in intermittent warfare. One of the earliest meetings recorded was between 16 sachems representing Indian tribes, and a group of Dutch envoys headed by Patroon David DeVries, in 1642. Apparently the results of this conference did not satisfy the Indians' grievances against the Dutch, and hostilities continued through the following year. However, in March of 1643, the Indians sued for peace, and sent three delegates to New Amsterdam to request a meeting with Dutch representatives. Only two Dutchmen were willing to go with the Indians, DeVries and Jacob Olfertsen. A short-lived truce with the one-eyed "great chief" Penhawitz was made at "Rechqua-akie" or Rockaway, "where they found nearly three hundred savages, and about thirty wigwams" (Brodhead 1853:358, 359). At this time Rockaway Beach was thought to be of little value. A section was set aside for Indian use, and the rest was employed as a cow pasture. The cattle were readily enclosed by a short fence running across the Peninsula (Ricard 1949:390). (See Figure 6.)

In 1685 the Indians sold their interest in Rockaway Neck for B31 2d to Governor Dongan, the English royal governor. Drawn up on October 6, 1685 and executed two days later, the deed was a conveyance by the Indians through their two chiefs, Tackapousha and Paman, of a tract running from a point designated as Well's Line to a point on the beach slightly West of what is now Wave Crest, seven miles from the present Rockaway Point. Three white men and four Indians acted as witnesses (Kearns & Kirkorian 1986a:10).

One month later, November 1685, Dongan made a grant of the land to John Palmer, the consideration being a quit rent of five bushels of winter wheat annually. Such land transactions later caused Dongan's removal, for he was charged with corruption for turning over land to favorites, like Palmer. Furthermore, the Town of Hempstead objected to the original sale, since the Rockaway Peninsula had been assigned to the Town when it was established in 1683, and therefore Tackapousha and Paman had no right to sell the land in the first place. Although Hempstead began legal action to overturn the Palmer grant, the suit was

dismissed with costs against the Town (Kearns and Kirkorian 1986a:10).

In 1687 Palmer sold the entire property to Richard Cornell, an ironmaster of Flushing. The name also appears as Cornwell and Cornwall. This family was one of the wealthiest on Long Island, possibly because in 1670 Cornell had obtained permission to sell liquor and powder to the Indians. Three years after the purchase, the Cornell family moved from Flushing to the Rockaways and built a large frame house overlooking the Atlantic Ocean at Far Rockaway. It was demolished in 1833 to make way for the Marine Pavillion, Far Rockaway's first large resort hotel (Kearns and Kirkorian 1986a:10-11).

As a result of a partition suit brought by 16 of the great-grandsons of Richard Cornell, the land was divided in 1809. The case was heard in the Queens County Court of Common Pleas. The commissioners appointed by the court divided the property into 46 parcels, 16 being known as the western division, and 15 marsh lots. In the latter group was included the marshy area that was to become the U.S. Truck Body Site. An old road which roughly corresponds to the present Rockaway Beach Boulevard, marked the division between the beach lots and the marsh lots along Jamaica Bay. The 1809 partition is recognized as the common source of all titles on the Rockaway strip. The easterly strip of the Cornell tract was purchased from the Cornell heirs in 1833 by John L. Norton, and was the first section to be developed. Most of the western division was sold to James Remsen in 1855, and developed as Seaside. Some of the land remained in the hands of the Cornell family (Kearns and Kirkorian 1986a:11).

Far Rockaway, approximately 2½ miles east of the project area, was the first section to be developed. It was discovered after it served as a sanctuary from Manhattan's 1832 cholera epidemic, when hundreds of families fled the City. The refugees slept in barns or anywhere they could find shelter. One year later the Marine Pavillion was built at a cost of \$43,000, and opened to boarders in 1834. (See Figure 7.) The Pavillion became a famous resort from 1834 until it burned down in 1864. Among the notable guests were Longfellow, Washington Irving, and artist John Trumbull. At that time the beach was rather isolated -- the only means of reaching it was Brouwer's "Americus Stage Line," whose vehicles were drawn by teams of four horses. The office was on Pearl Street in Manhattan, and each morning the stages would call at the doors of those who wished to visit Rockaway and carry them to Rockaway via the Rockaway Turnpike (Kearns & Kirkorian 1986a:11).

The development of the Peninsula did not follow far behind. Remsen, who purchased the major part of the western division in 1855, had erected one of the earliest public houses midway along the Peninsula in 1856 (Beach 103rd Street), and named it the "Seaside House". It "was a sort of refreshment stand for fisherman and boatmen, serving chowder, clams, etc." He also built a house near Rockaway Point, in token of his possession of the land, and pastured cattle on the beach grass as farmers had been doing there for two centuries. During the 1860's Remsen organized excursion boats to bring fishermen, bathers, and picnickers to the bay side of the Peninsula (Seyfried 1971:2, 60-61; Kearns and Kirkorian 1986a:12-13). (See Figure 8.) The example of Remsen's Seaside Park was followed by Michael P. Holland of Jamaica and Louis Hammel, who had early recognized Rockaway Beach's potential for development. Holland bought the section of the Beach east of Seaside Park in 1857, and Hammel purchased the tract east of Holland's property soon after. Hammel's land extended east to Beach 80th Street, the eastern boundary of the mainland section of the U.S. Truck Body Site (Block 16100). The three men realized that Seaside, Holland, and Hammels, as their communities came to be called, would not progress far beyond the four fishermen's houses which stood in the area when they arrived, without a better transportation link with New York City (Bellot 1917:102). At this time the fastest method of reaching Rockaway Beach from Manhattan was a scenic 26 mile boat trip, which lasted 1½ hours. Each development had its steamboat landing, with Hammels' pier at the end of Beach 85th Street, the most easterly stop on Jamaica Bay (St. Clair:12). The developers devoted themselves to improving the accessibility of their communities. Their efforts were rewarded in 1872, when the railroad was extended from Far Rockaway, with stops at important hotels such as Remsen's Seaside House. In 1878 Remsen and his partner donated the land for Seaside Station to the New York, Woodhaven and Rockaway Railroad Company, and Holland and Hammel gave land for the Holland and Hammels Stations shortly thereafter, all three on the condition that the stations always bear those names. Later, in August of 1880, a further improvement made Rockaway Beach less than an hour's journey from New York City -- the Railroad opened a ½-mile wooden trestle over Jamaica Bay, which reached the Beach at Hammels Station and the tracks continued west to the other communities (Bellot 1917:104). (See Figure 9.) The Hammels Depot was just north of the tracks on Chase Avenue (present Beach 83rd Street).

When Hammel arrived in the Rockaways, the land was still valued for the salt hay it produced, and the beach was dotted with handsome groves of cedar trees. He built himself a homestead on Hammels Avenue, present Beach 85th Street, and Rockaway Beach Boulevard (demolished October 2, 1899). Hammel,

whose property extended from Bay to Ocean, and from present Beach 80th to Beach 88th Streets, wanted to create a combination summer hideaway for New York businessmen and fishing station. This being the case, he oriented his development not towards the Ocean, but towards Jamaica Bay (Kearns and Kirkorian 1986a:15; Bellot 1917:102).

Jamaica Bay had long been known for its abundant fisheries. As early as 1704, the freeholders of the Town of Hempstead were expending their legal energies trying to keep non-residents from catching their fish. Clams, crabs and oysters were also to be had in abundance. As early as 1863, the Town trustees granted D.H. Waters "the privilege of planting oysters under the waters of Jamaica Bay . . ." for the modest fee of 6¢ (Ibid.:62). At the end of the nineteenth century the Bay was still famous for its "Rockaways," the small, sweet clams that are presently called "Little Necks," as well as for its flounder, bluefish, fluke, porgies and weakfish (Kearns and Kirkorian 1986a:15). Banking on this, Hammel encouraged the building of boarding houses and fishing facilities in the area. His hotel, the Hammel Hotel, at the end of Hammels Avenue (Beach 85th Street), was itself facing the Bay. It had 100 rooms, "all of its appointments are elegant and comfortable, and calculated to please the best class of family boarders." Music was provided semi-weekly, there was a large dancing platform, bowling, 100 bath houses for still water bathing, and "every facility for clam bakes, chowder, etc." (St. Clair:28). The Hotel stood near the foot of Hammels Pier, the last steamboat landing on the Beach. Under Hammel's influence, the Jamaica Bay shore was lined with docks used by private yacht clubs, and boats of all kinds could be hired. (See Figure 10.) An 1894 insurance map of Hammels shows yacht clubs and club houses along the Hammels shore of Barbadoes basin, east of Beach 80th Street, formerly Pleasant Avenue (Sanborn 1894:11). A review of the 1899 Trow's Business and Residential Directory for Brooklyn and Queens (Vol. II) reveals the very large number of private fishing clubs operating out of Hammels at the end of the century (e.g., Consolidated Fishing, Indian Yacht, Orion Yacht, Waeldin and Anchorage).

In order to preserve food and accomodate the needs of the increasing numbers of visitors, especially in the summer, the Hygia ice plant was erected east of the study area between 1891 and 1894 on both sides of Beach 79th Street. It was named for Hygeia, a Greek goddess of health, in keeping with Rockaway's image of fresh air and sylvan groves. At this time the U.S. Truck Body Site was at the eastern limit of the resort area -- the last of the string of hotels was the Atlantic Park Hotel just south of the railroad tracks (Rockaway Beach Boulevard) on

the west side of Beach 75th Street. The Atlantic Park was considered one of the "best on the Long Island Seaboard." It boasted an elevated position with a view of Ocean and Bay, a private grove, dancing, bowling, a shooting gallery, etc., everything "first class" (St. Clair:24; Sanborn 1894:13). Up through this period, the project area was rarely depicted, since it was still marsh, and therefore uninhabited and undesirable land (Wolverton 1891:13; Sanborn 1894:12).

At this time the Vernam Barbadoes area was not yet connected to the mainland. It consisted of two islands. The northernmost was Horse Island, 15.55 acres, and an unnamed island of 5.1 acres (Hyde 1901:24).^{*} Because of their late consolidation, it is not clear to which community the Vernam Barbadoes area belongs. Missing deeds have made it almost impossible to determine the earliest owners of the property (Deeds liber 4090:258; liber 3938:8105). While Hammel's land extended as far east as Beach 80th Street, Queens historian St. Clair places the just mentioned Atlantic Park Hotel (Beach 75th Street) in Hammels. Other sources extend the present Hammels neighborhood at least as far east as Beach 78th Street, if not all the way to 75th (Kearns and Kirkorian 1986a:15). On the other hand, a short time before the turn of the century, the area north of Arverne and east of Hammels, as far as Remington Avenue (Beach 69th Street), was called Atlantic Park (Sanborn 1894:Rockaway Beach Index), but apparently this name never became popular. Thus, historical information on Hammels falls geographically short of Vernam Barbadoes, until the mid-twentieth century.

The specific area in question is the neck of the land that was created to connect the two marshy islands to the mainland, located around the intersection of Beach 75th Street and Amstel Boulevard. To know who owned the land would probably indicate who did the filling, and give us a better understanding of this section's development.

^{*}The Storch Associates report refers to the southern island as "Hassack Island" (Storch Associates 1987:E-2). However, early maps of the study area do not support this (U.S. Coast and Geodetic Survey 1879; Beers 1886; Hyde 1901:24). The source of confusion is most likely the Matthew Drips map of 1852 which shows the islands as one large island, labelled "Horse Hassock." A hassock is a place where coarse grass grows. (See Figures 3, 11, 12, 13.)

One strong possibility is Remington Vernam, a savvy New York lawyer who used Rockaway Beach as a place to recover from the gruelling work of his thriving law practice. After spending several summers at Rockaway Beach, Vernam was inspired to build a rival resort to the east, directly southeast of the study area. Before 1882, this area of meadows and sand dunes also had only a few fishermen's shacks on it. In 1882, Vernam, his wife Florence and five other investors formed the "Ocean Front Improvement Company," with a capitalization of \$500,000. The stated goals of the Company were the "acquisition of land, laying out villa sites, erection of buildings, etc." Vernam began the transformation by first levelling the sand hills, some of which were up to twenty feet high, and then laying out streets, building sidewalks, sewers, and even a few houses. Unlike Hammels, which was a collection of boarding houses and fishing facilities, Vernam's Arverne (which name his wife derived from R. Vernam) was to be a luxurious, large-scale, planned resort. He spared no effort to make it attractive to the affluent. Although accessibility of the Rockaways was vastly improved by 1872 the railroad line, its aesthetic impact on Arverne was less than desirable. The train tracks were far too near the ocean front (200 feet south of the present Rockaway Beach Boulevard), and Vernam negotiated successfully with the Long Island Railroad to have the line moved closer to Jamaica Bay. The new 1.6 mile section was opened to traffic on May 26, 1886, while the old track was pulled up by the end of the following year. More building followed, with the erection of the huge Arverne Hotel, and many private cottages. To facilitate access to Arverne, Vernam straightened the meandering wagon road that became Rockaway Beach Boulevard, and induced the Long Island Railroad to open a station at Gaston Avenue (present Beach 60th Street), making Arverne only 45 minutes by train from Manhattan (Kearns and Kirkorian 1986a:12-14).

Averne experienced its "Golden Age" early in its history, between 1898 and 1908. During this period private building flourished with the addition of 40 large 2½- to 3-story frame "cottages," built in the then popular Queen Anne style. The exclusive resort community, with its spacious plots and handsome buildings, not to mention the ease and speed of access and the mild climate, attracted New York's affluent, successful and famous (Kearns and Kirkorian 1986a:13-14). Exciting events were staged in the growing neighborhoods. The first trans-atlantic flight, in a small aquatic plane, took off from Jamaica Bay.*

*This flight was re-enacted in 1986 through the cooperation of the Port Authority and the U.S. Navy. (Gertrude Lipschutz, 23rd District Assemblywoman from 1976 to 1987, personal communication, 4/25/88).

As the area south of the tracks filled up, Vernam recognized the potential of the even larger marshlands which ran to Jamaica Bay. There are strong indications that he already owned this land, purchased directly from members of the Cornell family:

Mr. Vernam also, bought of the Cornwall heirs lots 14, 15 and 16 of the western division and all of lot 1 of the marsh except that portion purchased by Lewis Hammill, where Hammill station of the Long Island railroad is now located. The marsh lot No. 1 extends from Beach Channel on the west along the northern boundary of all the lots of the western division from 3 to 16. (Brooklyn Daily Eagle, June 6, 1896).

Furthermore, Wolverton's 1891 Atlas of Queens labels the bayfront plots immediately west of Park Avenue (75th Street) as "Arverne Annex" (Wolverton 1891:13). (See Figure 14.) Unfortunately, absolute certainty in this matter would require the missing deeds to Vernam Barbadoes. The plans for "New Arverne" were impressive, considering the land was still marsh: "artistic flowerbeds, luxuriant shrubbery fronting Jamaica Bay -- heretofore neglected by homeseekers converted to beautiful home sites," and ample shade trees will make the new Arverne even more attractive than the old." Other projected improvements were public boathouses/garages at the foot of every main avenue along the Bay, and a concrete boardwalk along the entire bayfront (Long Island Magazine, September 1907). (See Figure 15.) The marsh land was filled in with sand pumped from the bottom of the Bay. However, Vernam died in 1907 and did not see the completion of this project. Some of this land was sold to the Sommerville Realty Company which continued the filling operations and bulkheaded their property. Modern streets and parkways were laid out, stores and over 200 cottages, and the section, on the eastern shore of what was later Vernam Basin, was named Sommerville Park (Bellot 1917:100).

Perhaps because of Vernam's death the two islands were not part of this development. We know that they were not filled and attached to the mainland until about 1913 (Storch Associates 1987:E-2), and the insurance atlases present no evidence to dispute this date. This first filling operation created a small peninsula whose neck was just wide enough for Amstel Boulevard to pass. Amstel was laid out, at least on paper, with three other streets, Scheer Street, St. Cloud Road, and Crugers Road, forming a rectangle at the corner of Horse Island. (See Figure 16.) These streets, never more than dirt paths, were then recorded as only five feet above the high tide level. The 1919

Ullitz Atlas of Rockaway outlines the further development of the peninsula to its present shape, and shows the first buildings on Vernam Barbadoes. The larger of the two dwellings was on St. Cloud Road, at the intersection with Amstel Boulevard, facing the Bay. A 2½-story frame house with a wrap-around porch, shingle roof and no basement, it was quite a substantial building, about 79 feet long (without the porch), and therefore comparable to the "cottages" of Arverne (Ullitz 1919:34). A much smaller frame house, with coops (for chickens?) and no cellar, was located between Crugers Road and Vernam Basin. The municipal water line ran the length of Amstel Boulevard, and while there was no sewer line, waste was certainly discharged into the Bay, where sewage from the surrounding communities was disposed of. The base of the little peninsula, also along Vernam Basin, but outside the project area, was occupied by a boat works and related storage. (See Figures 17, 18.) However, by 1926 the large house was listed as vacant, and by 1933 both houses were gone (Sanborn 1912 corr. to 1926:102; Sanborn 1933:12).

No natural catastrophe occurred to explain this rather abrupt departure. However, summer resort housing in general, was leaving the vicinity of the study area during this period. Even though the land between Barbadoes Basin and the Long Island Railroad tracks boasted a large number of clubhouses, including one and a pier with several houses on the mainland section of the study area (gone by 1926), the vicinity of the project area had exhibited a commercial character as early as the 1890's, with the establishment of the Hygia Ice Company on Kane Avenue (Beach 79th Street). (See Figure 19.) This development was encouraged by the proximity of the Hammels passenger and freight stations. Directly south of the tracks stood the Charles Crabbe Moulding Mill on Pleasant (80th), and a lumberyard between Kane (79th) and Potter Avenues (77th). A lumberyard appeared on the mainland section of the project area in 1912, and by 1919 had engulfed the property of the neighboring clubhouses (Lots 175 and 177; See Figure 20.) At about the same time a second lumberyard appeared nearby on Potter Avenue (Beach 77th). The ice factory, now John B. Murray's Ice Factory, expanded substantially in this period, joined by a coalyard and machine shop, while one of the lumberyards grew to take over the opposite side of Beach 77th Street. Many of the clubhouses, including the Angler's Club Hotel, east of Pleasant Avenue (Beach 80th) were replaced before 1926 with a boat shop, a garage, a gas station/auto supply business and a Department of Sanitation incinerator (Sanborn 1912 corr. to 1926:67, 70). (See Figure 21.)

Built almost adjacent to the project area along Barbadoes Basin, one lot east of Beach 80th Street, the incinerator was obviously damaging to any residential potential left in the vicinity. Although the Sanitation Department's records are incomplete, the incinerator was supposedly operating between 1925 and 1937 (Storch Associates 1987:E-2), while an insurance map shows the facility still present in 1951 (Sanborn 1933 corr. to 1951:12). With 1925 as the accepted starting date of operation, it is interesting to note that the larger house on Vernam Barbadoes, was vacant the following year. It is evident that these developments in the general area made the U.S. Truck Body Site a far less desirable residential/vacation area by the late 1920s.

The first shock to the booming Rockaway resort area as a whole was a result of its incorporation into Greater New York in 1898. This had a greater effect on the luxury resorts such as Arverne, which could not continue to maintain certain standards, such as the exclusion of commercial enterprises, and thus lost some of their old cachet. Hammels, while it had a few substantial houses, was less affected by the municipal reorganization. It had always had a commercial strip (Bellot 1917:108), set amid middle class bungalows and hotels. However, the increased popularity of the resorts increased the demand for moderately-priced housing, encouraging developers to build more modest houses throughout Rockaway Beach. Spurred by the electrification of the Far Rockaway branch of the Long Island Railroad in 1905, property values continued to rise (Kearns and Kirkorian 1986a:16-18).

The influx of new residents also brought industrial/commercial development to the entire Bay area. In 1910, the New York City Department of Docks lent its support to a grandiose scheme to "improve" the Bay as a harbor for ocean going vessels. (See Figure 22.) Centering it on the Brooklyn shore, and citing the combination of railroad, shipping and warehouse facilities that would spring up there, planners envisioned Jamaica Bay as the greatest harbor in the world (Brooklyn Daily Eagle, March 1910). Although this project development was never completed, channels were deepened, increasing the water volume of the Bay, and many small islands were either consolidated or removed (Black 1980, quoted in Grambo 1984:83).

These developments were accompanied by the increased pollution of Jamaica Bay, and the consequent erosion of its fishing industry. The Bay had always been a convenient outlet for sewage, but by 1917 50,000,000 gallons of sewage were being pumped into it each day from locations on all of its shores. Industrial pollution also fouled the Bay, particularly waste

from the group of fertilizer plants on Barren Island (approximately 3 miles west of the project area, part of the northern shore of Rockaway Inlet), the only such concentration in the City. Although shellfish did not disappear, they were increasingly contaminated. Black reports that 21 cases of typhoid were caused by oysters from Inwood in 1904, and by 1911 27 cases of typhoid and almost 100 of gastroenteritis were caused by Carnarsie shellfish. Eventually, in 1921, the shellfish beds were closed by health officials (Black 1980:69, 87).

In spite of this, Hammels continued to flourish throughout the 1920s and 30s. Rockaway Beach became ever more popular and accessible due to the widespread availability of the automobile, with which city dwellers had direct access to the Peninsula via the Marine Park and Cross Bay Bridges built in 1937 and 1939, respectively. However, the effect of the car's popularity had another side, for it also helped speed the decline of Rockaway Beach as a resort area. The automobile brought more distant and exotic places within the reach of many former patrons, while leaving vacation spots like Rockaway Beach to the less affluent. This change was quickly evident in the housing stock of the Hammels neighborhood which by 1939 was described as a few imposing private dwellings:

set in the midst of cheaply constructed frame houses, inhabited by Jews, Italians, Irish, and Negroes who constitute a majority of the residents. (New York City Guide 1939:592).

According to Borough Hall House Number Division's Official Final Map, Section 215, in 1949 Vernam Barbadoes, through a Port of New York Authority deed, became host to a radio range station. During the post-war era, the mass exodus to the suburbs caused a further decline in the number of summer visitors, as did improved public recreation facilities and the rising standards of many competing resorts. The clientele which Rockaway Beach had once served was able to drive and even fly to far more exciting and luxurious places, or stay home and enjoy equal or better facilities (Kearns & Kirkorian 1986a:19).

In the face of this loss of income, many landlords allowed their properties to deteriorate. For example, the boardwalks, whose wooden piers supporting summer houses and yacht clubs had juttred out into the tidal marshes since the turn of the century, were removed or allowed to fall apart. In 1912 there were boardwalks at the Bay ends of Beach 80th, 82nd, 84th, 85th, 86th, 87th, 90th and 92nd Streets, but only two have survived to the present day, at Beach 84th (Bayside) and 85th (Hammels)

(Hyde 1912:Index, 66, 67, 70). (See Figure 23 and Photograph 10.)

Other property owners sold or rented their summer bungalows and hotels to unscrupulous slum lords who installed minimal heating facilities for year round occupation. When the City began slum clearance in the Redern section of Far Rockaway, many of the displaced people moved to Hammels, where slum lords welcomed them, cooperating with welfare officials to house homeless from all over the City at Rockaway Beach (Kearns & Kirkorian 1986:19-20).

Hammels quickly became one of the worst slums in New York. It was infamous for its filthy and unsafe boardinghouses, particularly the one in the former Coast Guard Station south of the railroad triangle on Shorefront Parkway (Long Island Daily Press July 14, 1954). One 10 block, 2,000 family section (in 1939 the permanent, or winter population of all of Hammels was only 7,500), nicknamed "The Rookerie," was estimated to contain a third of all tuberculosis cases in the City (Long Island Daily Press March 25, 1954).

In 1958 Hammels was slated for urban renewal, expected to transform the "slum-blighted resort area into a prosperous residential suburb," by building a highrise development for 3,600 families on 45 acres between Beach 74th and 90th Streets, Rockaway Beach Boulevard to Ocean Drive. The expected completion date was 1961 at a projected cost of \$61 million (New York Times October 26, 1958). With many displaced by the construction, those who could afford it left Rockaway Beach, while those who could not moved to Arverne until it too was "renewed."

Since by this time the U.S. Truck Body Site was no longer being used as a residential area, the changes in Hammels had only an indirect effect on the businesses that did not cater to the resort crowd. By 1951 both sections, the peninsula parcel and the mainland parcel, were vacant except for the two "coops" still present from the 1926 map (Sanborn 1933 corr. to 1951:12, 29). The study area section of the Vernam Barbadoes Peninsula (on present Block 16075) was depicted as unchanged in 1972, while the eastern part of the U.S. Truck Body Site on block 16100 had become part of the auto wrecking yard which had replaced the businesses and garbage incinerator on the east side of Beach 80th Street. A large storage shed is shown to be on the property (Sanborn 1933 corr. to 1972:12,29).

Presently, the mainland section of the project area on Block 16100 is being used as a dump for various building

materials (e.g. I-beams, concrete, bricks, etc.) and the storage of several dumpsters, probably from Maggio Brothers Carting, Inc., and Bay Auto, the occupants of the properties on the opposite side of Beach 80th Street. The ground surface is obscured by fill, in some places mounds at least five feet high. On the eastern part of the property is a tidal pool surrounded on all sides by fill. It has no apparent outlet to the Bay. Beyond it, at the edge of Barbadoes Basin is a burned-out structure on wooden piles, which could be the remains of the clubhouse present in 1912, but not depicted subsequently. Another possibility is that it was a loading platform for the lumberyard or auto wrecking company that has recently occupied the site. The flora of this disturbed area consists of low-growing herbaceous weeds, and what appears to be saltwater cord grass in the tidal area.

Vernam Barbadoes (on Block 16075) has also been used for dumping and storage. The streets drawn in the atlases are little more than paths strewn with trap rock, and do not extend the length of the peninsula. Heavy machinery, including old pile driving equipment is parked or abandoned on the property, and wooden piles are also stockpiled there. The landward side of the peninsula is being used for lumber storage, obviously by the Ferrara Lumber Company. On the Barbadoes side of the neck, docked in the Basin, is a loading platform with a crane, which is not depicted in any of the atlases. Aside from this, there are no standing structures on the U.S. Truck Body Site. What is left of the timber bulkhead is decrepit and half exposed.

The Storch Associates report contains an excellent vegetation study of this area, of which only a summary is necessary here (Storch Associates 1987:D 3-8). Five different ecological zones are discussed. On the Basin shores is sandy beach and an intertidal zone containing saltwater cord grass, common reeds, and other plants common in such areas. The rest of the peninsula is designated as "uplands," the neck and the south central sections being the most disturbed and containing herbaceous weeds and beach heather. This section hosts the stored lumber and wooden piles. The northern side of the site has higher and denser growth of winged sumac, bayberry and American bittersweet. Finally, the western corner of Vernam Barbadoes is the host to the most mature growth, indicating little recent disturbance. Bayberry predominates.

VII. SUMMARY AND CONCLUSIONS

As discussed in the preceding report, it is not likely that the physical and environmental resources of the northern shore of the Rockaway Peninsula were sufficient to support a prehistoric camp or village. Neither does physical evidence exist that the marshy area of the U.S. Truck Body Site nor its vicinity served as a processing site for Bay shellfish. It must be remembered that the sandy Peninsula itself offered far less of a protected, fertile environment than the northern and eastern shores of Jamaica Bay where numerous archaeological sites have been recorded. Although it is probable that Indians did traverse the area, the possibility of recovering stray artifacts from such a transitory visit does not warrant the time and expense of additional archaeological exploration into the area's prehistory. (See Appendix.)

Historical archaeology of homelots is often undertaken in urban settings. The water and sewer facilities available up through the nineteenth century, namely privies, cisterns and wells, become valuable time capsules for the archaeologist, for once they exhausted their utility to the household, they were inevitably used as convenient depositories for household refuse, ranging from broken tools, ceramics and glass, to animal bones. When such an archaeological resource is uncovered, its analysis can provide insights into the everyday life of the City's past, particularly when used in conjunction with documentary evidence on the household's owners and inhabitants. With the advent of water supply lines and sewage systems, the home lot's backyard no longer functioned as a utilitarian extension of the house, and the accumulation of archaeological data in the discrete, recognizable units of cisterns, privies and wells ceased (Kearns and Kirkorian 1986a:21).

By the time that Hammels and its sister communities were developed, municipal water and sewer lines were operative in a large part of New York City. A public water supply and drain system was considered of utmost importance to the developers and early residents of the Rockaway Peninsula. However, for the dwellings that stood on the U.S. Truck Body Site, there is no conclusive evidence that all were fully equipped. The large house that stood on Vernam Barbadoes, occupied from c.1919 through the early thirties, had a water main in 1919, but no sewer line, and it is possible the smaller house had neither. It is entirely plausible that even such a substantial twentieth century house, in an area with a very high frequency of sewers should not be so equipped, since the proximity of the Bay offered a more convenient alternative to the seasonal inhabitants. Because the sewers discharged directly into the

Bay, the clubhouse near Beach 80th (occupied c.1912, with water main) and those along the boardwalk just east of the railroad trestle (c.1912, houses not depicted 1919) were conveniently situated by the sewer lines. They were either connected or discharged their sewer directly into the Bay (Ullitz 1919:34, 35).

Even conceding the existence of cisterns, privies or wells in the project area, the archaeological potential of these deposits - early twentieth century secondary and seasonal housing - is not considered sufficient to carry out additional archaeological investigation.

Therefore, this cultural resource survey concludes that the U.S. Truck Body Site is archaeologically non-sensitive. The development of the project area will have no impact on the archaeological resource base of the Rockaway Peninsula.

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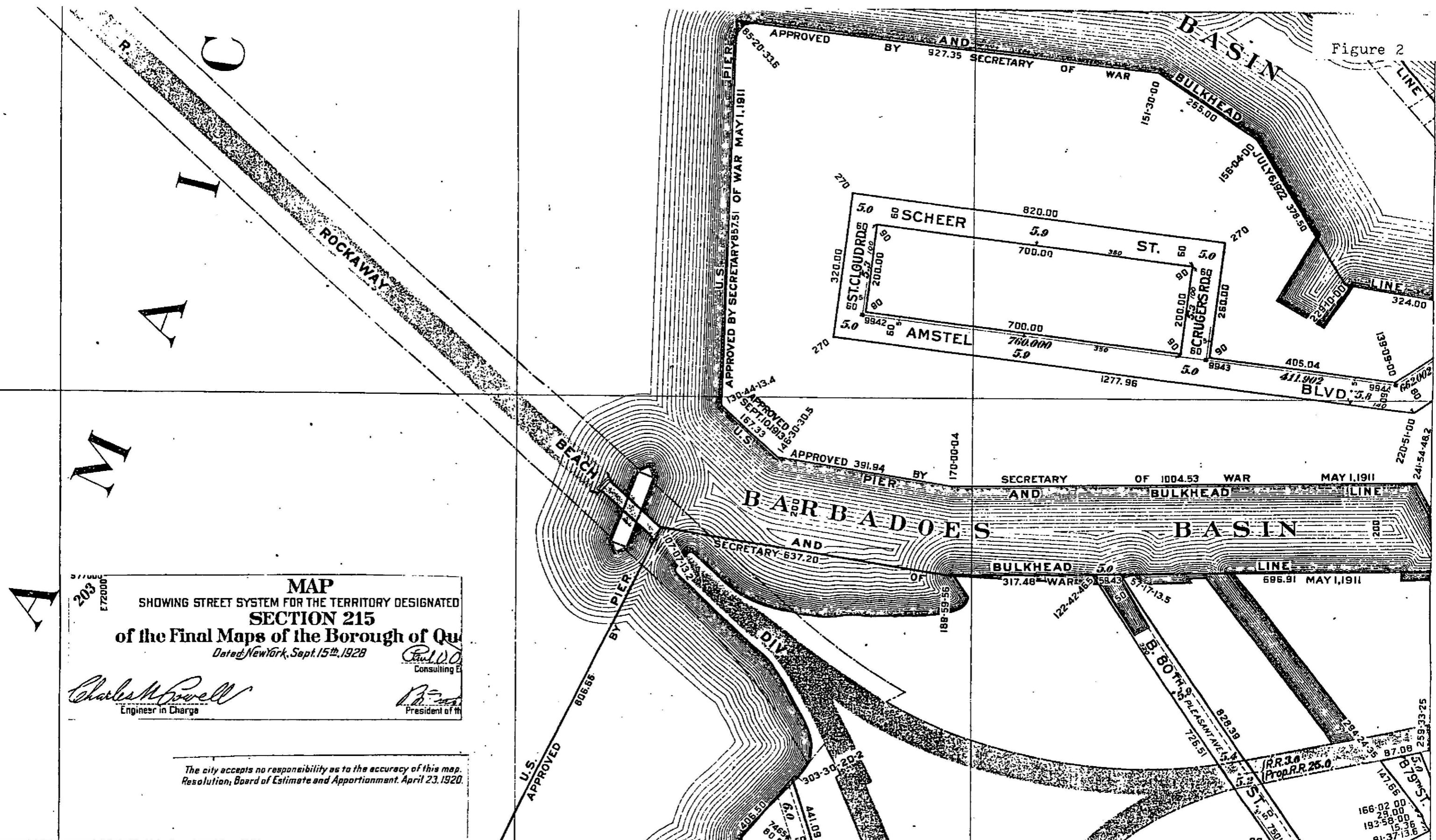
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Figure 2



MAP
SHOWING STREET SYSTEM FOR THE TERRITORY DESIGNATED
SECTION 215
of the Final Maps of the Borough of Queens
Dated New York, Sept. 15th, 1928
Charles M. Powell
Engineer in Charge
Paul V. O.
Consulting Engineer
President of the

The city accepts no responsibility as to the accuracy of this map.
Resolution, Board of Estimate and Apportionment, April 23, 1920

Note

The position of the street lines is indicated with reference to a system of monuments taken collectively. Grades refer to a datum 2725' above U.S. Coast & Geodetic Survey datum and apply to intersections of center lines of streets unless otherwise indicated and are shown thus: 6.0. Portions of existing streets shown thus: --- included within the blocks hereby established are ultimately to be discontinued. The area colored yellow is not a part of this map and is excluded from adoption.

216
OF NEW YORK BOROUGH OF QUEENS
OFFICE OF THE PRESIDENT
Topographical Bureau

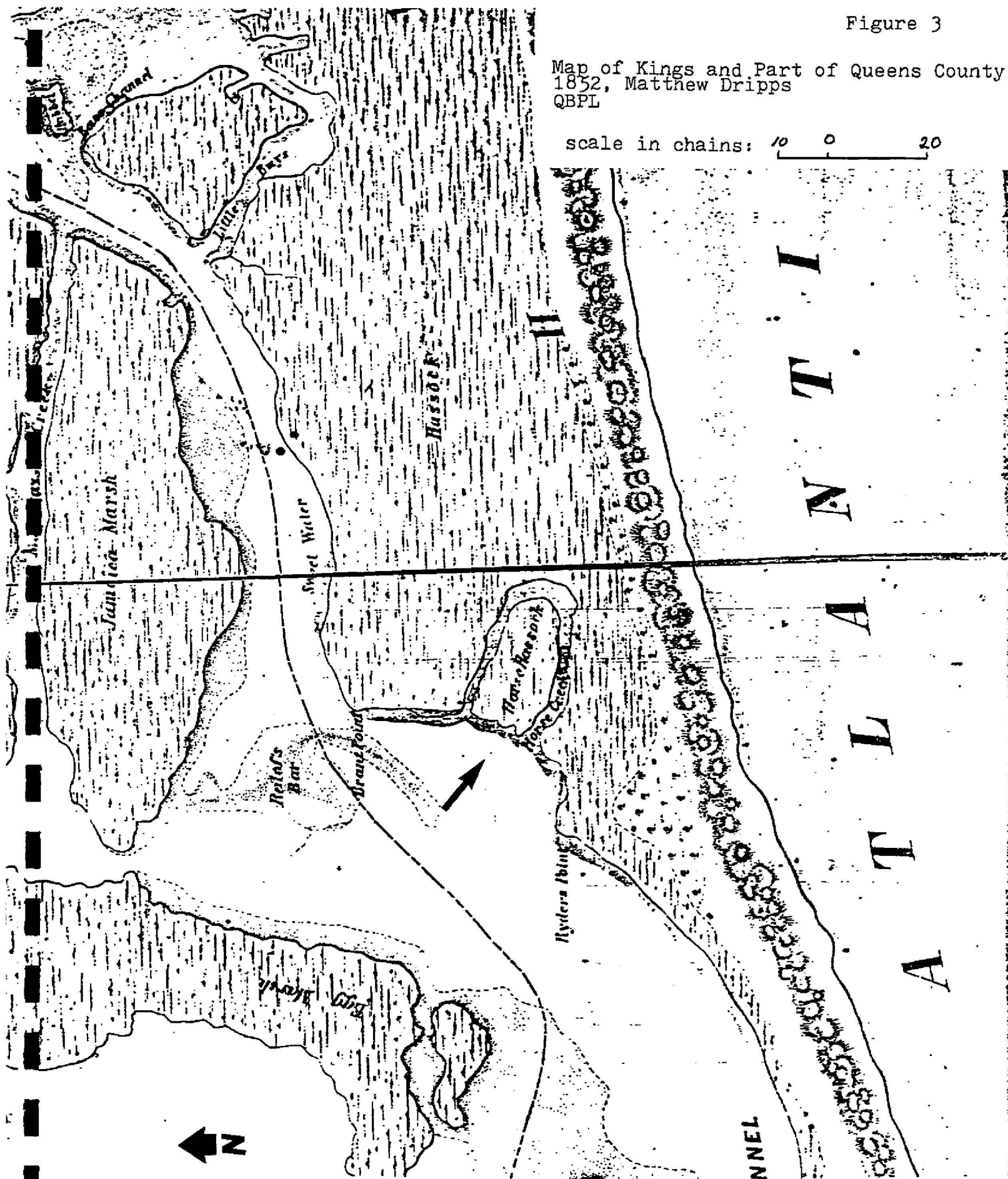


I, Peter J. McGowan, Secretary of the Board of Estimate and Apportionment of the City of New York, do hereby certify that this map is one of three similar maps made at the direction of and adopted by the said Board of Estimate and Apportionment on the 10th day of January 1930 and approved by the Mayor on the 23rd day of January 1930 entitled: "Map showing Street system for the territory designated as Section 215 of the Final Maps of the Borough of Queens" which map includes all of the area shown, with the exception of the portion colored yellow, and shall supersede all maps heretofore filed attaching the area embraced by said map, insofar as it makes any changes therein. Prepared for the Board of Estimate and Apportionment under authority of the Charter of the City of New York.
Dated: New York,
Secretary Board of Estimate & Apportionment

Figure 3

Map of Kings and Part of Queens County
1852, Matthew Dripps
QBPL

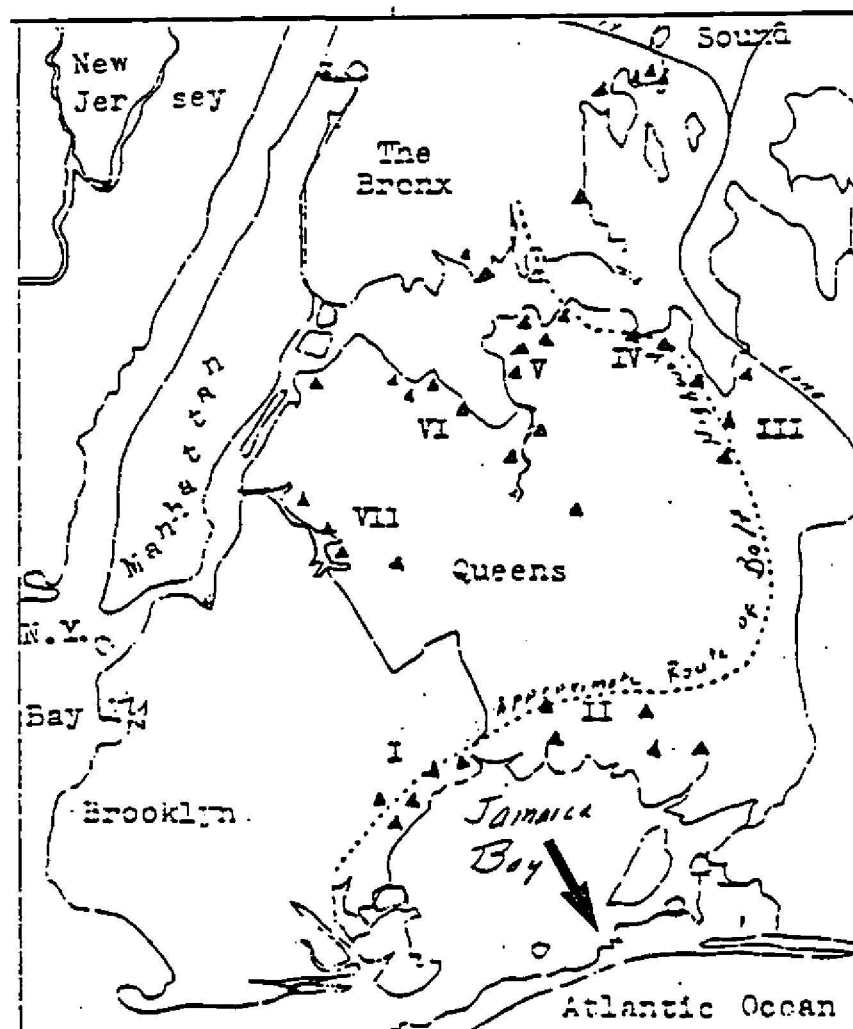
scale in chains: 10 0 20



Upper Delawaran Trails and Settlements in New York City:
Queens



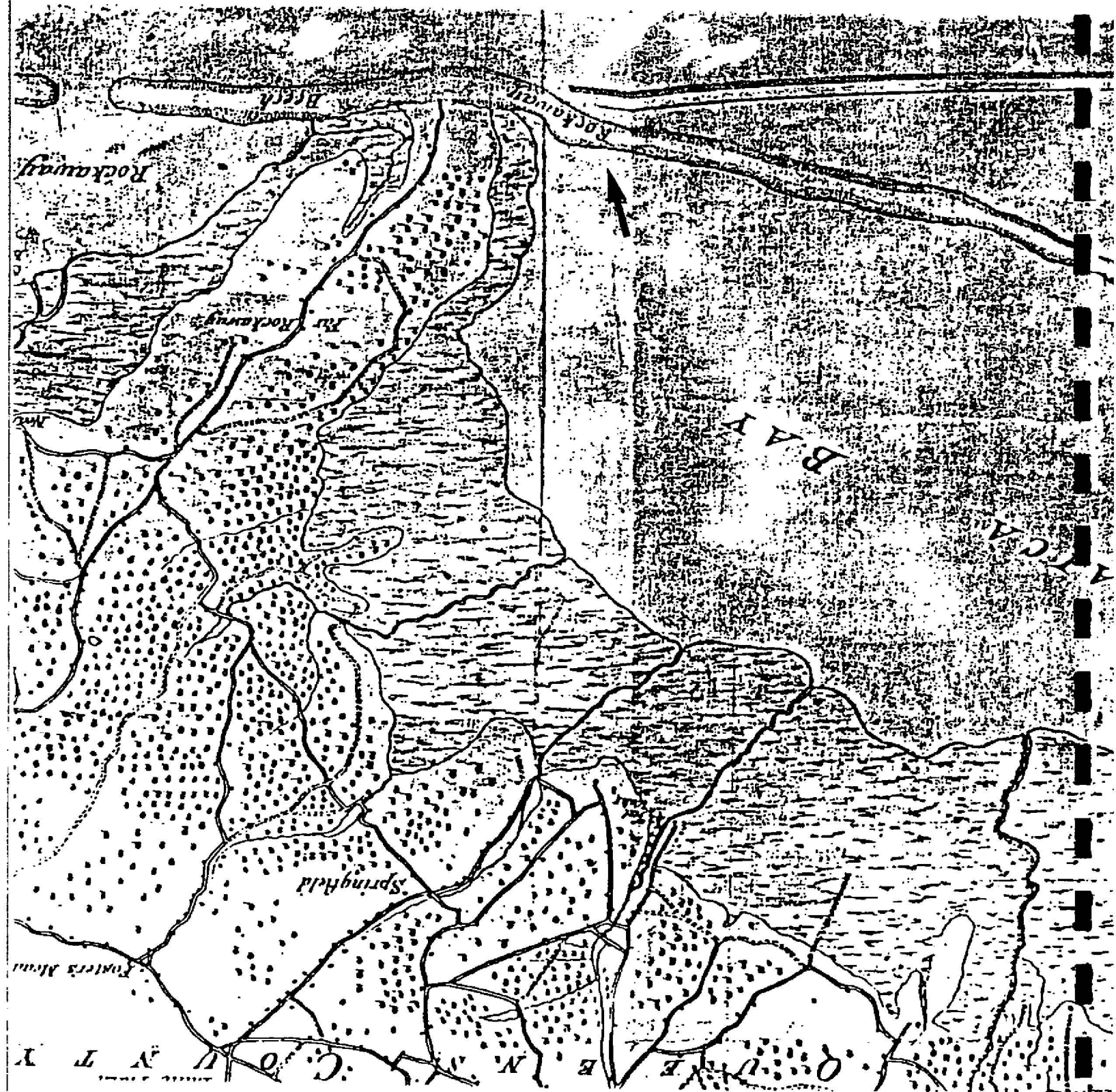
Photocopied from
Solecki, 1941



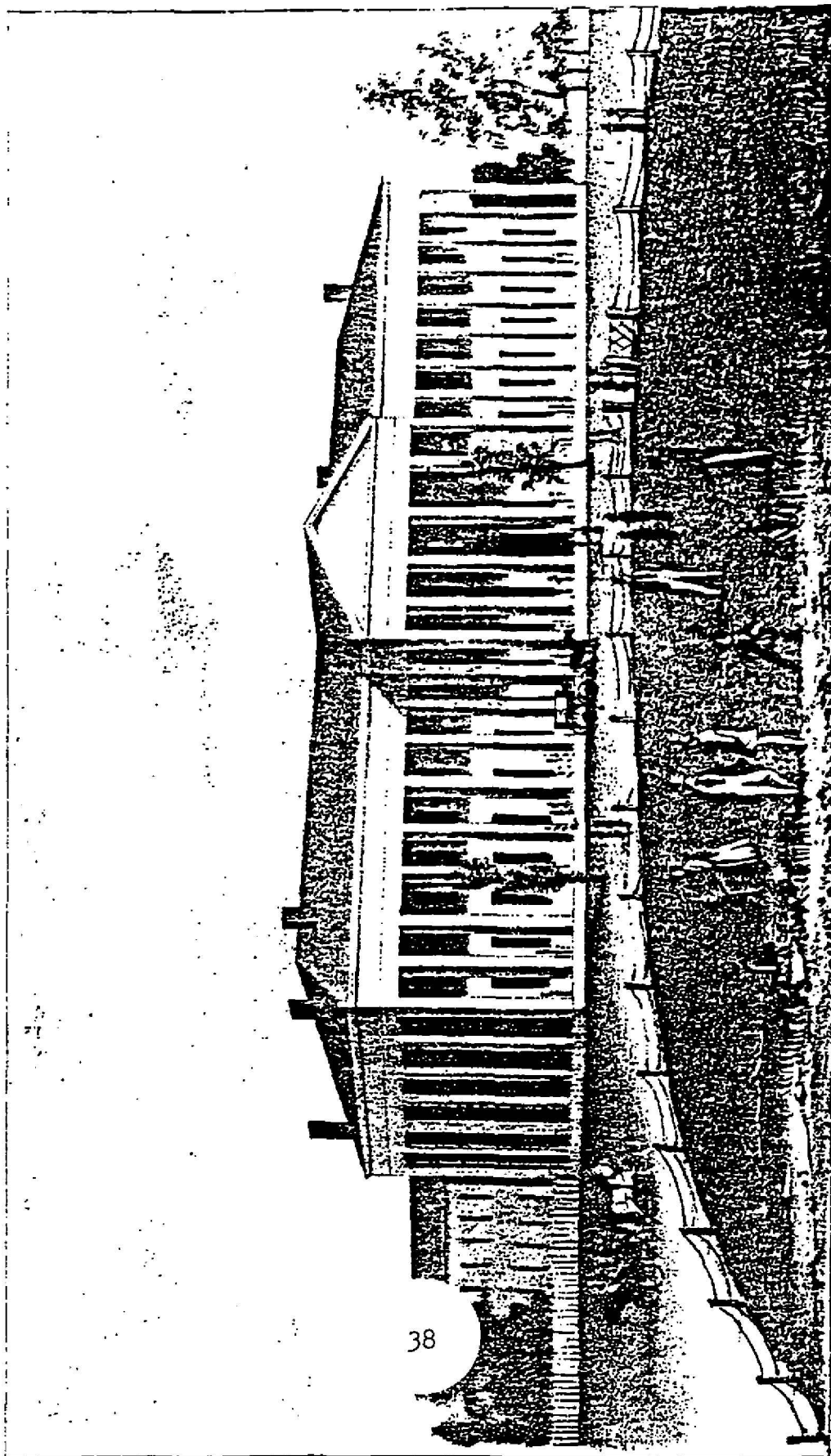
INDIAN VILLAGE SITES: Triangles on diagram indicate sites explored by Committee on American Anthropology of the Flushing Historical Society. Important locations described in accompanying article are numbered.

N
↓

37



Photocopy of Sir Henry Clinton Map, 1781

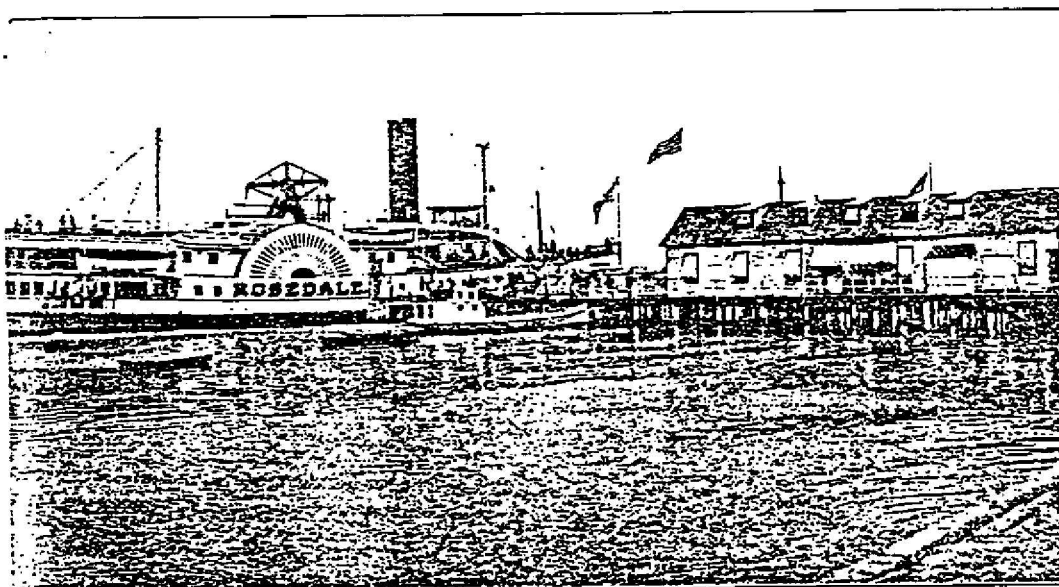


W. A. R. E. N. T. E. R. A. N. Y. H. I. C. O. N.

Rockaway, N. Y.

Copied from Postcard File, Long Island Division of the Queens
Borough Public Library, Jamaica

Steamer Landing at Seaside

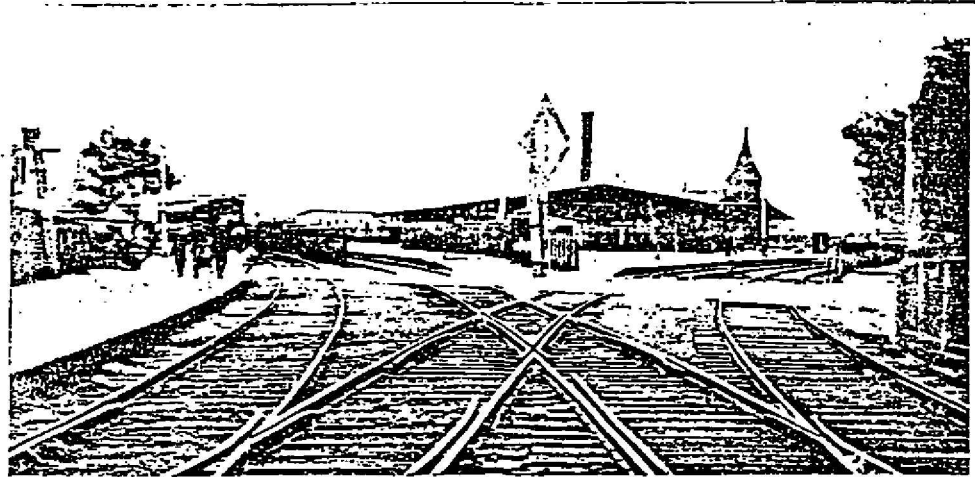


STEAMER LANDING AT SEASIDE, ROCKAWAY BEACH.

PA. BY J. STERN, BROOKLYN, N.Y.

Copied from Postcard File, Long Island Division of the Queens
Borough Public Library, Jamaica

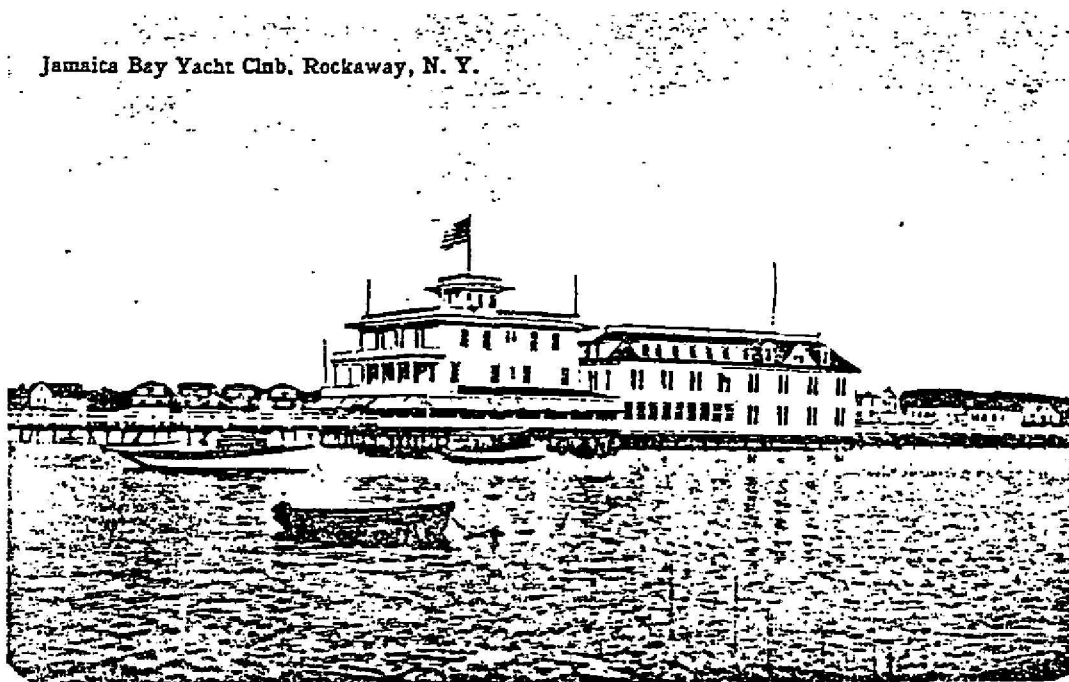
Hammels Station (postcard cancelled 1913)

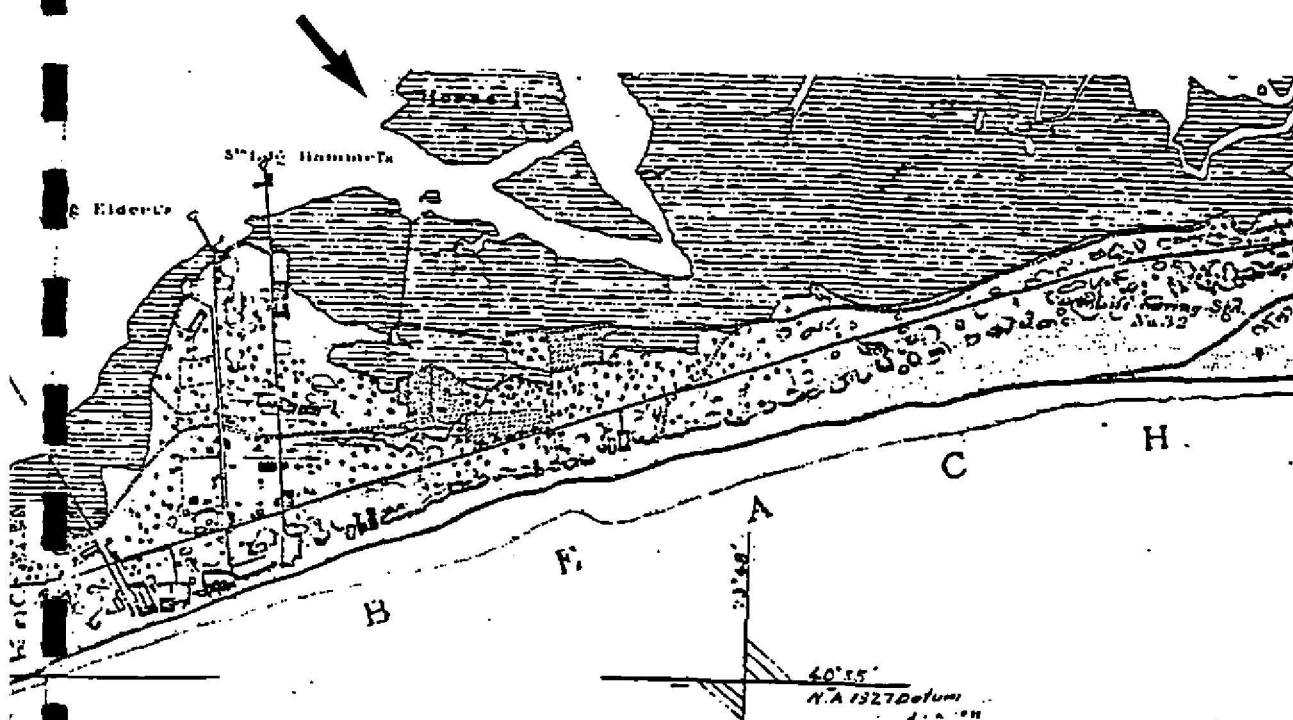


Hammels Station, Rockaway Beach, N. Y.

Copied from Postcard File, Long Island Division of the Queens
Borough Public Library, Jamaica

Jamaica Bay Yacht Club
(located on Boardwalk, East of Beach 90th Street)





U.S. COAST AND GEODETIC SURVEY

Carlisle P. Patterson, Supt.

1879

ROCKAWAY BEACH

AND

MIDDLE PART OF JAMAICA BAY

LONG ISLAND

NEW YORK

Surveyed by J. W. Donn, Assist.

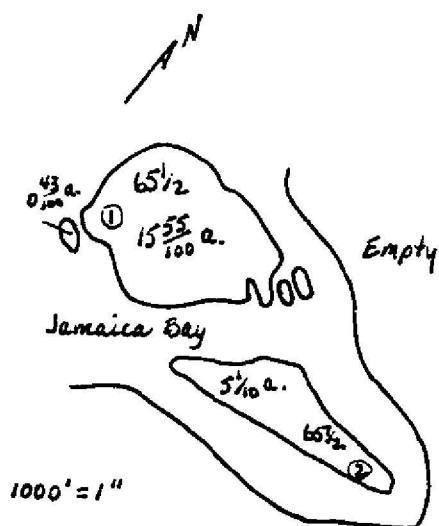
Beers Atlas
1886, Queens Borough Public Library
scale: 200 rods = 1 inch



Tracings of the two islands that formed
the Vernam Barbadoes peninsula:

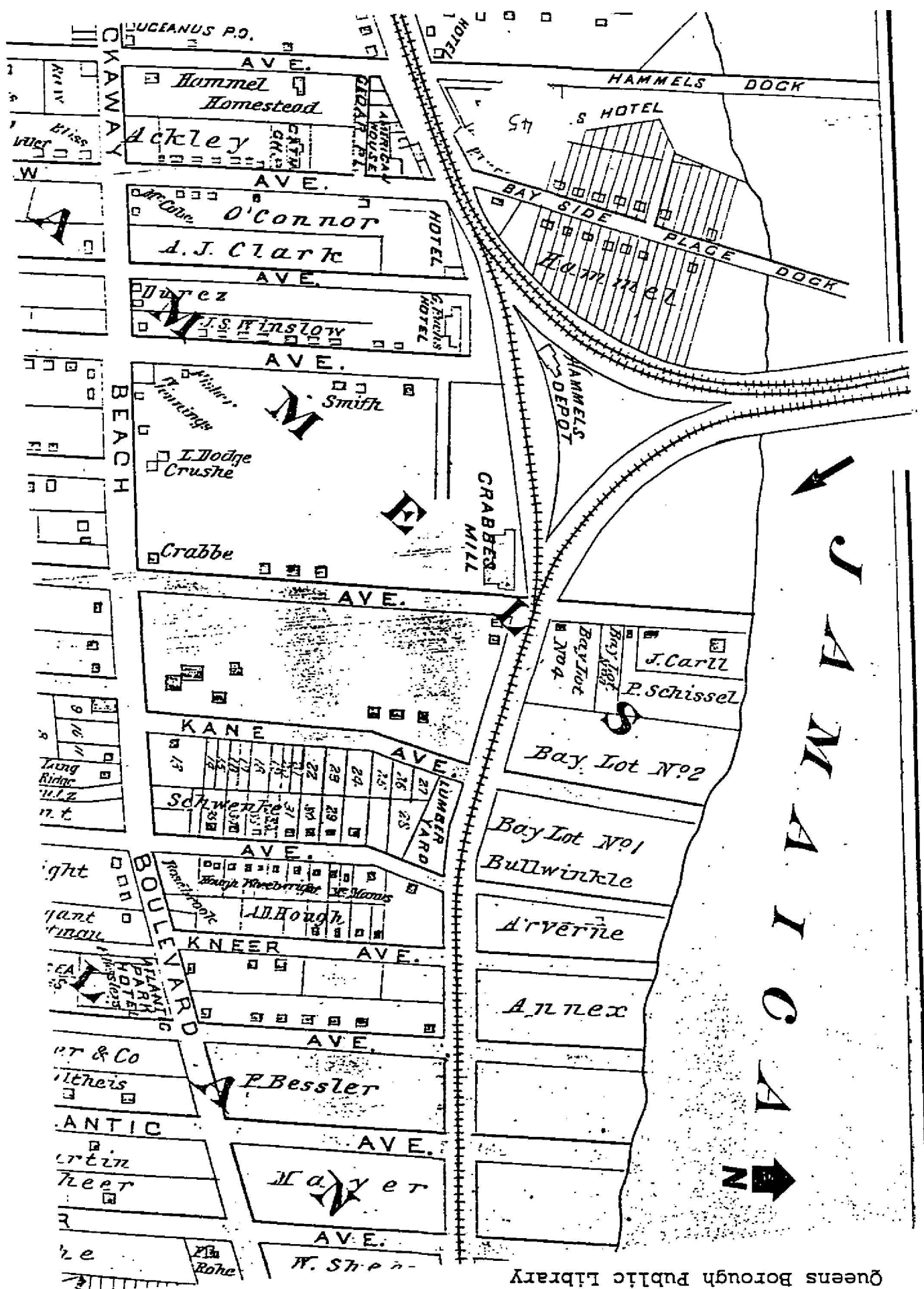


E. Belcher Hyde 1907
vol. 1 Index
(no scale)



E. Belcher Hyde 1901
vol. 1
plate 24, inset

"Atlas of Queens County," 1891, Wolverton
Volume 1, plate 13
Queens Borough Public Library



SUNDAY, APRIL 18, 1909.

B

Long Island Real Estate for Sale. | Long Island Real Estate for Sale. | Long Island Real Estate for Sale.

WE OF ARVERNE

Have Taken a Sane View of the Long Island Situation.

LONG before the East River bridges and tunnels were thought of, Arverne was established. Long before rapid transit was projected and its effect anticipated in land values, Arverne was a thriving community. Its situation, between the Ocean and Jamaica Bay, made it the popular seaside suburb. Fashionable hotels and summer cottages sprang up. More elaborate residences followed, and the community developed a business section. Good stores, markets, etc., found patronage. Then came the annexation of Queens County by the City of New York. Police, fire protection and free mail delivery were extended and handsome schools erected by the city.

Arverne reached its capacity for population, and held it in the winter as well as in the summer. It stopped growing because of physical limitations, but its popularity never waned.

The Long Island Railroad then electrified its Rockaway Divisions from Flatbush av., Brooklyn. The Interborough Company extended the New York subway to Flatbush av. It became possible to reach Arverne from this point in TWENTY-TWO MINUTES BY EXPRESS TRAINS, and people came flocking, only to find that Arverne had no room for them.

The Rockaway section grew. Property was in demand. New communities were established and old ones revived. Values increased in proportion to the growth and often exceeded it. Arverne began to feel the necessity for expansion.

ARVERNE'S NEW ADDITION.

An adjoining unimproved tract was then annexed; owners located; titles cleared, and the work of improvement started.

Energy and brains were not spared. Dwellings, from the pretentious villa to the modest little bungalow, were erected. The near-by shores of Jamaica Bay were subordinated to the interests of the community.

Everything that the skilled artisan and landscape gardener could suggest has been carried out in Arverne's new addition.

Broad streets and boulevards, with a 10-foot parking in center, planted with shrubbery and flowers, form part of the ornamental scheme.

Pleasure walks, curbing, sewers, water, gas and electric lights have been installed.

It is doubtful whether there exists a more complete or artistic development. The artificiality employed is nothing in comparison to the beauty of the natural surroundings.

The Long Island Railroad, forecasting what would happen, has taken title to a portion of the new ground for the site of a larger station to replace the old one, just a few feet distant.

Now the public are to have their long sought opportunity. The new tract, a veritable garden by the sea, is open for inspection. It will be sold to the right kind of people at the right kind of price, and—

Values Are Obvious.

Purchasers of this property SEE what they are paying for. Prices are based on actual values. The \$100,000,000 being expended for East River bridges and tunnels are going to increase these values, OF COURSE. But they won't have an effect until they are REALLY in operation. And we have too much to offer right now to allow the future to make any difference. PROPERTIES THAT MAKE THEIR CLAIMS ON TO-MORROW SHOW THAT THEY ARE WORTH TO-DAY.

It's common sense, too, to argue that such places are getting FUTURE PRICES. We are not asking these, and that's why we don't dwell upon what will happen a year from now.

The Improvement of Jamaica Bay.

This is something that affects us, as our property is so adjacent to this fine body of water. Partly municipal and partly private, the nature of the enterprise is to make of this a harbor that will have no equal on the Atlantic Coast.

Millions are to be expended, and the benefits of this to our vicinity are too great to be estimated.

Moreover, this project has taken definite shape and will be pushed forward to completion as rapidly as possible.

Get This Free Book.

You who contemplate buying realty, either for home-site or investment, will profit by reading the book "Arverne." This volume is a verified gold mine of information, containing impartial advice of great value to the city dweller.

Artistically bound, handsomely illustrated and on actual aerial photograph, this book is yours upon request. But it will interest you ONLY if Long Island interests you, and in order to secure a copy you must WRITE FOR IT TO-DAY.

SOMERVILLE & SOMERVILLE, Selling Agents,

"Arverne's New Addition," - - - - - Arverne, L. I., N. Y.

Brooklyn Office, 192 Montague Street.

INDEX MAP No.2 TO ATLAS OF FAR ROCKAWAY AND ROCKAWAY BEACH

5th WARD

PUBLISHED BY

HUGO ULLITZ

5 BEEKMAN STREET

NEW YORK CITY

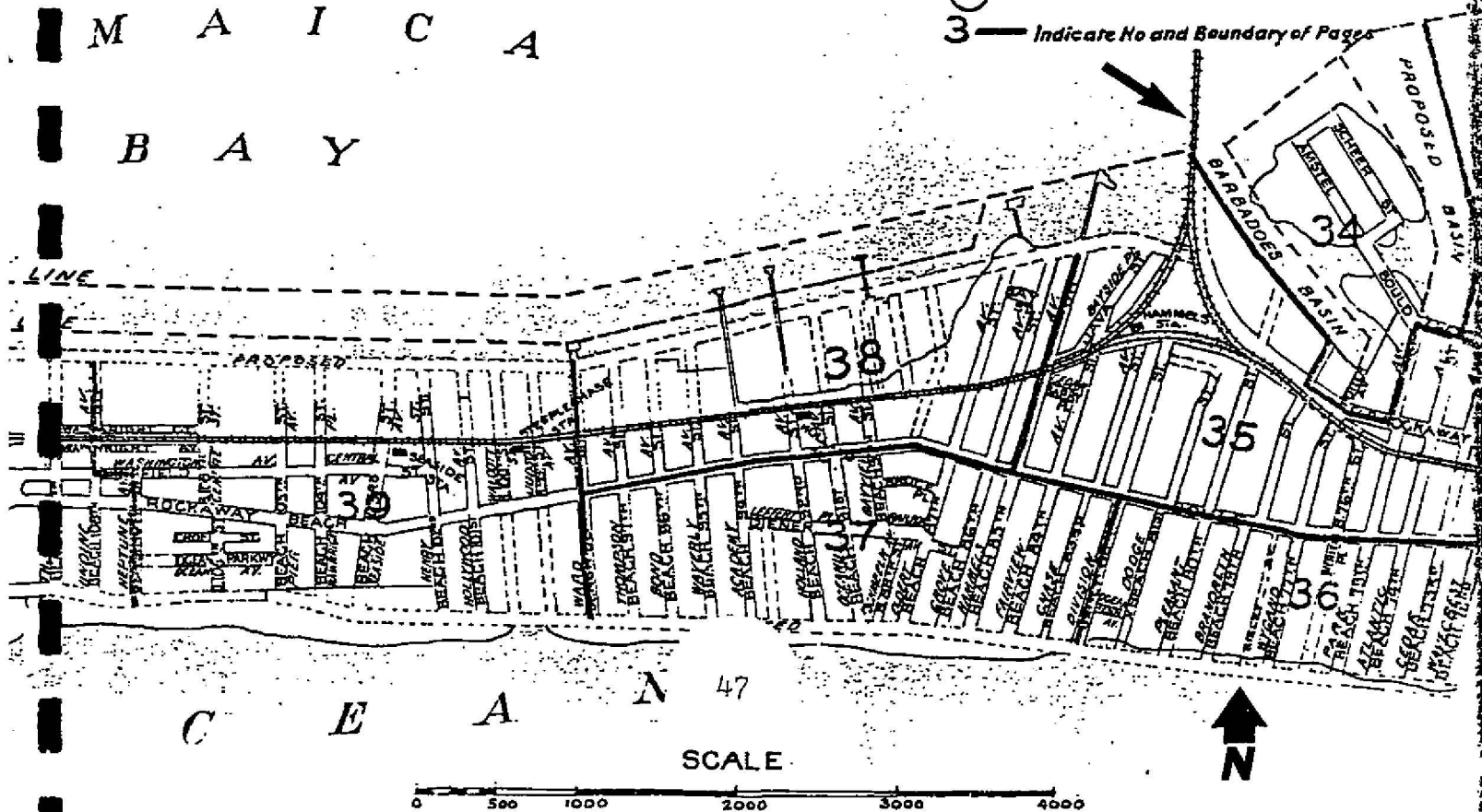
1919

M A I C A

B A Y

EXPLANATORY

- 33
- Block Numbers of Maps on file at Assessor's
Lot Numbers and Dimensions.
*This signifies that the Assessment Map does not give the
House Numbers.*
- Width of Streets.
- Elevation of Streets above High Tide.
- M. J. Bailey, Map 400 (Owner's Name of Farm)
- Brick Houses.
- Stucco and Concrete Houses.
- Frame Houses.
- Houses Half Brick and Half Frame.
- Two Stories and Basement.
- Buildings with Store on First Floor.
- Saloon or Hotel with Bar.
- Stables.
- Old Building or Shed.
- Green Houses.
- Garage.
- Asphalt or Brick Pavement.
- Macadamized Pavement.
- Granite Pavement.
- Streets Opened.
- Streets Unopened.
- Sewers and Dimensions.
- Water Mains and Dimensions.
- Railroads.
- Trolley Lines.
- Hydrants.
- Adjoining Page Number.
- 3 — Indicate No and Boundary of Pages



PIERHEAD & BULKHEAD LINE
808.70

Atlas of Far Rockaway and
Rockaway Beach
H. Ullitz, New York City, 1919
Queens Borough Public Library

PROPOSED
BASIN

SCHEER

ST.

65½

AMSTEL

BOLLE

BARBADOES

BASIN

Figure 17

Figure 18
1924 Aerial Photograph
QBPL



49

30 D

COPYRIGHT 1924
ARTHUR S. TUTTLE CHIEF ENGINEER

600 scale 0 600

Minature Atlas of Far Rockaway and Rockaway Beach
Hyde, 1912
Queens Borough Public Library

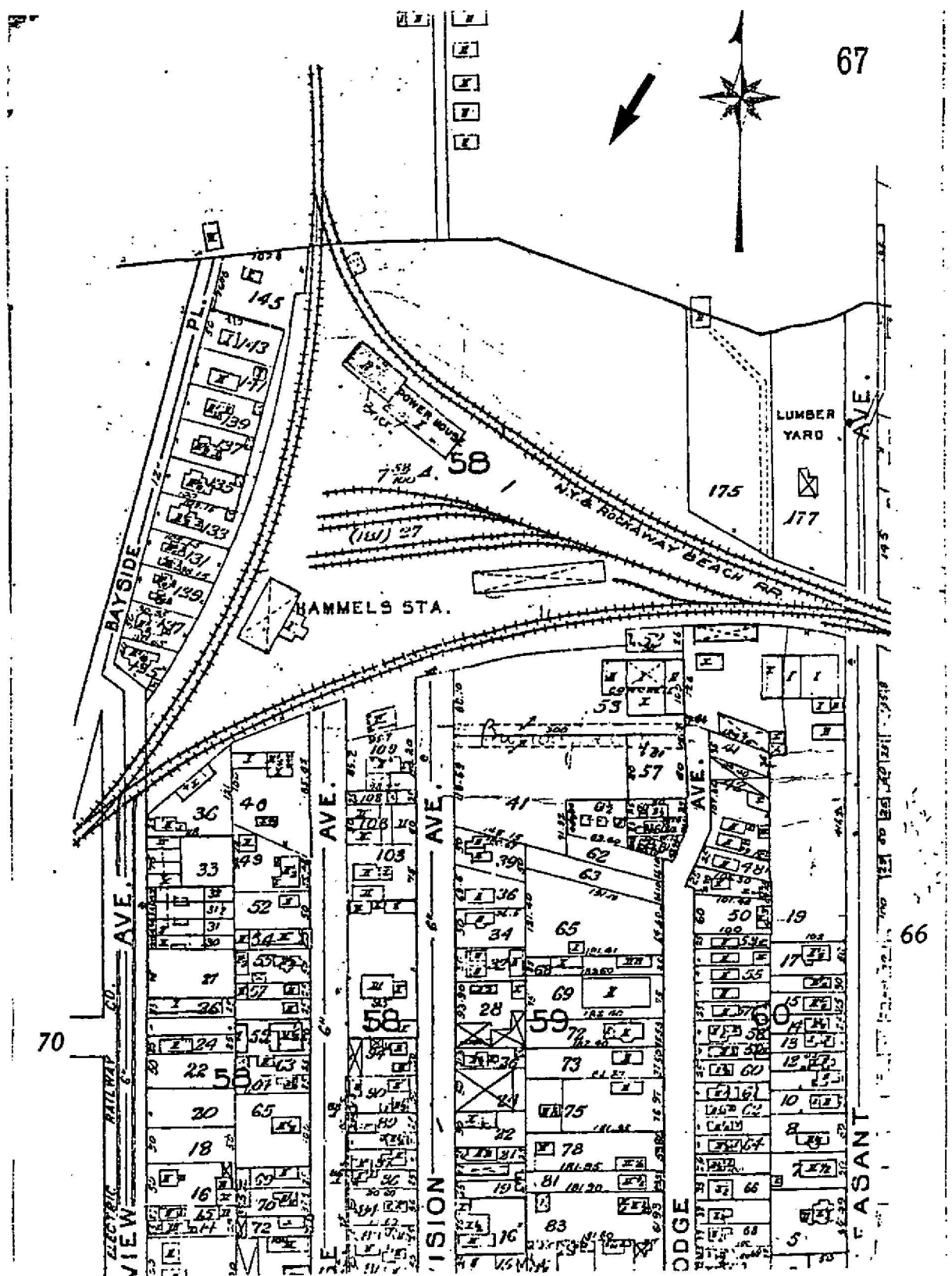
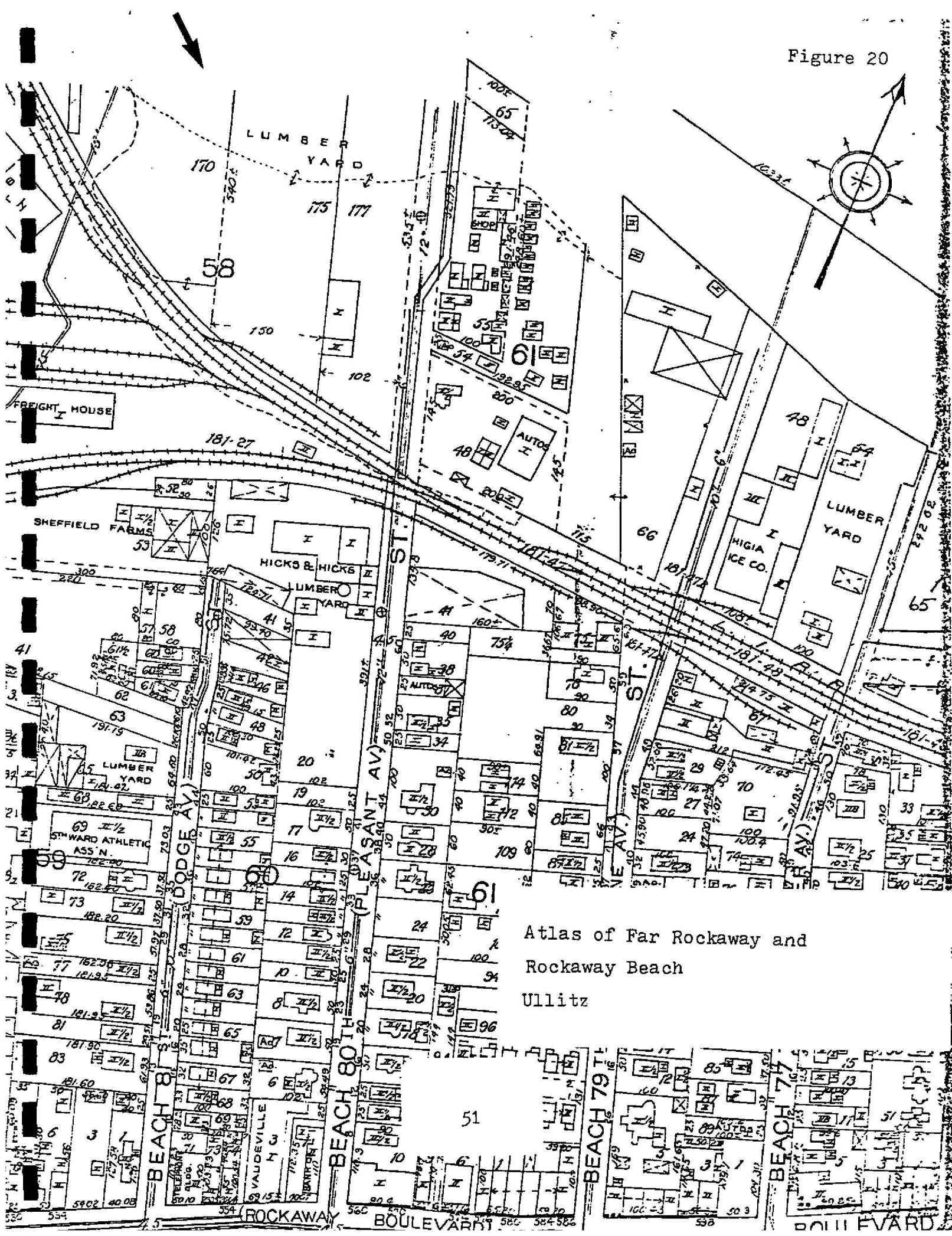
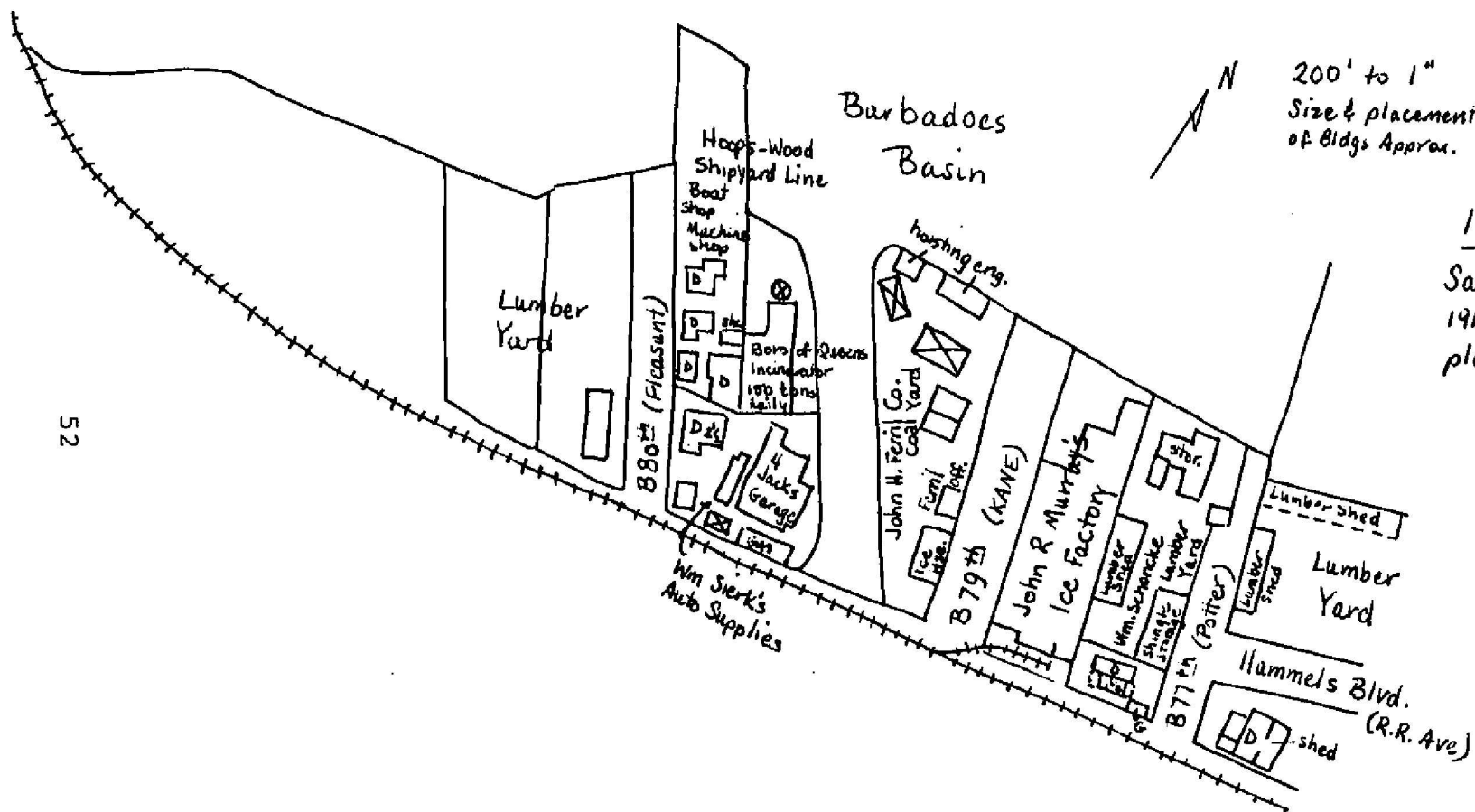


Figure 20





1926
Sanborn Atlas of Queens
1912 corr. to 1926
plates 67 & 70

Figure 21

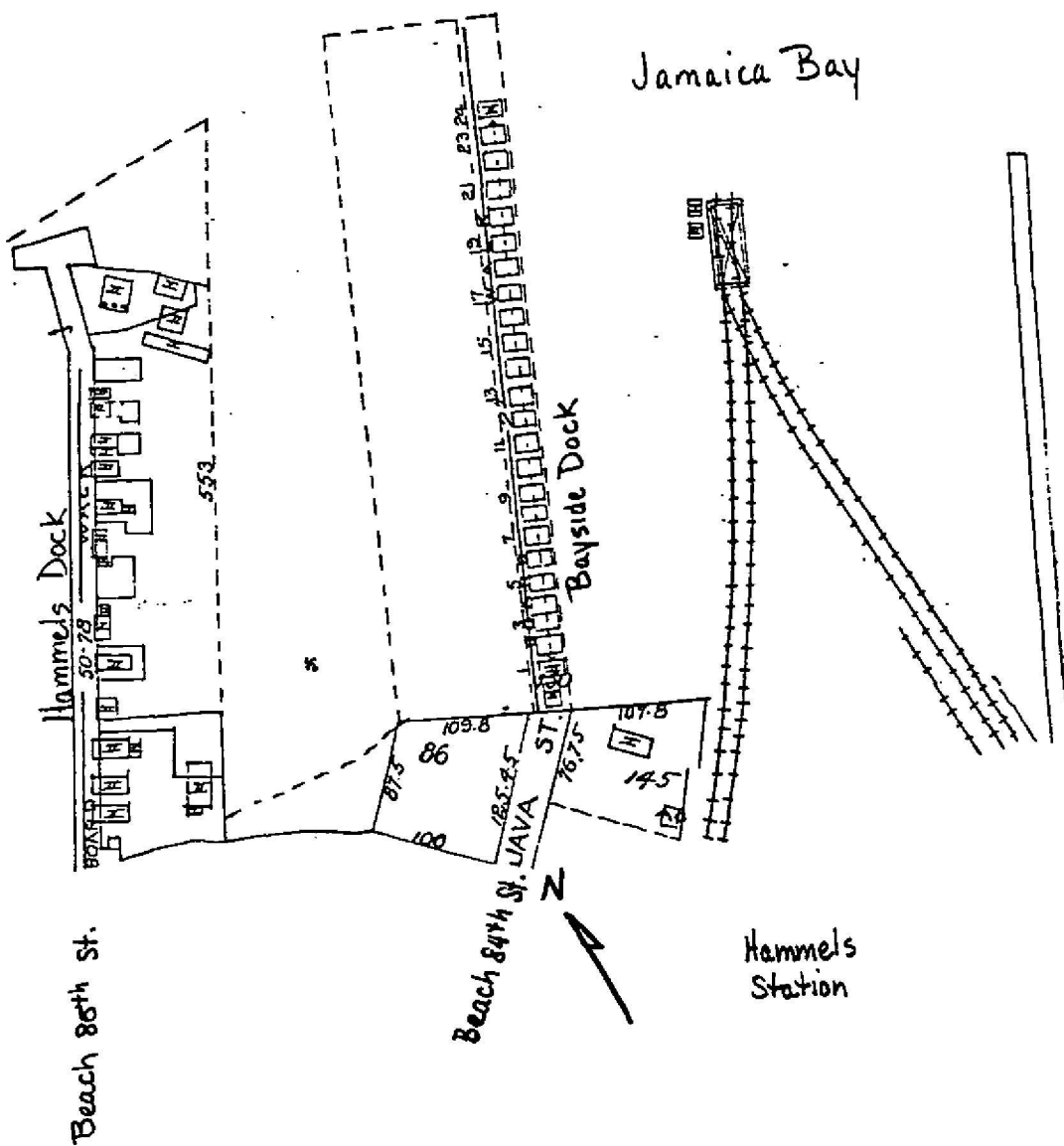
JAMAICA BAY IMPROVEMENT

A New Gateway to America

What the Plans Are and What Effect
This Improvement Will Have on
New York's Commerce.

OFFICE OF PUBLICATION:
EAGLE BUILDING, BROOKLYN, NEW YORK

Entered at the Brooklyn-New York Post Office as second-class matter. VOL. XXV, No. 3 of the
Eagle Library. Serial No. 157, March, 1910. Trademark, "Eagle Library," registered.
Yearly subscription, \$1.00. Almanac Number, 50 cents.



subplan from plate 34 of Ullitz's Atlas of Far Rockaway and Rockaway Beach, 1919, showing Hammels and Bayside Docks, as well as dock beginning on mainland section of project area (right).

The following series of photographs, numbers 1 - 10,
were taken in 1988 and reflect current U. S. Truck
Body Site conditions.

Photograph 1



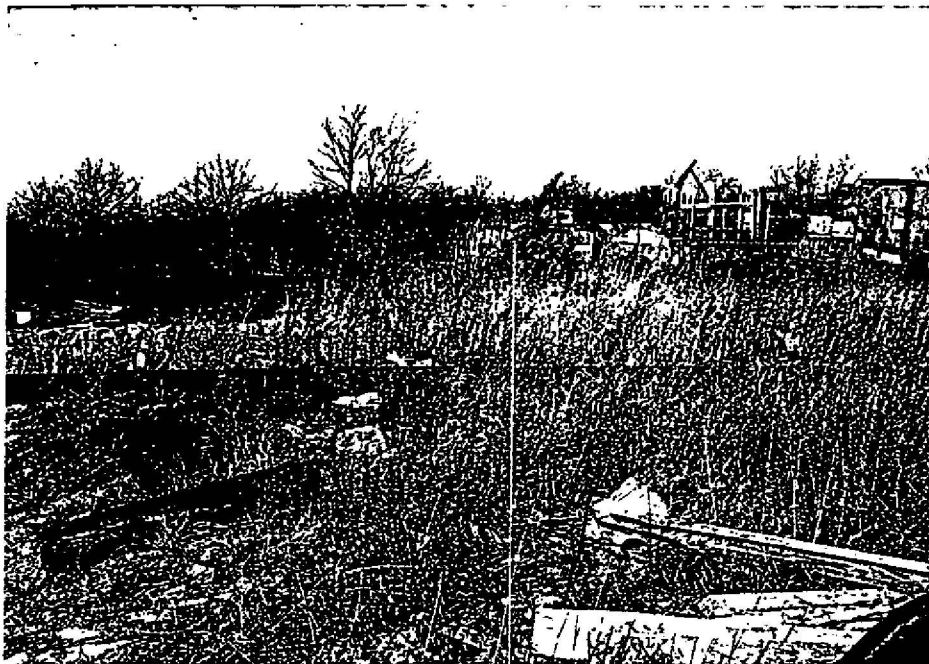
view: east to west
southernmost portion of the Vernam Barbadoes
peninsula

Photograph 2



view: south to north
southwesternmost portion of the Vernam Barbadoes
peninsula
note: bulkhead and accumulation of sand

Photograph 3



view: southwest to northeast
Vernam Barbadoes peninsula, center of the Site

Photograph 4 and 5



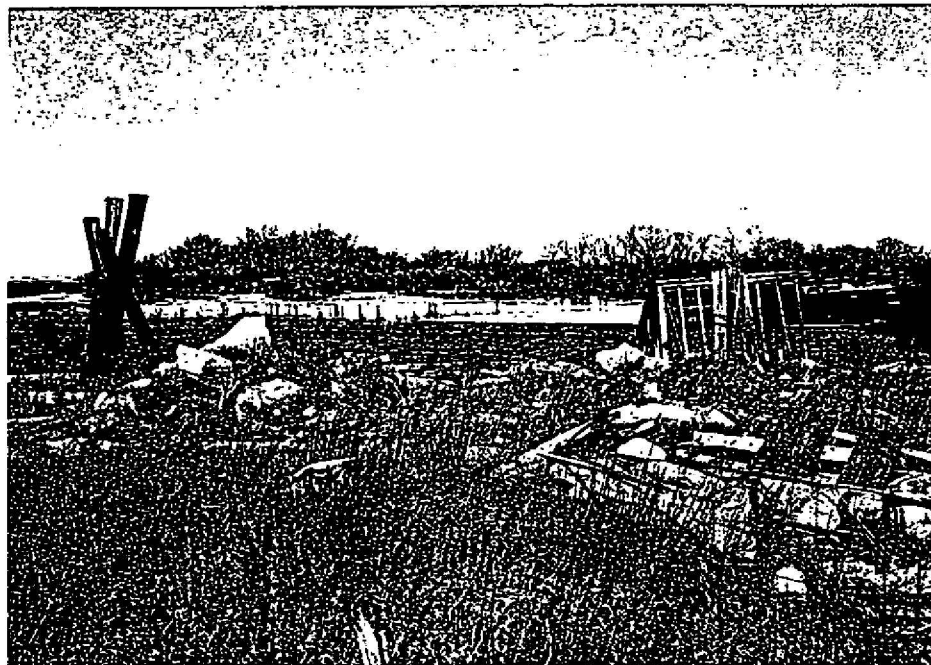
view: east to west
Vernam Barbadoes peninsula, center of the Site
note: railroad trestle over Bay

Photograph 6



view: southeast to northwest
Vernam Barbadoes peninsula, center of the Site

Photograph 7 and 8



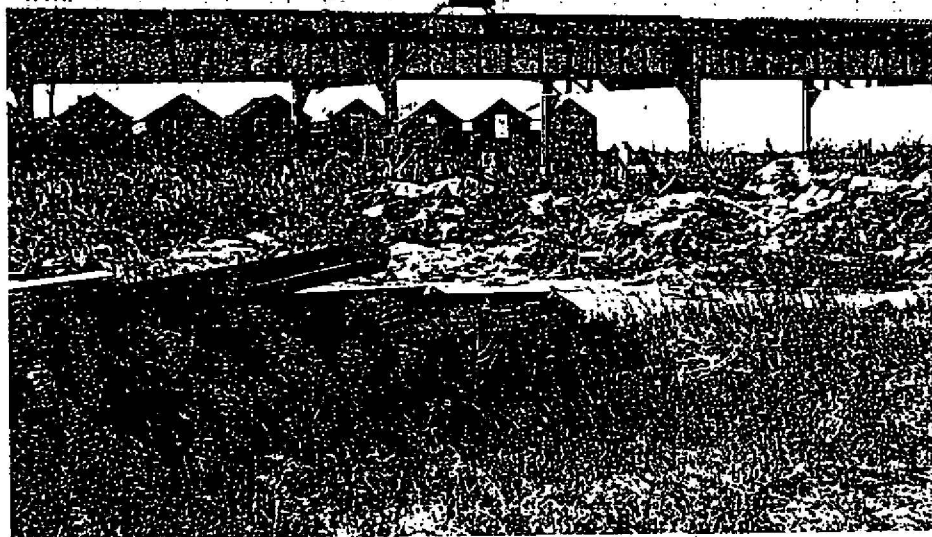
view: south to north
the northern shoreline of the U. S. Truck Body
Site, mainland parcel
note: Barbadoes Basin in the middle of photographs

Photograph 9



view: south to north
the central portion of the U. S. Truck Body
Site, mainland parcel
note: tidal inlet

Photograph 10



view: east to west
the northwestern portion of the U. S. Truck Body
Site, mainland parcel
note: the "pier houses" on the west side of the
railroad trestle

APPENDIX

Soil Borings Data

Soil borings were made by Storch Associates in the course of their subsurface analysis. All 22 borings were done on Vernam Barbadoes, none were drilled on the mainland section of the U.S. Truck Body Site. (See map, Appendix Figure 1) Furthermore, the majority were confined to the section of Vernam Barbadoes that was formerly Horse Island. These borings penetrated between 5'9" and 10' of overburden (tan and gray sand) to the pre-fill surface -- a layer of fibrous gray organic silt. This is consistent with the theory that the two islands were filled using material from the Bay floor.

Borings 4, 8, 12, 16, 17, 21 and 22 were discontinued before the overburden was penetrated. Borings 5 and 6 are unique in the series, since they reach no organic layer to a depth of 22' and 27' respectively. Since they are the southernmost borings (that were not discontinued at 6' or less) they are clearly in the area between the two original islands. At 21'8" (Boring 5), and 25' (Boring 6) there are shell fragments, probably indicating the Bay floor before filling operations commenced (Storch Associates 1987:Appendix B). (See chart, Appendix Figure 2)

The borings present no physical evidence of prehistoric occupation, or use.

Soil Borings Chart

Boring #	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
Depth of Fill:	7'4"	(Bottom at 6') 5'9"	8'	Bottom at 4'	21'8"	27'	7'6"	Bottom at 6'	7'6"	10'	6'8"
Remarks/Description	tan & gray, sand, trace silt.	tan & gray, with shell frags.	asphalt surface tan & gray sand, trace silt occ. shell frags.	tan sand, trace silt.	tan & gray sand, trace shell frags.	asphalt surface, brown & gray sand, trace silt.	sandy topsoil, tan & gray sand.	sandy topsoil, tan sand, little silt.	sandy topsoil, gray sand, little silt.	tan & gray sand, trace gravel, little silt.	sandy topsoil tan & gray sand, little silt.
65 Second Level	8'6"	6'	10'6"		22"		10'		8'6"	11'5"	8'
Remarks/Description	gray organic silt, fibrous	gray org. silt fibrous, little sand	gray org. silt, fibrous		white, gray black, gravel, some sand	bottom at 27'	gray org. silt, fibrous	"	"	", trace sand	grey org. silt, fibrous

Soil Borings Chart

Boring #	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>
Depth of Fill:	Bottom at 6'	7'9"	6'	7'10"	Bottom at 6'	Bottom at 2'	6'	6'	6'6"	Bottom at 6'	Bottom at 4'
Remarks/Description	sandy top-soil, tan sand	tan & gray sand, some silt, org. odor, fibrous	tan sand, little silt, gray sand	tan & gray sand, little silt, roots, org. odor	sandy topsoil tan sand little silt	sandy topsoil tan sand little silt	tan & gray sand little silt org. odor	brown to black sand, gravel, cinders, slag tan & gray sand little silt	sandy top-soil, gray & tan sand some silt, org. odor	sandy topsoil tan sand little silt	sandy topsoil tan sand, little silt
Second Level		9'	7'2"	9'6"			8'	8'	8'6"		
Remarks/Description		gray org. silt, some sand, fibrous	gray org. silt, fibrous	gray org. silt fibrous			grey org. silt, fibrous	grey org. silt, fibrous	black, org. clayey silt, fibrous		



LEGEND

- ⊙ BORING LOCATION
- B BORING NUMBER
- MW MONITORING WELL NUMBER

N.Y.C. PUBLIC DEVELOPMENT CORPORATION
VERNAM BARBADOES SITE, QUEENS, N.Y.

BORING LOCATION PLAN

PROJECT NO. 8214

SCALE: 1" = 200'

DATE: 3-3-87

DRAWING NO. 2