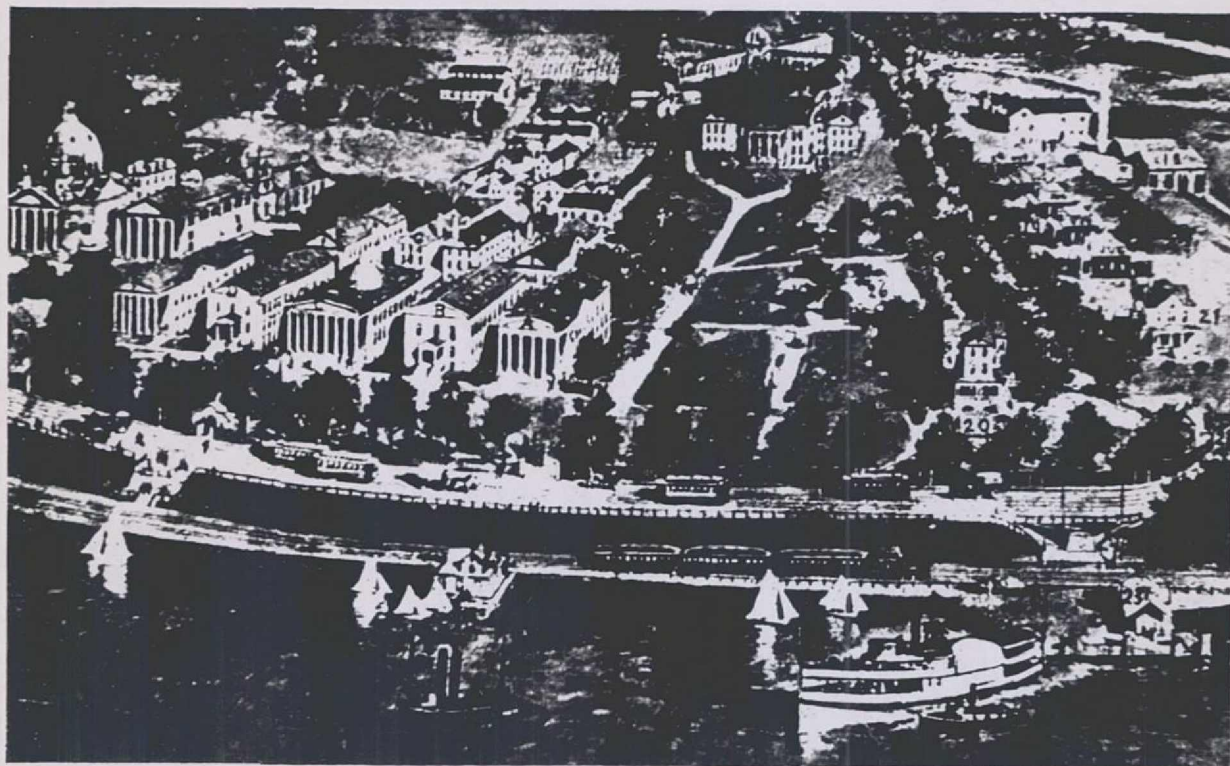


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An Archaeological Predictive Model
of the Shoreline Property
of Snug Harbor Cultural Center,
Staten Island, New York.



New York City
Landmarks Preservation Commission

July 1990

780

Report Funded by the NYC Department of Cultural Affairs
and the NYC Department of Parks and Recreation

NEW YORK CITY LANDMARKS PRESERVATION COMMISSION

AN ARCHAEOLOGICAL PREDICTIVE MODEL OF THE SHORELINE PROPERTY OF
SNUG HARBOR CULTURAL CENTER, STATEN ISLAND, NEW YORK

Authors:

Sherene Baugher
Edward J. Lenik

July 1990

REPORT FUNDED BY THE NYC DEPARTMENT OF CULTURAL AFFAIRS
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TABLE OF CONTENTS

LIST OF FIGURES.....	i
ACKNOWLEDGEMENTS.....	ii
INTRODUCTION.....	1
CHAPTER ONE - ARCHAEOLOGICAL METHODOLOGY.....	5
CHAPTER TWO - ENVIRONMENTAL SETTING.....	7
CHAPTER THREE -NATIVE AMERICAN RESOURCES.....	10
CHAPTER FOUR - HISTORIC PERIOD RESOURCES.....	19
CHAPTER FIVE - ARCHAEOLOGICAL FIELD SURVEY.....	52
CHAPTER SIX - CONCLUSIONS AND RECOMMENDATIONS.....	64
REFERENCES.....	69

LIST OF FIGURES

Introduction

Intro:1

Map of Staten Island showing the location of
Sailors' Snug Harbor2

Chapter Three

3:1

Native American Archaeological Sites on Staten
Island13

Chapter Four

4:1

Bird's-eye View of Sailors' Snug Harbor, 189920

4:2

Map of Colonial Land Grants, 1688-171221

4:3

Map commissioned by the Harbor Trustees, 183123

4:4

Blood's Map, 184524

4:5

Sketch of the dock at Sailors' Snug Harbor, 1873 .27

4:6

Shoreline of Sailors' Snug Harbor, c. 190028

4:7

Shoreline of Sailors' Snug Harbor, post 191629

4:8

Shoreline of Sailors' Snug Harbor, c. 193030

4:9

Map of Staten Island by James Butler, 185332

4:10

Beers Atlas of Staten Island, 187433

4:11

Atlas of Staten Island by I.A. LeFevre, 189434

4:12

Dock House at Sailors' Snug Harbor, c. 188036

4:13

Dock House at Sailors' Snug Harbor, 190737

4:14

Beers Atlas of Staten Island, 188738

4:15

Borough of Richmond Topographical Survey, 1906 ...39

4:16

Bromley Atlas of 191740

4:17

Sanborn Atlas, 193541

4:18

Bath House, Sailors' Snug Harbor, 190742

4:19

The Sailors' Lookout, c. 187844

4:20

Robinson's Atlas of the Borough of Richmond,

189845

4:21

Shoreline of Sailors' Snug Harbor, undated photo .46

4:22

Richmond Terrace fronting Sailors' Snug Harbor,

c. 190049

4:23

Railroad near Sailors' Snug Harbor, c. 1905-10 ...50

4:24

View of Sailors' Snug Harbor, c. 190051

Chapter Five

5:1

Present condition of seawall, rip-rap54

5:2

Shoreline of Sailors' Snug Harbor, 197155

5:3

U.S. Coastal Survey of 1836-183956

5:4

Stone retaining wall57

5:5

Stone retaining wall58

5:6

Existing railroad tracks59

5:7

Map depicting twentieth-century site disturbance .61

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INTRODUCTION

Sherene Baugher

INTRODUCTION

Snug Harbor Cultural Center, a New York City owned property, is located in the New Brighton section of northern Staten Island (see Figure Intro: 1). It is a multi-use cultural resource that is being developed as a cultural center to house museums, galleries, a performing arts center, a botanical garden, and a public park. Snug Harbor has a rich and varied past. The extant buildings, seven of which are designated New York City Landmarks, are visible reminders of the site's use as an institution for aged and sick seamen. Prior to the 1831 construction of Sailors' Snug Harbor, this property was used as farmland and included a house and outbuildings. Because this property contained several desirable geomorphological and environmental features, including proximity to a fresh water stream which fed into the Kill Van Kull, Native Americans may have been earlier settlers on this land.

In 1985, the New York City Landmarks Preservation Commission developed an Archaeological Predictive Model of the Snug Harbor Cultural Center (Baugher, Baragli, DeCesare, and Venables 1985). This report includes an evaluation of the eighty acres of property surrounded by a fence that is the major portion of the Center. It does not include a study of the shoreline property. This present report analyzes the waterfront property, evaluates its cultural resources, and presents determinations about the archaeological significance of this land.

The waterfront study area is a five acre parcel of land with approximately 2,225 linear feet of frontage on Richmond Terrace. It is bounded by the Kill Van Kull on the north, Tyson Street on the

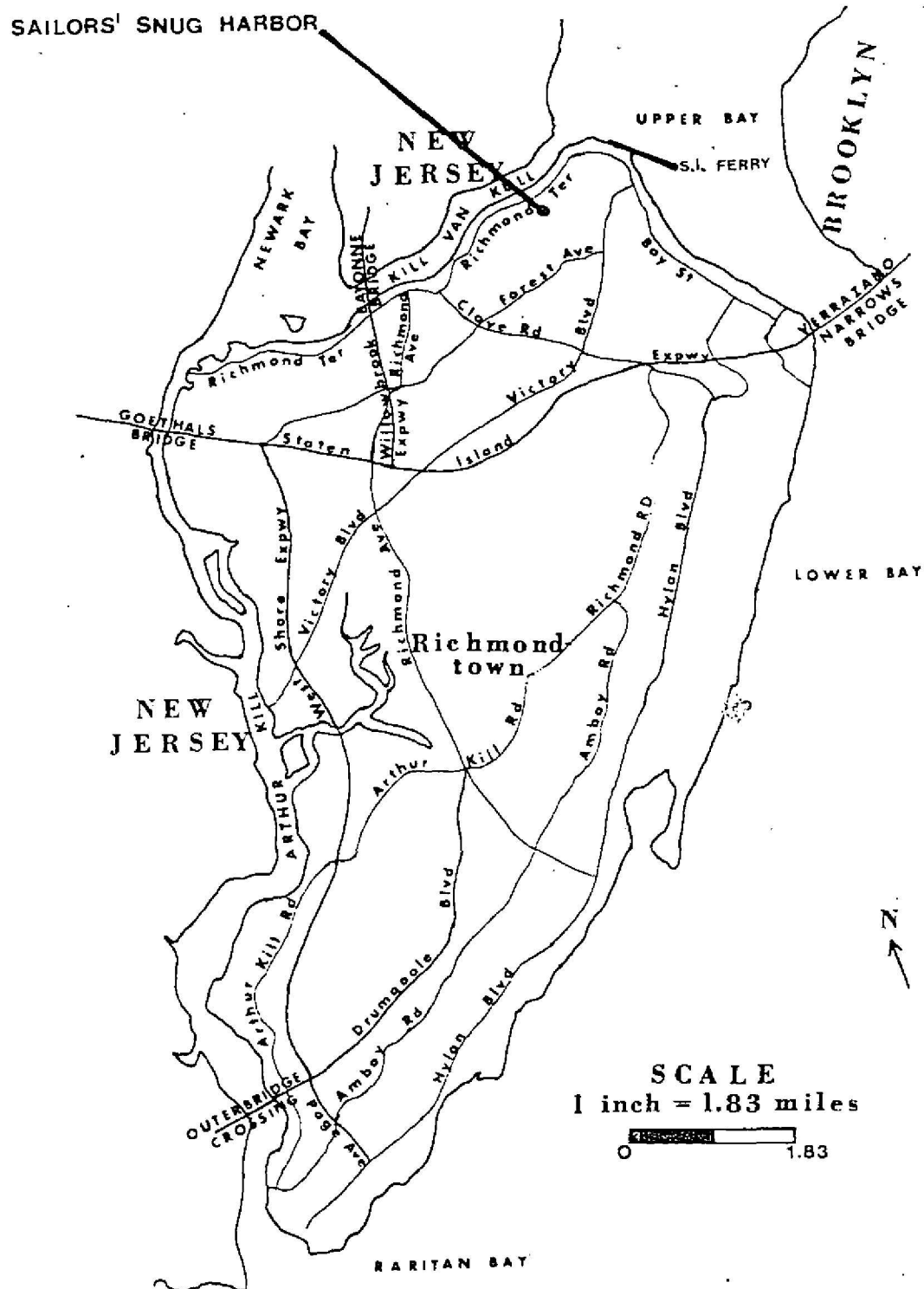


Figure Introduction 1 Map of Staten Island showing the location of Sailors' Snug Harbor.

east, the western end of Snug Harbor Road on the west, and Richmond Terrace to the south. The waterfront land varies in width from eighty to 125 feet. The site may have been used by American Indians prior to the European settlement on this property.

This report is divided into six chapters:

- 1) the archaeological methodology
- 2) the environmental setting
- 3) Native American resources
- 4) historic period resources
- 5) field survey
- 6) conclusions and recommendations

To undertake this study, the New York Landmarks Preservation Foundation, the non-profit arm of the New York City Landmarks Preservation Commission, applied to the New York City Department Of Cultural Affairs and the New York City Parks Department for a \$3,900 matching grant to develop an archaeological predictive model (planning model) of the shoreline property of Snug Harbor Cultural Center. This project is the first archaeological grant that is a joint endeavor of two City agencies with the Landmarks Preservation Commission. This project may be used as the model for a cooperative program between the Landmarks Preservation Commission and both the Department of Cultural Affairs and the Parks Department for archaeological research and evaluation of city-owned sites.

The goal of this model is to delineate areas of high archaeological potential (if any are still extant) based on prehistoric (i.e., American Indian prior to 1600 A.D.) and historic land use and the amount of modern disturbance. Like preservationists, archaeologists

must evaluate the site's significance in terms of local and regional history. Assessing the degree by which twentieth-century construction has destroyed earlier material will determine the important archaeological issue of how "intact" the site is. Having a well-designed research plan for the shoreline property enables archaeological projects to become components of a larger historical study rather than stand as separate unrelated reports. The maps and the text from this report can be used by other City agencies to determine if their projects will impact the archaeological zone on the shoreline property of Snug Harbor. The staff of other City agencies can consult with the Landmarks Preservation Commission to determine if their new proposals will impact any archaeologically significant areas. If there are likely to be impacts on archaeologically significant areas, the City's archaeologists at the Landmarks Commission can evaluate the merits of doing archaeological work prior to construction, or changing the site of the construction project so that it avoids destroying the archaeological resources. If an archaeological evaluation is needed, the work can be undertaken by the City's archaeology program.

CHAPTER ONE: ARCHAEOLOGICAL METHODOLOGY

Sherene Baugher
Edward J. Lenik

CHAPTER ONE: ARCHAEOLOGICAL METHODOLOGY

This archaeological predictive model or planning model is based on three steps: a) background research; b) field survey; and c) environmental analysis.

Background Research

A documentary study was undertaken to identify known or potential archaeological resources. A search of the literature pertaining to Sailors' Snug Harbor was carried out¹ and contacts were made with individuals knowledgeable in the history and prehistory of the area. Interviews were conducted with historians, local historians, and avocational archaeologists/collectors. Primary data was sought from all of the sources consulted.

Field Survey

A careful walk-over reconnaissance of the shoreline of Snug Harbor Cultural Center was conducted to locate and identify any existing sites and to evaluate the archaeological potential of the area. This aspect of the methodology had to address several problems or conditions that were present within the project area.

1. Sailors' Snug Harbor archives are located at the New York Maritime College in the Bronx and at Snug Harbor Cultural Center on Staten Island. There is additional data at Sailors' Snug Harbor in North Carolina but this material was not examined.

In a few sections of the study area the field survey was hampered by dense ground cover which included trees, leaves, shrubs, goldenrod, rye grass, poison ivy, and other flora. However, all areas were examined closely several times during the course of this project including those areas which have undergone considerable disturbance in the past as a result of construction, demolition, and landfilling.

In summary, it was not possible to detect the presence of American Indian material over much of the area because of the land alterations since the eighteenth century. Nevertheless, all areas that were exposed through erosion, travel (paths), or other natural or cultural factors were carefully examined. The areas of disturbance will be described later in this report as well as the effect of such activities on the integrity of potential cultural resources.

Environmental Analysis

The prediction of American Indian site locations involves the study of environmental, archaeological, historic, and ethnohistoric data. Based on an analysis of data in each of these categories, a determination was made regarding the degree of archaeological sensitivity of the shoreline property. At this particular site, environmental and geomorphological conditions were important criteria in developing a hypothesis regarding the presence or absence of American Indian material.

CHAPTER TWO: ENVIRONMENTAL SETTING

Edward J. Lenik

CHAPTER TWO: ENVIRONMENTAL SETTING

The surface of Staten Island is made up of many varied and interesting landforms. Each land feature originated through the action of some past or present geological process which has led to a variety of indigeneous flora and fauna. In turn, these factors have had a tremendous impact on early man and his settlement and subsistence patterns in this area. The following discussion is a synopsis of the major natural environmental characteristics of the study area. The characteristics include:

- a. geological and soil conditions
- b. typography
- c. proximity to fresh water
- d. availability of floral and faunal resources
- e. availability of lithic materials
- f. climatic conditions
- g. historic and current land use

a. Geological and Soil Conditions

Geologically, Sailors' Snug Harbor is considered a part of the coastal plain physiographic province. The bedrock geology is archean serpentine which is covered with pleistocene glacial sediments and marine alluvium. Cotz's (1984) archaeological tests and our own field reconnaissance revealed that loose red, orange, tan, brown, gray, and black sands, and clay are found in the area. Continental glaciation

affected the surficial geology of Staten Island as the glacier advanced and receded at least three times in the last million years. The study area consists of glacial outwash composed of material deposited by streams from the melting ice sheet. These deposits are present throughout the area where rivers and streams carried debris from the receding glacier. An occasional glacial erratic or boulder was encountered in the general area, and these boulders are a vivid reminder of the former presence of the glacier.

b. Topography

The project area ranges in elevation from approximately twenty-six feet along Richmond Terrace to zero along the edge of the Kill Van Kull. In general, the terrain drops off sharply from the top of Richmond Terrace to the railroad tracks which run along the shore. The grade between these two levels is thirty per cent or more. A small creek enters the Kill Van Kull along the western end of the project area. The floodplain of this creek is low-lying, and wet or damp most of the year, and would have been undesirable for human habitation. At present, a concrete conduit carries the fresh water from the creek underneath Richmond Terrace out into the Kill Van Kull.

c. Proximity to Fresh Water

The small creek and adjacent marshy area which are located near the western end of the Snug Harbor property would have provided fresh drinking water for prehistoric campers plus aquatic subsistence resources.

d. Availability of Floral and Faunal Resources

Native Americans' adaptive strategies included utilization of trees;

plants, animals, migratory birds and waterfowl, shellfish, and fish in order to insure their survival. These would have been readily available in the surrounding area.

e. Availability of Lithic Materials

Small cobbles and pebbles of chert, quartz, and quartzite occur in depositional material left by the recession of the Wisconsin Glacier. These materials are present in the local area.

f. Climatic Conditions

The prevailing winds at the site come from offshore, that is, from the north and northeast. This suggests that long-term occupation along the shoreline would be undesirable and unlikely much of the year due to the cold, dampness, and strong winds coming from the Upper Bay Area.

However, the shoreline could have been used for temporary seasonal summer camps.

g. Historic and Current Land Use

The environmental conditions at the site have undergone radical alterations during the historic period due both to natural and human processes, particularly the latter. Extensive development of the shoreline property has taken place. Thus, the possibility of finding undisturbed prehistoric features in developed areas -- such as pits, postmolds, and hearths -- is highly unlikely.

CHAPTER THREE: NATIVE AMERICAN RESOURCES

Edward J. Lenik

THREE: NATIVE AMERICAN RESOURCES

The following discussion of prehistoric human occupation provides a basis on which to anticipate the kinds of cultural remains or sites that may be found in the Snug Harbor study area. A brief discussion of the three periods' culture history prior to European contact is presented first. This information summarizes the ways in which Native American peoples lived in the northeastern United States in general and in coastal New York in particular. These cultural sequences describe the particular technologies, lifestyles, and environmental contexts of the three time periods.

The American Indian history of Staten Island has been researched extensively, and the available data provides excellent background material with which to assess the project area. A search of the literature on the project area, which includes Skinner 1909, Bolton 1920, Parker 1920, Smith 1950, Ritchie 1980, and the Staten Island Institute of Arts and Sciences Indian Sites Records, has identified several American Indian sites in close proximity to the study area. These documented sites, although directly outside our immediate project zone, give us a good picture of American Indian settlement and subsistence patterns. Furthermore, additional information was received from local informants and collectors who have extensive knowledge of the general area.

The absence of previous systematic field investigations of the north shore of Staten Island has made it difficult to identify the study

area's Native American resources. Nevertheless, we have evaluated the probable attractiveness of the study area for Native American peoples and the areas where they were likely to have lived and worked. We considered the archaeological potential of the area by correlating environmental and cultural history in the region.

A. Native American Cultural Periods

The Paleo Indian Period (c. 10000 to 8000 B.C.)

Early man arrived in the New World sometime before 12,000 years ago. These early Americans, called Paleo Indians, migrated from Siberia across the Bering Strait Land Bridge to Alaska during the Late Pleistocene or Ice Age. They undoubtedly came down from Alaska during the Two Creeks Interstadial around 10000 B.C. when an ice-free corridor opened up between two massive glaciers that covered Canada. During this period, the Indians were hunters and gatherers, a nomadic people who roamed widely in search of food, and their settlement pattern consisted of small temporary camps. The diagnostic artifact of the Paleo Indian is the fluted projectile point. However, these people made other sophisticated tools as well, such as gravers, steep-edge scrapers, knives, drills, and other unifacial tools.

The Archaic Period (c. 8000 B.C. to 1000 B.C.)

The Archaic Period produced a major shift in the settlement and subsistence patterns of early man. Hunting and gathering were still the basic life during this period, but the emphasis in subsistence shifted from the large Pleistocene herbivores, who were rapidly becoming extinct, to smaller game and plants of the deciduous forest. The settlement pattern of the Archaic people indicates larger, more

permanent habitation sites. These people were increasingly more efficient in the exploitation of their environment. The hallmarks of this period are grinding implements, ground stone tools, and, toward the end of this period, or Terminal Archaic, the use of stone bowls.

The Woodland Period (c. 1000 B.C. to A.D. 1600)

In general, the hunting and gathering way of life persisted in this period, but several important changes took place. Horticulture began during this period and later became well established with the cultivation of maize (corn), beans, and squash. Clay pottery vessels replaced soapstone bowls, and tobacco pipes and smoking were adopted. Also, the bow and arrow replaced the spear and javelin during this period. The habitation sites of the Woodland Indians increased in size and permanence as these people continued to extract food more efficiently from their environment.

B. American Indian Archaeological Sites Along the North Shore of Staten Island

Prior to the seventeenth century, the area along the north shore of Staten Island was one of intense occupation and use. In the early twentieth century, archaeologist Alanson B. Skinner of the American Museum of Natural History surveyed and located twenty-four American Indian sites on Staten Island. Eleven of these sites are located in the northern section of the island but not within the project boundary (see Figure 3:1). Skinner (1909:4-16) lists these eleven sites as follows:

- no. 1: West New Brighton, or Pelton's Cove
- no. 2: West New Brighton, Ascension Church

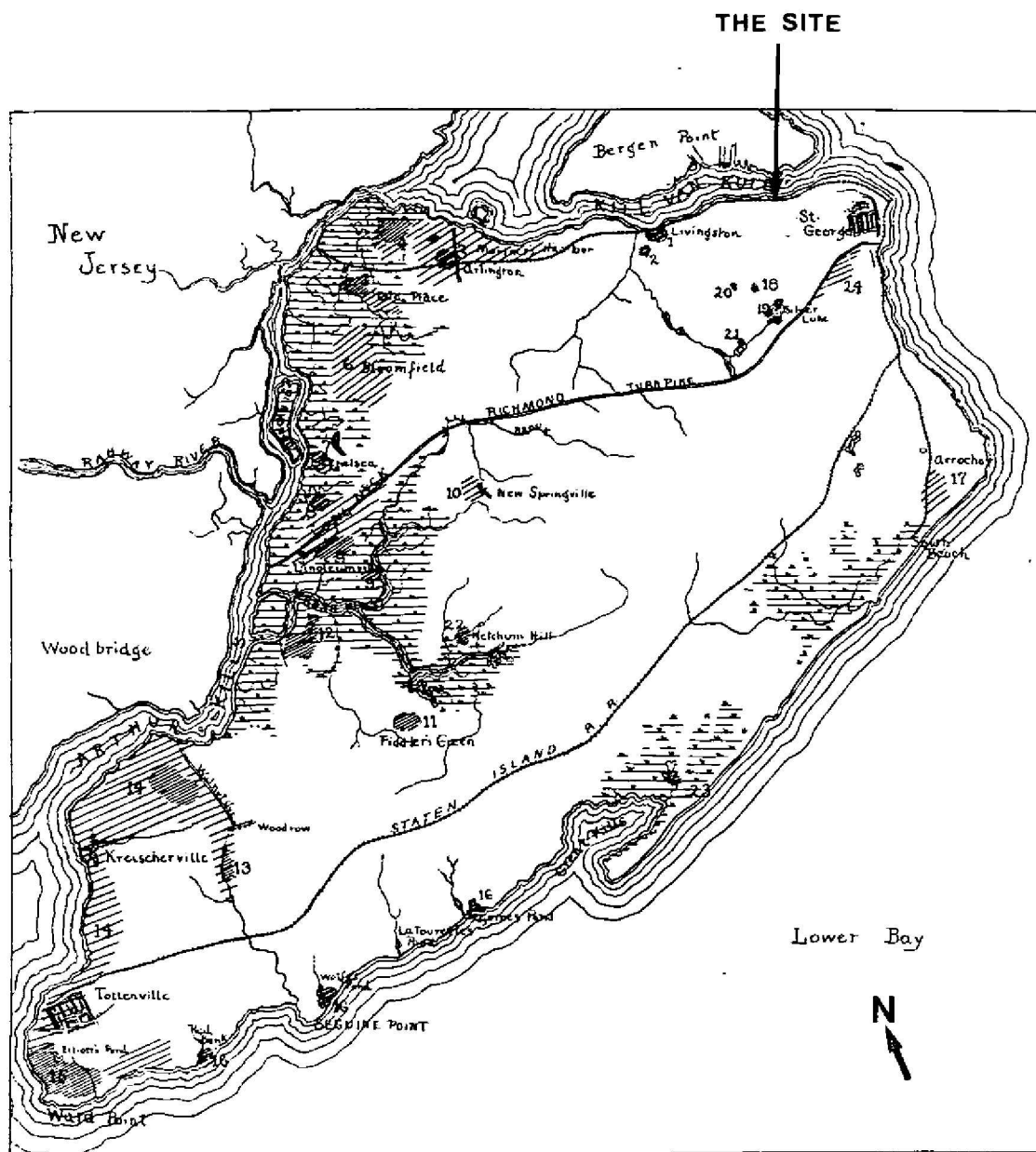


Figure3:1 Native American Archaeological Sites on Staten Island.
Identified by Alanson Skinner, 1909.

- no. 3: Arlington, Mariner's Harbor
- no. 4: Bowman's Brook, Mariner's Harbor
- no. 5: Old Place, Mariner's Harbor
- no. 6: Bloomfield, Watchogue
- no. 18: New Brighton, Harbor Hill Golf Links
- no. 19: New Brighton, Silver Lake
- no. 20: New Brighton, Harbor Hill
- no. 21: New Brighton, Nannyberry Hill
- no. 24: Tompkinsville

Skinner reports that burials were found at the two sites in West New Brighton plus a variety of artifacts at all of the eleven sites, including hammerstones, projectile points, and pottery. The presence of pottery at several of these sites indicates that they were occupied during the Woodland Period.

At the Arlington Site, Skinner (1909:5 and 6) reports finding a variety of stone tools, pottery, clay pipes, and shell pits. Among these artifact recoveries were projectile points, scrapers, hammerstones, grooved axes, celts, a grooved adze, a gouge, a metate, and a "couple of bannerstones," which are presently referred to as atlatl weights (Skinner 1909:5 and 6). This cultural material indicates that the Arlington Site was occupied by several groups of people from the Late Archaic through the Woodland Periods, i.e., from 3000 B.C. to A.D. 1600. These artifacts further suggest that the American Indians engaged in several activities at the site including hunting, food processing, woodworking, and the manufacture of stone tools.

Skinner also conducted extensive archaeological investigations at the Bowman's Brook Site in Mariner's Harbor. This site is located in

northwestern Staten Island and is one of the most important sites on the island. Skinner (1909:7) reports that "from fifty to one hundred pits were exposed" at the site along with several skeletons. Artifact recoveries from the Bowman's Brook Site were abundant and included stone, bone and antler tools, and pottery. The majority of the pottery fragments recovered from the site were described as "typical Algonkin type"; however, some were "Iroquoian in design" (Ibid:7). This latter type has become known as Bowman's Brook Incised pottery and consists of collarless vessels with broad lines of incising (Staats 1974:1). Bowman's Brook with its incised pottery is an extremely important type-site and an equally important aspect of Woodland Period aboriginal history in the coastal region of New York.

The third major site recorded by Skinner (1909:8) is known as Old Place, which he describes as a "large village site." Skinner indicates that "fireplaces" or hearths, shell pits, pottery, and European trade goods were found at this site. In the early 1960s, the Old Place Site was excavated by Albert J. Anderson and his associates. Anderson (1964: 50-52) reports finding bifurcated projectile points that date to the Early Archaic Period (8000 B.C. - 6000 B.C.), Bare Island and Poplar Island-type projectile points that date to the Late Archaic Period (3000 B.C. - 1000 B.C.), several broad spear points including Perkiomen, Susquehanna, and Snook Kill types, which date from the Terminal Archaic to Early Woodland Periods (2000 B.C. - A.D. 0), and a Levanna point that dates to the Late Woodland Period. In addition, several types of pottery were found at the site, plus drills and scrapers. This data indicates that the site was occupied intermittently from around 6000 B.C. to A.D. 1600.

Indian relics were also reportedly found at the Bloomfield or Watchogue Site (Skinner 1909). Skinner (1909:9) reports that a variety of artifacts had been found on "all the dunes and sandhills including grooved axes, pottery, pipes, and projectile points." Most of the Bloomfield Site was probably destroyed during construction of the West Shore Expressway. Recently, archaeological testing and reconnaissance were conducted in the Bloomfield Site area but no evidence of prehistoric occupation was found (Lenik 1983:34-42).

Finally, Skinner (1909:16) characterizes the sites at New Brighton (Numbers 18, 19, 20, and 21) and the site at Tompkinsville as camp sites. He reports that scattered "relics" or artifacts were found at these sites as well.

As we noted earlier, no systematic field investigation of prehistoric sites has been made on Staten Island. Nevertheless, some additional research along the north shore has been conducted subsequent to the work of Skinner.

Arthur C. Parker (1920:684) reports that "scattered relics appeared along the shore road near St. George." Also, one prehistoric stone artifact was reportedly found on Stuyvesant Place and is now in the collection of the Staten Island Institute of Arts and Sciences (Kardas and Larrabee 1977:8).

The Goodrich Site is also located in the northwest corner of Staten Island in the Mariner's Harbor section. This site is located to the west of South Avenue and lies between the Arlington Railroad yards and Forest Avenue. This site was excavated professionally by six different

groups between 1969 and 1972. The site has been temporally and culturally assigned to the Late Archaic Period, c. 3000 B.C. to c.1000 B.C. (Eisenberg 1982:37).

Recent archaeological testing at Sailors' Snug Harbor has resulted in the recovery of a few artifacts of prehistoric origin, namely chert and jasper flakes and a biface (Cotz 1984:49 and 64; Baugher, DeCesare, and Baragli 1985:11). Unfortunately, these specimens were found in disturbed contexts; however, they do indicate the presence of prehistoric people on the site.

In summary, our documentary research has revealed that a number of prehistoric sites are located near the north shore of Staten Island. All of these sites are situated well back from the present shoreline, and are located outside our project area. They give us a good picture of the culture history of the region and of the type of sites that may be present within Sailors Snug Harbor.

Recent archaeological investigations in 1982 and 1985 on the Snug Harbor property revealed the presence of prehistoric artifacts. The surveys show that, in general, the Snug Harbor site would have been an excellent location for prehistoric occupation. The site contains flat elevated terraces that overlook New York Harbor and the Kill Van Kull. These locations would have been well drained and in close proximity to fresh water and aquatic food resources. A small stream forms the western border of the Snug Harbor property and would have provided water. Also, two springs are located nearby, namely, "The Watering Place" in Tompkinsville, and the "Hessian Spring" on Jersey Street in New Brighton, which are approximately one and one-half miles away (Leng

and Davis 1930, vol. 1:9). In conclusion, these data suggest that prehistoric peoples were present on the Snug Harbor property, and that portions of the site would have been highly desirable for human occupation. For details regarding the previous survey results see Cotz 1984 and Baugher et al 1985.

CHAPTER FOUR: HISTORIC PERIOD RESOURCES

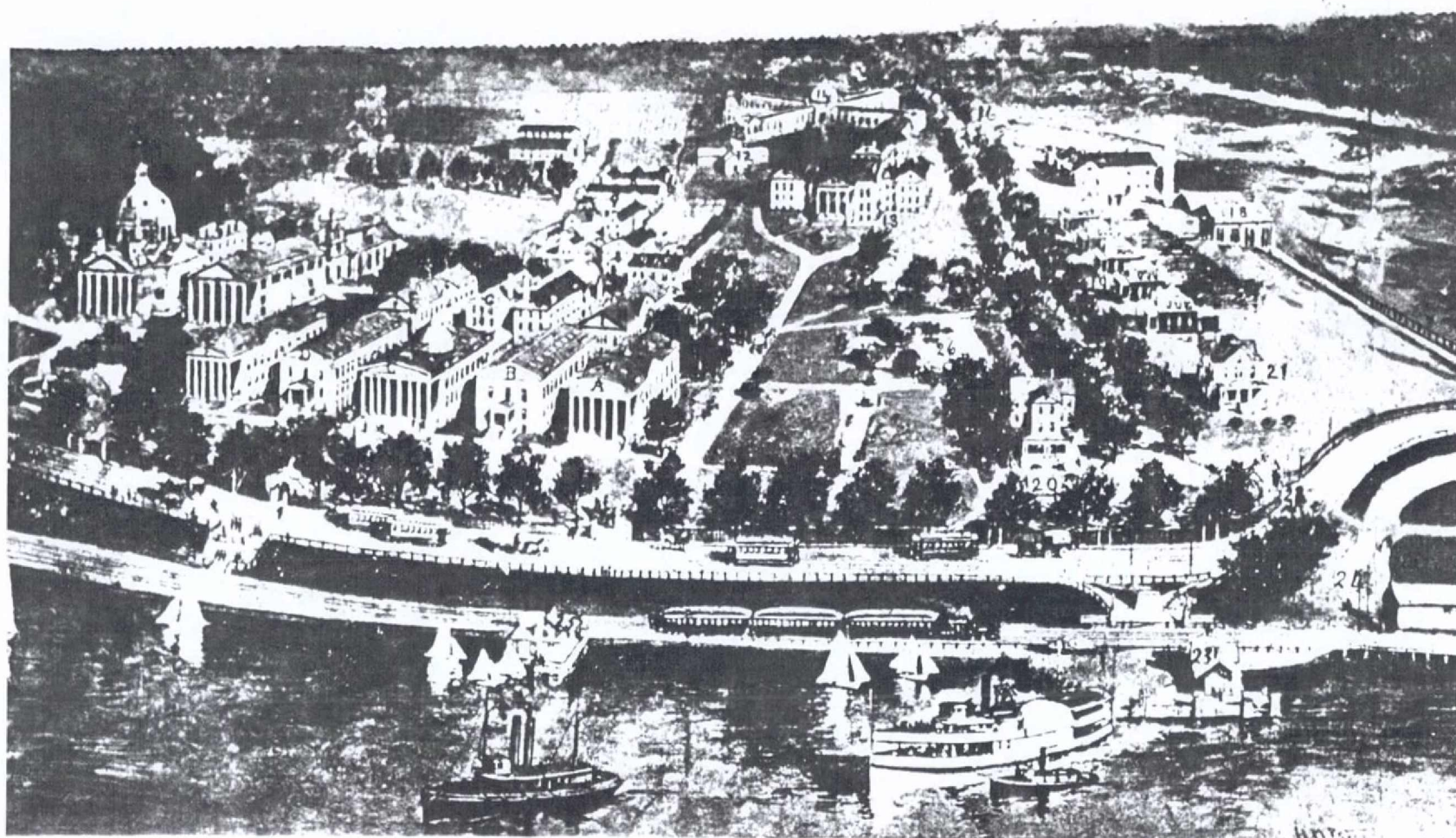
Sherene Baugher

CHAPTER FOUR: HISTORIC PERIOD RESOURCES

The waterfront of Sailors' Snug Harbor was developed extensively throughout the nineteenth century. By 1900, the shore area was an elegant entrance to the Snug Harbor property. When a late nineteenth-century visitor approached Sailors' Snug Harbor by boat he would see a dock, a dockhouse, a boathouse, a bathhouse, a stone retaining wall, and a dual carriage drive (see Figure 4:1). The waterfront structures were built, altered, and rebuilt throughout the nineteenth century; none of these buildings survive today. The only remnants of the once elegant shorefront are some dock remains, the stone retaining wall with a viewing platform and steps leading down to the tracks and the dual drive. Prior to Sailors' Snug Harbor's use of the property, there was only one building at the waterfront: a small waterfront structure associated with the Housman farm. This chapter will discuss the historical development of the waterfront property.

Colonial and Federalist Periods (1600-1831)

The history of this property can be traced back to the original grant of 120 acres given in 1677 by Governor Andros to Clause Arent. The exact location of this land is shown on Map of Colonial Land Grants, 1668 - 1712 drawn by Frederick Skene (State Engineer and Surveyor) in 1907 depicting Staten Island colonial land patents (see Figure 4:2). There is no record of Arent living on this property; at one time he lived in Brooklyn (Proceedings of the Natural Science Association of Staten Island, Vol 7:52). The next known owner of the property was John Veghte. It is not known how Veghte acquired the land or when he



The eight houses occupied by inmates are known by letters A H. Fig. 1 Main Gate. 2 East Gate. 3 Main Gate. 4 Main Gate. 5 Main Gate. 6 Main Gate. 7 Main Gate. 8 Main Gate. 9 Main Gate. 10 Main Gate. 11 Main Gate. 12 Main Gate. 13 Main Gate. 14 Main Gate. 15 Main Gate. 16 Main Gate. 17 Main Gate. 18 Main Gate. 19 Main Gate. 20 Main Gate. 21 Main Gate. 22 Main Gate. 23 Main Gate. 24 Main Gate. 25 Main Gate.

Figure 4:1 A Bird's-eye View of Sailors' Snug Harbor which shows the extensive development of the shoreline property. (Postcard, Hugh Powell Collection, Archives, Staten Island Institute of Arts and Sciences, 1899.)

L V A N K U L L

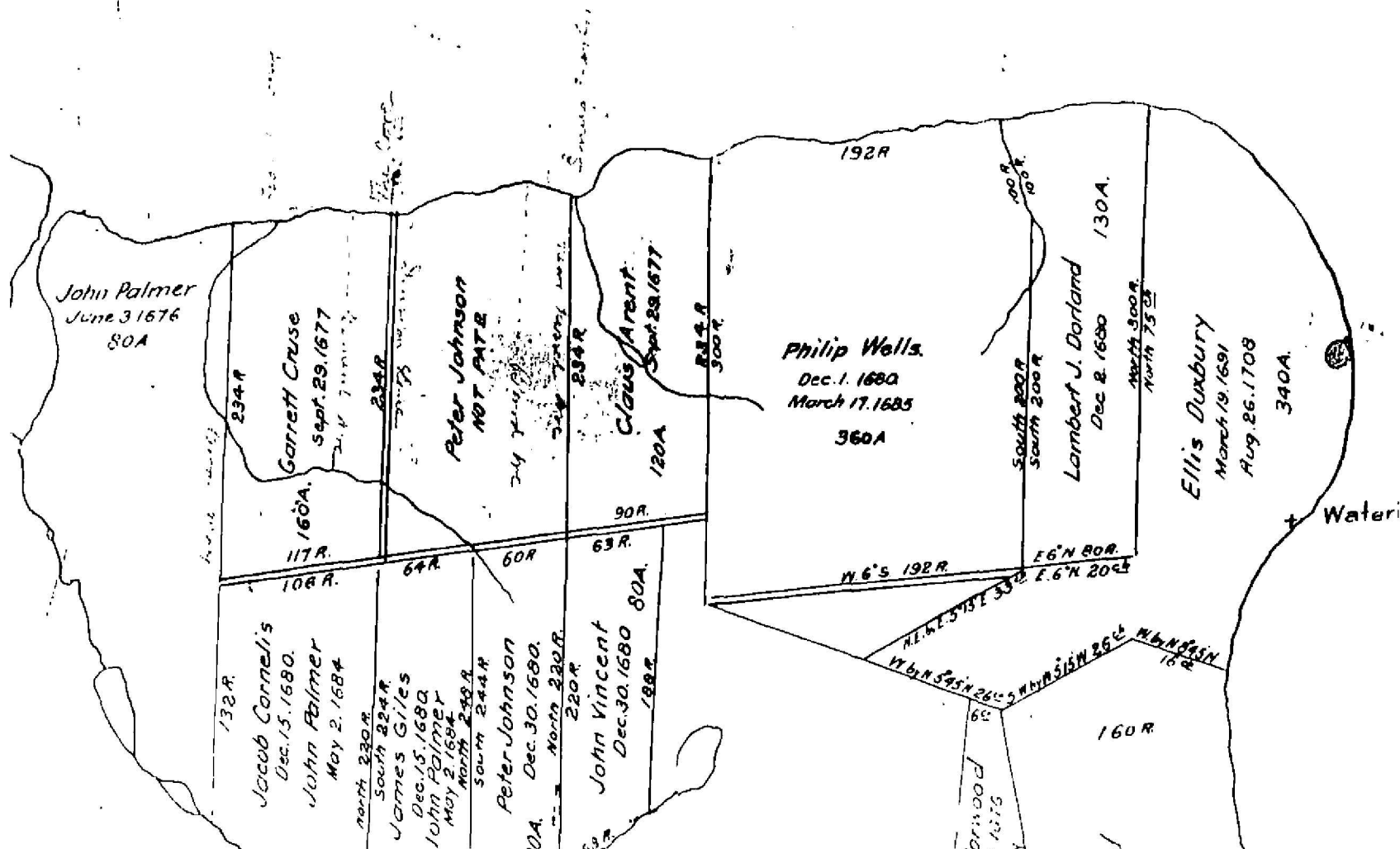


Figure 4:2 Map of Colonial Land Grants, 1688-1712, Frederick Skene, 1907. (Archives, Staten Island Institute of Arts and Sciences.) Scale: 1500 feet = 1 inch.

owned the land, but in a later deed he is mentioned as one of the previous owners (Liber V of Deeds: 464). Daniel Mersereau appears as the subsequent owner and again no deed of sale exists. However, in 1786 Merseraeu sold the land to Richard Housman (Liber E of Deeds: 201). After Housman's death in 1807, his son Issac acquired the property (Liber V of Deeds: 464). The Trustees of Sailors' Snug Harbor bought this land from Issac Housman in 1831 (Liber T of Deeds: 1831).

It has not been determined when any of the Housman structures were built. The first evidence of any structure on the shoreline property is on an 1831 sketch map drawn for the Trustees of Sailors' Snug Harbor. A comparison of the 1831 map and Blood's map of 1845 (see Figures 4:3 and 4:4) suggests that the Housman farmhouse may be either near the present location of the Randall statue or close to the West Gate House entrance to Snug Harbor. These two possible locations of the Houseman farmhouse are both within an area judged by the archaeologists at the Landmarks Preservation Commission to be archaeologically sensitive (see Baugher et al, 1985, pp. 64-76). A small dock and a small structure existed on the shoreline west of the major dock for Snug Harbor on land that was altered for the railroad. The map is the only evidence that we have of these two structures. However, we do not know the shape or composition of the dock and the nearby building, nor the exact function of the building. Other than these two structures, we have no evidence for any other buildings on the waterfront property during the period 1600 - 1831.

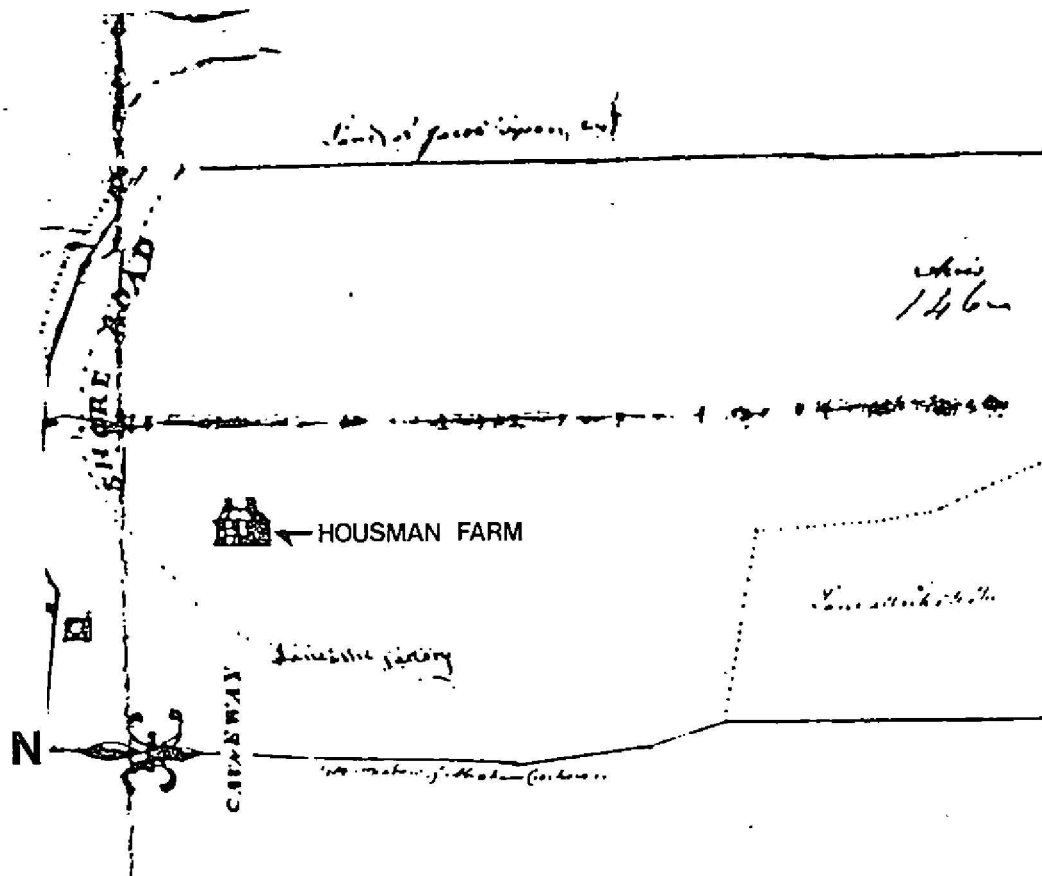


Figure 4:3 Map commissioned by the Harbor Trustees in May, 1831. Adapted by Louise DeCesare.

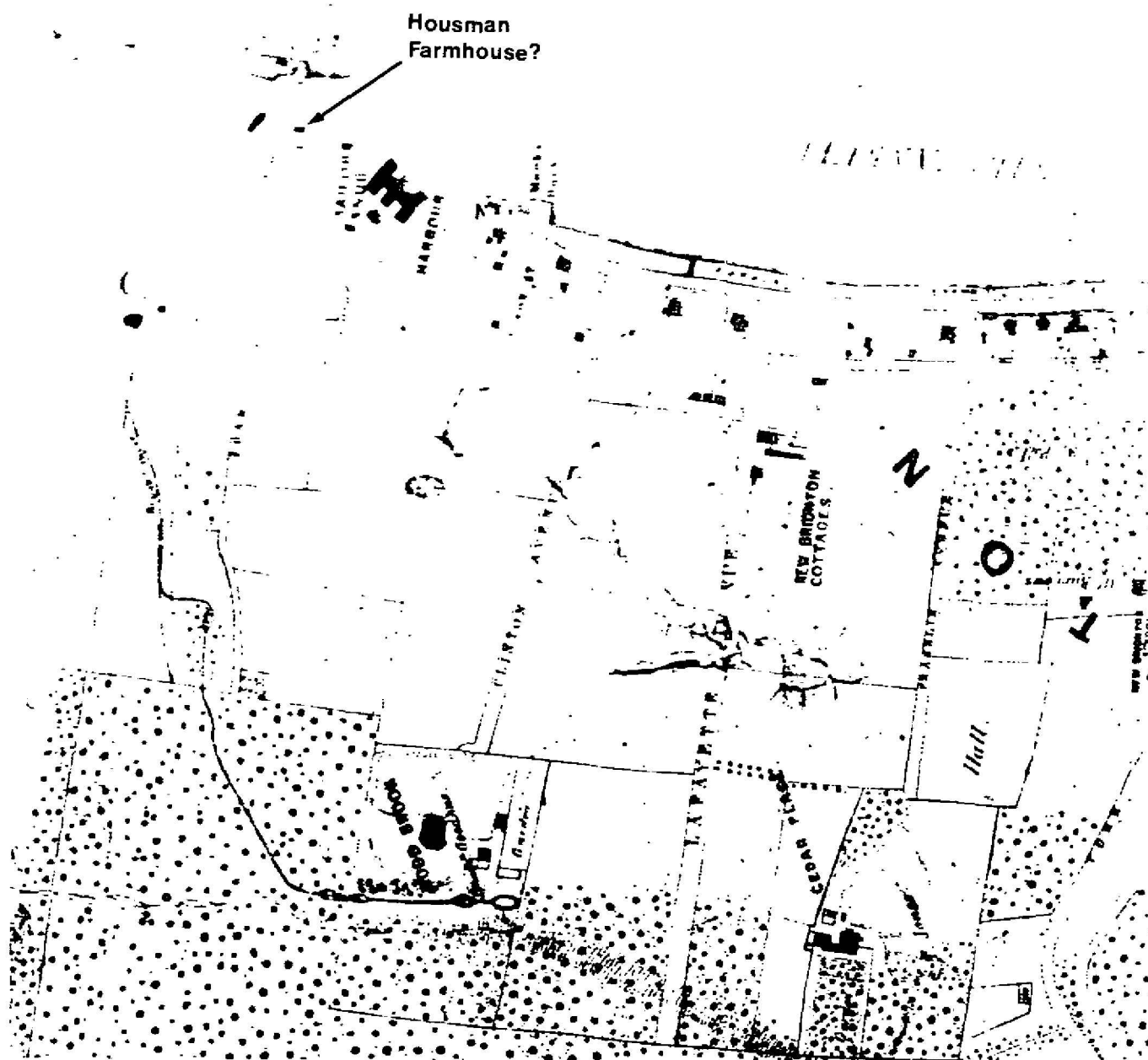


Figure 4:4 Map of New Brighton, Tompkinsville, Stapleton, and Clifton, Blood, 1845.
 (Archives, Staten Island Institute of Arts and Sciences.) Scale:
 100 yards = 18 chains.

Institutional Ownership (1831 - 1976)

The development of the waterfront property of Sailors' Snug Harbor can be discussed in five sections:

- 1) the landfilling episodes
- 2) the dock
- 3) the waterfront buildings
- 4) the dual drive
- 5) the railroad

Each section will be discussed separately, although the development of each area was not sequential; for example, the dual drive was being altered while the waterfront structures were being built.

1. The Landfilling Episodes

Archaeologists have evaluated the history of landfilling, the construction of fill retaining structures and the composition of the fill at Sailors' Snug Harbor (Geismar 1983, Louis Berger & Assoc, Inc 1987A, Louis Berger & Assoc, Inc 1987B, and Rockman, Levin and Harris 1983). In the Snug Harbor archives there is extensive information about the landfilling episodes at the site. In 1831, the Board of Trustees authorized the building of a dock and seawall with the following specific information:

to sink a pier in seven feet of low water - of 30 by 40 feet - and to be connected by a bridge from ten to fifteen feet - to a permanent stone pier - the walls to be 6 feet thick commencing at low water and extending 50 feet to the bank - the center to be filled in with earth and stone (Executive Committee Report 1831, Greene Street file).

In 1868, the dock area was dredged to "remove a collection of sand and gravel" (Governor's Quarterly Report, March 1868). An 1873 sketch of the Snug Harbor dock clearly shows both the wooden pier and the

permanent stone pier at the water's edge (see Figure 4:5). In 1875, the dock was rebuilt and the space between the seawall and the bank was filled in (Governor's Quarterly Report, June 1875). The documents provide an accurate description of the seawall (which was started in September 1873 and was finished in December 1876) and the land fill:

980 feet long, 10 feet high, 5 feet wide... contains 53,666 cubic feet of masonry equal to 1,050 tons of stone all of which except for 600 tons was taken off the Sailors' Snug Harbor farm (Governor's Quarterly Report, Dec. 18, 1876).

Two photographs, c. 1900, show the seawall and the graded slope along the Harbor's shoreline (see Figures 4:6 and 4:7). In 1928, the seawall received additional work:

...the seawall, because of the rapid slope of the shore, be supported by a quality of rip rap derrickstone placed outside the present retaining wall, beginning at the Harbor dock and extending approximately 858 feet in an easterly direction... (Greene Street file, box 32, file 32-7).

A postcard from the 1930s shows the seawall along the shoreline of the Harbor property and the unimproved shoreline where the property line ends (see Figure 4:8). In 1929, one hundred feet of seawall to the west of the dock also received similar treatment of derrickstone (Greene Street file, box 32, file 32-7). The Board of Trustees in 1947 authorized the Staten Island Rapid Transit Railway Company to construct a rock fill to be placed

on the north side of their bulkhead from the institution dock westerly to the mouth of the brook emptying into the Kill Van Kull from our property (Greene Street file, box 32, file 32-7).

No further documentation of landfilling has been found.

2. The Dock

A dock was the first structure to be built by Sailors' Snug Harbor. In May 1831, the Board of Trustees of Sailors' Snug Harbor authorized the

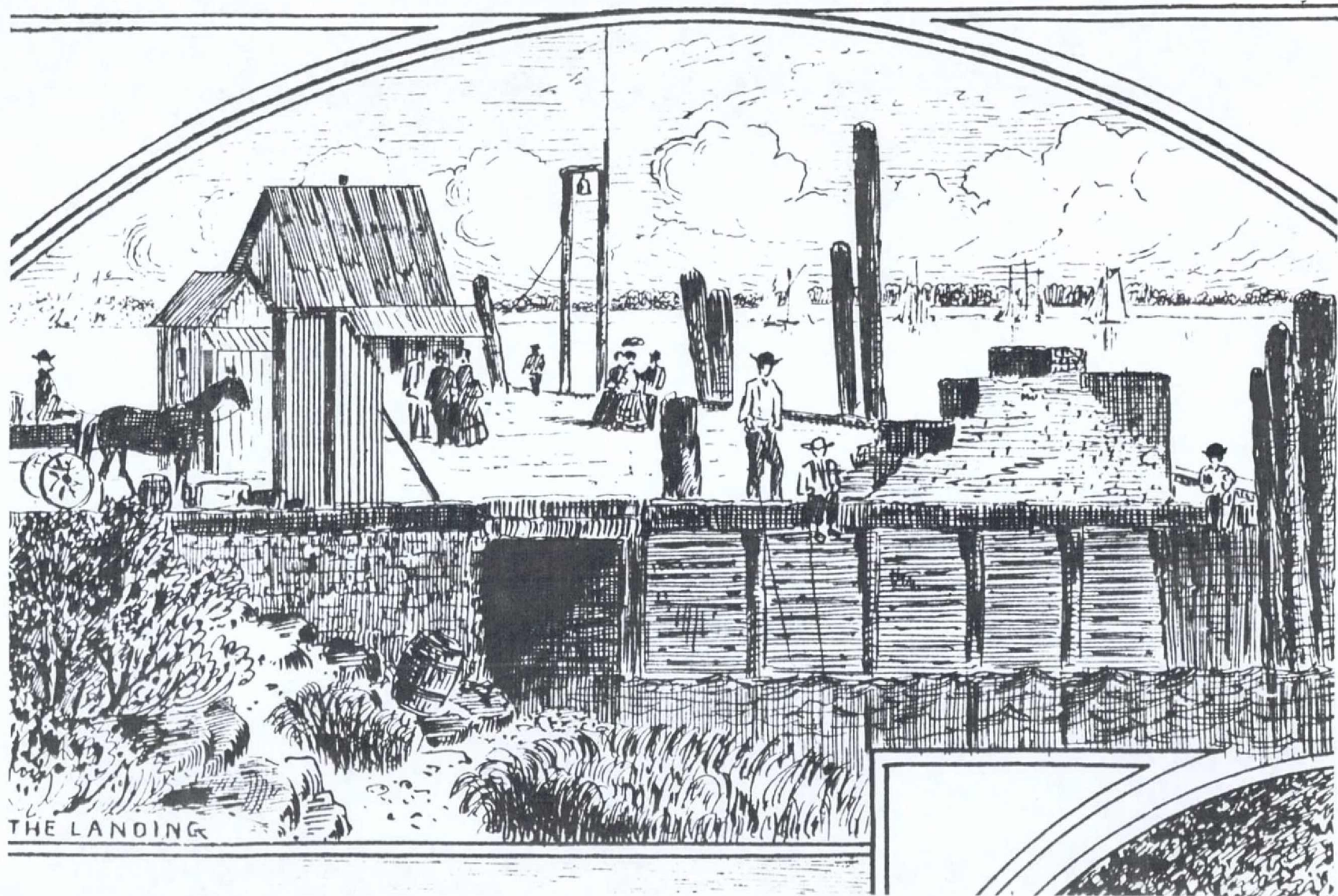


Figure 4:5 An artist's sketch of the dock at Sailors' Snug Harbor. (The Daily Graphic, New York, September 2, 1873, Page 437.)

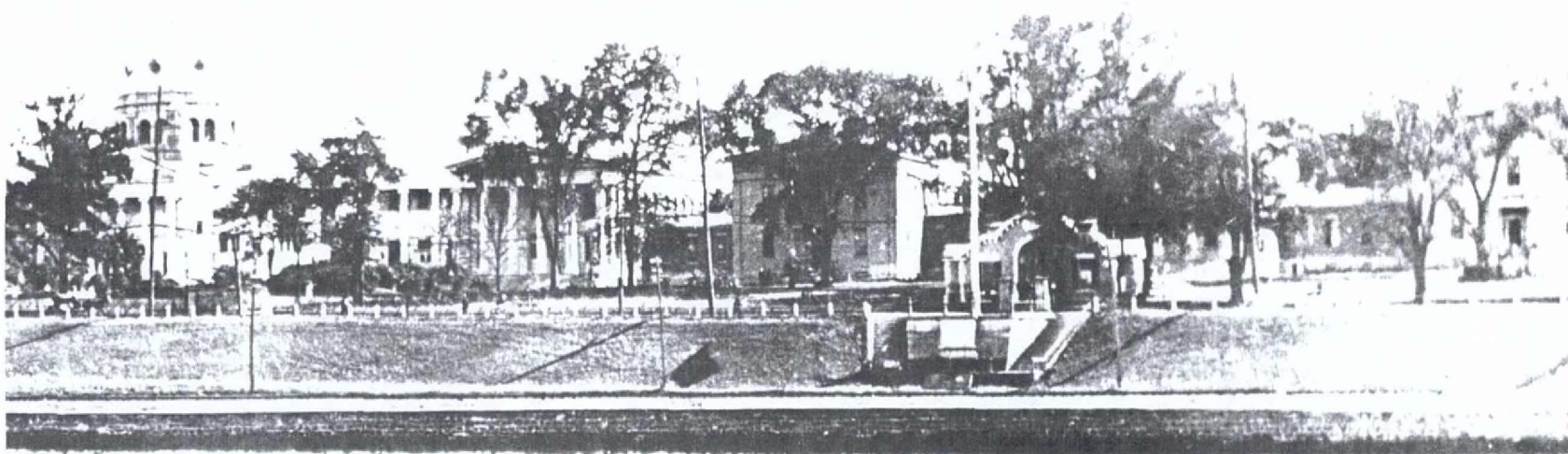


Figure 4:6 Shoreline of Sailors' Snug Harbor, c. 1900. Note addition of gateway and flagpole.
(Archives, Staten Island Institute of Arts and Sciences.)



Figure 4:7

Shoreline of Sailors' Snug Harbor, post 1916. Note the steep rise from the railroad tracks to Richmond Terrace. (Photo: Postcard, Hugh Powell Collection, Archives, Staten Island Institute of Arts and Sciences.)



Figure 4:8

Shoreline of Sailors' Snug Harbor, c. 1930. (Drawing: Postcard, Hugh Powell Collection, Archives, Staten Island Institute of Arts and Sciences, c. 1930.)

building of a dock and seawall on the shore frontage of the Houseman farm, and the dock was completed by September of that year (Greene Street File, Executive Committee Reports, May 1831 and Sept. 1831). Butler's Atlas of 1853 depicts the dock as a simple structure, small in comparison to neighboring docks along the north shore of Staten Island (see Figure 4:9). By 1874, the dock is shown on the Beer's Atlas of 1874 as a fairly extensive structure (see Figure 4:10). The dock had to be rebuilt in 1875. Le Fevre's Atlas of 1894 shows that the shape of the dock has been altered although it is still an extensive structure (see Figure 4:11). After another major rebuilding in the early 1900s, the dock was described as follows:

the dock measured 175 feet long on the waterfront side, 150 feet on the land side, and from the seawall extended slightly more than 60 feet into the Kill van Kull. Half on land and half on pilings, the dockhouse, 50 feet ~~in~~ length, was set on the western side of the wharf with its southern end just 25 feet north of the low curved wall on the northern side of the dual drive (NYC Landmarks Preservation Commission 1986, Snug Harbor Dock:1).

In 1947, Sailors' Snug Harbor was given permission by the New York City Department of Marine and Aviation to remove the pier, fill in the boathouse foundation, and to do repairs on the seawall (Greene Street file, Box 32, file 32-5). Remnants of the dock and dock house foundation can still be seen.

3. The Waterfront Buildings

The waterfront buildings included a boat house, a bathhouse, and a dock house. These three buildings are depicted in the 1900 "Bird's Eye View" (see Figure 4:1). Detailed architectural documentation exists for the dock house. In December 1877, Governor Melville submitted plans for a new dock house because the original building was in a

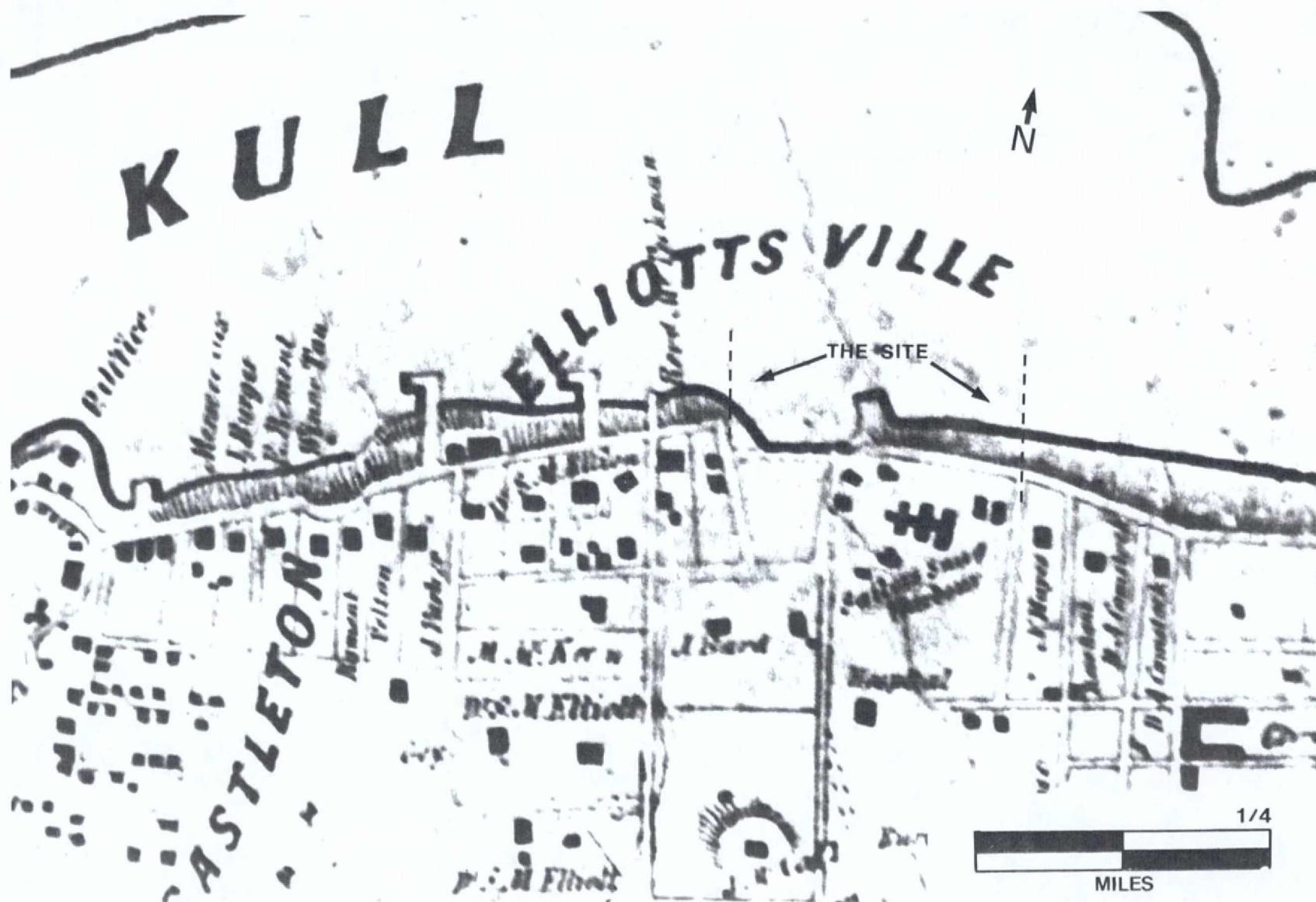


Figure 4:9

Map of Staten Island or Richmond County, New York, by James Butler, 1853. (Archives, Staten Island Institute of Arts and Sciences.)

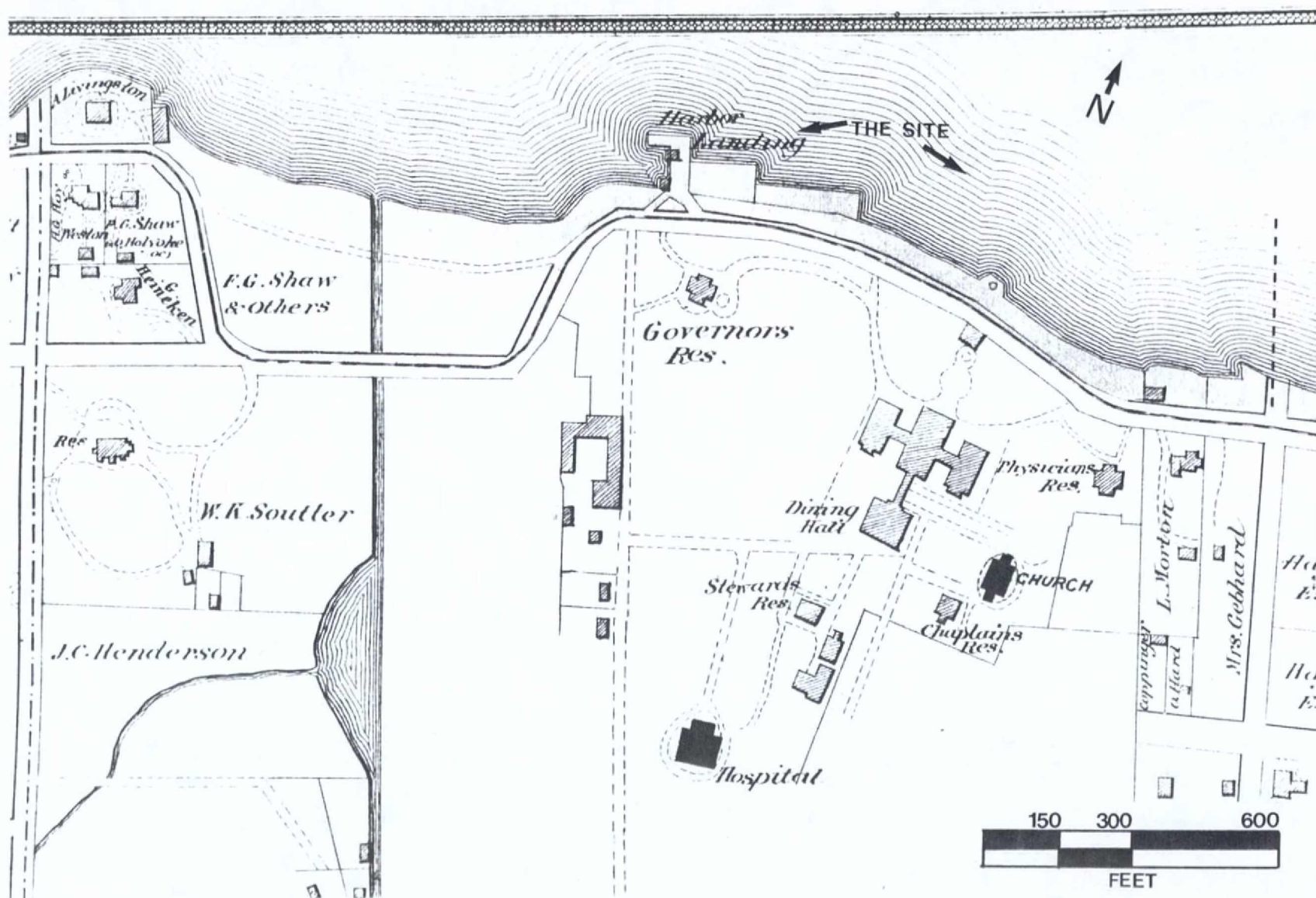


Figure 4:10 Atlas of Staten Island, New York. J. B. Beers and Company, New York, 1874. (Archives, Staten Island Institute of Arts and Sciences).

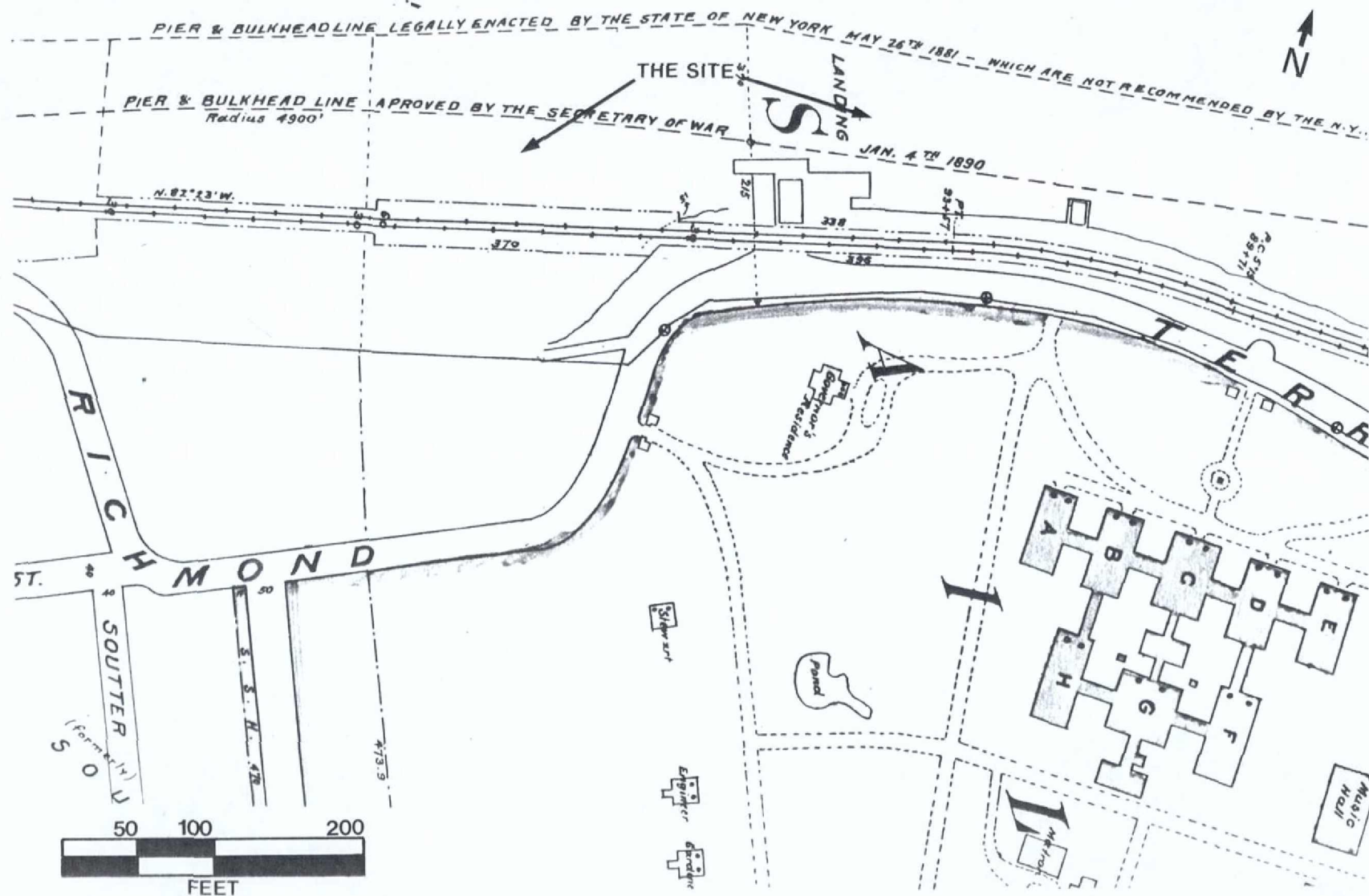


Figure 4:11

Map, Atlas of Staten Island, Richmond County, New York, Volume I, Castleton. (I. A. LeFevre, Broadway, New York, 1894, Plate 12.)

"dilapidated state and not in keeping with the recent improvements on the waterfront" (Governor's Quarterly Report, Dec. 17, 1877). By 1878 the dockhouse was completed, including the installation of the clock tower (Governor's Quarterly Report, September 30, 1878). An 1880 photograph shows the dock house with a boat docked at the pier (see Figure 4:12). The dock house is designed in the stick style with Second Empire iron cresting (see Figure 4:13). Richard Smyth designed the building which contained an apartment for an attendant and a waiting room (Shepherd, 1977:4.25/1). In 1943, the dock house was severely damaged in a fire (Greene Street files, Box 33, file 5). In a letter from the Governor of the Harbor to the Board of Trustees in 1944 the Governor recommended that the dock house be demolished; he noted that the building was damaged in a fire in April 1943 and suffered "further serious damage" in a fire in June 1944 (Greene Street file, Box 32, File 32-5). By 1947, the building had been demolished and only part of the foundation still existed (Greene Street file, Box 32, file 32-5). A portion of the dockhouse foundation appears to have survived.

The bathhouse, a companion building to the dock house, first appears on Beer's Atlas of 1887 (see Figure 4:14). The last map reference for it is on Borough of Richmond Topographic Survey, 1906 (see Figure 4:15). It is not shown on either the Bromley Atlas of 1917 or the Sanborn Atlas of 1935 (see Figures 4:16 and 4:17). Therefore it appears that it was built by 1887 and demolished sometime between 1907 and 1917. The 1907 photograph shows the bathhouse as a stick style building with Second Empire iron cresting (see Figure 4:18). The structure was located near the sailors' lookout, flag post and viewing spot (see



Figure 4:12

Dock House at Sailors' Snug Harbor, c. 1880. (Photo: J. Loeffler, Archives, Staten Island Institute of Arts and Sciences, c. 1830.)

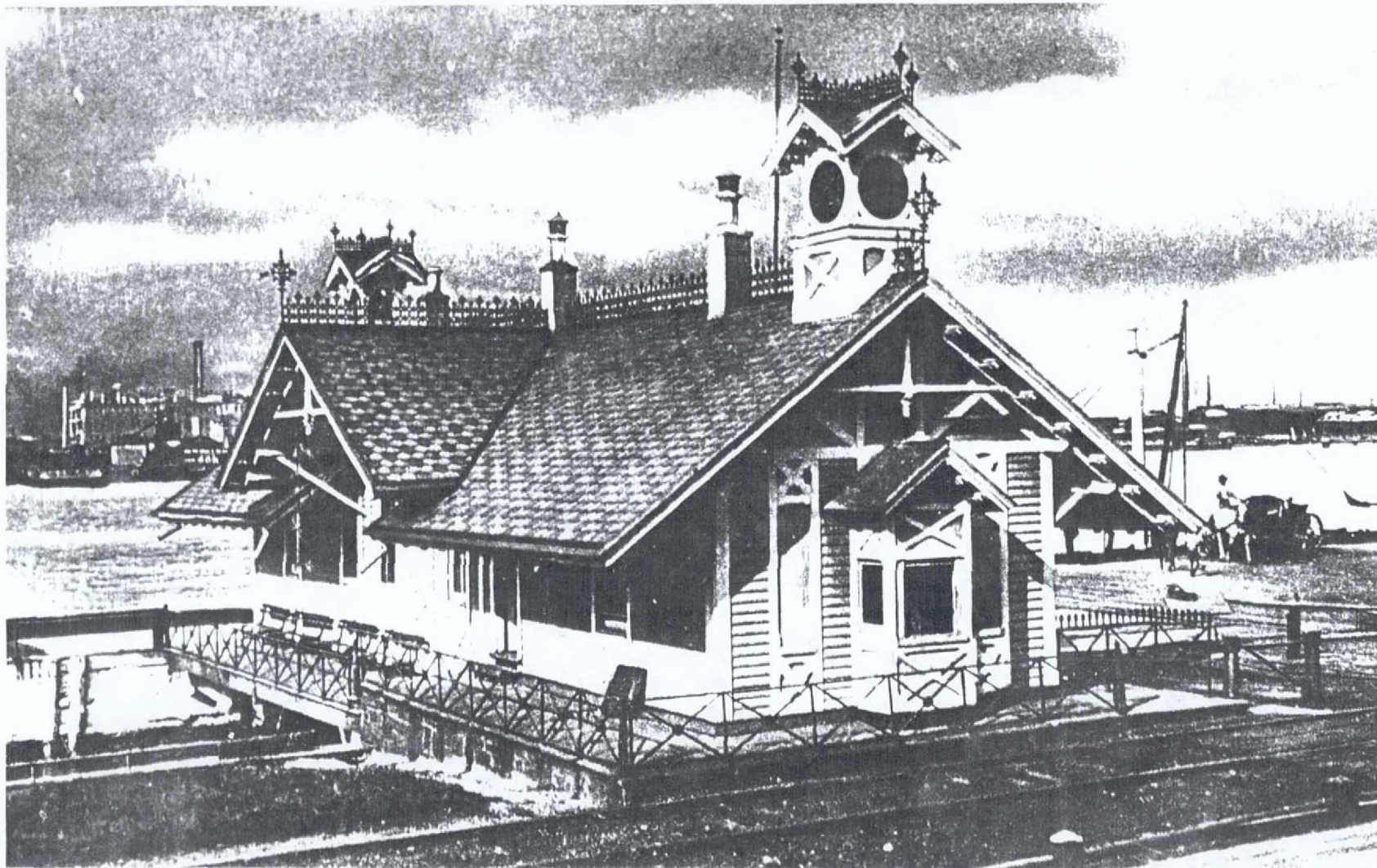


Figure 4:13 Dock House at Sailors' Snug Harbor, 1907. (Photo: Postcard, Hugh Powell Collection, Archives, Staten Island Institute of Arts and Sciences, 1907).

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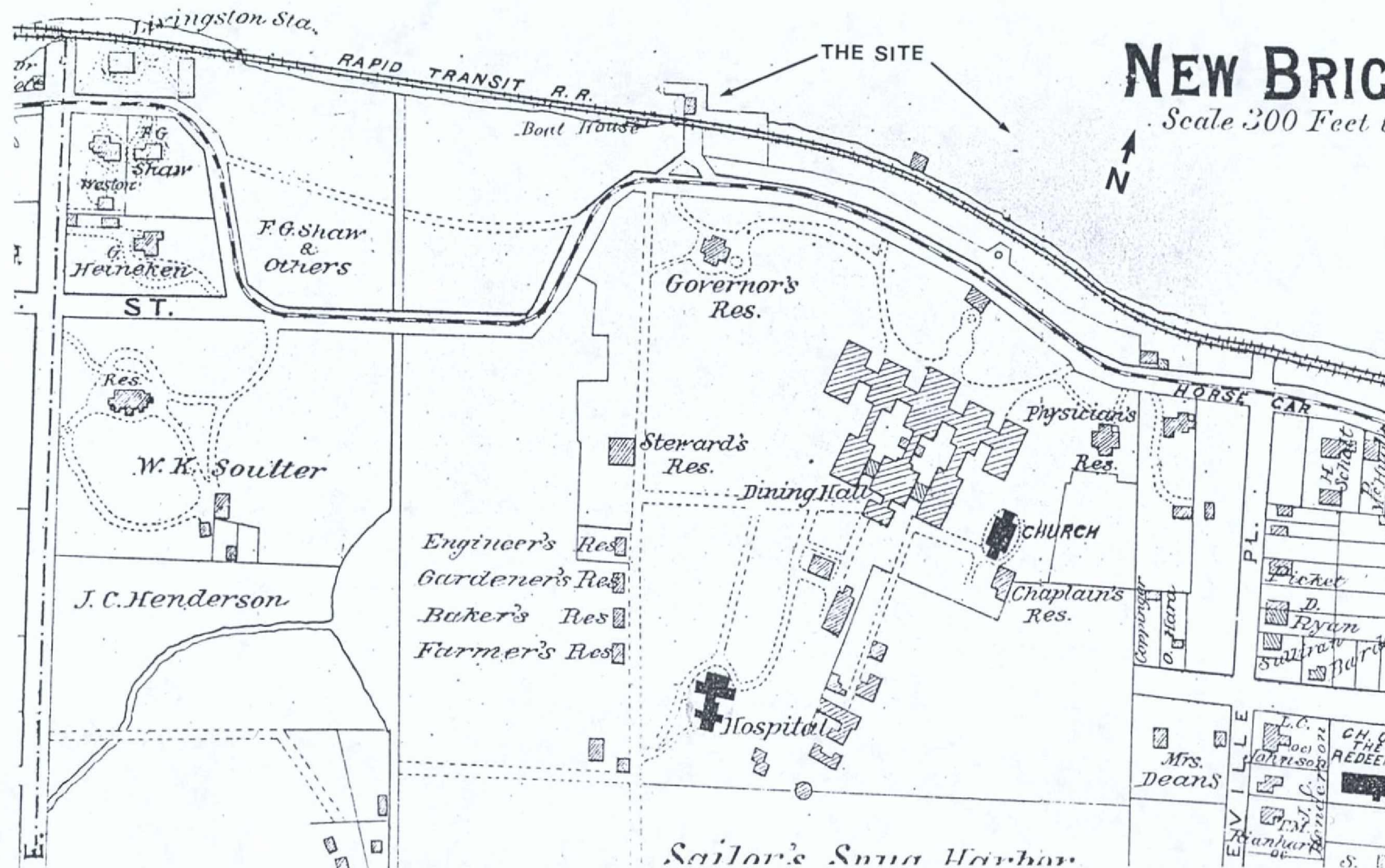


Figure 4:14 Atlas of Staten Island, Richmond County, New York, J. B. Beers, 1887. (Archives, Staten Island Institute of Arts and Sciences.) Scale 1500 feet=1 inch.

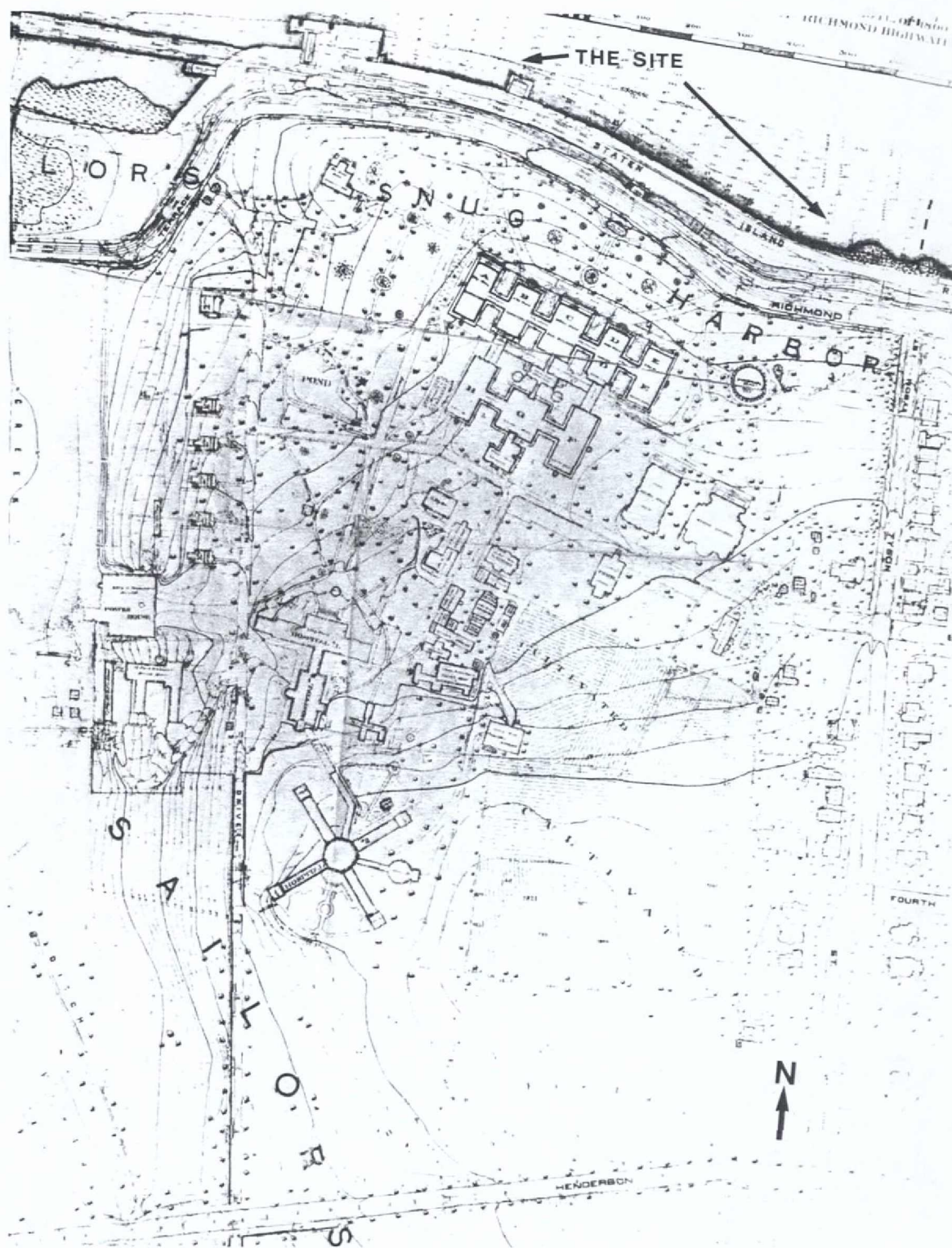
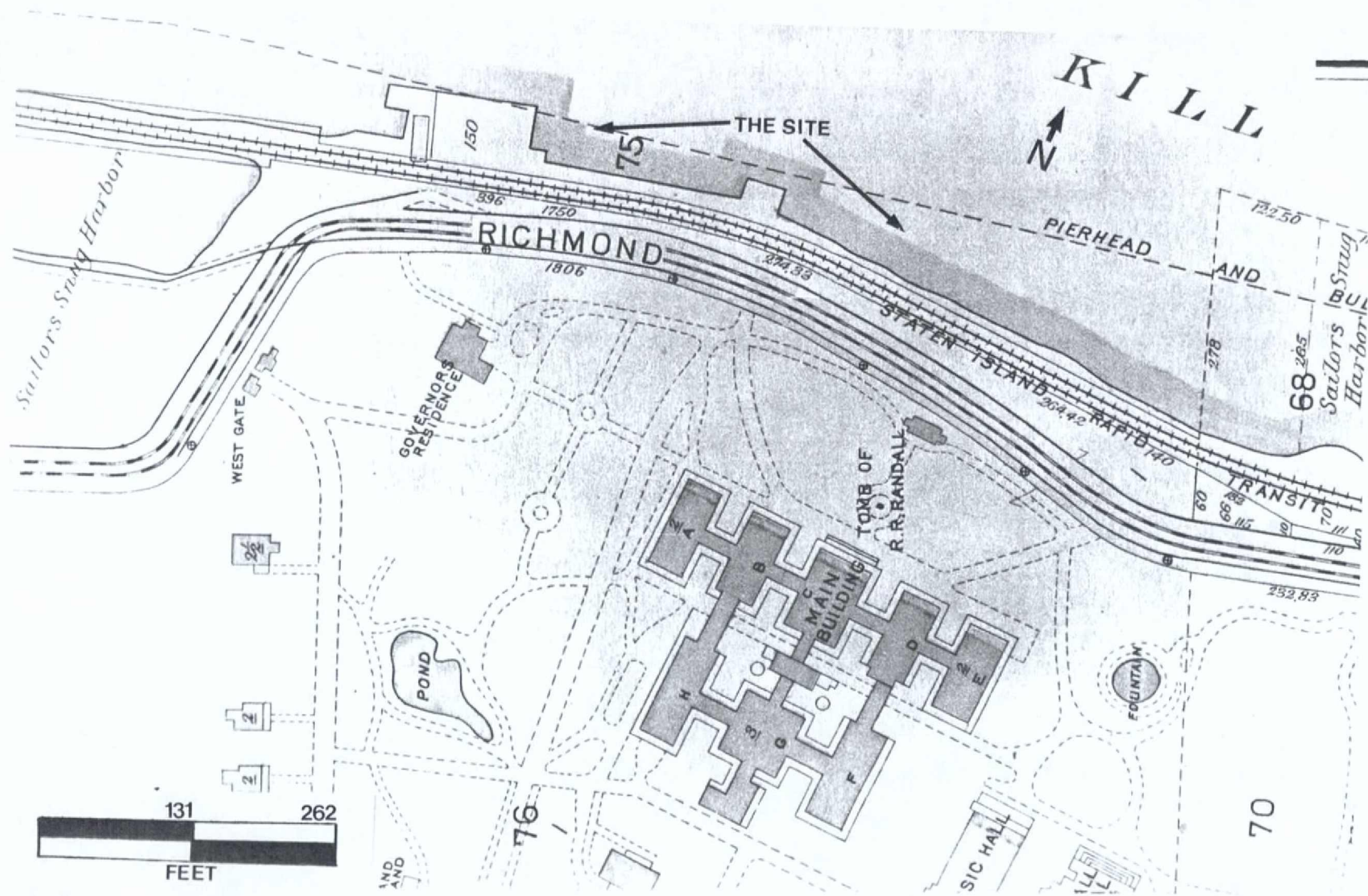


Figure 4:15 Borough of Richmond Topographical Survey, 1906.
Scale: 1 inch = 150 feet.



4:16 Bromley Atlas of 1917, Volume I, Plate 13.

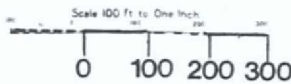


Figure 4:17 Atlas of the Borough of Richmond. Sanborn, 1935.

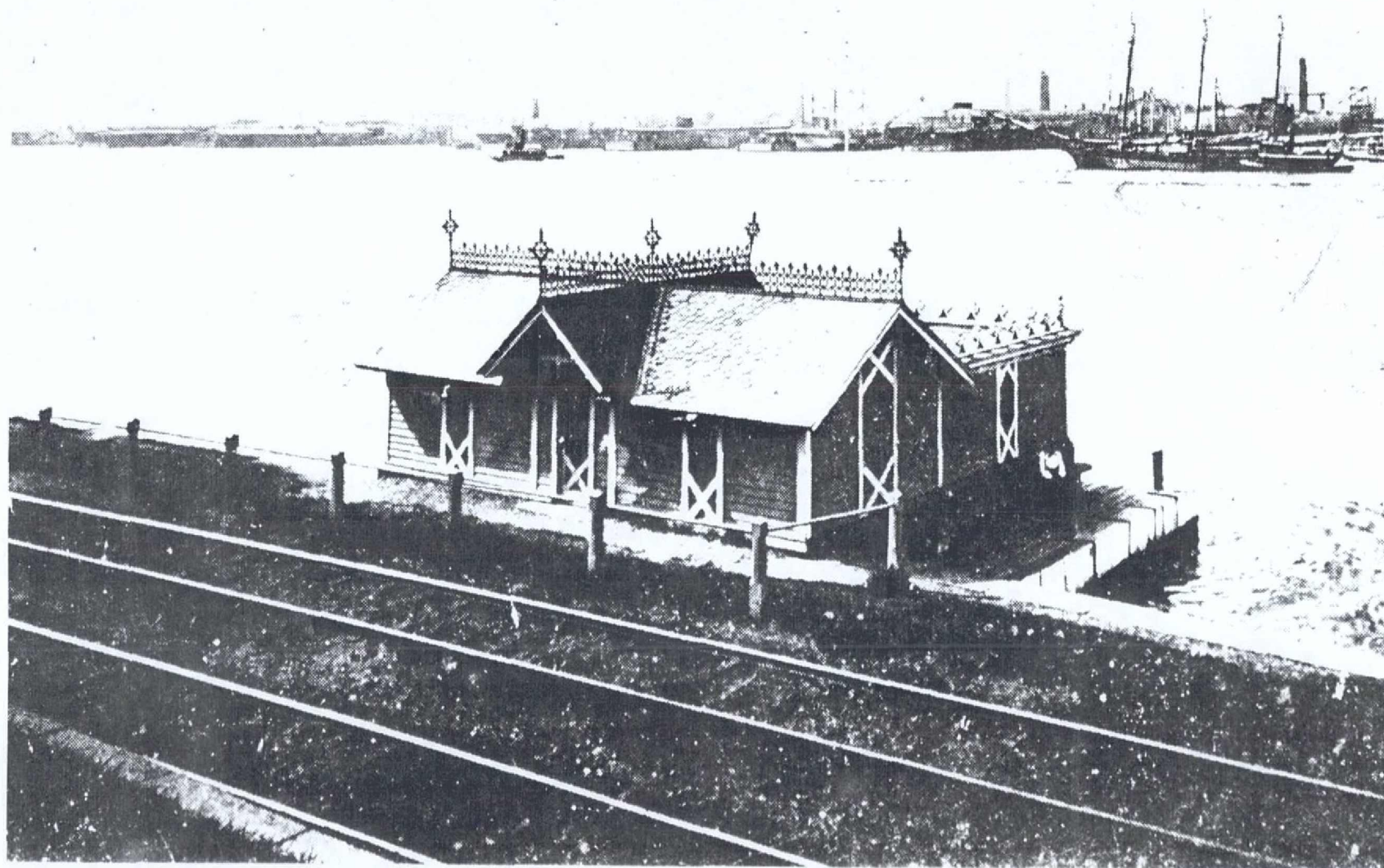


Figure 4:18 Bath House, Sailors' Snug Harbor, 1907. (Photo: Postcard, Hugh Powell Collection, Archives, Staten Island Institute of Arts and Sciences, 1907).

Figure 4:19). The Snug Harbor archives do not contain any further information concerning the bathhouse and its use.

The first documentation of the boat house is on Robinson's Atlas of 1898; the structure is situated south of the railroad tracks but west of the dock and dock house (see Figure 4:20). It is depicted on the Borough of Richmond Topographic Survey, 1906 parallel to the shoreline (see Figure 4:15). By 1917, the building is gone; it does not appear on Bromley's Atlas of that year (see Figure 4:16). In regard to the boat house, Barnett Shepherd (1976:4.24/1) states that "it is possible that this building, although located on Snug Harbor property, was constructed by the neighboring community." In August 1944, the Staten Island Advance reported that Charles W. Decker built the boat house. A photograph shows the boat house as a simple wood frame structure of "utilitarian" style (see Figure 4:21). The Snug Harbor archives do not contain any information which explains the different functions of the boat house and the dock house.

On Blood's 1845 map of the north coast of Staten Island, two unidentified structures are depicted near the shore at the northeast portion of the Snug Harbor property near Tyson Street (see Figure 4:4). These two structures do not appear on any other map, nor are they mentioned in documents in the Sailors' Snug Harbor archives that pertain to the shoreline. The authors of this report have found Blood's map to be useful in providing general information on property location which includes the owner's name. However, Blood's map is not always accurate in providing the specific location or dimensions of buildings. In fact, there are documented structures that are missing from other portions of his map (Baughner-Perlin and Bluefeld 1980:109).

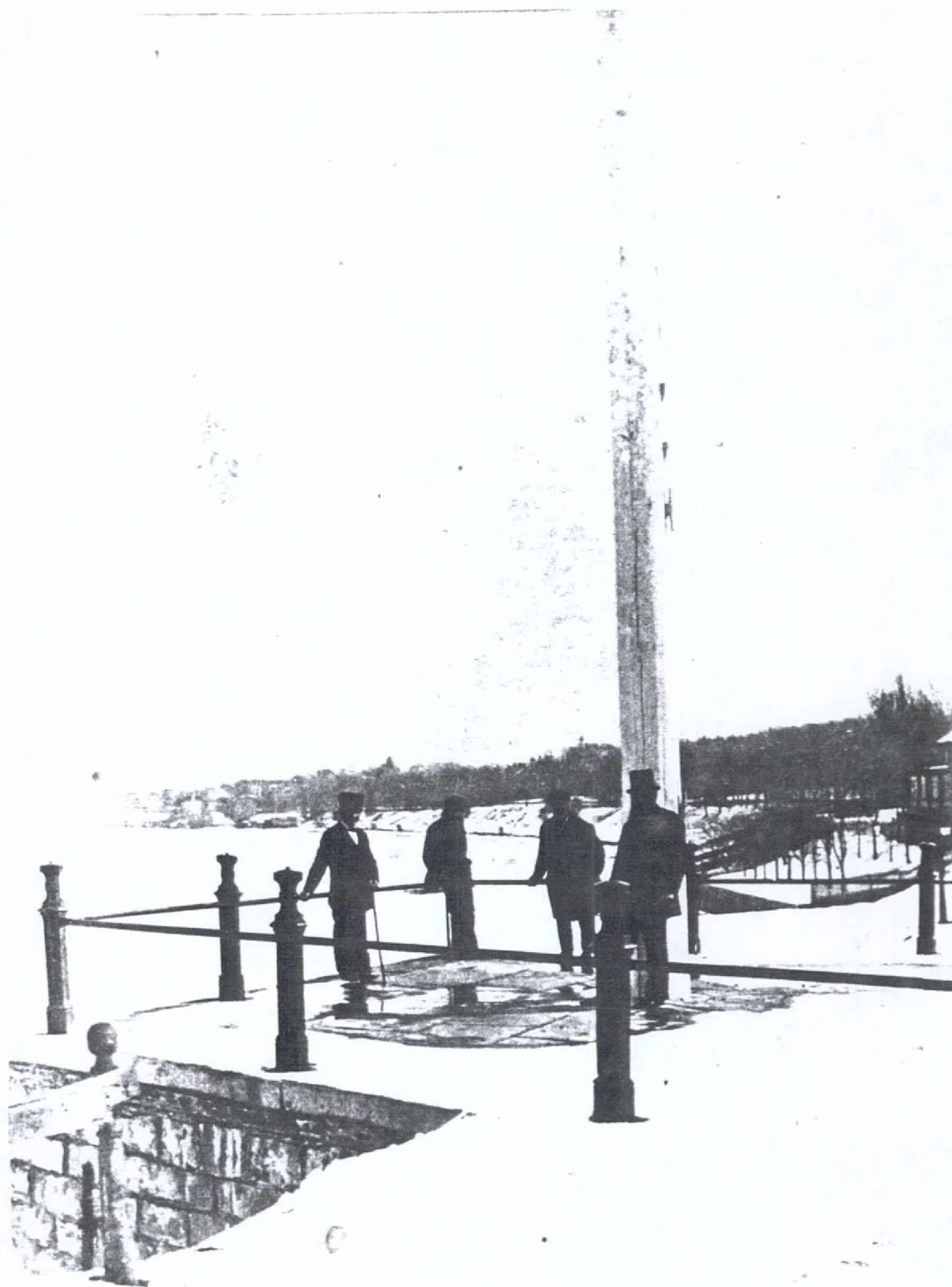


Figure 4:19 The Sailors' Lookout, Sailors' Snug Harbor. Photo:
I. Almstaedt, Tompkinsville, Staten Island, c. 1878.
(Hugh Powell Collection, Archives, Staten Island
Institute of Arts and Sciences.)

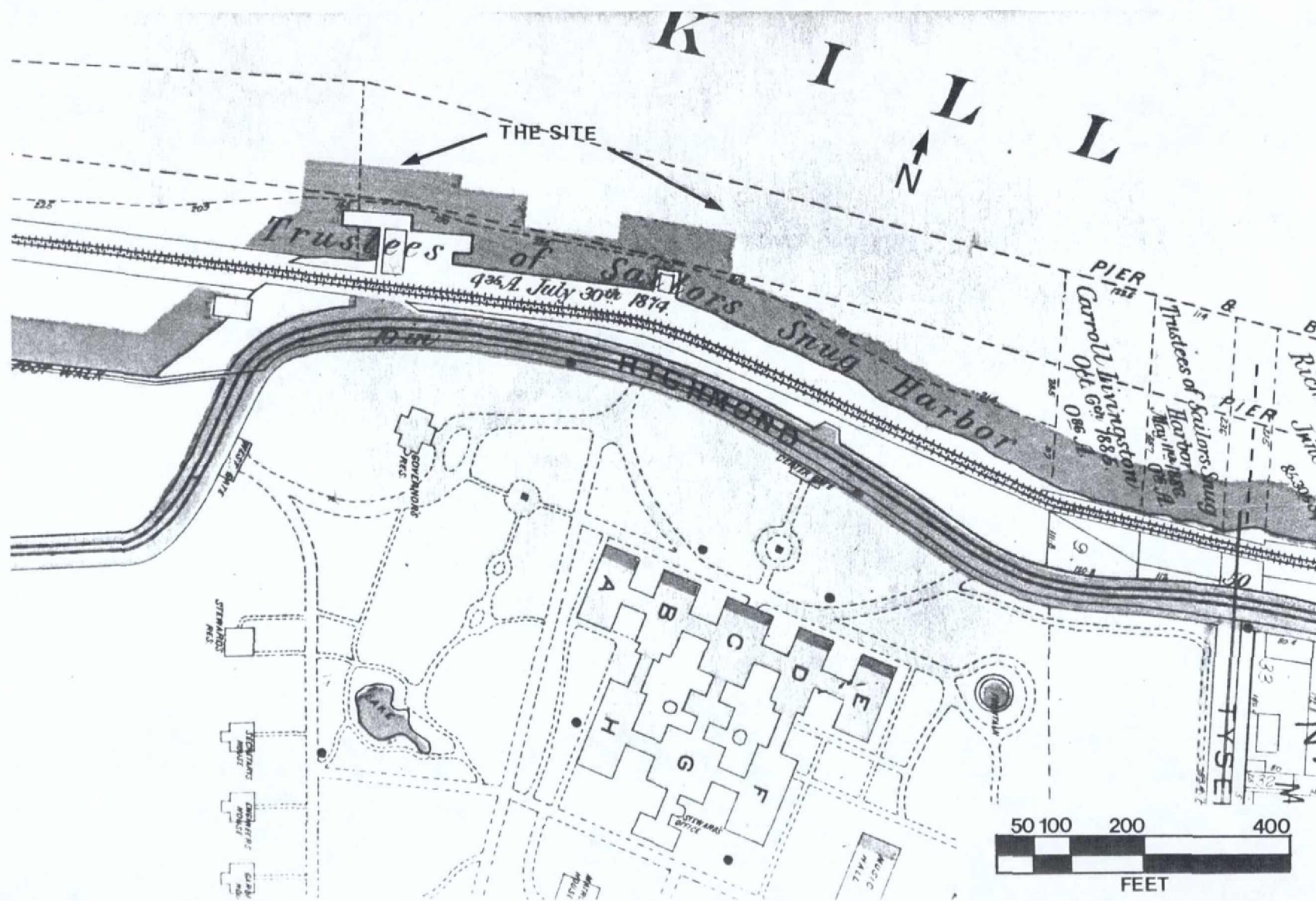


Figure 4:20 Robinson's Atlas of the Borough of Richmond, Plate 2, 1898.



Figure 4:21

Shoreline of Sailors' Snug Harbor, undated photograph in the Archives, Staten Island Institute of Arts and Sciences.

Thus possible explanations for these two structures are that they are:

- 1) non-existent structures
- 2) structures projected to be constructed at the site but were never built
- 3) mislocated structures
- 4) temporary structures for storing building materials, housing special events, etc.

Since no other documentation exists for these two structures, it is probable that they were not located on Snug Harbor property but that they were simply inaccurately depicted on Blood's map.

4. The Dual Drive

The dual drive, which runs parallel to Richmond Terrace, provides both access to the shoreline and dock and a connection to the main thoroughfare along the Kill Van Kull. The drive first appears in 1845 on Blood's map of New Brighton, Tompkinsville, Stapleton, and Clifton (see Figure 4:4). The drive is not depicted on the 1831 Trustee's map of the Housman farm; so it seems to have been built sometime between 1832 and 1845. The drive may have been improved in 1877 when other changes were made to the shoreline. The drive walls are of granite ashlar construction and are extant.

5. The Railroad

By 1884, the Staten Island Rapid Transit Railroad obtained right-of-ways for their trains to run along the Snug Harbor shoreline (Greene Street file, Box 32, file 32-7). The railroad tracks were drawn clearly on Beer's Atlas of 1887 (see Figure 4:14). A postcard, c.

1900, shows the railroad tracks fronting Richmond Terrace (see Figure 4:22). A 1900 photograph shows the railroad tracks supported by pilings across the mouth of the inlet near the fresh water stream (see Figure 4:23). The present stream channel has been altered several times since the mid 19th century. For example, Blood's 1845 map indicates an "oxbow" in the stream channel near its mouth. By 1926, the stream channel is straight (see Bromley 1926 plate #13).

In the twentieth century, the railroad carried out major landfilling operations along the Snug Harbor shoreline. A 1905-1910 photograph shows the railroad tracks laid on landfill (see Figure 4:24). In 1929, the railroad agreed to share the cost of placing rip rap derrickstone along the institution shoreline from the dock west for 100 feet; 350 net tons of stone were used (Executive Committee Reports Jan 11, 1929 and May 24, 1929). In 1947, the railroad company arranged with the Trustees of Sailors' Snug Harbor to install a rock fill on the north side of the railroad's bulkhead from the Snug Harbor dock westerly to the mouth of the brook which empties into the Kill Van Kull (Executive Committee Reports, Dec. 26, 1947).

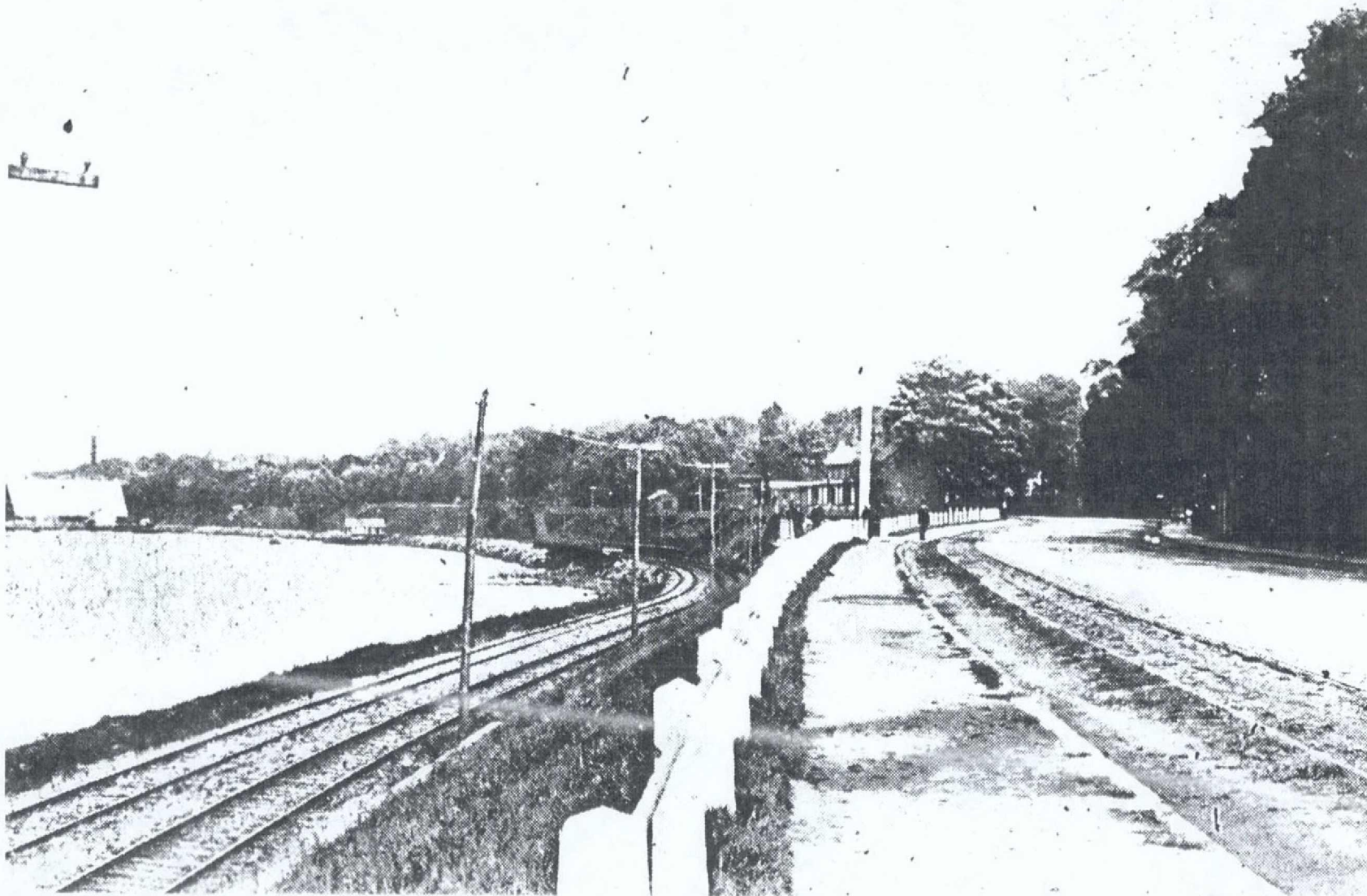


Figure 4:22

In the foreground is Richmond Terrace, fronting Sailors' Snug Harbor. Note the slope of the ground from Richmond Terrace to the railroad tracks. (Photo: Clegg, Postcard, Hugh Powell Collection, Archives, Staten Island Institute of Arts and Sciences, c. 1900.)

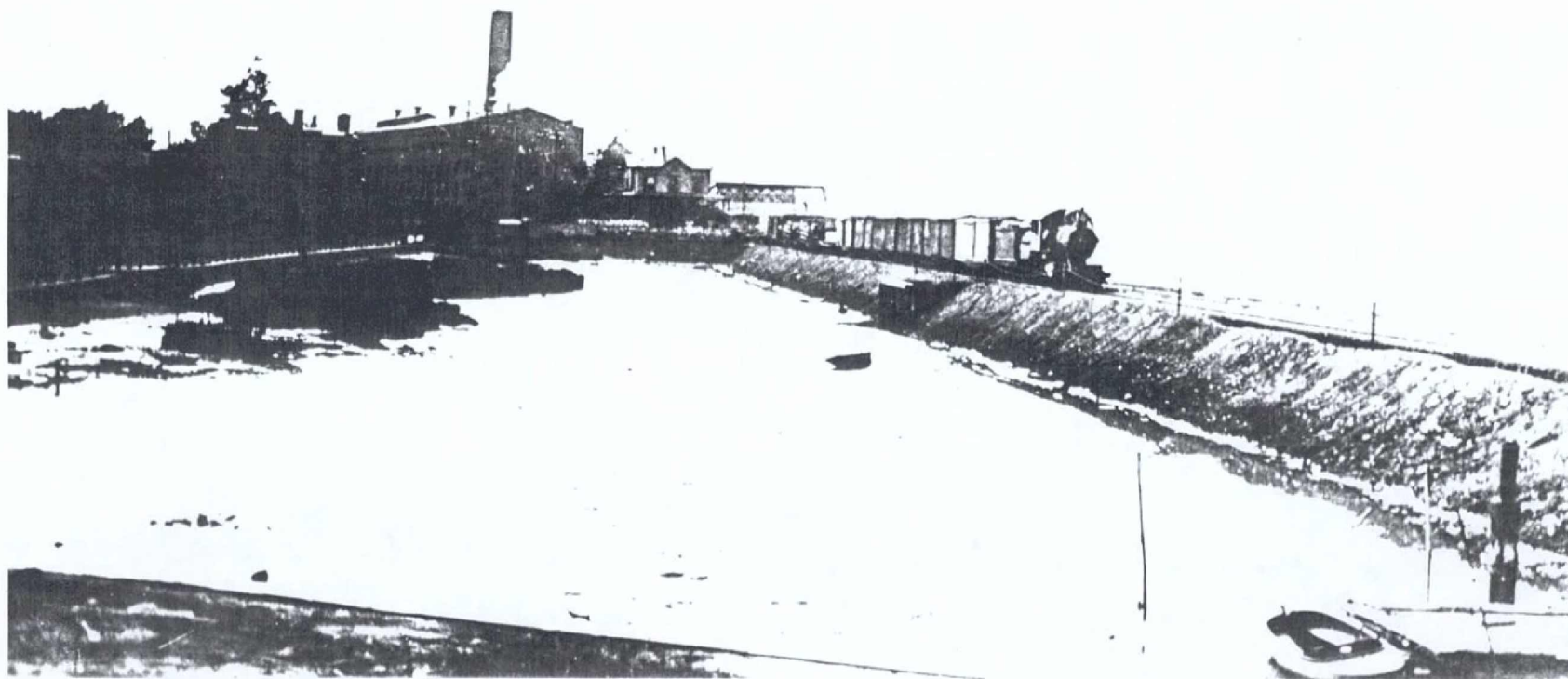


Figure 4:23

Railroad across mouth of inlet near Sailors' Snug Harbor. Note that the tracks are laid on landfill. Previous photograph (Figure 4:20) shows tracks supported by pilings. (Photo: Cornelius B. Egbert Collection, Archives, Staten Island Institute of Arts and Sciences, c. 1905-1910.)



Figure 4:24

View of Sailors' Snug Harbor, c. 1900 showing dock, boathouse, and railroad across mouth of inlet near fresh water stream. (Photo: Almstaedt, Postcard, Archives, Staten Island Institute of Arts and Sciences, c. 1900.)

CHAPTER FIVE: ARCHAEOLOGICAL FIELD SURVEY

Sherene Baugher
Edward J. Lenik

CHAPTER FIVE: ARCHAEOLOGICAL FIELD SURVEY

The purpose of this survey was to examine the present conditions and alterations that may have taken place to the shoreline of Snug Harbor. This task required the collection and assessment of geomorphological data since coastal environments are particularly susceptible to drastic and far-reaching natural changes such as submergence and erosion. Historic period and current land use in the project area have also been examined. These data reveal that the Snug Harbor shoreline has undergone several alterations during the past two hundred years due to both natural and human processes. These changes have a direct impact on the preservation and viability of any archaeological sites within the project area. In this chapter we present the results of our survey and our assessment of the area's potential to contain archaeologically significant resources.

The Survey

During the nineteenth and twentieth centuries extensive construction work and landfilling have taken place along the Snug Harbor shoreline (see Chapter Four for historic details). This work is evident in the presence of remnants of the former dock and dock house, a double driveway (dual drive) consisting of retaining walls constructed of granite and paved with Belgian blocks and bluestone flagging which leads from Richmond Terrace down to the wharf, a stone wall with the name Sailors' Snug Harbor on it, and stone stairs that connect the road to the shoreline.

The shoreline has been and still is subjected to bank erosion as a result of wave action both natural and that caused by boat traffic

(especially from the container ships and Exxon tankers) on the Kill Van Kull. The stone seawall, stone rip-rap, and wooden bulkheads are still visible but they have not been maintained (see Figure 5:1).

At present, there is a sharp drop in the topography - approximately fifteen feet - between Richmond Terrace and the shoreline (see Figure 5:2). This topographic shoreline drop-off was apparently a natural feature at least as far back as 1836, as indicated by the U.S. Coastal Survey of 1836 - 1839 (see Figure 5:3). In addition, photographs of the shoreline which were taken around 1900 also show the drop in topography between the top of the shore road and the shoreline (see Figures 4:6 and 4:7). The east and central portions of the shoreline consist of large boulders, wood, and gravel landfill. The western portion of the shoreline consists of wood on bulkhead with rubble and gravel backfill.

Today, the elegant shoreline entrance to the Harbor is but a memory. The only remnant of the dock and stick style dock house are the foundation pillars for the dock (see Figure 5:1). The Belgian block dual drive paving still exists, although weeds have taken over the drive. The stone retaining wall with the name "S.S. Harbor" on it still stands, although graffiti mars the surface (see Figure 5:4). The wall is broken in various places (see Figure 5:5). Stone stairs still connect Richmond Terrace to the shore, although weeds are encroaching on the steps.

Railroad tracks were laid along the shoreline by 1887 (see Chapter Four for details). Although the Staten Island Rapid Transit no longer uses this railroad line, the tracks are extant (see Figure 5:6). The



Figure 5:1 Present condition of seawall, stone rip-rap, and wooden bulkheads. (Photo: Carl Forster, 1986).

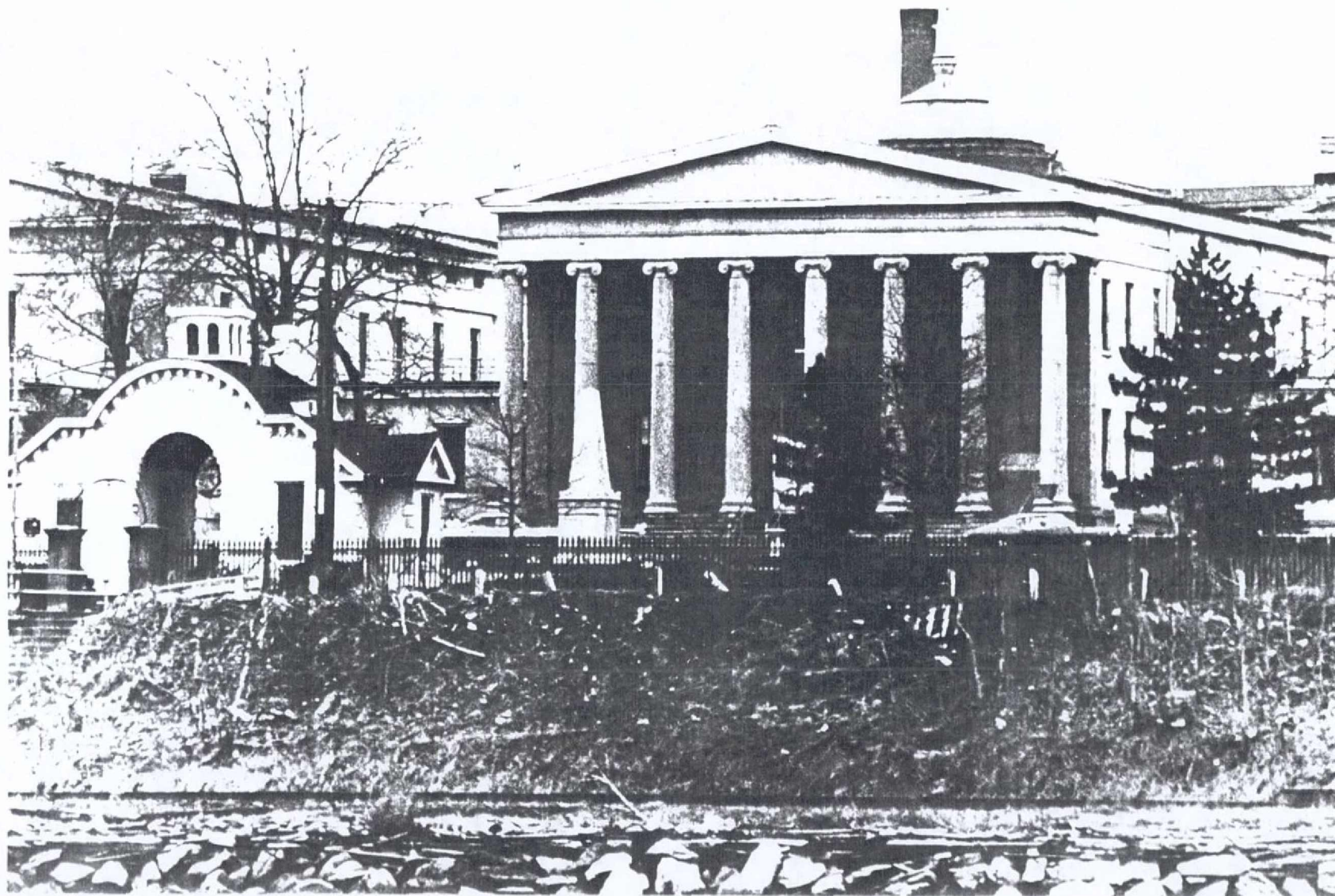


Figure 5:2 Shoreline of Sailors' Snug Harbor, 1971. Note the debris and erosion on the embankment.
(Photo: Eric Arts, Archives, Staten Island Institute of Arts and Sciences, 1971.)

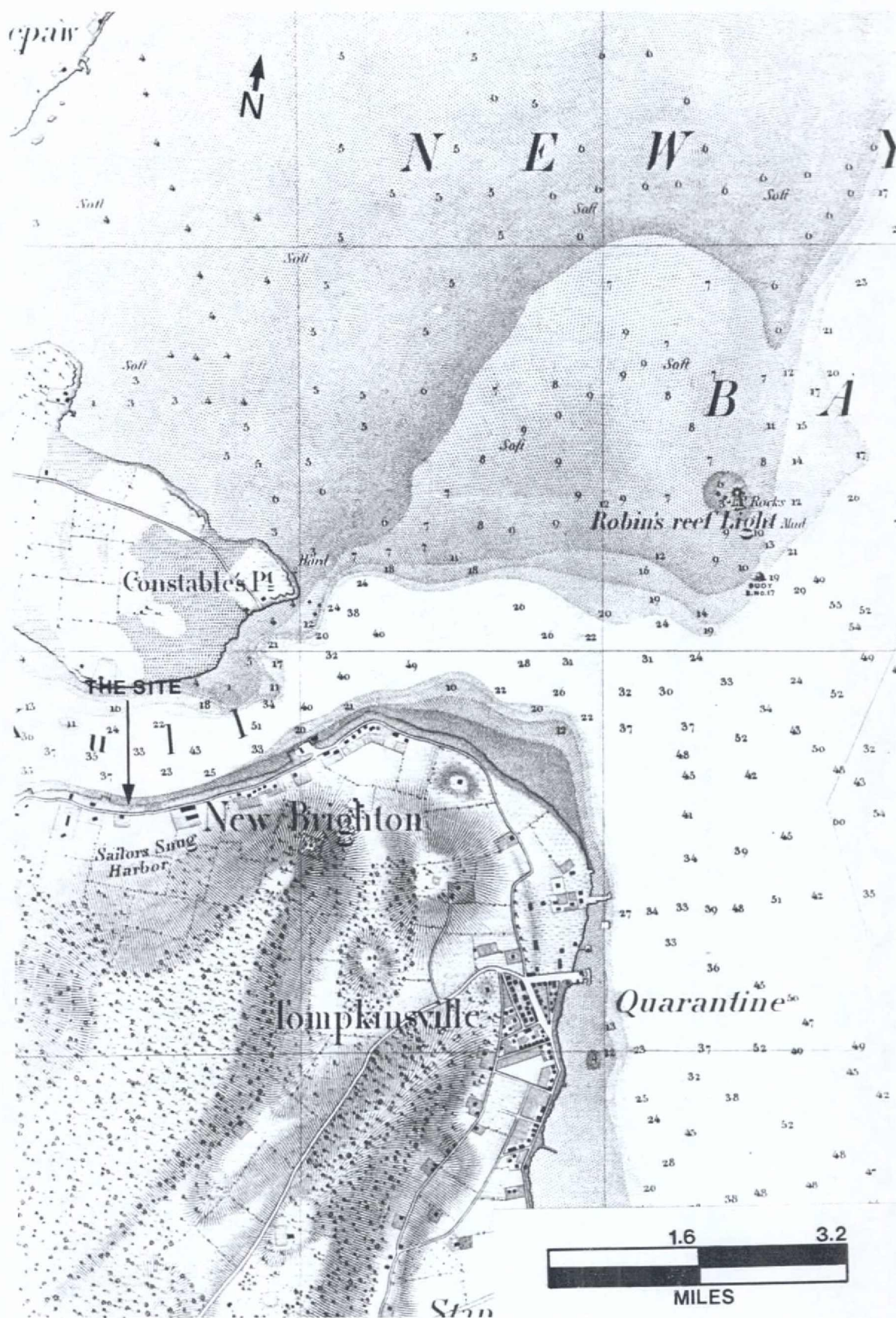


Figure 5:3 U.S. Coastal Survey of 1836-1839.



Figure 5:4 Stone retaining wall. (Photo: Carl Forster, 1986.)



Figure 5:5 Stone retaining wall. (Photo: Carl Forster, 1986.)



Figure 5:6 Existing railroad tracks. Shoreline, Sailors' Snug Harbor.
(Photo: Carl Forster, 1986.)

railroad right-of-way is thirty feet wide for a distance 1410 feet at the eastern end of the site, and widens to sixty feet for a distance of 815 feet at its western end. The construction of the railroad resulted in the partial cutting-away of the bank to the south of the tracks. A stone retaining wall is present along the south side of the railroad tracks.

We observed the presence of "man-hole" covers two feet five inches in diameter -- utility lines -- at several points along the railroad tracks (see Figure 5:7). The installation of these lines has undoubtedly resulted in considerable ground disturbance throughout the area.

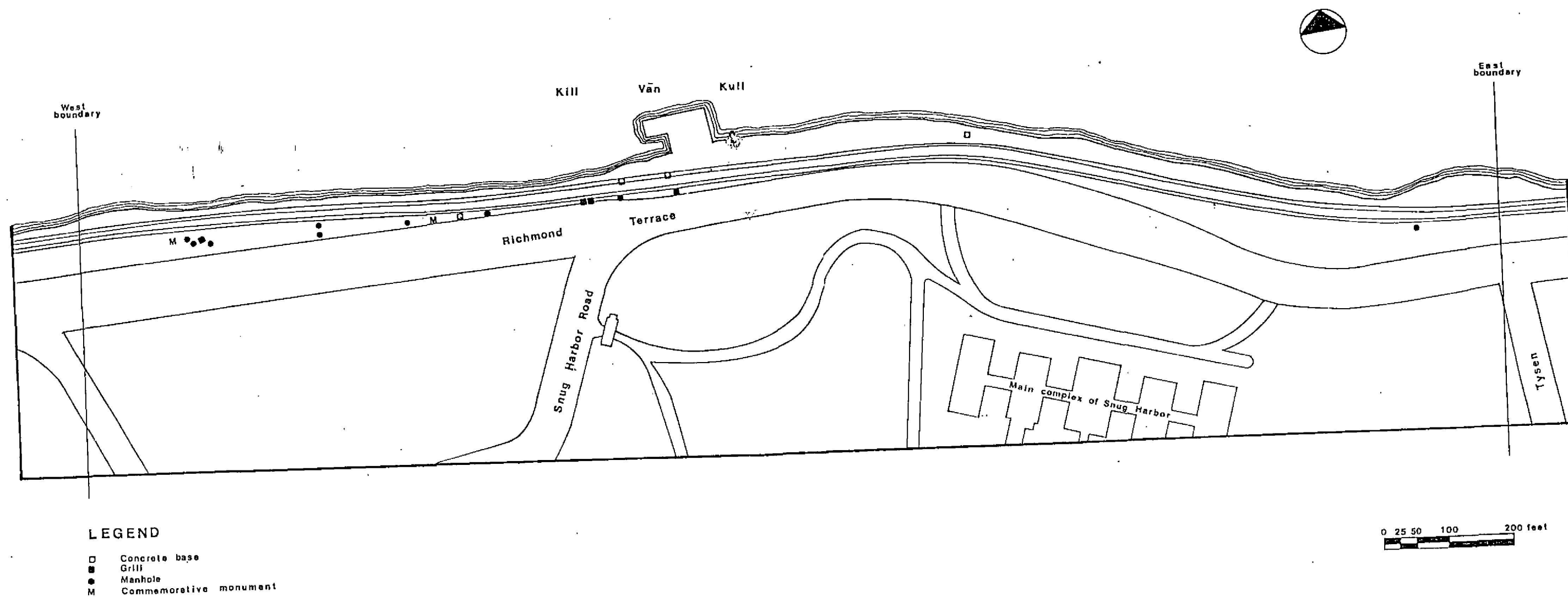
As discussed in Chapter Four, extensive landfilling and land alteration activities have taken place along the shoreline of the Harbor. A 1908 photograph showed that the railroad tracks were on elevated piers as the tracks crossed the stream and the adjacent marsh (see Figure 4:22). Today, the railroad bed rests on landfill rather than on piers.

Construction activity has altered the stream channel as it flows underneath Richmond Terrace and the railroad tracks. A remnant of the marsh described above still exists in an area between Richmond Terrace and the present Snug Harbor Road to the south. This marsh, however, is silting in rapidly and is covered with a dense growth of trees and brush.

Archaeological Surface Collection

The Snug Harbor shoreline is a thin strip of land lying between Richmond Terrace and the waters of the Kill Van Kull. Our pedestrian

Figure 5:7 Map depicting twentieth-century site disturbance. Map drafted by Victor Buchli.



survey in this area consisted of systematically walking along three linear and contiguous transects and observing the landscape. The three transects consisted of : 1) along the shoreline zone including seawalls, bulkheads and riprap; 2) along the railroad tracks; 3) and along the steep sloping hillside between the road and the railroad. Two archaeologists were involved in this reconnaissance process. Only one prehistoric artifact was found. A thick, trianguloid, black chert flake was found on the surface in an area between the railroad tracks and the seawall. This flake appears to have been utilized and is probably of prehistoric origin (prior to A.D. 1600). This flake measures 54 mm. in length by 26 mm. in width by 14 mm. in thickness. There is a medial ridge present on the dorsal side and the ventral side is flat. A portion of the outer cortex of the stone is visible also. Edge scarring and crushing are evident along one lateral edge of the flake. Since this flake was found in a highly disturbed context, that is, landfill, it may have been brought to the site from other parts of the Harbor, other parts of Staten Island, or even other parts of the metropolitan area.

The surface was littered with beer bottles, cigarette packs, soda cans and bottles, and other recent (within the last ten years) garbage. The architectural debris -- nails, bolts, screws, etc. -- may have been associated with one of the nineteenth century buildings along the shoreline. Fragments of nineteenth century material, such as ceramic sherds, were also present on the surface but were found in a disturbed context in association with late twentieth century garbage.

In summary, our research and field reconnaissance of the Snug Harbor shoreline indicated that extensive ground disturbance and development

have taken place in this area over a long period of time. Any remains of Native American occupation that may have existed in this zone have been destroyed or seriously disturbed by historic land use. In addition, twentieth-century construction, land alteration, and demolition have seriously disturbed earlier historic deposits.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

Sherene Baugher
Edward J. Lenik

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

For clarity we have separated our conclusions and recommendations chapter into two sections. The first section is devoted to a discussion of the potential Native American resources at the site, and the second section focuses on the historic period resources.

Native American Resources

Recently, several studies (Historical Perspectives 1987; Pickman 1978; Rutsch et al. 1983) have been done in the coastal New York area which included the analysis of soil borings as part of cultural resource survey projects. The primary purpose of these studies was to determine whether sites suitable for human occupation were present, based on analysis of subsurface soil samples.

Soil boring data can provide information about the buried soil stratigraphy. For example, Dr. Dennis Weiss, geologist from C.U.N.Y. - City College, has analyzed soil borings in the Bronx in order to reconstruct the paleotopography (Weiss 1987), and archaeologists have been able to use his data to determine if the Tibbett Gardens site had any archaeological potential (Historical Perspectives 1987). It is desirable to have a geologist evaluate the data to determine the approximate geological age of the intact soil layers. With the geologist's analysis more accurate conclusions may be drawn. Thus, in a recent survey of the nearby Stapleton, Staten Island waterfront, an archaeological analysis of soil boring data suggested the presence of an intact prehistoric surface beneath the bay and the possible presence of cultural deposits within this submerged surface. Therefore,

archaeological testing was recommended to determine this potential ("Homeport, Draft Supplemental Environmental Impact Statement" 1985: 3-4). However, subsequent analysis by a geologist and archaeologist of soil boring data and other geologic and stratigraphic data by Louis Berger and Associates (1985:1) concluded that intact early Holocene surfaces were not present in the Stapleton area and that archaeological testing was not warranted. The Berger study indicated that the glacial deposits underlying the freshwater silty clay layers are datable to the Mid-Wisconsin glacial stage (100,000 years ago) and are outside the generally accepted date range for Native American occupation in the Northeast (10-12,000 years ago).

In dealing with submerged sites, we must add that the principal utility of soil borings is for securing the geological data. Boring tests should not be used as another means of excavation. The likelihood of finding a prehistoric artifact in a boring core is remote. In the unlikely event that an artifact is recovered, the investigator must then consider the problem of context and deposition. That is, how did the artifact get there, and what does it mean? Such questions can not be answered easily since deeply buried underwater sites are very difficult to excavate.

In addition to soil boring studies, sub-bottom marine studies have been used to obtain archaeological data. In 1984, in an effort to identify submerged prehistoric archaeological resources in New York Bay, the New York State Department of Transportation authorized a sub-bottom marine survey in the Hudson River off Lower Manhattan in connection with the Westway project. This sub-bottom marine profile survey was undertaken in an effort to locate shell middens which might have been

associated with human occupation. The method utilized was sub-bottom profiling which is a means of investigating changes in material below the sea floor by the use of sound waves. This marine survey concluded that there was no indication of buried shell middens in the survey area (Bieber 1984). Furthermore, the survey revealed a number of technical problems in the methodology including severe underwater reverberations, minimal depth penetration, and difficulties in surface maneuvering of boat and equipment. All these factors contributed to the minimal results of this survey.

In evaluating the use of soil borings, an important consideration in the selection of coring sites is to determine the extent to which these sites are subject to high energy wave action, currents, and storms which contribute to erosion and the movement of sediments. As it pertains to the Snug Harbor shoreline, it is important to note that historic records suggest that erosion and channel dredging have occurred in the Kill Van Kull but not in the project area. The shipping channel is between 250 and 500 feet off the Sailors Snug Harbor shoreline and is dredged to a depth of thirty-six feet. In fact, the Kill Van Kull channel between Staten Island and Bayonne, New Jersey will be widened, and dredged to a depth of forty feet (Frank 1986:9). Because of the historic disturbance to the site, we do not recommend soil boring testing specifically for archaeological purposes. However, if soil borings are being done for construction purposes for the Snug Harbor shoreline area, then we recommend that an archaeologist and geologist evaluate the borings. But we believe that this data will confirm our conclusion that the erosion and channel dredging have destroyed any submerged sites that may have existed along Snug Harbor's

shoreline.

Historic Period Resources

We do not recommend archaeological testing in order to obtain data on landfill retaining structures and on landfill.

We were fortunate in that there is extensive documentary and visual data regarding landfiling on the Snug Harbor shoreline. We know that a wooden dock was connected to a permanent stone pier and the center of the structure was filled with earth and stone (Executive Committee Report 1831). An 1873 artist's sketch shows the dock and stone pier and the drawing fits the 1831 description. Documents provide a very accurate description of the seawall, which was started in 1873 and finished in 1876, and the landfill (see Chapter Four for details). Stones from the Snug Harbor grounds were used as landfill (Governor's Quarterly Reports Dec. 18, 1876). We do not believe that further archaeological work is needed to test the accuracy of the Snug Harbor archives.

The Snug Harbor Executive Committee Reports and the Governor's Quarterly Reports discuss the nature of land alteration work at the Harbor; the desire to make Sailors' Snug Harbor a model institution; and the wish to have orderly, clean, landscaped property. The archaeological fieldwork by Cotz (1984) in 1982 and by the Landmarks Preservation Commission in 1985 (Baughner, Baragli, and DeCesare 1985 and Baughner and Baragli 1986) confirm the documentary data. Snug Harbor had a noticeable absence of twentieth century debris and in areas that were landscaped in the nineteenth century there were relatively few artifacts. Based on the findings of three different

field studies, we believe that the documentary record accurately reflects the construction work that took place on the Snug Harbor shoreline. Therefore, we do not recommend field testing in order to obtain data on fill retaining structures or on landfill.

Conclusion

We conclude that the strip of land between Richmond Terrace and the Kill Van Kull is not archaeologically significant regarding both Native American and historic period deposits. If soil borings are taken for construction purposes, then we recommend that an archaeologist and geologist evaluate the borings. However, we believe that this data will confirm our conclusion that the erosion, channel dredging, and twentieth century construction have destroyed any submerged sites that may have existed along Snug Harbor's shoreline. We believe that the extensive ground disturbance, as documented in Chapters Four and Five, destroyed any intact archaeological deposits that may have existed on the site. Furthermore, the historic material that does exist -- buried foundations and landfill -- is well documented in the Snug Harbor archives.

We believe that there are architectural features that may be significant. The Research Department of the Landmarks Preservation Commission has noted the architectural merits of the dual drive and the stone retaining wall. Any site development planned for the shoreline should preserve these surviving architectural remnants of the glorious days of Sailors' Snug Harbor.

REFERENCES

REFERENCES

MAPS

- Beers, J.B.
1874 Atlas of Staten Island.
- Beers, J.B.
1887 Atlas of Staten Island.
- Blood
1845 Map of New Brighton, Tompkinsville, Stapleton, and Clifton.
- Bromley
1917 Atlas of the Borough of Richmond.
- Butler
1853 Map of Staten Island or Richmond County.
- Department of General Services, N.Y.C.
1984 Snug Harbor Cultural Center, sheet numbers 1-6,
topographical and property line map.
- Le Fevre, I.A.
1894 Atlas of Staten Island or Richmond County.
- New York City
1906 Borough of Richmond Topographical Survey.
- Robinson
1898 Atlas of the Borough of Richmond.
- Robinson
1907 Atlas of the Borough of Richmond.
- Sanborn
1885 Insurance Maps of Staten Island.
- Sanborn
1917 Insurance Maps of Staten Island.
- Sanborn
1937 Insurance Maps of Staten Island.
- Skene, Frederick
1907 Map of Colonial Land Grants, 1668-1712.
- Trustees, Sailors' Snug Harbor
1831 Map of the Housman Farm.

United States Government

1845 U.S. Coastal Survey Charter of New York Harbor, 1836-1839.
Map No. 35.

PUBLIC DOCUMENTS

Cromwell, George

1902 City of New York, President of the Borough of Richmond Annual Report. Martin B. Brown Press: New York.

Executive Committee Report

1846 Report in the Sailors' Snug Harbor Collection on file in the Archives of the New York Maritime College, Bronx, New York.

Greene Street Collection

1830- Sailors' Snug Harbor Records that were housed in the office
1930 on Greene Street, Manhattan; collection is on file in the Archives of the New York Maritime College, Bronx, New York.

Governor's Quarterly Reports

1867- Quarterly Reports of Governor Melville, Director of Sailors'
1881 Snug Harbor; reports on file in the Archives of the New York Maritime College, Bronx, New York.

ARTICLES, BOOKS, and REPORTS

Anderson, Albert

1964 "The Old Place and the Old Place Complex." The Chesopiean,
Vol. II (3): 50-57.

Baugher, Sherene and Judith Baragli

1986 Archaeological Excavation of the Matron's Cottage Site, Sailors' Snug Harbor, Staten Island, New York. Monograph, 134 pages. New York: New York City Landmarks Preservation Commission.

Baugher, Sherene, Judith Baragli, Louise De Cesare, and Robert W. Venables

1985 An Archaeological Predictive Model of Snug Harbor Cultural Center. Monograph, 163 pages. New York: New York City Landmarks Preservation Commission.

Baugher, Sherene, Judith Baragli, and Louise DeCesare

1985 An Archaeological Report of the Field Testing at Snug Harbor Cultural Center, Staten Island. Monograph, 44 pages. New York: New York City Landmarks Preservation Commission.

Bieber Associates, Inc

- 1984 "Marine Survey for Archaeological Remains, Westway Project,"
Report on file at New York State Dept. of Transportation,
Albany.

Board of Education of the City of New York

- 1964 Staten Island: A Resource Manual for School and Community.
The Board of Education of the City of New York: New York.

Bolton, Reginald P.

- 1920 "New York City in Indian Possession." In Indian Notes and Monographs, Vol. II, no. 7: 1-170. New York: Museum of the American Indian, Heye Foundation.

Cotz, Jo Ann E.

- 1984 "Cultural Resource Study at Sailors' Snug Harbor."
Report on file at the New York City Landmarks Preservation Commission.

Cotz, Jo Ann E., Edward Lenik, and Herbert Githens

- 1985 "Sharrott Estates Archaeological Project: Report on Mitigation Procedures in the Sandy Ground National Register District, Staten Island, New York. Report on file with the New York State Office of Parks, Recreation and Historic Preservation, Albany.

Draft Supplemental Environmental Impact Statement

- 1985 "Surface Action Group Homeporting: Stapleton, Fort Wadsworth Complex, Staten Island, New York. Report on file at the Dept. of Navy - Army Corps of Engineers, New York District.

Eisenberg, Leslie

- 1982 "The Goodrich Site (STD 11-1), Mariner's Harbor, Staten Island." Proceedings, Staten Island Institute of Arts and Sciences, Vol. 31, nos. 2,3: 37-61.

Frank, Al

- 1986 "P.A., U.S. Will Share Cost of Port Dredging." The Star Ledger, Newark, N.J., Sat. May 31. p. 9.

Geismar, Joan

- 1983 "The Archaeological Investigation of the 175 Water Street Block, New York City." Report on file at the New York City Landmarks Preservation Commission.

Gibson, David, Barnett Shepherd, and Steven Bauer

- 1979 "Sailors' Snug Harbor, an Historic Structures Report." 4 Vols. Report on at the New York State Office of Parks and Recreation, Historic Preservation Division, Albany, New York.

Historical Perspectives

- 1987 "Tibbett Gardens Project Site, Bronx, New York. Second Level Study." Report on file at the New York City Landmarks Preservation Commission.

Kardis, S. and E. Larabee

- 1977 "Cultural Resource Reconnaissance Northeast Shore, Staten Island, New York Harbor Collection and Removal of Drift Project." Report on file with the U.S. Army Corps of Engineers, New York Division.

Leng, Charles and William T. Davis

- 1930 Staten Island and Its People: A History, 1609-1929, Vol. I - Vol. III. Lewis Historical Publishing Co: New York.

Lenik, Edward J.

- 1983 "Stage 1B Cultural Resource Survey of the East Side Project, Staten Island Industrial Park, Bloomfield, Staten Island, New York." Report on file with the New York City Landmarks Preservation Commission.

Louis Berger & Associates, Inc.

- 1985 "The Potential for Submerged Archaeological Resources in the Proposed Dredging Area; Surface Action Group, Stapleton, Staten Island, New York." Report on file with the U.S. Army Corps of Engineers, New York Office.

- 1987a "Archaeological Investigation of Site 1 of the Washington Street Urban Renewal Area, New York City." Report on file at the New York City Landmarks Preservation Commission.

- 1987b "Druggists, Craftsmen, and Merchants of Pearl and Water Streets, New York. The Barclays Bank Site." Report on file at the New York City Landmarks Preservation Commission.

New York City Landmarks Preservation Commission

- 1986 Snug Harbor Cultural Center Research File on Snug Harbor at New York City Landmarks Preservation Commission.

Parker, Arthur C.

- 1920 "The Archaeological History of New York, Part 2." New York State Museum Bulletin, nos. 237-238. Albany, New York: University of the State of New York.

Pickman, Arnold

- 1978 "EIS Background Document, Preliminary Cultural Resources Assessment: Literature Search and Windshield Survey, Oakwood Beach Water Pollution Control Project, Phase III and Future Phases." Report on file with the New York State Dept. of Environmental Conservation, Albany.

Ritchie, William S.

- 1980 The Archaeology of New York State. Revised Ed. Harbor Hill Books: Harrison, New York.

- Rockman, Diana, Wendy Harris, and Jed Levin
 1983 "The Archaeological Investigation of the Telco Block, South Street Seaport Historic District, New York, New York." Report on file with the New York State Office of Parks, and Recreation and Historic Preservation, Albany.
- Rutsch, Edward S.
 1983 "Westway Highway Cultural Resource Survey Archaeological Work Program: Cultural Resources Research." Report on file with New York State Dept. of Transportation, Albany.
- Shepherd, Barnett
 1977 Sailors' Snug Harbor, 1801-1976. Publishing Center for Cultural Resources (for Snug Harbor Cultural Center): New York.
- Skinner, Alanson
 1909 "The Lenape Indians of Staten Island." In The Indians of Greater New York and the Lower Hudson. Clark Wissler (ed.), pp: 3 - 62. Anthropological Papers of the American Museum of Natural History, Vol.III. American Museum of Natural History: New York.
- Smith, Carlyle S.
 1950 The Archaeology of Coastal New York. Anthropological Papers of the American Museum of Natural History, Vol. 43, Part 2. The American Museum of Natural History: New York.
- Staats, F. Dayton
 1974 "A Fresh Look at Bowman's Brook and Overpeck Incised Pottery." Bulletin of the Archaeological Society of New Jersey, Spring - Summer pp: 1-6.
- Weiss, Dennis
 1987 "Paleo-Environmental Interpretation of the Tibbett Gardens Project Site, Bronx, New York." Report on file at the New York City Landmarks Preservation Commission.