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REFERENCE

OAKWOOD BEACH WATER POLLUTION CONTROL PROJECT

PHASE I CULTURAL RESOURCES SURVEY

THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
COTTENVILLE SEASIDE
7100 BRIDGE RD. STATEN ISLAND
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**Hyjan Boulevard at Richmond Avenue to
Arthur Kill Road at Krelscher Street**

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ENVIRONMENTAL REVIEW

MAY 16 1988

Capital Project WP-136

LANDMARKS PRESERVATION
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City of New York
Borough of Staten Island

Submitted to: **WOODWARD-CLYDE CONSULTANTS**
Wayne, New Jersey

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Submitted by: **THE CENTER FOR BUILDING CONSERVATION**
New York, New York

Arnold Pickman and Rebecca Yamin, Principal Investigators

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CHAPTER I

INTRODUCTION

This report presents the results of a 1984 Phase I cultural resources reconnaissance conducted in the area to be affected by a portion of the intercepting sewer (Capital Project No. WP-136) to be constructed by the New York City Department of Environmental Protection in the Borough of Richmond, City of New York, as part of the Oakwood Beach Water Pollution Control Project (Figure I-1).

The primary objective of the reconnaissance reported here is to identify the presence or absence of prehistoric and/or historic period archaeological sites along the currently planned route of construction. Standing structures along the route have also been reviewed. The reconnaissance has been conducted in accordance with the requirements of existing Federal legislation, including the National Historic Preservation Act of 1966, the National Environmental Policy Act of 1969 (Public Law 89-665), Executive Order 11593 (Protection and Enhancement of the Cultural Environment), the Archeological and Historic Preservation Act, the American Indian Religious Freedom Act, and the Archeological Resources Protection Act, and

associated regulations 36 CFR 60 and 36 CFR 600; and the New York State Historic Preservation Act and its regulations.

The Principal Investigators for this cultural resources survey were Arnold Pickman and Rebecca Yamin. Ray Pepi and Mark ten Eyck served as the administrative coordinators for the project.

1.1 DESCRIPTION OF THE PROJECT

The project area extends for approximately 58,000'. The main portion of the interceptor route runs west along Hylan Boulevard from Richmond Avenue to Satterlee Street (approximately 30,500'); along Craig Avenue, Satterlee Street, Amboy Road, Hopping Avenue, Bentley Street, Arthur Kill Road, Main Street and Ellis Street in Tottenville (approximately 10,700'); and northward along Arthur Kill Road to Kreisler Street (approximately 5,400'). A number of laterals run from the main portion of the route to pumping stations near the Prince's Bay, Raritan Bay, and Arthur Kill shorelines. The proposed laterals extend along Lipsett Avenue (approximately 1000'), Poillon Avenue (approximately 1600'), Arbutus Avenue (approximately 2300 feet), Holten Avenue-Johnston Terrace-Bayview Avenues (approximately 4500'), Carteret Street (approximately 4500'), and Kreisler Street (approximately 300') (see

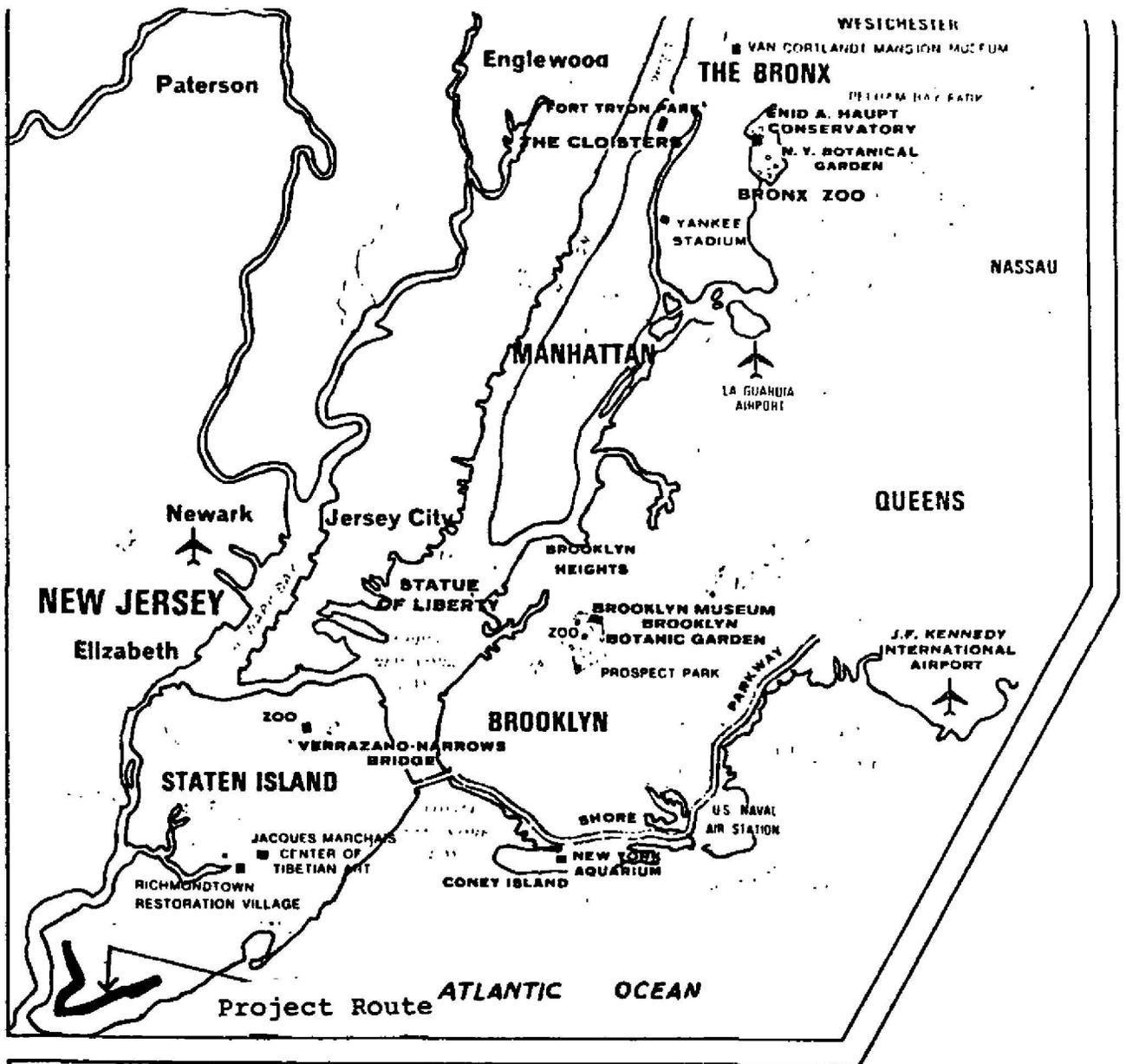


FIG. I-1: Location of Project Area
(No Scale)

Figure IV-1). In all of the areas noted above with the exception of the Carteret Street lateral, the planned interceptor route runs beneath existing paved streets.

The project may also involve the construction of fourteen pumping stations. Engineering personnel of Woodward-Clyde Consultants, Inc. have informed us that the pumping stations would be of two types. One type would be located adjacent to roadways and would occupy an area measuring 50' on each side. The second type is a "packaged" pumping station which would be installed beneath existing pavements. These would measure approximately 10' on each side.

It should be noted that the details of construction of this project will be finalized only after the completion of the engineering study being conducted concurrently with the cultural resources study. This would affect the locations of the pumping stations. In addition, if a deep tunnel construction method is selected for the project, pumping stations would not be required.

1.2 CULTURAL RESOURCES SURVEY

This cultural resource survey included four types of activity prior to the preparation of this report; documentary research, pedestrian reconnaissance, development of a testing plan, and laboratory processing of materials recovered from testing.

1.2a Documentary Research

A Phase Ia documentary research survey was conducted in 1977-78 in the area to be affected by the proposed Oakwood Beach Water Pollution Control Project (Pickman and Yamin 1978). Since this Phase Ia survey was conducted, the proposed route of the interceptor has been partially modified in the portion of the Oakwood Beach WPCP covered by the present study. Previously, the proposed route ran closer to the shoreline east of Sharrott Avenue, and between Page Avenue and Ellis Street. This change in route was not critical as far as documentary research relevant to prehistoric cultural resources is concerned since the Phase Ia survey included a review of known sites and find spots in the entire southern portion of Staten Island. However, the route change could have affected specific historic period cultural resources not reviewed in the Phase Ia study.

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The objectives of the documentary research conducted as part of this project were to update the Phase Ia documentary research to include relevant materials published and archaeological field work conducted from 1978 to the present and to revise the historic period research to include possible cultural resources along the currently proposed route of construction. The documentary research involved the review of archaeological literature published since 1978 and a review of historic period maps and literature. Library research was conducted at the New York City Public Library, Map Division, the Staten Island Institute of Arts and Sciences, the Tottenville Public Library, the New York University Library, the Rutgers University Library, and the offices of the New York City Landmarks Preservation Commission and Ettliger and Ettliger P.C. During the course of our research we contacted the following persons:

Sherene Baugher, New York City Landmarks Preservation
Commission

Eloise Beal, Staten Island Institute of Arts and
Sciences

Shirley Zavin, New York City Landmarks Preservation
Commission

Bert Salwen, Professor of Anthropology, New York
University

Annette Silver, Archaeologist, New York University

We would like to thank these individuals for their cooperation. Our thanks also go to a number of local

residents who provided us with valuable information during the course of our field work. We are also appreciative of the assistance provided by Ruthann Knutson, Andrew Ciancia and Robert Gabrois of Woodward-Clyde Consultants, Inc., and Michael Renard of the New York City Department of Environmental Protection.

As part of our documentary research, we have identified standing structures along the route of construction which are listed on the National Register of Historic Places or which may be eligible for listing on the Register, either on their own merits or as a components of historic districts. To assist us in our review of standing structures we consulted with Elsa Gilbertson, an architectural historian and a member of the Board of Trustees of the Preservation League of Staten Island.

Chapter II of this report contains the results of the documentary research and an analysis of standing structures prepared by Elsa Gilbertson.

1.2b Pedestrian Reconnaissance

Pedestrian reconnaissance was conducted along the entire project route by the principal investigators on February 4, 10, and 16, 1984. The principal objective was to assess the

characteristics of various portions of the project route including areas of disturbance and topographic features which may have been attractive to prehistoric peoples.

1.2c Testing Plan

Prior to the conduct of field testing a written testing plan was submitted to NYDEC and USEPA. This document is included as Appendix F to this report. The testing plan was developed based on two types of data: 1) the location of prehistoric archaeological sites and find spots identified in the Phase Ia report and the additional documentary research conducted as part of the present project and 2) an analysis of topography and physiography based on an examination of a series of detailed Borough of Richmond topographic maps (1"= 150'; 2' contour intervals) dated 1907-1913. Based on known general prehistoric settlement patterns in addition to those noted in published sources pertaining to coastal New York such as Smith (1950) and Ritchie (1969), we considered areas in the vicinity of streams, marshes and tidal coves or basins, especially where there was immediately adjacent high ground, as being particularly likely locations of prehistoric occupation.

The project area was stratified into three levels of sensitivity based on the analysis of the above data.

Nominal testing intervals of 50, 100, 150 feet were assigned to specific areas with the shorter intervals assigned to the areas of greatest sensitivity. During the field testing, these intervals were modified as required to eliminate areas of obvious disturbance and to provide for additional tests where finds of prehistoric artifacts were made.

1.2d Field Testing

Field testing for this project included manual testing and the use of archaeological borings in some areas.

Manual Testing

Manual field testing was carried out between April 23 and May 18, 1984 and consisted of the placement of shovel tests along the proposed route of construction. Supplementary tests were conducted on May 21, June 21, September 13 and September 24, 1984. The field crew consisted of 5-6 archaeologists under the supervision of one of the Principal Investigators. All members of the field crew are present and former undergraduate and graduate students who have had archaeological training and previous archaeological experience.

It should be noted that construction of the proposed interceptor will take place beneath present road surfaces.

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(The exception is the Carteret Street lateral, where there is no pavement at present but which is the site of a former road). Testing took place in relatively undisturbed areas on either side of the roadways. Our assumption was that larger archaeological sites located beneath present roadways would most likely extend outside the limits of the roadway, although it is possible that this would not be true of smaller campsites. Conversely, any sites located adjacent to the road could continue under the road surfaces. Even if road construction had disturbed the surface of a site, sub-surface archaeological features, such as trash pits, could be at least partially preserved except where the road is in a deep cut. Where road surfaces are built completely on fill, sites could be preserved beneath the fill. Testing in such areas was conducted below the fill embankment. In some areas where roadways are built on sloping ground, one side of the road is in a cut while the other side is built on fill. Portions of archaeological sites in such areas could be preserved beneath the latter side of the road.

Prior to the start of this project we considered that historic period archaeological sites could be located beneath roadways. One objective of our documentary research was to determine the possible locations of such sites. As discussed in Chapter II, however, some of the roadways to be

affected by interceptor construction have followed the same routes since at least the mid-19th century. Thus any historic period sites would be located adjacent to, rather than beneath the roads, and would not be affected by construction. Where roadways are of more recent construction, analysis of historic 19th and 20th century maps indicate that no historic period archaeological resources are located beneath the road surfaces.

As noted above, a nominal sampling interval was selected in each portion of the project area. This interval was modified during the actual field testing depending on conditions encountered.

Our proposal called for the pumping station locations to be tested in a 50 foot grid pattern. However, the exact details of construction for the project, including the pumping station locations, will only be determined subsequent to the engineering evaluation which is being conducted concurrently with this cultural resources study. At the time that our field testing was conducted we had been provided only with tentative general locations for the pumping stations. In one instance, we were informed near the end of our field testing period that the location previously indicated for the Kreisler Street pumping

station was approximately 700' from the actual proposed location. Because of the limited area to be affected by pumping station construction and the uncertainty concerning the exact pumping station locations, the pumping stations were considered within the framework of our overall linear testing strategy except where documentary research and pedestrian reconnaissance suggested the possible presence of historic period archaeological resources in the vicinity of proposed pumping station locations.

Our proposal initially envisioned the placement of up to 800 shovel tests along the proposed interceptor route. After we had assessed the substantial amount of disturbance within the project area as a result of our pedestrian reconnaissance, our testing plan stated that approximately 340-400 shovel tests would be necessary. A total of 377 shovel tests were actually conducted.

The shovel tests typically covered 1 to 2 square feet of surface area. We endeavored to extend each shovel test to a depth at which culturally sterile subsoil was encountered. Where necessary, an auger-type post hole digger was used to extend the depth of a test below that reachable by using the shovel. In some cases, the presence of fill, highly compacted soil, or a high water table prevented us from

reaching sterile subsoil. These tests are noted in Chapter III.

In most tests, all of the soil removed was screened through 1/4" mesh to detect the presence of artifacts. In some instances, however, the presence of wet and/or extremely clayey soils made screening impossible. In these cases, the soil was carefully troweled through and examined for artifacts. In a few instances, obviously modern or sterile deposits were only partially screened or not screened.

The stratigraphy encountered in each shovel test was recorded on a provenience record form (included in Appendix E). Most of the artifacts and faunal materials recovered from the field testing were bagged according to the strata from which they were recovered. In some cases, however, where large quantities of brick, cinder, coal, building materials, or obviously modern artifacts were encountered, these were discarded in the field and their presence noted on the provenience record forms.

Archaeological Borings

The proposed route of interceptor construction intersects several areas associated with present and/or former tidal coves or marshes. Roadways are constructed on deep fill deposits in these areas, with marsh deposits underlying the fill. These areas would have been drier during earlier prehistoric times when sea levels were lower and would have probably been attractive loci for prehistoric exploitation. Archaeological borings were used to test the stratigraphy underlying the fill and marsh deposits in these areas. Such testing was conducted at Hylan Boulevard in the vicinity of Lemon Creek and west of Sharrott Avenue, and Arthur Kill Road north of Nassau Place.

It should be noted that our initial testing plan included the placement of borings in two limited areas associated with former streams entering the heads of tidal coves along Hylan Boulevard in the vicinity of Lipsett Avenue and Arbutus Avenue. However, it proved possible to test these areas by means of manual shovel tests placed below the Hylan Boulevard fill embankments. Therefore, borings were not conducted at these locations.

Documentary research indicated that the Satterlee

Avenue/Craig Avenue area was archaeologically sensitive. However, it was not possible to test the area adjacent to the Craig Avenue pavement by means of manual shovel tests due to heavy disturbance from grading connected with recent house construction. Therefore, the stratigraphy underlying the Craig Avenue pavement was directly sampled by archaeological borings.

A total of 20 archaeological borings were conducted under the supervision of the Principal Investigators. They were conducted from March 13 to March 22, 1984, with supplementary borings conducted on July 5, 1984. The borings were carried out using a truck mounted drilling rig. An approximately two foot long, three inch diameter, split spoon sampler was driven into the ground by blows from a 140 or 300 pound hammer. Where borings needed to reach depths in excess of approximately 8'-10', a larger diameter casing was first driven into the ground and cleaned out using water and a rotary drill. The sampling tube was then driven beneath the bottom of the casing to obtain the sample. In some instances, continuous sampling was begun immediately beneath the road pavement. In other cases, the casing was driven beneath the fill deposits and continuous sampling begun at this depth.

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The soil contained within the sampling tube was examined and the stratigraphy recorded on a prepared form (included in Appendix E). In most cases, where deposits appeared to be of a type possibly associated with human occupation, the soil was retained and subjected to flotation in the laboratory.

It should be noted that in several cases we experienced sample recovery problems with the boring techniques used. In some instances these were caused by stones or pieces of debris from fill deposits becoming lodged in the sampling tube, so that the soil was pushed downward rather than entering the tube. In other cases, where sandy and less compact soils were encountered, the water used to wash out the casing apparently loosened the soil beneath the casing to such an extent that it was not retained in the sampling tube. A listing of the stratigraphy encountered in each boring is included in this report as Appendix C.

1.2e Laboratory Processing

Most of the artifacts returned to the laboratory were washed and placed in plastic bags. However, large quantities of shell, coal/cinder and miscellaneous metal were tabulated and bagged without being washed. All artifacts were

tabulated and identified as to material, function and generally recognized type where appropriate (e.g., historic period ceramics, projectile point). The artifacts were tabulated on special recording forms (included in Appendix E). Where no artifacts were recovered from a particular stratum, this was also recorded. The recording forms were then converted to the format of the artifact inventory included as Appendix B to this report. For each shovel test, the inventory lists the depths beneath the surface and soil type of each stratum encountered and the cultural materials recovered. Where a stratum was excavated with the post hole auger rather than a shovel, the stratum is designated by the letter "A" in the inventory. Similarly, the letter "T" is used where the soil was examined with a trowel rather than being screened.

The location of each test has been plotted on the 1" = 30' project maps prepared by Woodward-Clyde Consultants, Inc. and Ettliger and Ettliger, P.C. These maps are included in this report as Appendix A. However, the map for the Kreisler Street lateral was not provided to us. The tests in this area were plotted on the 1"=150' 1913 Borough of Richmond topographic sheet included in Chapter III (Figure III-2).

1.3 DISPOSITION OF ARTIFACTS

The Staten Island Institute of Arts and Sciences has expressed interest in providing a permanent repository for the artifacts recovered from this survey. Discussions are continuing with the Institute to determine the amount of space available to house the collection. At the present time the artifacts and project records are temporarily located at the offices of the Center for Building Conservation, 40 Dover Street, New York, NY 10038.

1.4 GEOLOGICAL AND STRATIGRAPHIC CONSIDERATIONS

The terminal moraine from the Wisconsin glaciation runs across Staten Island from Tottenville on the southwest to Stapleton. The deposits underlying those deposited by glacial action were laid down during the Cretaceous period (Gratacap 1909; Salisbury 1902). Maps published by Gratacap (1909), Salisbury (1902) and Arnold (1936), indicate that the moraine runs along the shore of Raritan Bay and Prince's Bay in the project area, and extends northward along the Arthur Kill shore for nearly the entire extent of the project area. Salisbury (1902:13) describes the moraine as "made up primarily of clayey till...[which]...usually has a

reddish color due to the abundance of material from red Triassic shale and sandstone." The subsoil encountered in our tests in the eastern portion of the project area, from Richmond Avenue to a point somewhat east of Page Avenue was described as a reddish clayey silt, with inclusions of red shale often being noted. This fits Salisbury's description of the glacial till.

From a point east of Page Avenue and extending westward along Hylan Boulevard to the vicinity of Brighton Street, and in the extreme western portion of the project area, including the Satterlee Street, Tottenville and Ellis Street sections, the stratigraphy encountered in the tests differed from that noted above.

Underneath the topsoil, the soil in this area consists of sand, with the color being described as orange, red or greenish yellow, usually becoming yellower with increasing depth. In some tests, a silty or clayey silt similar to the subsoil encountered in the eastern portion of the project area underlay this sand. The topsoil in this section was also markedly more sandy than the silty topsoil noted in the eastern portion.

Along Hylan Boulevard from the vicinity of Brighton Street

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to Satterlee Street and in the Arthur Kill Road section of the project area, the clayey subsoil noted in the eastern portion of the Hylan Boulevard section was again encountered immediately below the topsoil or transitional layers.

Several explanations are possible for the change in soil type. The sandier soil could represent outwash deposits from the terminal moraine. These outwash deposits may be stratified, with the more clayey material underlying the sand at varying depths. Alternatively, the clayey soils underlying the sand may have been deposited prior to the final stage of the Wisconsin glaciation.

It should be noted that many of the finds of prehistoric material from the western portion of the project area originated in the sand deposits underlying the topsoil, while the finds in the eastern section were recovered from the topsoil or the immediately underlying transitional layer. It should also be noted that prehistoric materials have been found in similar sand deposits at other Staten Island sites (Jacobson 1980; Silver n.d.). If the sand was deposited as the result of glacial action, the artifacts found within this stratum could not represent an *in situ* deposition during prehistoric occupation of the area, since the commonly accepted date for the first human occupation

of the northeastern United States occurred subsequent to the end of the Wisconsin glaciation. If the sand does represent glacial outwash, the prehistoric materials probably originated in layers of topsoil and were carried downward in the soil by the action of roots, rodents, or water.

If the prehistoric artifacts in the sand stratum represent an in situ deposition, this implies a continuing post-Pleistocene deposition and formation process, with the organic materials associated with prehistoric occupations having been leached out of the soil and new deposits laid down and a soil formed over the occupation layers. Salisbury (1902:15) notes that "wind blown sand is common along the west side of Staten Island." He notes that the deposit is not continuous, and that it rarely exceeds 10' in thickness. Although Salisbury does not give the distribution of these deposits, it is possible that aeolian deposition is responsible for the presence of the sandy subsoil in the western portion of the project area, accounting for the burial of prehistoric deposits. It is also possible that some or all of the red/orange sand is of post-glacial deposition, with the underlying yellower sand representing glacial outwash deposits.

In formulating our recommendations, we have assumed that, at

least in some cases, the deposits of artifacts in the orange sand represent an in situ deposition.

1.5 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Indications of prehistoric activity were recovered from 59 of the 377 manual tests and 20 archaeological borings conducted during this project. Analysis of the results of these tests indicates that archaeological sites may be present in the following areas:

Satterlee Street - three areas beginning approximately 250', 400' and 1000' north of Hylan Boulevard.

Hopping Avenue - one area beginning approximately 350' north of Amboy Road.

Arbutus Avenue - two areas beginning approximately 700' and 1400' south of Hylan Boulevard.

Holten Avenue - one area beginning approximately 850' south of Hylan Boulevard.

Arthur Kill Road - one area near the intersection of Nassau Place.

Hylan Boulevard - five areas: extending westward from Holdridge Avenue; beginning approximately 100' east of Huguenot Avenue; extending eastward from Page Avenue; beginning approximately 1300' west of Sharrott Avenue; and

extending westward from Bedell Avenue.

In addition to the above, an archaeological site associated with a 19th - early 20th century brick works is located along Kreisler Street extending westward from Arthur Kill Road.

These sites may be eligible for the National Register of Historic Places under criterion 36 CFR 60.4(d); that is they may include material and information important in understanding the history or the poorly known prehistory of Staten Island.

We recommend that a Phase II archaeological investigation be conducted in each of the above areas to complete the evaluations of these potentially significant site areas. A more detailed description of each area and our recommendations for Phase II archaeological testing are contained in Chapters III and IV of this report.

One area located north of Ellis Street, approximately 75' east of Main Street appears to contain an undisturbed archaeological deposit associated with the 19th century occupation of the area. The deposit would not be affected by the planned construction. However, this area should not

be used for staging of equipment.

Three standing structures located along the proposed route of construction are listed on the National Register of Historic Places. Evaluation of standing structures indicates that there are two additional structures which may be Register eligible and that other structures could be eligible as components of historic districts. All of the above structures and potential districts are located in three portions of the project area, Prince's Bay, Tottenville, and Kreischerville. Further evaluation of eligibility and an engineering and architectural evaluation to determine adverse impacts are recommended. Data pertaining to the structures and details of our recommendations are included in Chapters II and IV of this report.

CHAPTER II

DOCUMENTARY RESEARCH

Four activities are discussed in this section: an update of the documentary research done for the Phase Ia Preliminary Cultural Resources Assessment (Pickman and Yamin 1978) on prehistoric resources, an update of the documentary research on historic resources, the plotting of the newly proposed interceptor route on historic maps, and an evaluation of standing structures. All four activities were completed before field work commenced.

An effort was also made to talk to archaeologists active in Staten Island and to residents along the route who expressed an interest in our work and in cultural resources. Their contributions are gratefully acknowledged.

2.1 LITERATURE REVIEW - PREHISTORIC

All issues of the bulletin now published as the Proceedings of the Staten Island Institute of Arts and Sciences were reviewed back to 1974. No archaeological sites or finds within the project area were mentioned. The New Bulletin which had published many archaeological reports in the past and is heavily cited in Pickman and Yamin (1978) is no

longer published by the Staten Island Institute of Arts and Sciences and has not been since the summer of 1968.

Elouise Beal, now chief archivist at the Staten Island Institute of Arts and Sciences, was not aware of any recent prehistoric finds within the project area. Several attempts were made to reach the avocational archaeologist, Robert Anderson, without success.

2.1a Ward's Point

Jerome Jacobson's summary report, "Burial Ridge, Archaeology at New York City's Largest Prehistoric Cemetary" provides an invaluable overview of what is known of the Ward's Point area and was used as a reference during field testing as well as in the planning stages of the project. The report indicates that many questions are still unanswered concerning the nature of the occupation within the Burial Ridge portion of the site and even less is known about Billop Ridge. After reviewing archaeological work done at Ward's Point by Wainwright, Harrington, Anderson and Sainz, Jacobson concludes that "the stratigraphy at Ward's Point is still imperfectly known" and "no stratigraphy is described for Billop Ridge" (Jacobson 1980: 18-19). The project area runs along the eastern boundary of the Ward's Point

Archaeological Area and crosses Billop Ridge (see Figure II-1, from Jacobson 1980: Map II, p. 7).

Jacobson describes the stratigraphy south of the Billop (Conference) House as generally consisting of a layer of topsoil, humus, sand, and/or leaf mold over a deposit of sea shells "mostly oyster" and "often mixed with earth." The shell or "village layer" as it was called by Harrington varies in thickness, sometimes measuring as much as 20" but is most often described as about "half a foot." "Yellow sand sometimes stained tan, usually appears just beneath the shell layer" (Jacobson 1980: 18-19). He then goes on to discuss the cultural evidence for these three basic strata. According to Jacobson (1980:19), "only Sainz and Anderson provide any detailed information about the contents of the shell deposit contrasted with other strata at Ward's Point. They found both ceramic and lithic types characteristic of the Middle and Late Woodland stages in the shell layer and projectile points principally of argillite and stemmed in shape in the sand."

The stratigraphic evidence is by no means clear especially within the sand deposit. There still remains a question as to whether the sand represents a stratified deposit. In describing one of the two clearly stratified areas reported

MAP II - Sites Near Ward's Point.

Scale: one inch equals 200 feet.

(1) Billopp Ridge, (2) Billopp House, (3) Pits H-12, H-17, H-27, H-31, (4) Herbert Reed's finds, (5) Section of Zone 3, (6) Burials WA 1-8, AC-1, Zone 3, (7) A-S 1, (8) 1960 Area Excavation (Appendix C), (9) 1967 Excavations (Appendix E)

Harrington Trenches, 1920 

Buildings, 1907 

Fences, 1920 ----

Pepper Trench, 1895 

Area, Map III - - - - -

NOTE: Topographic features and some buildings are after a topographic survey of 1907; streets have been superimposed from recent street maps. See text, Section VI, and Map III for details.

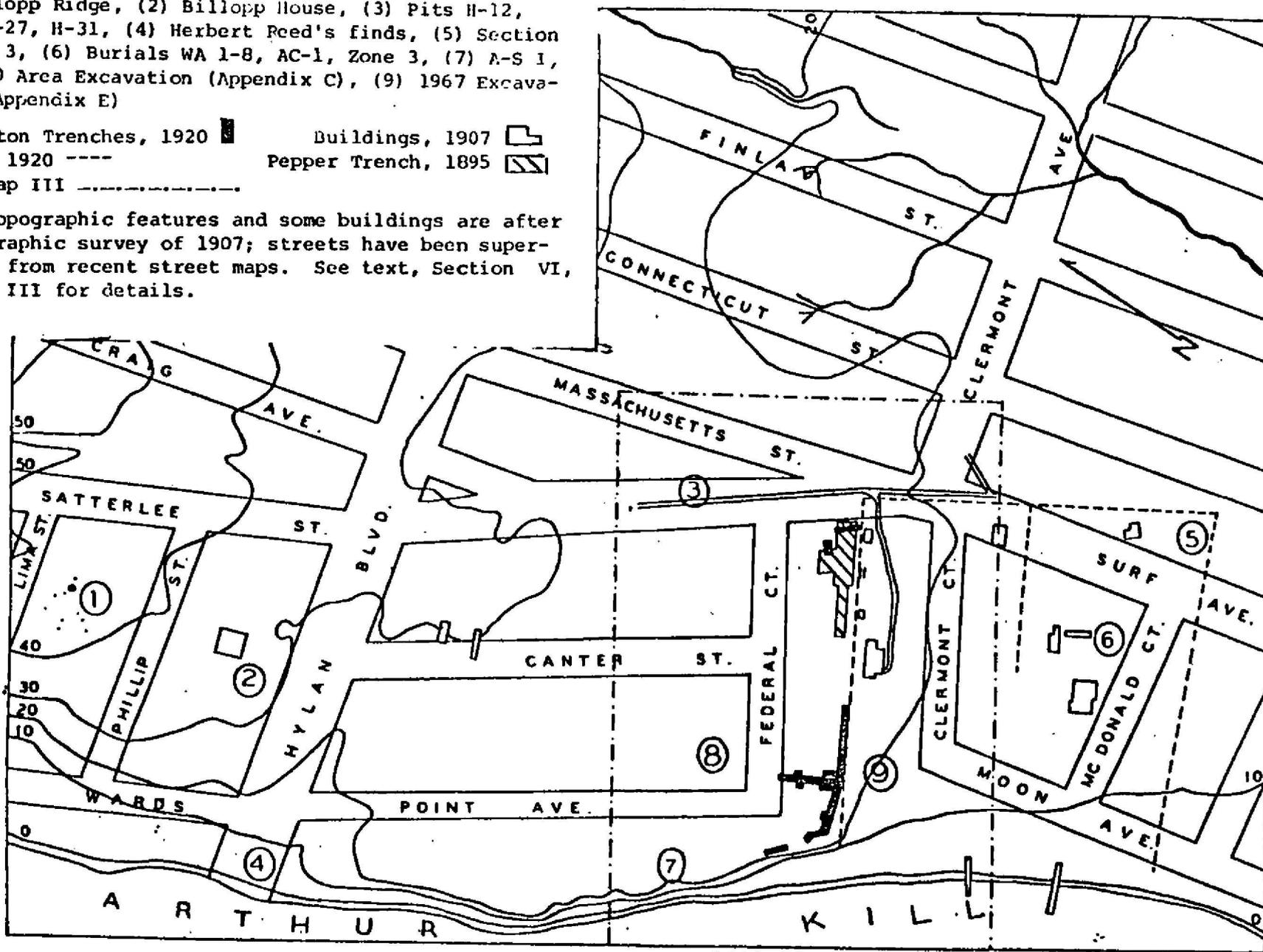


Fig. II-1: Sites near Ward's Point (from Jacobson, 1980:7)

by Anderson and Sainz, Jacobson points out that while they found pottery dated by Dorothy Cross to the latter half of the Middle Woodland 10" higher in the sand than pottery dating to the Middle Woodland, Carlisle Smith would date the material found higher to the Early Woodland (Jacobson 1980:44). If Smith's chronology is accepted, the sand deposit would appear to be disturbed.

Bert Salwen (personal communication, September 1984), however, reports typological sorting within the sand at two sites on Staten Island (the Smoking Point site in Rossville and the Goodrich site in the northwestern portion of Staten Island) and at the Zipser site in New Jersey. According to Salwen, the analysis of materials recovered from arbitrary levels within the sand stratum at Smoking Point (Silver 1984: in press) indicated that Late Archaic materials clustered at the top of the orange sand; there was then a relatively sterile zone and below that, at approximately 24" beneath the surface, were found early Archaic materials. Although no clearly diagnostic materials were found at a greater depth, the morphology of the flakes recovered suggested a possible Paleo-Indian component.

The paucity of stratified deposits described by Jacobson for Ward's Point and the ongoing concern with defining the

deposition of cultural materials in similar situations elsewhere emphasize the potential value of any archaeological deposits within the project area.

The National Register nomination for the Ward's Point Conservation Area, prepared by Charles A. Florance in 1982, discusses other research potential for the Ward's Point site. After reviewing Jacobson's interpretive goals, i.e., an evaluation of Carlisle Smith's Woodland stage taxonomy in terms of the Ward's Point data, and discussing his observations of many "similarities between Early and Middle Woodland lithics and ceramics from the Abbott Farm site in New Jersey and those materials from Ward's Point and from Western Coastal New York in general", Florance notes that the distributions cited by Jacobson and elsewhere by Funk "suggest a rather extensive interaction sphere involving southeastern New York, western coastal New York, New Jersey, and the Delaware Valley" (Nomination Form, Section #8:4). Florance hypothesizes that macrobands may have been formed to exploit the marine resources -- oyster beds, fish and water fowl -- at Ward's Point and might have comprised groups from the Hudson drainage, the Raritan drainage and the Delaware Valley creating the diversity of point types and materials from which they are made (Nomination Form, Section #8:4). He also notes that "faunal analysis has not

been pursued beyond gross identifications and remains a research topic with significant potential for establishing patterns of resource use" (Nomination Form, Section #8:4).

The Ward's Point Conservation Area, proposed for nomination to the National Register of Historic Places (Florance 1982), encompasses some but not all of the 68.5 acres designated as the Ward's Point Archaeological Area in 1976. The Ward's Point Archaeological Area was determined eligible for the National Register of Historic Places in the context of the U.S. Environmental Protection Agency's Oakwood Beach Water Pollution Control Project (Nomination Form, Section #7:1). The 1982 nomination redefines the Area based on well-documented proveniences; this has led to the elimination of areas to the east and south where no specific provenience data could be demonstrated for pertinent resources (Nomination Form, Section #7:1). The southernmost 180 meters of Satterlee Street forms a portion of the eastern border of the Ward's Point Conservation Area. The northern border of the Area extends west of Satterlee Street from a point 180 meters north of Hylan Boulevard. It is interesting to note that these portions of the boundaries have remained unchanged from those of the earlier Ward's Point Archaeological area. This is presumably because no additional data were available and the existing provenience

data were deemed adequate.

Unlike the original nomination, the newly proposed conservation area includes historical archaeological components as well as a standing structure, the Conference House, which has been a National Historic Landmark since 1966 and a New York City Landmark since 1967.

2.2 LITERATURE REVIEW -- HISTORIC

With the exception of a summary publication on the Conference House (Zavin et al. 1980) which includes discussion of Baugher-Perlin's archaeological excavations within the property in 1979, no reports have been published on excavations at historic sites within the project area since 1978. Eloise Beal was not aware of any recent work at historic sites in the area.

2.2a The Conference House

In 1979, Baugher-Perlin placed 35 shovel tests and one 5'x5' test square on a 10' grid to the north of the Conference House. Three soil strata were identified: sod and dark brown soil, brown and orange-brown soil, and orange to red-

brown sand (Zavin et al 1980:155). Artifactual materials including "small fragments of glass and pottery" were recovered from the upper two strata with a sterile sand layer between 9" and 11". Baugher-Perlin notes that the shovel tested area was disturbed in the 1930's when pathways were constructed and grounds developed as part of the Billop (Conference) House restoration. The highest concentration of artifacts came from shovel tests closest to the house which she attributes to this pattern of disturbance. The 5'x5' square placed at the juncture between the original portion of the house (built about 1675) and the 18th century kitchen wing addition yielded material from the 1700s and early 1800s in two refuse pits.

Additional testing -- thirteen 3'x3' squares -- were placed along the foundation of the Conference House, also on the north side, in 1980. According to the Ward's Point Conservation area nomination, "...the material from the 1980 investigation suggests a very rich site. The stratified deposits contained historic artifacts from the 17th through the early 20th centuries. Underlying the historic strata was a sandy soil that contained Woodland pottery, scrapers, jasper and flint flakes, clam and oyster shells, and animal bones" (Nomination Form Section #7:3). This prehistoric material was, according to Baugher-Perlin, found 5' beneath

the surface (personal communication, December 7, 1983). Subsurface tests conducted on the Conference House property east of the house also yielded stratified deposits with cut nails and window glass being recovered from the topsoil above a shell layer which contained flint and jasper chips and Woodland pottery (Baugher-Perlin, personal communication, December 7, 1983).

The only other historic deposits described within the Ward's Point Conservation Area are associated with the Cole/Decker house (south of the project area), constructed in 1858. The 1982 Nomination Form (Section #7:3) calls it an "intrusive element in terms of the prehistoric components of the conservation area" but "a later 19th to 20th century historic archaeological site. While the site has no record of investigation, the partially filled cellar hole and a brick cistern can still be seen today."

Two other specific features of potential archaeological significance are mentioned in the Zavin et al. 1980 report: an underground tunnel leading out of the Conference House cellar either toward the south and under the present Hylan Boulevard (now removed) or west toward the beach (Zavin et al. 1980:94), and the Billop Burying Ground believed to lie east of the house. The latter was of some concern to the

present project as the proposed construction corridor, both along Satterlee Street and along Craig Avenue, is due east of the Conference House. It appears, however, that all sources agree that the burial ground would have been even further east than the present location of Craig Avenue.

Autun describes it [the burial ground] in 1853 as being "300 yards to the east of the Old Manor House." According to Benson Lossing in 1876 and Ira Morris in 1893 the Burying Ground was dislocated following the Aspinwall acquisition. As the 1875 map of the Aspinwall properties indicates, it was the acquisition of the property by the Aspinwall heirs and the proposed development of the area that brought about the elimination of the Billop Burying Ground. Morris noted in 1893 that the site was marked only by a single cedar tree a few hundred yards east of the Manor House.

(Zavin et al. 1980:62)

Zavin et al. conclude that the Burying Ground would have been some distance further east of the outbuildings associated with the Billop property which would put it well east of Craig Avenue. The location of the outbuildings and the burial ground would not be within the project area.

2.2b Tottenville

Research on Tottenville for the 1978 Literature Search was confined to resources within the community along the shoreline which was then the proposed route of construction. Because the interceptor as now planned will run east for two blocks along Arthur Kill Road through the heart of

Tottenville and north along Main Street to meet Ellis Street, as well as running north along Bentley Street from Hopping Street to the location of Pumping Station #13 on the Arthur Kill and along Ellis Street as in the original plan, further research was conducted on Tottenville. The two major sources for Tottenville are two scrapbooks -- "Tottenville in Retrospect" by Benjamin Franklin Joline, privately published in 1950, and "The Fathers Have Told Us, Facts and Traditions told by Lovers of Their Hometown," dating to 1935 now in the care of the Tottenville branch of the New York Public Library. For the 1935 volume, Paul M. Van Name wrote a description of Tottenville as he remembered it in his boyhood:

My early recollections of our town as a boy of eight years was of the deep water captains who lived on Quality Street, now Main Street. It was shaded on both sides with large trees. The street was kept in good condition by a continued coating of oyster shells and the side walks were of dirt. All dwellings and lots were fenced in by both square and flat pickets. The customs of those days was a meeting place most central to talk and get the news of the day. The popular places were the old country stores, one at the foot of Main Street, Mr. Wesley Totten's, to hear the sea tales and stories around the store stove and amid clouds of tobacco smoke. In those days the vessels would discharge their cargoes and anchor in the river, before putting out to sea again. They sailed mostly to southern ports, Virginia, Baltimore, and North Carolina.

If Mr. Van Name is really describing the village when he was 8 years old, he is providing a view of Tottenville in 1845.

According to the Joline scrapbook, after the historic Revolutionary War meeting at the Billop House Colonel Billop began to dispose of his property selling 23 1/2 acres to Joseph Totten, 60 acres to Benjamin Drake, and 373 acres to Samuel Ward. The 1780 map, "Plan du Camp Anglo Hessors dans Staten Island," shows a ferry at the foot of Amboy Road and the Dissosway Mill to the northeast of what was to become the village of Bently, later known as Tottenville. Joseph Totten apparently settled first on the Raritan Bay side of the island.

The Amboy ferry was reportedly established as early as 1650 by the Raritan Indians (Pickman and Yamin 1978:II-25). The Billopp family of Bentley Manor maintained the service for four generations, its name changing from Amboy Ferry to Billopp's, to Dote's (Doty's) to Butler's. Thomas Farmer Billop is supposed to have built the Ferry Tavern "for protection of ye passengers in waiting" in 1740. The building, which was located on the bluff near the terminus of Amboy Road (in the vicinity of proposed pumping station #12), burned in 1866 (Morris 1898:182).

Amboy Road was the only highway through this portion of Staten Island in colonial days. By 1853 (Figure II-2)

several streets including Bentley and Totten (later called Main) extended from Amboy Road to the shore of the Arthur Kill (within the proposed project area). Joline claims that the post office for the village of Bently was established at the lower end of Bentley Street sometime between 1829 and 1861 in the home of George Cole who served as post master. No post office appears in this area on the 1853 Butler map (Figure II-2) though a landing is shown at the foot of the street marked "Bently". The 1874 Beer's atlas (Figure II-3) shows a house marked "M.E. Cole" on the east side of Bentley Street (called Bentling on this map) in the same location as that identified as the post office in a sketch made by George C. Brown (Figure II-4) included in the "Facts and Traditions" scrapbook. On the 1874 Beer's atlas, however, a building marked Tottenville post office is shown at the foot of Totten or Main Street. Both the location and name of the Village had apparently been changed by this time.

Bentley and Totten Streets, each with a landing on the Arthur Kill, were recognized as the center of the village in the 1860's. The 1874 Beer's atlas shows two structures in addition to Mr. Cole's house along the eastern edge of Bentley Street and three houses on the south side of Washington Street (later called Arthur Kill Road). Main or Totten Street is lined with houses. In fact, it was already

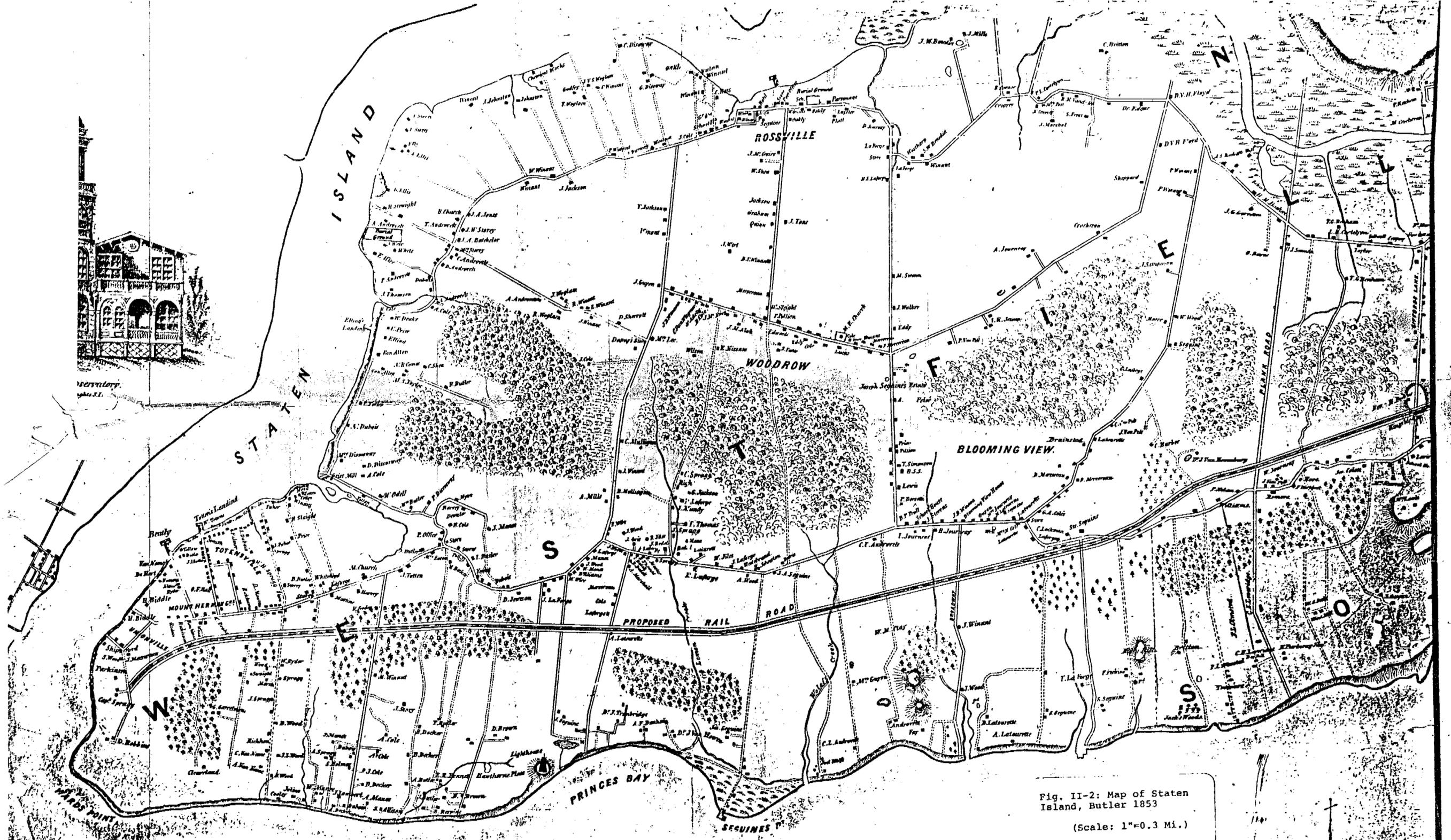


Fig. II-2: Map of Staten Island, Butler 1853
 (Scale: 1"=0.3 Mi.)



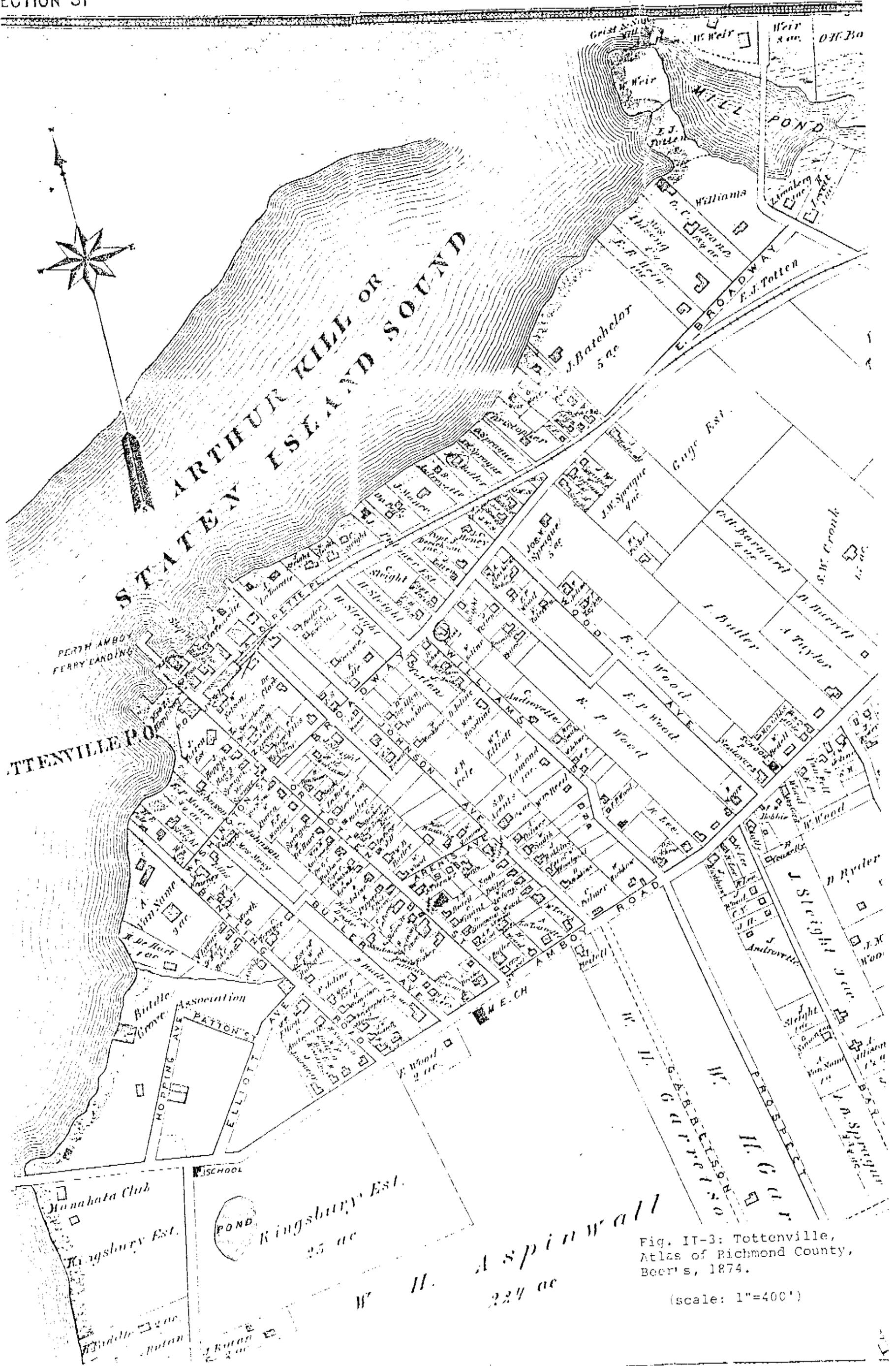


Fig. II-3: Tottenville, Atlas of Richmond County, Beer's, 1874.

(scale: 1"=400')

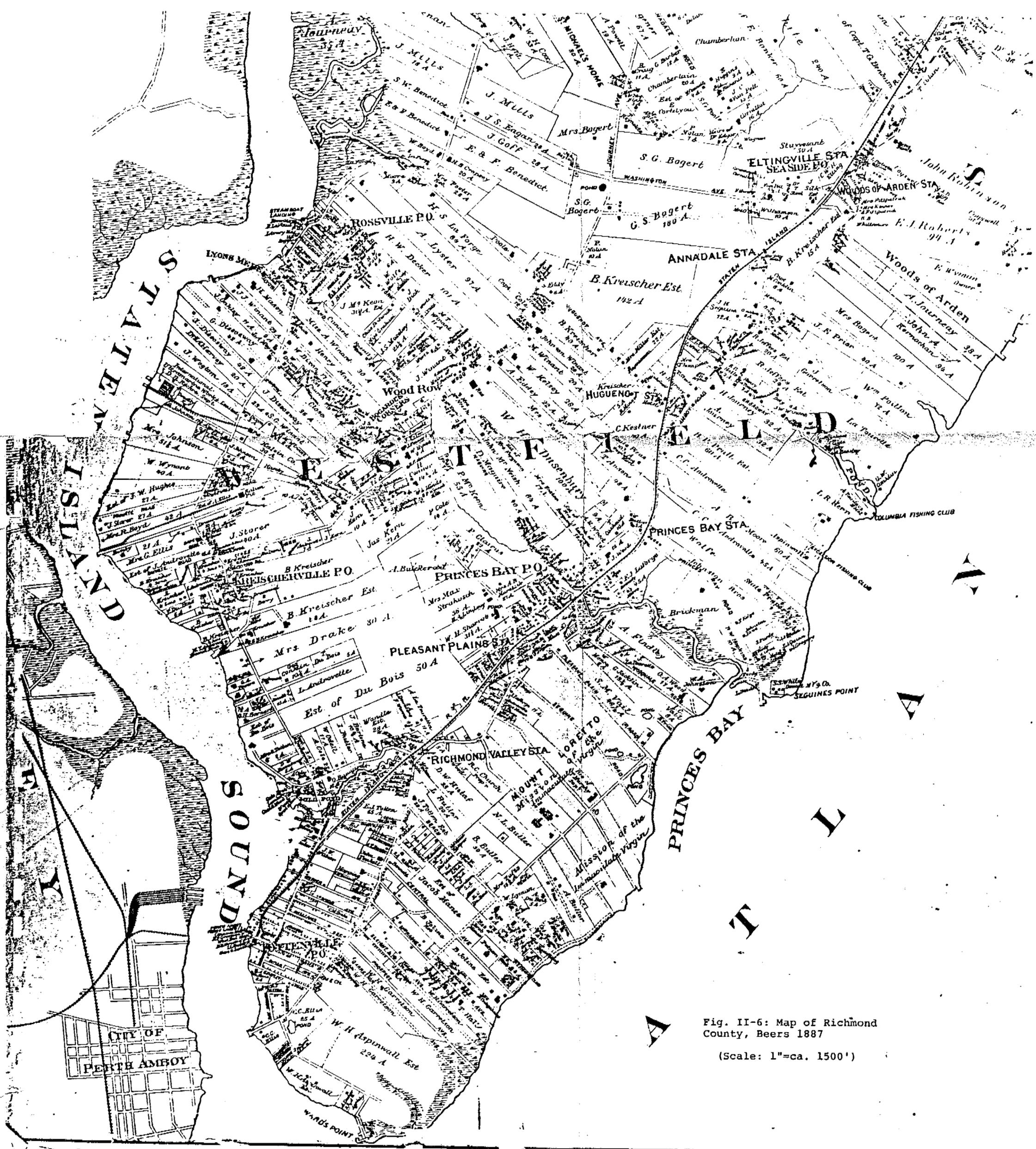


Fig. II-6: Map of Richmond County, Beers 1887

(Scale: 1"=ca. 1500')

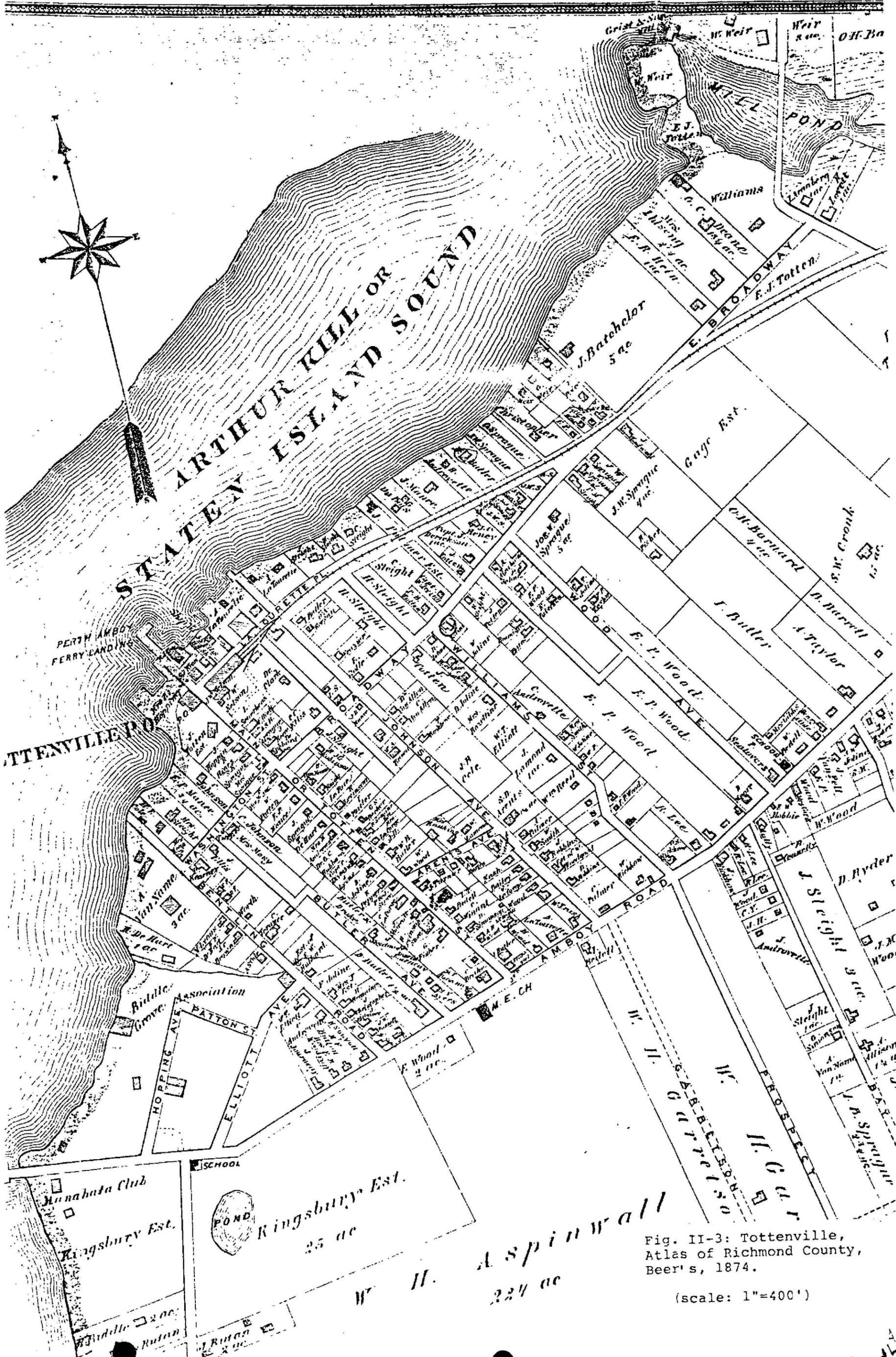
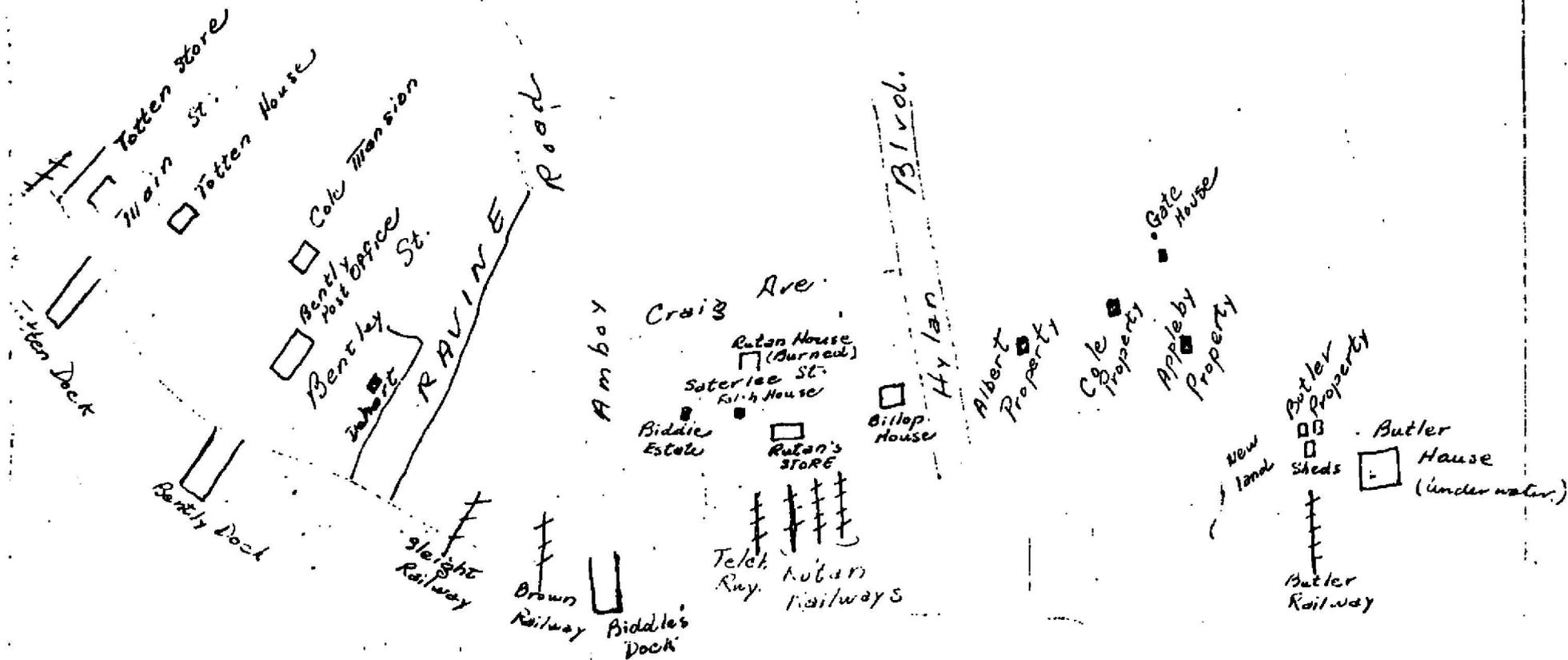


Fig. II-3: Tottenville, Atlas of Richmond County, Beer's, 1874.

(scale: 1"=400')



Geo. C. Brown

Fig. II-4: Sketch of Tottenville, from "Facts and Traditions" Scrapbook.

lined with houses in 1853 when the Butler map (Figure II-2) was made. On the Butler map, W. Totten's name appears under Totten's Landing. Totten, who had a store in this location, is supposed to have built the dock which rivalled the Bentley Dock in popularity (Joline 1950:7). The Beer's atlas (Figure II-3) identified a structure just to the east of the dock as belonging to E.J. Totten. Mrs. E. Hopping's name appears next to the post office; Samuel Hopping was the post master in this period.

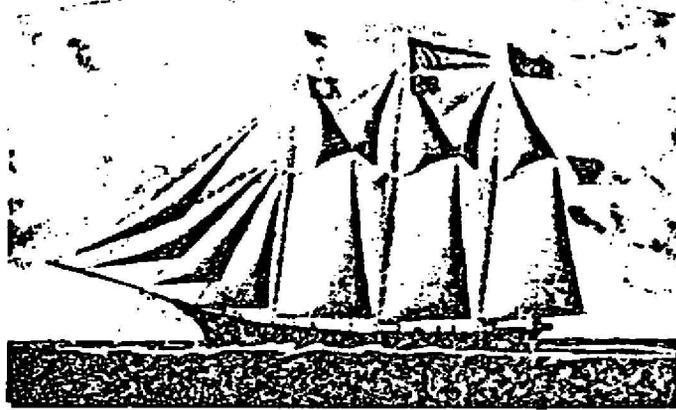
According to Joline, "during the 1840s, 50s, 60s, and 70s a fleet of 3-masted schooners, carrying on trade with Europe and the West Indies, found safe and convenient anchorage on Kill von Kull between the port of Perth Amboy and the little village of Bently." Many sea captains made their homes on Staten Island, a number along Main Street in Tottenville. The town had two ship building yards, the Ellis Ship Yard just to the east of Totten's Landing (marked "ship yard" on the Butler map, Figure II-2) and the Brown Ship Yard located on the shore of the sound where Amboy Road ends.

The Ellis Yard was founded by Jacob Ellis, the son of Captain Cornelius and Bealy (Butler) Ellis of Huguenot, Staten Island some years before the Civil War. The Yard built large schooners, pilot boats, yachts, tugs, and barges

providing steady employment for ship's carpenters, iron workers, sail makers, and other artisans. The black smith shop of A.R. Rolle marked the eastern end of the property (marked just black smith on Figure II-3) the sail loft of Stephen D. Arents (not shown on Figure II-3) marked the western end. Joline claims that the firm enjoyed the reputation of building some of the finest boats on the entire seaboard for 4 or 5 decades (Figure II-5).

The early development parallel to the shoreline (see Figure II-2) just west of Totten's Landing undoubtedly relates to the growth of the shipyard. Although no road is shown on the 1853 map, La Tourette Place, now Ellis Street, appears in this location on the 1874 Beer's atlas (Figure II-3). The currently proposed sewer line will run down the length of Ellis Street.

The Brown Shipyard was opened in 1870 by Abraham Christie Brown who, according to "Facts and Traditions", had been a fireman in the Ellis Shipyard for 15 years. Joline says Brown's first contract was for a large oceangoing tug boat for Captain Cornelius C. Ellis. It was a powerful vessel which made history by towing huge rafts of lumber from Nova Scotia to New York.



THE "SUNNY SOUTH"

This three master was built at the Ellis Ship Yard in Tottenville, in 1873, for Captain Job Derickson.

She made many voyages to European and West Indian ports and was finally lost by hurricane, in the Caribbean Sea.

After the loss of his vessel, Captain Derickson retired from his life at sea. He opened a large general store in Tottenville and was Postmaster there for six years.

Fig. II-5: Schooner built at Ellis Shipyard;
(from Joline, 1950:37).

It is interesting to note that the Brown Ship Yard does not appear on the 1874 or 1887 Beer's maps (Figure II-6) but a property marked C.C. Ellis is marked on the Beer's map at the foot of Amboy Road. Brown, perhaps, began by renting from Ellis. Both the Ellis Ship Yard and Brown's were forced to close by the end of the nineteenth century.

Other forms of transportation came early to Tottenville. On June 2, 1862, a single track rail line opened from Vanderbilt's Landing (Clifton) to Tottenville equipped with two wood burning locomotives. The line was completed in 1867. The original terminal was on the east side of Main Street marked "Depot" on Figure II-6. Between the depot and Totten's Dock were a number of hotels, apparently built after the 1874 Beer's atlas was made and before 1887 (Figure II-7, detail of Tottenville from Beer's 1887 map). On the west side of the street, just north of LaTourette or Ellis Street, is the West End Hotel identified as belonging to B.E. Streeter and remembered for the talking parrot who called from the long open porch, "Hurry along the the train." On the other side of the street, also north of Ellis, the map shows a much larger structure identified as the Cassonia Hotel owned by P.P. Grosjean.

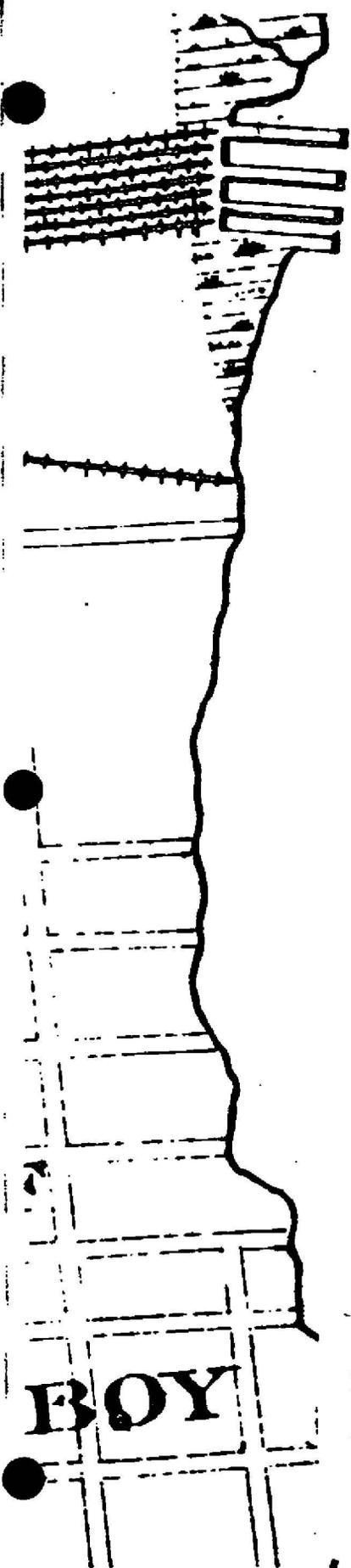
A 1878 bird's eye view of Tottenville (Fowler and Evans, not

reproducible) shows a rather densely settled community extending from the shore of the Kill to the bay on the other (south) side of the island. With the oystering business, ship building, steam boats, and the railroad the community offered a variety of economic opportunities and was a thriving nineteenth century settlement. All of the proposed sewer lines in Tottenville appear to be coincident with streets which existed as early as the mid-19th century

2.3 PLOTTING OF NEW INTERCEPTOR ROUTE - HYLAN BOULEVARD AND THE SOUTH SHORE

Although portions of Hylan Boulevard follow historic period roads, other sections were not built until the 1930s. In order to determine whether these newer sections could cover the remains of historic houses and/or outbuildings and features associated with historic period occupation of the area the present route of the boulevard was plotted on 1907 Robinson Atlas maps and on early nineteenth century topographic sheets.

At the eastern end of the project area modern Hylan Boulevard coincides with historic Southfield Boulevard up to its intersection with Harold Avenue. Southfield Boulevard had not been laid out when the 1887 Beer's map



BOY

A

DEATH AMBOY
FERRY LAND
Carroll's
P.P. Grosvenor
West End
BE Streets
St. Hope
Store & Lumber

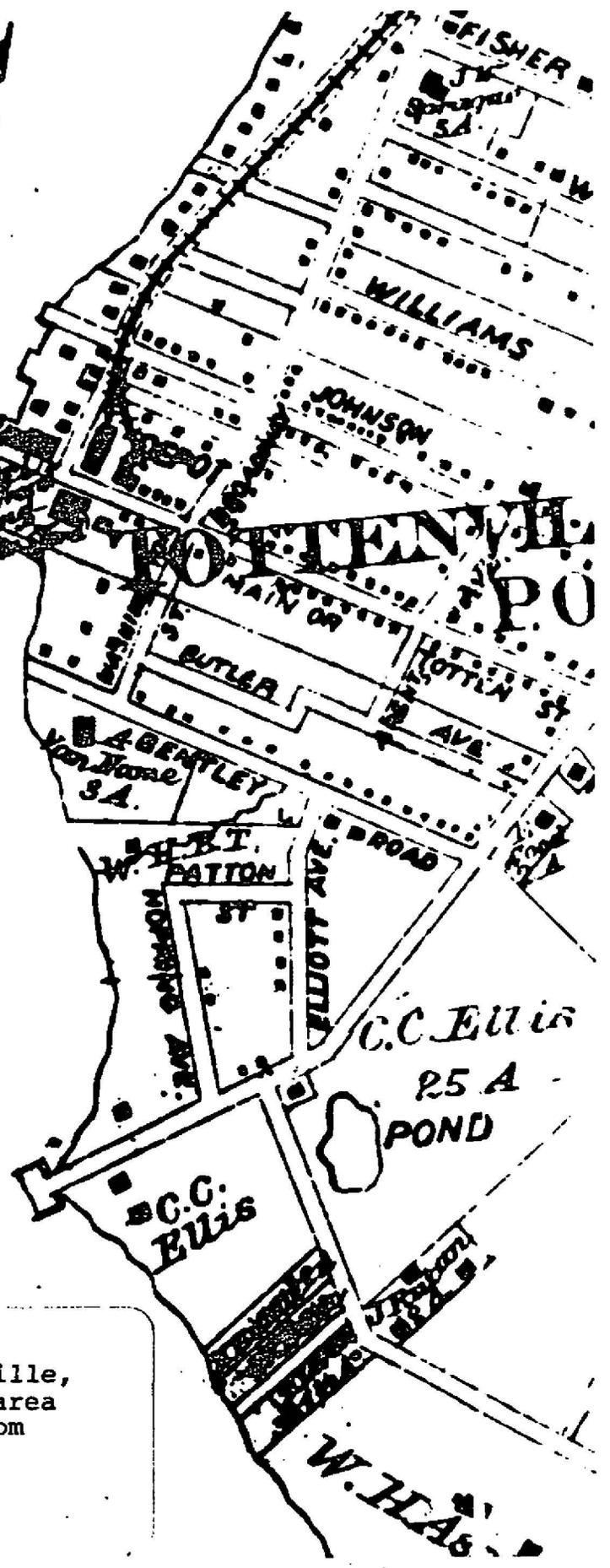


Fig. II-7: Tottenville, Ellis/Main Street area enlarged detail from Beers 1887.

(Figure II-6) was made but appears on the Robinson 1907 atlas. Beyond Harold Avenue the route of Hylan Boulevard runs due west through land identified as owned by James W. Huguenot on the 1907 Atlas to Barclay Street and from there northwest through land marked on the map La Terre Realty and Martin Keppler. A few farmsteads are shown in this area on the Butler and Beer's maps but none in the direct route of the road. Several lots are shown bordering the east side of Harrison Street (now called Poillon Avenue) on the 1907 Robinson atlas but the road would not have intersected any structure. The route of Hylan Boulevard continues for 1600' to Broadway (now called Arbutus Avenue) passing through one property along the east side of Broadway that has no structures marked within it on the Robinson atlas. No structures appear here on the Butler map but a house marked 'Lufianhaus' on the 1887 Beer's map had apparently disappeared by the time the 1907 atlas map was made. The route of Hylan Boulevard is shown connecting up with the proposed Southfield Boulevard west of Broadway and passing north of developed areas along Seguire Avenue, crossing Lemon Creek, and one property on the east side of Bayview Avenue. No structures are shown in the road's path on the Butler or Beer's maps. West of Bayview Avenue the route of Hylan Boulevard runs in a southwesterly direction through land shown divided into large tracts belonging to Cornelius

Johnston, W.T. Elliott and the Vail Farm on the 1907 Robinson atlas. No structures are shown in this area on the Butler map but the area had been developed by the time the Beer's map was made, probably a reflection of the oyster industry. The route of the road, however, appears to miss structures represented on the map. At Sharrott Avenue, the Robinson atlas shows the route of Hylan boulevard following Butler Avenue west to Beach Street (now called Page Avenue). Butler Avenue did not exist when the 1853 Butler map was made but it is shown on the 1887 Beer's map. West of Page Avenue, Hylan Boulevard passes through many properties marked on the Robinson Atlas map which may or may not have ever been developed. At Loretto Street it is shown joining Belmont Avenue, called Cartere west of Aspinwall Street. No east-west roads are shown in this area on the Butler map; Clermont Avenue, to the south of the route of Hylan, is shown on the Beer's map. The area had been developed by 1887 but it appears the road would have missed any extant structures.

In no instance does the route of Hylan Boulevard appear to intersect historic buildings or come close enough that one would expect to find archaeological features.

Of the laterals within the proposed interceptor route only

Lipsett Avenue and the northern portion of Holten Avenue did not exist in 1907 when the Robinson atlas was made. Poillon Avenue is shown on both the Beer's and Butler maps although it is not named on either; it is called Harrison Street on the Robinson Atlas. Arbutus Avenue, called Broadway, appears on both the Butler and Beer's maps. Holten Avenue is not shown on the Butler but its southern portion appears on the Beer's map with no name; it is called Algernon Street on the Robinson atlas. Carteret Street Street is on neither the Butler nor the Beer's map.

2.3a Lipsett Avenue

Lipsett Avenue was laid out just east of tidal marsh on land marked belonging to the La Terre Realty Co. on the 1907 Robinson Atlas map. No structures are shown in this area on the Butler, Beer's, or Robinson maps.

2.3b Poillon Avenue

Three structures are indicated on the 1853 Butler map along the east side of Poillon Avenue (not named on the map), only two of which would have been within the southerly portion of Poillon Avenue that is within the project area. One structure is shown on the 1887 Beer's map also on the east side of the street within the project area. This house

which may still be standing, although camouflaged by modern siding, is shown within a lot belonging to William Poillon (Appendix D, Photograph 1). The road on both maps is flanked on the west by property belonging to La Tourette. It appears to follow the same route today that it followed in the nineteenth century.

2.3c Arbutus Avenue

Arbutus Avenue, called Broadway on the 1853 Butler and 1887 Beer's maps, also follows the same route as in the nineteenth century. No structures are shown along the road within the project area on the Butler map. Several are shown along the eastern edge of the road on the Beer's map, the Columbia Fishing Club right on the shore. The only structure on the west side is A. Beasley's Hotel, also very near the bay. Although it appears on these early maps that the road ran right to the water, the road is shown intersecting a building on the eastern side at the bay on the Robinson 1907 atlas. Otherwise the remains of these buildings would be to the side of the roadway.

2.3d Holten Avenue/Johnston Terrace/Bayview Avenue

No road or structures are indicated along the western shore of Wolfe's Creek on the Butler map. On the Beer's 1887 map (Figure II-6) the southern portion of Holten Avenue (called Algernon Street on the Robinson 1907 atlas) has been laid out and developed on both sides. The street apparently intersected outbuildings shown on the 1874 Beer's atlas (Figure II-8). None of the maps reviewed shows structures in the northern section between the end of Algernon Street and Hylan Boulevard. Johnston Terrace seems to have existed at this time at least as a dirt track. The S.S. White Dental Manufacturing Company, discussed below, is shown at Seguire's Point and Johnston Terrace seems to follow the same route it does today around to the mouth of Lemon Creek. The Butler map shows no development at Seguire Point but a road (now called Seguire Avenue) was already in existence and two houses marked S. Seguire are represented on the east side of the road. The southernmost of these houses is presumably the Manee-Seguire homestead (later called the Purdy Hotel) discussed below. The 1887 Beer's map also shows Seguire Avenue (called Prince's Bay Road on that map) and a house in the same place as on the Butler map, marked S.P. Purdy. Two additional houses are shown marked A.J. Wood to the east along a road now known as Purdy Place. On

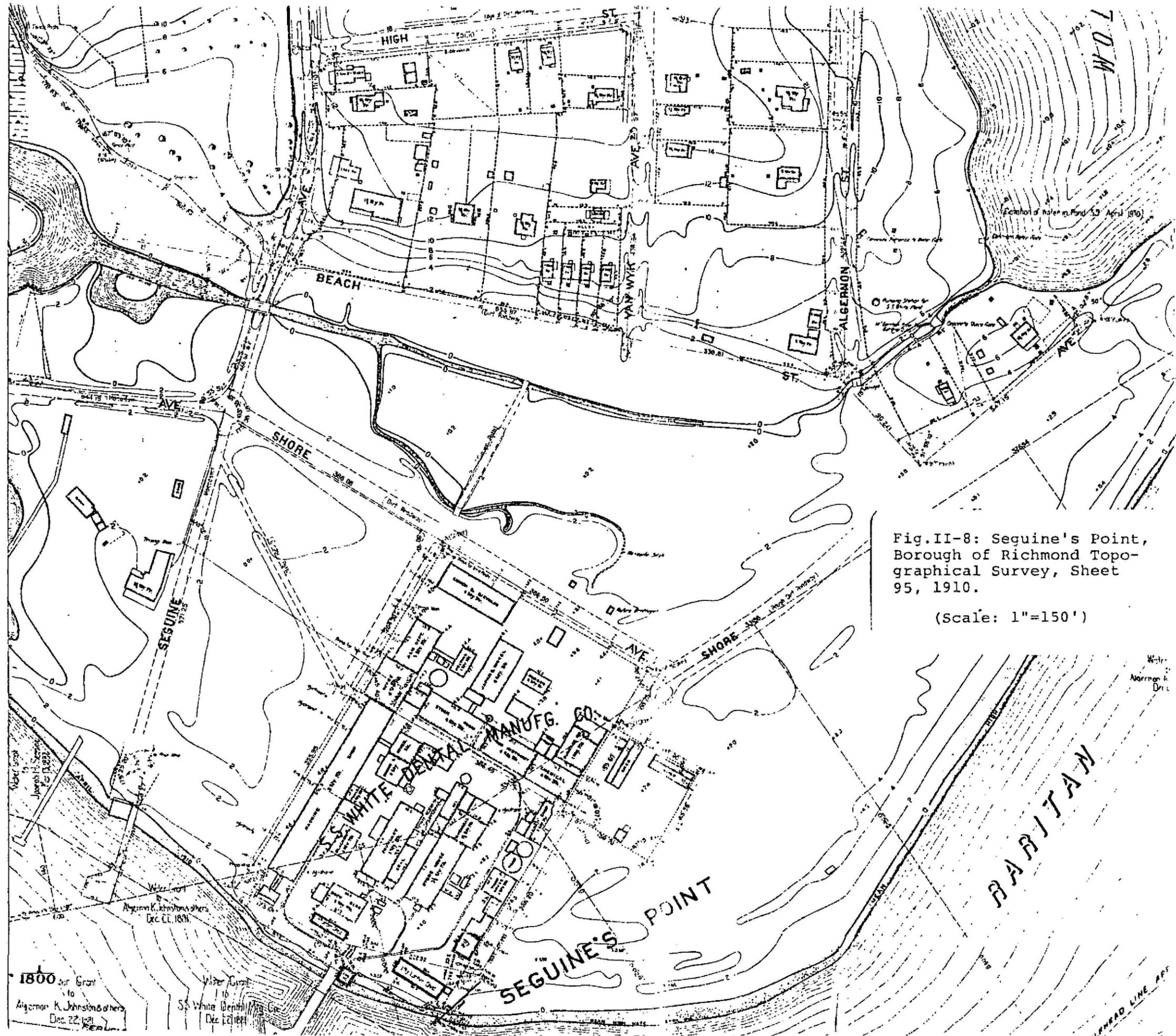


Fig.II-8: Seguire's Point, Borough of Richmond Topographical Survey, Sheet 95, 1910.

(Scale: 1"=150')

the 1907 Robinson atlas, Purdy Place is called Beach Street. The Purdy house is marked on the northeast corner "built in 1690", two large houses appear to the east marked Cath. E. Wood, and four small houses appear still further east in a row on identical lots. John Van Wyck was the owner of all four.

The Beer's 1887 map shows an unnamed road following the same route as Bayview Avenue along the western shore of Lemon Creek. One structure is shown close to the roadway on the west side. The Butler map shows nothing on this side of Lemon Creek. Only the William A. Johnston estate is shown to the west of Bayview Avenue on the 1907 Robinson atlas.

2.3a Carteret Street

Carteret Street runs through land shown as undeveloped on both the Butler and Beer's maps. On the 1907 Robinson atlas the street appears to be called Castleton and has been laid out in lots for development.

2.4 STANDING STRUCTURES -- INTRODUCTION

The proposed interceptor route passes through three communities which have already been recognized to some extent for their historic significance and, as discussed

below, are under consideration for further recognition. Standing structures in Prince's Bay including the colonial period Manee-Seguine homestead (also known as the Purdy Hotel) and the 19th century S.S. White Dental Manufacturing Plant form a rather compact community which represents 100 years of industrial development along Staten Island's southern shore. Figure II-8 shows the relationship of the buildings and other structures, some of which are still standing, and also relate to the oystering or resort era in this community's history.

The town of Tottenville is most often recognized as the location of the Conference House but also has a rich history of its own as a 19th century community that thrived on the oystering business and shipbuilding industry. Many, if not most, of the standing structures in what was originally the center of the village (between Bentley and Main Streets on the north side of Arthur Kill Road) date to the 19th century and form a coherent community. The detail of the Beer's 1874 atlas (Figure II-7) shows the portion of the community that is still represented by many standing structures.

Kreischerville, the home of the Kreischer Brick Works and the New York Anderson Pressed Brick Company, retains standing structures relating to both owners and workers in

this mid-nineteenth century industry. In this case the buildings have not been incorporated into a modern commercial town and retain the appearance of a 19th century "factory village." The brick works are shown on Figures II-9 and II-10.

The architectural historian, Elsa Gilbertson, was asked to evaluate these resources as part of our survey. Her descriptions follow.

2.5 EVALUATION OF STANDING STRUCTURES by Elsa Gilbertson

PRINCES_BAY

The name Prince's Bay, a locality near the southern tip of Staten Island facing the Atlantic Ocean, dates back to the late 17th century. Scattered farmhouses were built along the shore and Amboy Road. The oldest remaining of these, the c. 1690 Manee-Seguine Homestead, is now being considered for New York City landmark status and the National Register of Historic Places. Prince's Bay was especially known for its oyster beds, and most residents in the area both farmed and fished. When commercial harvesting began here is not known, but in the late 17th century there was a kiln for

PART OF WESTFIELD

Scale 5000 or about 400 feet to the inch
J. Storrs
40 ac.

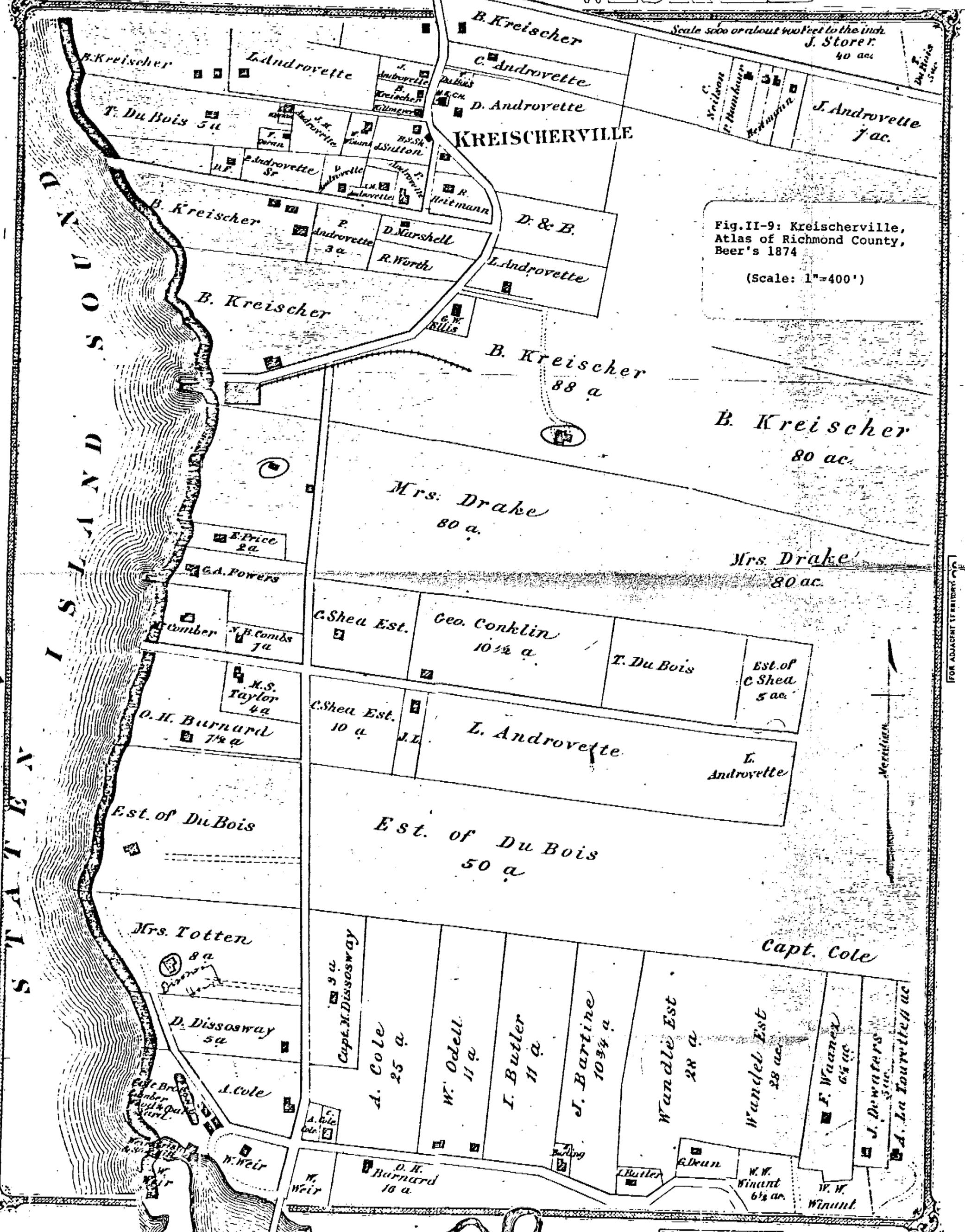


Fig. II-9: Kreischerville, Atlas of Richmond County, Beer's 1874
(Scale: 1"=400')

FOR ADJACENT TERRITORY SEE SECTION 22

making lime out of oyster shells nearby. By the early 1800's, the natural oyster beds had become exhausted and were planted with seed oysters from local waters. Prince's Bay oysters achieved considerable renown, and were specifically mentioned in an 1813 guide to New York. Seed oysters from Maryland and Virginia were being planted here by the 1820's. Growth of this industry in the 1830's brought with it the black oystermen who settled at Sandy Ground. Many of the early 19th century houses remaining in the Prince's Bay/Pleasant Plains area were the homes of oystermen, an example being the Abraham Wood House (5901 Amboy Road) listed on the National Register. The oyster industry closed in 1916 because of severe water pollution.

By the 1850s, manufacturing was also becoming important in Prince's Bay. The first factory, Joseph H. Seguire's Staten Island Oil and Candle Company, was incorporated in 1848 and made candles from imported African palm oil. In 1876, Johnston Brothers, a Brooklyn dental supply firm which merged in 1881 with S.S. White, a Philadelphia company, took over the complex of factory buildings. They opened many branches and offices throughout America and Europe, but the main manufacturing operation was here. With well over 1000 employees in the mid 20th century, S.S. White was the largest producer of dental supplies in the world, making

items from drill burrs, gold fittings, and dental chairs to large pieces of dental equipment.

During the latter half of the 19th century, Prince's Bay also became a popular resort. People made day trips here to eat the famous oysters served at the day hotels, which included the Old Homestead Hotel (in the Manee-Seguine Homestead) and the Prince's Bay House in the c. 1840 Greek Revival Seguine House on the National Register and a New York City landmark. The diversity of the styles and types of the historic structures here embrace the area's entire history -- from the late 17th century Manee and Seguine family farmhouse and its imposing Greek Revival successor to a late 19th century manufacturing center. The scale of the oyster industry and the relative prosperity of the area's oystermen is suggested by their homes -- substantial and comfortable in scale and toward the end of the century even in one case flamboyant. In this regard, they provide a significant contrast to the stylistically similar but more modest homes of Tottenville.

MANEE-SEGUINE HOMESTEAD

(a.k.a. Purdy's Hotel, the Old Homestead Hotel),
509 Seguine Avenue

In 1670, the 140 acre tract of land roughly between Lemon Creek and Wolfe's Pond and running from the shoreline almost to Amboy Road was patented to Paulus Regrinet. The same tract was patented in 1694 to New York merchant Paulus Richards, and sometime after that, perhaps by the early 18th century, passed into the hands of the Abraham Manee family. Whether Richards or the Manees (French Huguenots) built the house is not known, but Staten Island borough historian, Loring McMillen (founder of Richmondtown Restoration) has tentatively dated the original section as being built in the 1690's. The main stone part of the house was built in two stages, the section from the center door to the right being the oldest part. Its stone construction and heavy beams are typical of early Staten Island colonial dwellings. Approximately twenty colonial buildings remain on Staten Island, which has more than any other borough in the City of New York. Although alterations and additions have been made over the years to the old Manee-Seguine Homestead, it is an important part of the architectural history of Staten Island and of the New Netherland area as a whole. It is currently being considered for New York City landmark status by the City Landmarks Preservation Commission, and was heard at

CHAPTER 11 DOCUMENTARY RECORDS

their public hearing on Staten Island in October 1982. The Preservation League of Staten Island are also planning to include it in their Staten Island Multiple Resource Area National Register nomination project which is under way at this time.

S.S. WHITE DENTAL MANUFACTURING PLANT

The first factory on the site of this plant by the shore of Prince's Bay was the Staten Island Oil and Candle Company, incorporated in 1848. The president of the candle company, Joseph H. Seguire (1801-1856) was the builder of the impressive c. 1840 Greek Revival Seguire House at 440 Seguire Avenue (both a New York City Landmark and on the National Register of Historic Places). The candles made here from imported African palm oil were known for their light and hardness and were sold from coast to coast. It is possible that part of Building 11 and Building 22 of the S.S. White plant may be part of the candle making factory, although this has not yet been proven. In 1864, the plant was bought by Algernon K. Johnston, who leased it to the Middleton Gas, Water and Drain Pipe Company. In 1876, the Brooklyn firm founded by his brothers in the 1860's moved here. Johnston Brothers, manufacturers of dental supplies and equipment, merged with the Philadelphia firm of S.S. White in 1881. Much of the business remained in

Philadelphia and offices and branches opened elsewhere in America and in Europe, but most manufacturing was done at the Staten Island plant. In 1888, the main building facing Seguine Avenue was built, and in 1901 the long building at right angles and to the west of the tower was constructed. To the rear are a number of small late 19th and early 20th century structures. In 1929 and 1937, the north complex was added. This S.S. White plant, described as having "over 7 acres of moving machines" in 1944, was once the largest producer in the world of dental supplies.

Unlike many Staten Island industries founded in the late 19th century, S.S. White survived the Depression. Operations were moved to other locations in the 1960s, and the factory was then converted to a shopping center. Not financially successful, the Trade Mart was recently closed and the future of these buildings is in jeopardy.

This industry was very important to the economy of Staten Island, and because of its large size and the long span of time it remained in business here it plays a significant role in the history of Prince's Bay and of Staten Island as a whole. This factory complex is also significant because it is one of the only large late 19th century manufacturing plants on Staten Island that still survives. For example,

long since demolished are the factory buildings for the Staten Island Dyeing and B. Printing Establishment in West New Brighton (the Island's first major industry, established in 1819), Kreisler Brick in Charleston (begun in 1854), American Linoleum in Travis (America's first linoleum manufactory, founded in 1876), Atlantic Terra Cotta in Tottenville (these buildings were torn down recently) most of the breweries (the oldest established in 1852), and C.W. Hunt in West New Brighton (founded in 1872, a large producer of coal handling machinery -- part of one of their buildings still remains). Thus the S.S. White plant serves as a significant reminder of all those industries founded in the last half of the 19th century which were so important to Staten Island.

Architecturally, perhaps the S.S. White factory buildings are considered less significant although the main 19th century part with its large windows, bracketed eaves, and cupola is quite attractive. The Preservation League of Staten Island is considering nominating the S.S. White plant to the National Register of Historic Places in their Staten Island Multiple Resource Area application underway right now, but it is not known if the New York State Office of Parks, Recreation, and Historic Preservation will approve of the choice.

TOTTENVILLE

In the 1670s, Captain Christopher Billop was granted over 1600 acres of land at the southern tip of Staten Island. His house, the c. 1675 Conference House (National Register, National Historic Landmark) which overlooks Raritan Bay, is the last remaining manor house in New York City. His descendants lost this huge property during the Revolution because of their Loyalist ties, and the land was divided up into smaller farms and sold off. By the 1830s, a village was forming along Amboy Road (which led to the ferry to Perth Amboy, New Jersey) and scattered houses were being built along the shore and throughout the area. By mid-century the area was named Tottenville after the prominent local Totten family. The village prospered until the beginning of the 20th century when severe water pollution destroyed the oyster beds and the introduction of the steel hull brought an end to the area wooden shipbuilding industry. Several new industries were then introduced -- a silk mill, copper smelting plant (still in existence), and the Atlantic Terra Cotta Company which failed during the Depression. Terra cotta made from local clay at this plant was used in the Masonic Hall on Main Street, built in 1909, and was shipped all over the world. It was used for many

buildings designed by the major architects of the day, including Daniel Burnham's Fuller "Flatiron" Building in Manhattan. Since the Depression, Tottenville has been primarily a quiet residential community. The historic buildings which remain suggest the greater homogeneity of this village which was composed generally of persons of relatively modest means. More isolated and self-contained (even to this day) than any other Staten Island village, its ferry connection to Perth Amboy linked it more closely to that city than to Staten Island's North Shore. Many of the residences are small in scale -- diminutive versions of those built elsewhere on the Island. Many were built by persons in the shipbuilding industry or related trades. Further research may demonstrate a unique building or construction tradition related to that fact. It is of interest to note that there are relatively few structures in the commercial center on Main Street that date after 1900 -- the major exception being the Masonic Hall.

In the Staten Island Multiple Resource Area National Register nomination now being prepared by the Preservation League of Staten Island, the League is considering suggesting a number of Tottenville properties, ranging from residences to commercial structures. As of now, it is not likely that any districts will be proposed because although

there are many fine buildings here, they are interspersed with others (often historic structures that have been altered) which would not contribute to the character of a district. This does not however preclude the possibility of proposing historic districts here at a later date.

CHARLESTON (KREISCHERVILLE)

Growth of the small village known as Androvetteville since the 18th century received a major boost when clay suitable for making firebrick was discovered here in the 1850's. Balthazar C. Kreischer (co-founder in 1845 of the Kreischer and Mumpton fire brick company in Manhattan) established a brick manufacturing plant here in 1854. In 1876, all his manufacturing activities were shifted from Manhattan to Kreischerville, further stimulating growth in the village. A much expanded plant was built, as were workers' housing, and two large houses for Kreischer's sons, one of which still stands and is on the National Register. Next door to the factory was New York Anderson Pressed Brick, a related company.

Kreischer Brick was noted in its early years for firebricks and clay retorts used for making illuminating gas. These retorts were sold across the country. By the later 19th century, production shifted to face brick and terra cotta

ornament which were used by all the major architects of the time -- including Ernest Flagg, Carrere and Hastings, McKim, Mead and White, and Leopold Eidlitz. Examples of buildings built with Kreisler products include those at Barnard College in Manhattan and many in the Greater Ridgewood (Queens and Brooklyn) Historic District on the National Register. Although there were a number of brick manufacturers on Staten Island, Kreisler Brick was the only one that was nationally known. The factory closed in 1927 due to lack of family interest in carrying on the business and decreased demand for building materials at the onset of the Depression. The village was then renamed Charleston. All the factory buildings and a number of the houses have since been demolished. Although few in number, those historic buildings which remain reflect to a degree no longer visible elsewhere several 19th century "factory villages" such as Linoleumville (now Travis, home of America's first linoleum manufactory) and early West New Brighton (the old Factoryville, home of Staten Island's first major industry -- the Staten Island Dyeing and Printing Establishment, Goodyear's rubber plant, and others), all so important to the 19th century economy of Staten Island.

The Preservation League of Staten Island is considering

nominating several Kreischerville buildings for the Staten Island Multiple Resource Area National Register nomination now in progress, but it is not yet known if they will be approved by the New York State preservation office in Albany. Nonetheless, many of the village structures, including those that have been altered, are significant to the history of Staten Island.

CHAPTER III
RESULTS OF FIELD TESTING

This chapter presents the results of our manual tests and archaeological borings. As an aid to analysis and to maintain consistency with our testing plan the area tested has been arbitrarily divided into 19 sections.

A complete listing of the stratigraphy for each test and the cultural materials recovered from each stratum is presented in Appendix B. The location of each test has been plotted on the set of 1"=30' maps included with this report as Appendix A. An analysis of finds in each section and recommendations for further archaeological testing are presented in Chapter IV.

SECTION 1

HYLAN BLVD--RICHMOND AVENUE TO LIPSETT AVENUE, ca. 5200'
[Appendix A, Sheets 1-7]

INTRODUCTION

Section 1 extends along Hylan Boulevard from Richmond Avenue to Lipsett Avenue, a distance of approximately 5250'. Documentary research did not indicate this area to be archeologically sensitive. A surface find at Woods of Arden is the only report of prehistoric presence in the immediate vicinity (Pickman and Yamin 1978: II-28).

A nominal testing interval of 150' was selected for most of this section but a 100' interval was used in several locations within the section which may have been attractive for prehistoric occupation. The 1913 Borough of Richmond topographic sheet shows a stream located ca. 500' east of the intersection of Hylan Boulevard and Woods of Arden Road. This stream is at the base of a slope which rises to 45' above sea level (about 15' above the elevation of the stream). The other features which may have attracted prehistoric peoples are a stream which crossed Hylan Boulevard near the present location of Holdridge Avenue and a marshy area near the intersection of Harold Avenue and Hylan Boule-

vard.

A total of 30 shovel tests was planned for Section 1. After adjusting the sampling intervals to account for disturbed and untestable areas a total of 26 tests were actually placed in this section.

RESULTS

Eastward for approximately 600' from Richmond Avenue, nearly all of the area adjacent to Hylan Boulevard is bordered by modern houses with graded lawns. This area was not tested. Three tests (A-1, B-1, C-1) were placed in a thinly wooded area which extends for some 300' on the south side of Hylan Boulevard at Preston Avenue. Surface examination indicated this to be a former house site. Two of the tests in this area, B-1 and C-1, contained a layer of topsoil. This topsoil had apparently been graded off at the location of test A-1. The topsoil layer was some 10" thick in test B-1 and 20.5" thick in test C-1. The greater thickness in the latter test suggests the possibility that the top of the stratum was deposited as a result of grading, with the lower part being the results of natural soil development. The artifacts recovered from tests A-1, B-1, and C-1 consist of miscellaneous modern debris.

The stratigraphy in test B-1 was typical of that encountered in undisturbed contexts in most of the eastern portion of the project area. The topsoil which underlay the surface sod or humus was generally described as a brown or light brown silty soil. The transitional zone underlying the topsoil was generally described by the excavators as a tan or brownish yellow silty soil. The subsoil in this area was generally a compact silt, clayey silt or clayey soil containing pebbles and red shale. The color of this subsoil was generally described as red, reddish tan or reddish yellow.

The houses which adjoin Hylan Boulevard between Preston Avenue and Woods of Arden Road, a distance of approximately 850 feet, appear to have been built in the late 19th or early 20th century. A number of houses are shown on the 1913 Borough of Richmond topographic sheet. The bed of the stream mentioned in the introduction to this section was observed immediately west of the house located at #4465 Hylan Boulevard. The house occupies the high ground above the stream, and the grounds appear to have been landscaped. Because the topography of the area indicates that Hylan Boulevard was cut through this hill, we did not test the high ground on which the house is located. Test C-2 was placed on the side of Hylan Boulevard immediately East of the stream bed, and

test C3b was placed on slightly higher ground about 75' West of the stream bed. Neither of these tests detected any indication of pre-historic occupation of the area. In addition to modern debris, test C-2 yielded two sherds of what appear to be 19th century type ceramics, which were recovered from the topsoil. These may be derived from the 19th or early 20th century occupation of the adjacent houses.

It should be noted that test C-3a was initially placed some 20' west of the location of test C-3b. However, the presence of a piece of plastic at a depth of 21" indicated the presence of either a deep fill deposit associated with the grading of the land, or perhaps the presence of a pipe trench at this location. Therefore, the test was moved to the east (test C-3b).

Four tests were placed on the south side of Hylan Boulevard between Preston Avenue and Woods of Arden Road. Test A-2, A-3, and B-2 were located between the Hylan Boulevard sidewalk and the hedges bordering the houses on the south side of the road. Test B-3 was placed in a vacant lot on the southeast corner of Hylan Boulevard and Woods of Arden Road, about 100' northeast of a house foundation. All four tests encountered buried topsoil strata with overlying fill.

CHAPTER III SECTION 1

In test A-2, the buried dark brown silty topsoil, encountered between 14" and 17", yielded only a small piece of coal in addition to 85.7 grams of clam shell. Test A-3 was placed immediately west of test A-2 to determine if the shell could possibly be the result of aboriginal activity. Only 2.8 grams of clam shell were recovered from the buried brown silty topsoil layer between 18.5" and 21.5" in this test. No other artifacts were recovered from this stratum and no indication of aboriginal activity was encountered. The shell was most likely deposited during the historic period occupation of the area and the overlying fill may have been deposited in connection with the improvement of Hylan Boulevard or the adjoining sidewalk.

In test B-2 the buried 1' thick brown silty topsoil layer was encountered at a depth of 1'. Only cinder, coal and window glass fragments were recovered from this stratum. In test B-3, the buried brown loamy topsoil was 14" thick and was encountered at a depth of 13". In addition to coal and cinder, the stratum yielded six ceramic sherds and three fragments of miscellaneous glass which may have been associated with the occupation of a house fronting Woods of Arden Road whose foundation was noted above. Four of the sherds were 19th century transitional pearlware or whiteware and one was white delftware.

It should be noted that the actual spacing between tests B-3 and C-3 is somewhat broader than the planned 100' foot spacing in this area. This is due to the fact that the owner of the house at #4514 Hylan Boulevard denied permission to test on his property. In addition, the owner of the house at #4521, on the north side of Hylan Boulevard, was not available to give permission at the time the testing was conducted. An additional test, D-1, was placed in a vacant lot on the northeast corner of Woods of Arden Road and Hylan Boulevard. The test indicated that this lot had been heavily disturbed and the topsoil had been graded off.

The remainder of the distance between Woods of Arden Road and a point just east of Harold Avenue was not tested. Between Woods of Arden Road and Arden Avenue, the south side of Hylan Boulevard is bordered by modern houses with heavily graded lawns. The north side of the Boulevard is also bordered by modern homes with graded lawns. From Arden Avenue to Harold Avenue, the north side of Hylan Boulevard is mostly swampy with a few modern structures built on fill. The houses on the south side are modern with graded lawns. These lawns are apparently built on fill. The difference in grade between the lawns and the land to the east and west indicates that the fill is too deep to test by manual

methods.

A marshy area is located west of Harold Avenue and north of Hylan Boulevard. As noted in the introduction, this marsh was shown on the 1913 topographic sheet. It would possibly have been attractive to prehistoric peoples because of the faunal resources often found in such areas. Three tests, E-1, F-1 and F-2 were placed near the edges of this marshy area. Except for a historic period ceramic sherd and a glass fragment from test F-2, at the northern edge of the marsh, no artifacts were recovered from these tests. It should be noted that the area on the south side of Hylan Boulevard east of Harold Avenue and opposite the marshy area could not be tested as it was being bulldozed for the construction of a new home at the time that testing was conducted. A 20th century house, built on fill, is located west of the marsh at the northeast corner of Hylan Boulevard and Bennett Place. This area was not tested.

West of Bennett Place, the south side of Hylan Boulevard is low-lying and brambly and at the time of field testing the area was very wet. Test D-2 was placed on the north side of Hylan Boulevard, which is dryer. No artifacts were recovered from this test.

East of Holdridge Avenue, the land to the north of Hylan

Boulevard has been filled and now contains the offices and parking lot of the Staten Island Medical Group. The land on the south side of Hylan Boulevard is approximately three feet below the elevation of the road. This land is covered with a dense tangle of small trees and bramble. Test E-2, placed in this area, yielded one small chert flake in addition to a whiteware sherd. The artifacts were recorded as located at a depth of 8"-13" in the transitional zone beneath the topsoil layer. We placed two additional tests, E-3 and E-4, in the immediate area during the initial testing and another test (BG-6) after completion of the initial testing program. Test E-3, located approximately 15 feet east of test E-2, yielded a quartz blocky fragment. Again, this artifact was recorded as deriving from the transitional layer at a depth of 11-13 inches. Two sherds of historic period red earthenware and a nail fragment were recovered from the topsoil in this test.

Test E-4 was placed approximately 10 feet to the south and test BG-6 approximately 10 feet north of the first two tests. Although historic period ceramics were recovered from the topsoil in each of these tests, no prehistoric artifacts were recovered. In addition, no artifacts were recovered from test D-3, located approximately 85 feet west of test E-2.

Subsequently, two additional tests were placed in the area. The location of these tests was determined by surface conditions. Since a dense tangle of brush and bramble is located immediately west of test E-2, test BI-1 was placed approximately 50 feet west of the latter test. The base of the fill deposit on which Holdridge Avenue (a dirt road south of Hylan boulevard) is built up above the adjacent land is located about 5-10 feet west of test E-3. We placed test BI-2 in an open wooded area east of Holdridge Avenue, which was drier when these supplementary tests were conducted than at the time of the initial testing. Neither BI-1 nor BI-2 yielded prehistoric artifacts. A few historic period ceramic sherds were the only artifacts recovered.

Between Peare Place and Lipsett Avenue, some of the tests are spaced further apart than our 150 foot nominal spacing. This is due to the presence of several roadways, structures and associated disturbed areas, and the fact that Hylan Boulevard in several places is cut through higher ground on either side of Hylan Boulevard. Five tests were placed in this area. A topsoil layer was present in each test except for F-5, located north of Hylan Boulevard and east of Lipsett Avenue. This area was apparently graded and the topsoil removed at the test location. No prehistoric artifacts were recovered from these five tests. Except for test D-5 only a few miscellaneous historic period artifacts

were recovered. The location of test D-5 is a higher wooded area north of Hylan Boulevard and just west of Barclay Street. The topsoil was tested to a depth of 20", where a large number of roots prevented further excavation. The artifacts recovered, including 7 historic period ceramic sherds, suggest the presence of a former house site in the vicinity. The ceramics include one creamware sherd, and a kaolin pipestem fragment was also recovered. However, no house was shown in this vicinity on the 19th and early 20th century maps examined for this project.

One additional test (D-6) placed on the southwest corner of Hylan Boulevard and Lipsett Avenue is included in Section 1 for purposes of discussion. The test was placed on a grassy strip adjoining Hylan Boulevard. It included strata of fill and asphalt probably connected with road construction. Below this material, the red pebbly subsoil was encountered at nine inches, indicating that the topsoil had been graded off at this location.

SECTION 2

LIPSETT AVENUE, ca. 750'
[Appendix A, Sheets L1-L2]

INTRODUCTION

Section 2 consists of the Lipsett Avenue lateral, which extends approximately 750 feet south from Hylan Boulevard. Lipsett Avenue borders the east side of a former tidal inlet, the mouth of which is now blocked off from Raritan Bay. Lipsett Avenue is approximately 16 feet above the elevation of the inlet. The 1913 Borough of Richmond Topographic sheet shows a small stream emptying into the tidal inlet approximately 500 feet south of the present location of Hylan Boulevard. The stream is shown draining a marshy area approximately 200 feet east of the inlet.

Although no prehistoric finds have been reported from the Lipsett Avenue area (Pickman and Yamin 1978), the physiography and topography of the area are similar to that at Arbutus Lake, where finds have been reported. Therefore, our testing plan called for a nominal testing interval of 100 feet in this section. The projected number of shovel

tests was 10. Because portions of the area have undergone substantial disturbance, only nine tests were actually conducted.

RESULTS

Four tests (F-6, F-6B, D-7, H-2) were placed along the western side of Lipsett Avenue between Hylan Boulevard and Oceanview Avenue. These tests were located in a grassy strip between Lipsett Avenue and the hedges or fences bordering the lawns of the houses along Lipsett Avenue. Test F-6 encountered the edge of what appeared to be a former sidewalk at a depth of eight inches. This test was therefore moved several feet north and west (F-6b). The topsoil in the area of these four tests appears to have been disturbed and may have been deposited here subsequent to the grading of Lipsett Avenue. No transitional layer was recorded in these tests. The subsoil was encountered at 7-11 inches below the present ground surface.

During our pedestrian reconnaissance, we noted the presence of shell on the lawn of the house on the northeast corner of Lipsett Avenue and Oceanview Avenue. Test E-5 was placed south of this lawn, in a lot on the southeast corner of Oceanview Avenue and 4th Court. The test location is

approximately 60 feet east of Lipsett Avenue. The lot in which the test was placed appeared disturbed and at the time that the tests were conducted contained a number of junked automobiles. The stratigraphy in test E-5 suggests that approximately six inches of mixed red and brown soil had been deposited here. The soil below this comprises the "natural" sequence of topsoil, lighter transitional soil and reddish brown silty subsoil. Two flakes, one of them a tool resharpening flake, were recovered from this test. In addition, ten historic period ceramic sherds were recovered, many of which appear to be 19th century types. One flake was recorded as deriving from the fill in the topmost six inches of the test, although field notes indicate that it may have originated in the underlying topsoil layer. The second flake probably originated in the transitional zone.

Unfortunately, the owner of the house at the northeast corner of Oceanview and Lipsett Avenues did not grant permission to test on the lawn where shell had been noted. However, a test (H-1) was placed in the grassy strip between Oceanview Avenue and the sidewalk adjoining the lawn in question. A flake and 28 grams of clam shell, in addition to four historic period ceramic sherds, were recovered from the sod layer. Plastic, in addition to more shell fragments and a cut mammal tooth, were recovered from the underlying

topsoil.

Test D-8, placed on the east side of Lipsett Avenue, approximately 90 feet southwest of test E-5, yielded no prehistoric artifacts. The test location is in an area of woods and brush just north of the stream bed noted in the introduction to this section. Only a few historic period ceramic sherds and glass fragments were recovered from the topsoil and transitional layers.

South of the wooded area bordering the stream bed, the lawn of a modern house extends southward on the east side of Lipsett Avenue. On the west side of the road, the bluff area overlooking the former tidal cove forms a promontory. We considered this to be the most likely locus of any aboriginal occupation of the area. Tests F-7 and F-8 were placed here. The area is now covered with grass and weeds. We were informed by a local resident that it was the site of a house which burned down several years ago. The topsoil and transitional zone had been graded off at the location of test F-8. These strata were tested in test F7, however. Only a few modern artifacts (ceramic, glass, and wire nail fragments) were recovered.

South of the location of test F-8, most of the ground

bordering Lipsett Avenue appears to have been disturbed. Three structures now stand in this area. No tests were placed here.

SECTION 3

HYLAN BOULEVARD - LIPSETT AVENUE TO ARBUTUS AVENUE, ca. 3,250'
Appendix A, Sheets 7-10J

INTRODUCTION

This section along Hylan boulevard crosses the heads of two former tidal inlets -- one east of Lipsett Avenue and the other at Arbutus Lake -- which have been cut off from the shore in modern times. Although no prehistoric finds have been reported in the vicinity of Lipsett Avenue several, including a site at Bunker Hill, have been reported west of Arbutus Lake (Pickman and Yamin 1978: II-28). A 1911 topographic map shows the area to be relatively high (between 30' and 40' above sea level) and dotted with swamps and ponds in addition to the lake.

Only ten shovel tests were targeted for this area as much of its extent was either disturbed or built on fill. Nine tests were actually conducted.

RESULTS

A culvert channels water under Hylan Boulevard 64' west of the intersection of Hylan with Lipsett Avenue. One shovel test (H-3) was placed next to the stream bed about 15' below

the level of the boulevard. (Note: We had originally planned to test this location with a boring through the Hylan Boulevard pavement.) Historic period ceramics were recovered from the upper stratum, a 7.5" thick sandy silt which appeared to be a fill deposit. No artifacts were found in the black organic stratum between 7.5" and 10.5". The reddish brown clayey subsoil was encountered at 10.5".

The road is built on fill on either side of the culvert and then cuts through a high area. Just before the intersection with Foughkeepsie Avenue, the road begins to be less cut down. Five shovel tests (I-1, G-1, G-2, I-2, H-5) were placed in this flat wooded area between Foughkeepsie and Poillon Avenues. The topsoil beneath the humus in I-1 and G-1 contained historic period artifacts including whiteware, glass, a plastic doll's head, and some earlier materials: blue edgeware, pearlware, creamware, lampglass, and a fragment of a slate pencil. Tests G-2, I-2, and H-5, all on the south side of Hylan Boulevard, were waterlogged beneath the humus. A piece of whiteware and a piece of glass were recovered from the wet clay stratum beneath the humus in G-2. Two pieces of whiteware were recovered from the same stratum in H-5.

To the west of Poillon Avenue the roadside has been graded

for a distance of about 200 feet. Although the wooded area on the north side of the boulevard between Philip and Bertram Avenues appeared undisturbed during pedestrian reconnaissance, standing water precluded subsurface testing during fieldwork. The south side in this area was also low and swampy. Additional disturbance between Bertram and Arbutus (graded on the south and stripped for a new road on the north) as well as the fact that the boulevard is built on fill just opposite the head of Arbutus Lake, ruled out testing in this area except for the lot east of the gas station (#5025) on the corner of Arbutus, the location of Pumping Station #4.

The gas station lot is bounded on the east by the gorge in which the stream feeding Arbutus Lake runs. One test (V-1) was placed next to the stream (about 15 feet below the level of the pumping station location). Clayey silts were encountered to a depth of 26 inches beneath the surface, sandy clay to 37 inches, and silty sand to 60 inches. The deposits could either be the result of alluvial or glacial action. No cultural materials were recovered.

The two tests on the gas station lot confirmed that the area has been heavily disturbed. Hard ground and densely packed gravels prevented testing deeper than twelve inches. A car

CHAPTER III SECTION 3

fan and other modern metal and glass objects were recovered. The area has been filled and used for some time as a dumping ground.

SECTION 4

POILLON AVENUE, ca. 1,500'
[Appendix A, Sheets P1-P2]

INTRODUCTION

Poillon Avenue, a short connection between Hylan Boulevard and the bay that has followed the same route since 1853 (Butler map, Figure II-2), slopes gently down toward Raritan Bay for the first 600' of its extent. Two houses are shown on the 1907 Robinson atlas between the base of the slope and the water. The area has been subject to recent development including a line of bungalows on the east side and a restaurant complex on the west side of the street right at the water's edge.

Although 12 tests were targeted for this section only four were conducted as permission could not be obtained to test within house lawn areas and additional tests in the woods did not seem warranted.

RESULTS

Three subsurface tests (I-3, I-4, I-5) were placed along the western edge of the roadway in the woods going down the slope to the south. The stratigraphy in I-3 and I-4 was comparable and characteristic of this general area: humus, brown silt, a red-brown silt transitional zone and then the reddish clayey silty subsoil. A single piece of coal was recovered from the transitional zone in I-3. A pearlware sherd and 12.5 grams of coal were found in I-4. I-5, in a much lower area, was wet throughout. In this test the subsoil was reached at 8 inches beneath the surface. No cultural materials were recovered.

South of the intersection with Kenwood Avenue, Poillon Avenue is bordered by houses on both sides of the road; a paved parking lot and a restaurant cover the area at the end of the street on the west side. A single test (G-4) was placed within an old house site on a knoll on the eastern side of the street. Brick fragments, a whiteware sherd, and a nail fragment were found in the topsoil, a brown clayey silt, between 2" and 8". Beneath 8" the subsoil consisted of mottled clays. No additional cultural materials were found.

SECTION 5

ARBUTUS AVENUE, ca. 2,500'
[Appendix A, Sheets A1-A3]

INTRODUCTION

Arbutus Avenue follows the western shore of Arbutus Lake and has at least since 1853 (Butler map, Figure II-2) when it was called Broadway. The lake was apparently originally a tidal cove which has been cut off from Raritan bay in modern times. There are no structures along much of the shoreline, which includes two large and two small promontories. This allowed testing in the area immediately above the water.

Because tidal coves were attractive loci for prehistoric occupation and prehistoric finds have been made at Bunker Hill, west of Arbutus Lake, a nominal testing interval of 100' was set for the full extent of the street except where recent housing construction has created disturbance. Twenty tests were conducted.

RESULTS

Initial tests (H-6, I-6) were placed in front of the fence belonging to house #381 along the eastern road edge. No cultural materials were recovered and excavation was stopped when a friend of the owner of house #381 expressed concern over our right to be digging there. This same individual reported that prehistoric materials had been found in some quantity by the previous owner of #345 Arbutus, the house on the southeast corner of the Arbutus Avenue/Hylan Boulevard intersection. The boulevard is cut well below the level of the garden in which the finds were made but we were able to put a test, BE-7, on the lawn of #361 which slopes gradually down to the Arbutus pavement. No cultural materials were found beneath the humus zone. The natural soil layers appeared to have been stripped away with subsoil encountered at 4" beneath the surface.

Test J-1, 60' south of I-6, was placed about 25' from the shore of Arbutus Lake on a rise overlooking the water. Three strata were identified: a 4' thick humus, a brown sandy-silty topsoil between 4 and 24 inches below the surface, and the red-brown silty subsoil. No cultural materials were recovered.

Two tests, K-1 and K-2, were placed within the property of #381 Arbutus, on a small promontory above the head of the lake. In K-1, a sequence of clays reached a depth of 35.5" below the surface. Beneath the sod were 17" of clayey topsoil underlain by alternating bands, about 1" thick, of sandy clay and red-brown clay. Pebbles and rocks were mixed with the red clay below 28". These deposits may relate to old stream channels connected with the feeding of Arbutus Lake. No cultural materials were found beneath the sod.

The second test, K-2, was placed closer to the bluff edge in a wooded area. Beneath a 1 inch thick humus, an undifferentiated stratum of reddish brown clay mixed with sand and large and small pebbles, apparently fill, continued to a depth of 27" below the surface. Fire cracked rock was recovered from the humus (55.3 grams) and from the clay stratum below (308.8 grams). No other cultural materials were found.

Tests L-1, J-2, and K-3 were placed on the first large wooded promontory jutting out into Arbutus Lake. Prehistoric materials were recovered from all three tests. In L-1 and J-2 the topsoil was described as a brown sandy clay and extended to a depth of between 11.5" and 16.5" below the surface. Three flakes were recovered from this

stratum in L-1; a chert blocky fragment came from the same stratum in J-2. No additional cultural materials were found in the red clayey subsoil in either test. In K-3 the topsoil was described as consolidated green-gray sandy clay extending between 3" and 22". A utilized gray chert blocky fragment was found in this stratum. No cultural material came from the red clayey subsoil below. Test BJ-7 was placed approximately 60' to the west of these tests in order to determine if prehistoric materials were present closer to the road. A heavily rooted tan sandy silt continued to a depth of 16" below the surface in this test. Newspaper shreds and plastic objects throughout the matrix indicated that this was a fill deposit. At 16" the soil became yellower in color, probably the original transitional zone. The topsoil had apparently been removed in this area. No further artifacts were found.

Tests L-2, L-3, and L-4 were located in a gully between the first and second promontories through which a stream drains into Arbutus Lake. In L-2 a quartz chip was recovered from the 18.5 inch thick stratum of red-brown sand with shale and waterworn pebble inclusions beneath the humus. The additional two tests, L-3 and L-4, were dug with the auger. In these tests the red sand was only 3 to 7 inches deep and was underlain by black silt. A piece of whiteware was recovered from the black silt in L-3. It is probable that

the red sand in which the quartz chip was found represents fill dumped on top of the alluvially deposited black silt. No additional prehistoric materials were found. Test J-3 was placed on high ground within the second promontory extending out into Arbutus Lake. Beneath the humus, the topsoil, a brown sandy silt, extended to 12" beneath the surface. The subsoil, a red sandy clay, was immediately beneath this. A single piece of brick (0.6 grams) from the topsoil was the only artifact recovered.

Test K-4 was placed along the road edge to test the area between the second and third promontories out into Arbutus Lake. Compact road fill was encountered immediately beneath the surface preventing continuation of the test below 5 inches. Modern glass was recovered and discarded in the field.

Test K-5 was placed in the center of the third promontory. Three strata were defined: a three inch thick black humus, an 8 inch thick layer of topsoil described as a yellow/brown clay, and the subsoil, red/brown clay. A piece of creamware was recovered from the topsoil.

Three tests (J-4, M-1, N-1) were placed on the fourth and largest promontory initially and a fourth test (BF-5) later.

The stratigraphy was comparable in all four. Beneath the humus the topsoil consisted of between 7 and 17 inches of brown clayey silt beneath which was the usual subsoil -- a red clayey silt with shale inclusions. Prehistoric materials were recovered from the topsoil in two of the tests: a gray chert flake from J-4 and a chert flake and blocky fragment from N-1. The tests closer to Arbutus Avenue (M-1 and BF-5) however did not produce any prehistoric finds. Earthenware and redware ceramic sherds were found in the topsoil of M-1 and a plastic button was recovered from the topsoil in BF-5.

A test (O-1) was put at the end of Arbutus Avenue in what would have been the back yard of a recently destroyed house. Back yard features included a cement pond-like structure. The area appeared to be disturbed beneath the surface. Coal was recovered from the 4 inch brown silty topsoil beneath the humus and coal and shell came from the 4 inch reddish brown clay stratum beneath the topsoil. Disturbance of the area appeared to be related to landscaping activities.

SECTION 6

HYLAN BOULEVARD - ARBUTUS AVENUE TO HOLTEN AVENUE, ca. 4,500'
Appendix A, Sheets 10-16J

INTRODUCTION

The relatively high elevation between Arbutus Avenue and Stecher Street, about 60' above sea level, and the nearby reported finds at Bunker Hill, indicate that this area is likely to be archaeologically sensitive. A 40-year-old resident encountered during fieldwork remembers "shell heaps back in the woods" north of Hylan Boulevard and just west of Arbutus Avenue. She said the woods had not changed since she played there as a child. Five shovel tests, not originally included in the testing plan, were placed in this area to test for the presence of a prehistoric site. Between Stecher Street and Huguenot Avenue, a distance of 750', the nominal testing interval was to be 100'; 7 tests were conducted, two of which were slightly east of Stecher. Much of the boulevard is cut down between Stecher and Holten. Where it was not cut down a nominal testing interval of 150' was used; eight tests were excavated in this area. A total of 17 tests were planned for this section. Twenty shovel tests were actually completed.

RESULTS

The stratigraphy was comparable in all five tests (O-2, O-3, O-4, O-5, BI-3) placed in the flat open woods just west of Arbutus Avenue on the north side of Hylan Boulevard. A 1 to 2 inch thick humus overlay a 3-3.5 inch thick topsoil (reddish brown clayey loam to brownish silt), a transitional zone composed of 6 to 8 inches of yellowish red or brown clayey silt, and red clayey subsoil beginning between 9.5 and 11 inches beneath the surface. Flakes were retrieved from two of these tests (O-3, O-5) but no concentrations of shell or other cultural debris were recovered. A single piece of clear glass was the only historic period artifact found. An additional test (BI-4) was placed to test the area closer to Hylan Boulevard. This test, south of O-3 and about 35 feet north of Hylan Boulevard, produced no prehistoric materials. A large glass fragment was found in the topsoil. The location of this test was just east of Rockport Street, a street which appears to have been graded but never paved. The street is located on top of what is apparently a natural ridge running north-south. The ridge may have been attractive for prehistoric occupation and may account for the stray finds in the woods on either side.

Seven tests (N-2, M-2, M-3, N-3, N-4, M-4, N-5) were placed at approximate 100' intervals in the wooded area along the south side of Hylan Boulevard between Colon and Huguenot Avenues. Tests N-2 and M-2 appear to have been in an area that had been previously disturbed and stripped of its topsoil. A bullet shell was the only artifact recovered from N-2; a large quantity of plaster was encountered to a depth of 15" in M-2. The matrix in both tests was the red silty clay that is characteristically the subsoil in this area.

Tests M-3 and N-3 were less disturbed. Beneath the 2 inch thick humus was an 8 inch thick brown sandy silt topsoil layer, and a transitional zone of light brown sandy silt. The subsoil here consisted of light brown clayey silt with some rust-orange streaks which was tested to about 18 inches beneath the surface. With the exception of a piece of glass and some plaster in the humus of M-3, no cultural materials were recovered.

In the three tests between Swain and Huguenot Avenues, 2 to 3.5 inches of humus overlay a 5 to 6 inch thick topsoil of brown sandy silt. Tests N-4 and M-4 had a 4 to 12 inch thick transitional zone of red brown to tan sandy silt. Subsoil, the reddish clayey silt, was encountered between 15

and 19 inches beneath the surface. Thirteen fragments of glass were recovered from the transitional zone, between 8 and 19 inches below the surface, in N-4. No cultural materials were recovered from M-4. In test N-5, a broken jasper flake, possibly utilized, was recovered from the six inch thick brown sandy silt topsoil layer which immediately overlay the red clayey silt subsoil. Two additional tests were placed in the immediate vicinity, test BK-1 approximately 9 feet northeast and BK-2 approximately 15 feet north of test N-5. Twelve and 9 inches, respectively, of humus and tan sandy silt topsoil were encountered in these tests. Prehistoric materials were recovered from the topsoil in both tests, a single flake from test BK-1 and a flake and core fragment from BK-2. The sterile red sandy silt subsoil was tested to 16 and 14.5 inches in these tests. These three tests were located approximately 100 feet east of Huguenot Avenue. The 1911 topographic sheet indicates a swampy depression at the base of this slope which continued west of Huguenot Avenue. This swampy area has been filled-in. The 1911 topographic sheet also shows another swamp approximately 300-400 feet north of the find spots and a pond a similar distance to the southeast. It is not unlikely that prehistoric peoples would have utilized the higher ground between these physiographic features.

Beyond Huguenot Street Hyland Boulevard is deeply cut down for a distance of about 300 feet. One test (M-5) was placed on the crest of the slope between Huguenot Street and the beginning of Wolfe's Pond Park. No cultural material was recovered although the area appeared to be undisturbed. At Wolfe's Pond Park, the land on the south side of the boulevard slopes gently towards the pavement. The road does not appear to be radically cut down in this area. Four tests (M-6, N-7, O-6, M-7) were placed at 100' intervals along the side of the slope within the park. In all four, two strata were identified beneath the humus: a topsoil of brown sandy silt between 10 and 19 inches thick and the reddish clayey silt subsoil. No cultural material was recovered from these tests.

A stream bed intersects Hyland Boulevard in the western portion of Wolfe's Pond Park. Three tests (N-8, M-8, M-9) were placed near the stream, two (N-8, M-9) on the north side of Hyland Boulevard and one (M-8) on the south side. In N-8 and M-9 gray sand was encountered beneath the humus to a depth of about 15". The subsoil was white mottled sand. The only artifact recovered was a piece of whiteware from the humus. The test on the south side of the boulevard, M-8, appeared to be highly disturbed. Two layers of fill -- a 2" thick hard packed dark gray with tan clay containing

large quantities of coal, charcoal, and crushed brick and 11 inches of tan clayey silt with coal, cinder and brick -- underlay the topsoil. No cultural material was recovered beneath the fill layers.

Hylan Boulevard is deeply cut down for the next 1000 feet to the west. A single test (O-7) was placed on the high embankment on the north side of the boulevard about 80' east of the intersection with Holten Avenue. An old stand of trees and a swamp are visible to the northeast of the test location. Historic materials including large quantities of charcoal were recovered to a depth of 13 inches beneath the surface. No cultural materials were recovered from the yellow clayey sand beneath the artifact-bearing stratum.

SECTION 7

HOLTEN AVENUE/JOHNSTON TERRACE/BAYVIEW AVENUE, ca. 7,250'
[Appendix A, Sheets H1-H4; B1-B2]

INTRODUCTION

Holten Avenue, its northern extent not yet laid out in 1910 (Borough of Richmond Topographic Survey) passes for ca. 1000' through gently sloping land, shown under cultivation on the topographic sheet. It then approaches the western bank of Wolfe's Pond and follows an earlier road called Algernon Street due south to the shore. Skinner (cited in Pickman and Yamin 1978) describes a site at Wolfe's Pond which was on the bluff overlooking the bay and yielded potsherds and deer bone fragments. The Museum of the American Indian lists several entries for the area including a grooved axe from Wolfe's Pond (Pickman and Yamin 1978: II-28). Johnston Terrace runs parallel to the beach through an area that appears to have been heavily disturbed by nineteenth century construction activities (the Dental Works) and more recent land modifications.

Bayview Avenue runs along the base of bluffs which border the adjacent Lemon Creek marsh, which is east of the road.

The most likely location of prehistoric sites in this area would have been on top of the bluffs although prehistoric occupants might have disposed of trash over the edge of the bluff.

A nominal testing interval of 150' was set for the previously cultivated portion of Holten Avenue, and a 100' interval for the portion closer to the water. Tests were actually more clustered in order to adequately cover the promontories reaching out into the pond. Tests on Bayview Avenue were concentrated on the narrow strip of ground between the base of the bluffs and the road. A total of 33 tests were excavated in this section. Thirty-one had been projected.

RESULTS

Immediately south of Hylan Boulevard, six shovel tests (P-1, R-1, Q-1, R-2, P-2, P-3) were placed at 150' intervals along the eastern edge of Holten Avenue in an area that, according to the topographic sheet, had been plowed. In all six tests the 2 to 3 inch thick humus was underlain by a 6.5 to 13 inch thick brown/red brown clayey silt containing small historic ceramic sherds, glass fragments, and coal, apparently the old plowzone. A jasper flake, possibly altered by heat, was recovered from this stratum in test P-

2. The subsoil -- reddish brown silty clay with pebbles -- was encountered between 9.5 and 15.5 inches beneath the surface in all six tests.

Additional tests were placed on either side of F-2 -- BJ-2 seven feet to the south and BJ-6 seven feet to the north. In both tests the topsoil or plowzone consisted of tan sandy silt. A chert flake was recovered from this stratum in BJ-2. Another flake, possibly produced by natural processes, was recovered from the same stratum in BJ-6. Historic period ceramic sherds and coal were also recovered. Beneath the plowzone in both tests was the subsoil, a red sandy silt with shale. These tests were located near the edge of bluffs overlooking the northern portion of Wolfe's Pond. A third additional test (BJ-5) was placed closer to Holten Avenue in this area. In this test there was only an inch of sandy silt above the subsoil -- red sandy silt with shale. The topsoil had apparently been stripped in this area.

Three tests (Q-2, Q-3, R-2) were initially placed along the knoll at the north end of Wolfe's Pond and a fourth test (BE-6) was later placed in the area. The humus ranged between .5 and 2.5 inches in thickness. The second stratum consisted of the brown sandy silt plowzone which was between 4.5 and 6.5 inches thick. Historic period ceramic sherds,

glass, coal and cinder were recovered from this zone in Q-2 and R-2. A dark gray chert flake was found along with coal in Q-3. No cultural materials were recovered from the plowzone in BE-6. With the exception of BE-6, the subsoil, the usual red-brown silty clay, lay directly under the plowzone. In BE-6 there were 12 inches of hard packed red-brown clayey silt with pebbles between the plowzone and the reddish brown silty clay subsoil. No artifacts were recovered from this stratum.

Four tests (R-3, R-4, F-4, Q-4) were placed between the wooded western shore of Wolfe's Pond and Holten Avenue at approximate 100 foot intervals. Beneath the humus was a brown clayey silt topsoil between 6 and 10.5 inches thick. In R-3, R-4, and F-4 historic materials including ceramics, glass, coal, and a pipe stem fragment were recovered from this stratum. A red jasper flake and 2 pieces of historic ceramic were found in Q-4. An additional test, BG-4, was placed 25' south of Q-4 in order to test for the possibility of a prehistoric deposit. Glass, ceramics, and coal were recovered from the topsoil in this test. No prehistoric artifacts were recovered. A culturally sterile red and yellow mottled transitional zone was recognized in Q-4 and F-4 between the topsoil and subsoil. In the other tests the topsoil was immediately underlain by the subsoil.

Q-5 was placed closer to the water in a grassy area. Beneath the 1.5 inch thick black humus was a thin lens (1.5 inches) of dark brown silt (moist because of the high water table) and beneath that the subsoil. The area has evidently been scraped -- the topsoil removed -- and heavily disturbed. No cultural materials were recovered.

Shovel tests R-5 and P-5 were placed on a grassy promontory that extends from the roadside out into Wolfe's Pond (to the east). Beneath a 2.5 inch thick humus in both tests was a stratum of brown sandy silt with pebbles extending in P-5 to 12" beneath the surface and in R-5 to 17" beneath the surface. In both tests the stratum yielded historic materials including ceramic, cinder, coal, brick, and metal. In test P-5 two probable prehistoric flakes, 1 of heat-altered jasper and the other of quartz, were found at the interface with the third stratum, a yellow mottled clayey silt with stones. In R-5 the third stratum consisted of light brown clayey silt with pebbles and water worn cobbles from which no artifacts were recovered. Beneath that stratum, at 26" below the surface, was the red brown clayey silt subsoil. The stratum with waterworn cobbles could be the normal transition layer or in this test may represent stream or swamp deposits associated with Wolfe's Pond when

it was an estuary. In this event the overlying brown sandy silt could be fill. A test, BF-4, placed 15 feet to the northwest of R-5 shed no light on this possibility. There the stratigraphy was a 5.5 inch thick humus above an 8 inch dark brown silt containing modern ceramics. The subsoil was encountered at a depth of 13.5" below the surface.

An additional test, BE-5, was also placed in the vicinity of F-5 although closer to the road (40' west and 40' north of the original test). Beneath the humus was a 16 inch thick brown sandy silt topsoil containing no cultural materials. Subsoil was encountered at 19 inches beneath the surface.

On the west side of Holten Avenue a test, Q-6, was placed in the grassy strip between a hedge row bordering a house lawn and the street. The owner of the house who had known the area her whole life said she remembers "indian finds on the bluff across the water" but had never found anything in her garden. In the test a two inch thick layer of gray white fill lay beneath the humus. Some glass, coal, shell and bone were recovered from the top of the next stratum, a reddish clayey silt subsoil encountered at 5.5 inches beneath the surface. No cultural materials were found in the stratum proper which was excavated to a depth of 22 inches beneath the surface.

A second test on the west side of the street, P-6, was placed outside the hedge bounding the north lawn of House #474. Shell had been observed on this lawn and a solidly packed shell accumulation in the driveway. According to one member of the family, the grandparents ran a clamming business on the property. Modern materials and clam shells were found to a depth of 14.5" beneath the surface in two distinct layers of fill. The topsoil appears to have been stripped away. No cultural materials were recovered from the yellow orange silty subsoil beneath the fill.

Tests R-6 and R-7 were placed within what may be an old house site on the east side of Holten Avenue in an area of tall grass alongside Wolfe's Pond. Beneath the humus in both tests a brown silty clay topsoil contained historic ceramics, coal, metal and glass, probably reflecting the period of occupation of the house. A gray chert flake was recovered from this layer in R-7. No cultural materials were found in the subsoil below in either test.

A test 130' to the south, T-1, had similar stratigraphy: humus, a 6 inch thick topsoil of brown silty clay containing historic materials including a 1920 penny, and subsoil.

Three tests (Q-7, S-1, U-1) were placed in the vicinity of a meandering stream at the end of Holten Avenue on the east side of the street. All three produced evidence of considerable disturbance beneath the surface. The area appears to have been used in recent times as a dumping ground, reflected by finds in Q-7 and S-1 of many plastic objects, motion picture film, metal spikes, glass, coal, and metal screening. U-1, located near a house foundation, produced shingles, bone, ceramics, bottle glass, and plaster board. No undisturbed strata were encountered in these tests above the level of the subsoil.

Johnston Terrace which runs parallel to the shore and around the Dental Works is built on the beach east of the Dental Works and on fill to the west. Surface examination of this area indicated heavy disturbance. No subsurface tests were conducted.

At the northern end of Bayview Avenue the road has been cut approximately 5-7 feet through the higher ground. No tests were placed in this area. Approximately 150-300 feet south of Hylan Boulevard, what appears to be an old stream channel cuts through the higher ground west of Bayview Avenue and joins Lemon Creek east of the road. The ground slopes

downward from the north and south to the stream channel. Test S-4 was placed on the flatter north side of the channel to test for the presence of a possible prehistoric camp site. No prehistoric artifacts were recovered. Only one whiteware sherd and a bottle glass fragment were recovered from the humus and topsoil.

Three tests (U-5, V-6, S-5) were placed in the narrow strip of ground between Bayview Avenue and the bluff base. No indication of prehistoric occupation was found in these tests. Tests U-5 and V-6 were culturally sterile. Two oyster shell fragments were recovered from test S-5.

Test T-4 was placed at the end of Bayview Avenue where a narrow area of hedges separates the road from the beach. Test T-4 was placed between the road and the hedges. This area appeared to be less disturbed than the portion of Johnston Terrace further to the west, where structures stand on either side of the road. Approximately 21 inches of historic period fill were encountered in Test T-4, with the underlying reddish beach-type sand tested to 51 inches. This stratum also contained artifacts. However, these artifacts may have actually originated in the overlying fill as the collapse of the loose sand into the test made it difficult to determine their exact provenance. The

relatively large quantity of oyster shell recovered from the historic period fill was most likely deposited by the activities of the oyster industry which flourished in this area. We also noted a large quantity of shell in the vicinity of the house located east of test T-4 on the south side of Johnston Terrace.

SECTION 8

HYLAN BOULEVARD - HOLTEN AVENUE TO SHARROTT AVENUE, ca. 5000'
[Appendix A, Sheets 15-21]

INTRODUCTION

Section 8 includes the portion of Hylan Boulevard between Holten Avenue and Sharrott Avenue, a distance of some 5000 feet. Hylan Boulevard between Holten and Seguine Avenues is at a fairly high elevation, between 28 and 34 feet above sea level. Our testing plan called for a nominal spacing of 150 feet between tests in this area. Between Seguine Avenue and Bayview Avenue, Hylan Boulevard is intersected by Lemon Creek and the adjacent tidal marsh. The Creek and marsh are bordered by 25-30 foot high bluffs. Hylan Boulevard crosses the marsh area on fill, with a culvert across Lemon Creek. For much of the distance between Seguine Avenue and Lemon Creek, Hylan Boulevard is cut down sufficiently so that substantial remains of prehistoric sites could not remain intact beneath the pavement. However our testing plan included testing of the high ground bordering the Lemon Creek marsh. The fill and marsh area itself was tested by means of five archaeological borings and two associated manual tests. Between Bayview Avenue, on the western border

of the marsh area, and Sharrott Avenue most of the land adjacent to Hylan Boulevard is undeveloped, with woods east of Woodbine Avenue and cleared areas between Woodbine and Sharrott Avenues.

The nominal testing interval for this section was 150 feet. A total of 24 manual shovel tests were planned. Thirty tests were actually conducted.

RESULTS

Four tests were placed on the wooded north side of Hylan Boulevard between Holten and Seguire Avenues. Opposite Holten Avenue the land is low lying and damp, with the water table near the surface. However, the elevation rises to the east. The south side of Hylan Boulevard in this area is lower-lying and marshy.

Tests T-2, U-2 and V-2 contained a topsoil layer. However, test S2 was placed on the edge of a disturbed area at the northeast corner of Hylan Boulevard and Seguire Avenue and the test indicates that the topsoil had been graded off at the test location.

Except for a few historic period artifacts, tests T-2, V-2, and S-2 were culturally sterile. However, one gray chert

blocky fragment which probably was the result of aboriginal tool making activity was recovered from test U-2. The flake was recorded as being recovered from the top of the subsoil, although its actual provenance was probably above this level. Nine historic period ceramic sherds, some of which are 19th century types (creamware and transitional pearlware/whiteware), and four window glass fragments were also recovered from the topsoil. Test U-2 was located slightly to the southwest of a small rise of land.

Because of the recovery of the flake from test U-2, test BJ-1 was placed 5.5 feet south of the latter test. No indications of prehistoric activity were recovered from this test. In common with U-2, historic period ceramic sherds and glass fragments were recovered from the topsoil in BJ-1.

Test S-3 was placed in a wooded area north of a house fronting on the northwest corner of Hylan Boulevard and Seguire Avenue (#290 Hylan Boulevard). Five historic period ceramic sherds and one glass fragment were recovered from the topsoil.

For approximately 500 feet west of the location of test S-3, Hylan Boulevard is cut through the original grade to a depth of approximately 4-8 feet. No tests were placed in this

area.

The south side of the boulevard near test U-3 is bordered by open woods with some high brush. The stratigraphy of this test indicates that approximately one foot of reddish clayey fill had been deposited over a gray silty layer which probably represents the original ground surface. This original topsoil stratum was approximately one foot thick and the underlying yellow/tan clayey silt subsoil was tested to a depth of 40 inches below the present surface. No artifacts were recovered from the original topsoil layer or the underlying soil.

Test T-3 was placed some 75 feet west of test U-3. At this point the marsh area bordering Lemon Creek forms a cove extending further to the east than the rest of the marsh area, and test T-3 was placed to test the top of the "bluff" above the marsh. This test contained nine inches of humus and brown sandy topsoil. This stratum yielded approximately 274 grams of clam and oyster shell, but no indication of aboriginal activity. On the other hand, the stratum did contain approximately 60 grams of coal and cinder and a fragment of clear bottle glass. The shell most likely derives from the historic period occupation of the area.

West of the location of test T-3, Hylan Boulevard is cut through the bluffs which border the Lemon Creek marsh. The depth of cut ranges from some 2-3 feet to about 15-20 feet. Therefore, we did not test most of this area. However, test V-3 was placed on top of the bluff south of Hylan Boulevard. No artifacts were recovered from this test.

Archeological Borings

West of the location of test T-3, the land drops sharply to the marsh bordering Lemon Creek. Archaeological boring #3 was placed in Hylan Boulevard immediately east of the culvert on which the Boulevard crosses Lemon Creek. This boring penetrated approximately 12 1/2 feet of sandy fill. Below the fill, the boring encountered a thin layer of wood. Approximately six inches below the wood, a layer of dark brown organic sandy silt containing a number of oyster shell fragments was encountered. Visual inspection indicates that the depth of this stratum below Hylan Boulevard corresponds with the elevation of the marsh surface adjacent to Hylan Boulevard. We could not accurately determine the thickness of the brown organic stratum. Approximately four inches of this deposit were recovered in the split spoon sampler. However, most of the sample which included the brown organic soil, as well as the following sample, was not recovered. The next sample to be successfully recovered was from 17-19

feet below the road surface. This latter sample contained the sandy soil which preceded the formation of the marsh deposit.

The organic soil stratum with shell could have been deposited through one of three types of process. It could represent a midden deposit resulting from the aboriginal occupation of the area; it could be related to the 19th century oystering industry which was conducted in this area (Pickman and Yamin 1978); or the shell could have been deposited by natural processes. The substantial beds of shell which are visible on the eastern bank of Lemon Creek both north and south of Hylan Boulevard (Appendix D, Photograph 27) could also have been deposited by any of these processes. If the shell encountered in boring B-3 was deposited during a prehistoric occupation of the area, it probably would have been deposited during late prehistoric times since it was found at the surface of the marsh deposits. These deposits formed during earlier prehistoric times as the sea level rose subsequent to the final stage of the Wisconsin glaciation and would have buried earlier prehistoric cultural deposits.

It should be noted that the wood which was encountered above the brown organic deposit was not necessarily associated

with it. A number of timbers and pilings, perhaps associated with the former oystering industry are visible on the surface of the Lemon Creek marsh area, and such remains may have been encountered by the boring.

To further explore the organic stratum with shell, two additional borings were placed in this area. Boring #3A was located approximately three feet south and six inches west of boring #3. The brown organic shell stratum was not encountered in this test. Rather, a stratum of black sand was encountered below the fill, beginning at approximately 13 1/2 feet below the Hylan Boulevard pavement and extending to approximately 21 1/2 feet. The wood layer was also not present in this test. However, a few wood fragments were noted at the top of the black sand.

Boring #3B was placed approximately two feet east and 1 1/2 feet north of boring #3, slightly closer to the base of the bluff. At approximately 12-13 feet, this test encountered the layer of wood, with a compact layer of shell immediately below the wood. As in boring #3, sample recovery problems between this depth and 16 feet prevented an accurate assessment of the thickness of the shell stratum.

During laboratory processing, the samples recovered from

borings #3 and #3B were subjected to flotation. The heavy fraction from the flotation of the sample recovered from the organic shell stratum in boring #3 yielded a small chert chip. While this could have been produced by natural means, such "microflakes" are found in flotation samples from prehistoric sites. However, no such chips were recovered from the sample from boring #3B.

To further assess the shell deposits detected in the borings, we placed shovel test V-4 on the southern bank of Lemon Creek, some 50 feet south of Hylan Boulevard and seven feet east of the bank of the Creek. The uppermost 10 inches of this test consisted of humus and red sand which may have been deposited when Hylan Boulevard was constructed. Beneath this stratum, a deposit of organic silty clay with shell was tested to a depth of 46 inches, below which the stratum continued. Three thousand two hundred and eighty five grams of oyster shell were recovered, with only some 92 grams of clam shell being included in the sample. This would tend to lend weight to the explanation of deposition of the shell by natural means or as a by-product of the 19th century oystering industry.

Two archaeological borings were placed west of the Lemon Creek culvert, where Hylan Boulevard is built on fill. In

this area, the land adjacent to Hylan Boulevard consists of woods and brush with the marsh area ending approximately 100-150 feet west of the culvert. However, this wooded area may have developed on fill deposited over the marsh as part of the construction of Hylan Boulevard.

Boring #4 encountered a stratum of black/brown clayey loam, approximately two feet thick, beneath the fill, beginning at approximately 9 1/2 feet beneath the road surface. The reddish silty subsoil was encountered below this stratum. In boring #5, the first sample taken, at 12 feet, was lost. The first sample recovered, at 14 feet, consisted of the reddish silty subsoil.

To further clarify the stratigraphy in this area, shovel test V-5 was placed in the wooded area south of Hylan Boulevard in the vicinity of boring #5. The test contained six inches of humus and gray silt, followed by a stratum of yellow and rust colored clayey silt mixed with gray silty clay to a depth of 26 inches below the surface of the test. From this depth to the bottom of the test at 46 inches, a gray organic silty clay stratum was encountered. A few shell fragments from this stratum were the only materials recovered from test V-5. The water table was encountered at a depth of 20 inches. The results suggest that the organic

marsh deposits may have been removed from the location of Hylan Boulevard before the deposition of the fill on which the road is constructed. Additional fill may have been deposited to either side of the road, accounting for the observed vegetation.

Tests West of Bayview Avenue

The marsh area bordering Lemon Creek extends westward nearly to Bayview Avenue. The southeast corner of Bayview Avenue and Hylan Boulevard contains a standing structure and was not tested. Test U-4 was placed on the northeast corner of the intersection. At the location of the test, six inches of humus and reddish clay have been deposited over the original 12 inch topsoil layer and underlying subsoil. No artifacts were recovered from the latter strata. The artifacts recovered from the clayey fill included four pearlware sherds. The test yielded no indication of prehistoric occupation of the area.

East of Bayview Avenue for about 300 feet, Hylan Boulevard is cut through high ground to a depth of some 3-4 feet. No tests were placed here. Past this point the north side of Hylan Boulevard has been cut through higher ground at several points. Since the ground south of the road is lower, with elevations of only some 1-2 feet above Hylan

Boulevard, traces of any prehistoric sites in the area would be most likely to remain beneath the southern side of the Boulevard. Therefore, we decided to place tests on this side of the road.

The ground cover for some 950 feet west of Bayview Avenue consists of woods and brush, with bramble bordering Hyland Boulevard. During our initial testing, four tests (S-6, V-7, U-6, T-5) were placed in this area west of the previously mentioned cut down section. Except for test S-6, the stratigraphy in the tests followed the sequence noted for most of the ungraded areas in the eastern portion of the project area; humus and/or sod, topsoil, a transitional layer in many of the tests, and a silty/clayey subsoil. In test S-6, however, the ten inch layer of topsoil was underlain by 11 inches of grayish black clay, followed by greenish yellow clay which was tested to a depth of 37 inches. This stratigraphy may indicate the presence of an old marsh at this location. No artifacts were recovered from the clay stratum. Five ceramic sherds and two glass fragments were recovered from the silty topsoil. These sherds, as well as the five sherds recovered from test V-7, include a number of 19th century type ceramics. This may be due to the fact that the tests are located on what were the grounds of a 19th century estate (the Johnston estate) which

is shown on the 19th century maps (e.g., Figure II-6). However, the house and outbuildings were not located in the area of the tests.

Test V-7 yielded a chert flake from the topsoil (between 2-14 inches) in addition to the five historic period ceramic sherds, one clear window glass fragment, approximately 18 grams of coal and cinder and two small oyster shell fragments. Therefore, after the initial testing was completed, two additional tests, BH-4 and BH-5 were placed approximately 10 feet west and northeast of test V-7. Neither of these tests yielded indications of prehistoric activity. Test BH-5, in common with tests S-6 and V-7, yielded 19th century type ceramics from the topsoil. Tests U-6 and T-5 yielded no artifacts.

A large grassy open field extends approximately 300 feet east of Woodvale Avenue on the south side of Hylan Boulevard, with a row of trees bordering the boulevard. Three tests, V-8, W-1 and X-1, were placed in this area. Two of the tests, V-8 and X-1, had thin deposits of humus and fill (10 inches and 5 inches respectively) overlying a brown silty topsoil layer. Three pennies with dates of 1964, 1969 and 1971 which were recovered from the fill deposit in test V-8 indicate that the fill was deposited

after the latter date. The original topsoil underlying the fill in test V-8 was culturally sterile, as was test W-1. The topsoil underlying the fill in test X-1 contained one 19th century type ceramic sherd and four bottle and window glass fragments as well as a few small pieces of coal. No prehistoric artifacts were recovered from these tests.

Between Woodvale Avenue and Sharrott Avenue, the north side of Hylan Boulevard is bordered by a cemetery and no tests were placed on this side of the road. For approximately three hundred feet west of Woodvale Avenue, the land south of Hylan Boulevard is approximately 3-4 feet below the grade of the road, with the south side of the Boulevard constructed on fill. However, no tests were placed here because this land is part of the grounds of a convent and is fenced off. For approximately 100-150 feet past the convent grounds, the land on the south side of Hylan Boulevard is at approximately the same grade as the road, while the cemetery on the north side is above the grade of the road. Test Y-1 was placed in an area of bramble and weeds west of the convent fence. The topsoil appeared to have been graded off at this location, with only a single fragment of bottle glass being recovered from the remaining transitional zone. From this area westward to Sharrott Avenue, the land on both sides of Hylan Boulevard is above the grade of the road

itself, with the grade on the south side of the road ranging from 1-2 feet to approximately 3-4 feet above the road grade. Only the basal portion of the deepest prehistoric archaeological features would be likely to remain undisturbed beneath the road surface. However, in this area, Hylan Boulevard is near the shore of Prince's Bay and a shell heap has previously been reported at Sharrott Avenue (Pickman and Yamin 1978). Therefore, we decided to continue testing at nominal intervals of 150 feet on the south side of Hylan Boulevard. In addition, two tests were placed on the southeast corner of Sharrott Avenue and Hylan Boulevard. At the time that testing was conducted we had been informed that this would be the location of one of the proposed pumping stations (PS 10).

In general, this entire area slopes gradually downward toward Prince's Bay. Except for a narrow wooded area bordering Hylan Boulevard, the ground cover consists of grass and weeds and some low scrub. A total of 9 tests were placed here including those at the pumping station site. The results of these tests indicate that this area has been heavily disturbed. Test W-2, which was placed in the lightly wooded area bordering Hylan Boulevard, contained approximately 16 inches of topsoil. Only a few glass fragments were recovered. Of the tests placed in the more

open area to the south, three tests, Y-2, W-4 and W-6 indicated that the topsoil and transitional strata had been graded off. No artifacts were recovered from these tests. In three other tests, X-2, Y-3 and W-5, the topsoil had been graded off, but some of the transitional soil apparently remains. No artifacts were recovered from the first two of these tests. However, in test W-5 a fragment of modern bottle glass and a clam shell fragment were recovered from the humus. Immediately below the humus one chert flake was recovered in addition to a fragment of unidentified marine shell. In two other tests, W-3 and X-3, a buried topsoil stratum was encountered beneath 5 inches and 14 1/2 inches of "fill" respectively. The overlying soil was apparently graded off from other portions of the area and deposited above the original topsoil. Test W-3 yielded only clam and oyster shell fragments from both the fill and the buried topsoil layers. Test X-3 however, yielded a yellow jasper flake from the buried topsoil stratum, as well as a fragment of dark green window glass which contained air bubbles, indicating that it is probably not of modern manufacture, and a small piece of coal.

SECTION 9

HYLAN BOULEVARD FROM SHARROTT AVENUE TO RICHARD AVENUE, ca. 3,750 [Appendix A, Sheets 21-26]

INTRODUCTION

Skinner mentions a small shell heap at Sharrott Avenue (Pickman and Yamin 1978). Since Hylan Boulevard approaches the shoreline at its intersection with Sharrott Avenue, the site could not have been too far away. A stream, apparently channelized by 1910 (Borough of Richmond Topographic Survey) intersected Hylan Boulevard about 75' west of Sharrott Avenue and fed into the swampy area south of the boulevard.

From 400' west of Sharrott Avenue to 900' west, Hylan Boulevard is built on fill which covers a marsh that can be seen to the south of the road. Four archaeological borings (B-7, B-8, B-9, B-10) were used to test this area. The land just beyond the fill was considered sensitive because of its elevation and proximity to the marsh. Twenty-three shovel tests were budgeted for this section; 27 were actually conducted.

RESULTS

Information provided to us prior to the start of field testing indicated that pumping station #9 would be located at the northwest corner of Hylan Boulevard and Sharrott Avenue. Hylan Boulevard is bordered here by a thin strip of woods at a lower elevation than the road, which is built up on fill. The presence of large pieces of debris, probably deposited with the fill, precluded testing here. The ground slopes upward from this location to the north and west with grassy ground cover. Test AZ-8 was placed near the base of the slope, north of the pumping station site. The test results indicate that the area has been graded, with the subsoil encountered immediately beneath the sod. No cultural materials were recovered from this test.

A house which stands at the top of the rise, approximately 120' west of the location of test AZ-8, is shown on nineteenth century maps (e.g., Figure II-6). Since we considered that this rise would also have been a likely place for prehistoric occupation, and since the lower lying land appeared to have been disturbed, test AZ-9 was placed near the top of the rise south of the historic period house, even though Hylan Boulevard has been cut down approximately 6' at this location. At a depth of 7.5", below strata of

topsoil and an underlying dark brown clayey fill containing nails and historic period ceramics, a deposit of stones set in mortar was encountered. This may represent a foundation wall of an outbuilding associated with the historic period house. Because of the depth of the Hylan Boulevard cut and because of the extensive historic period disturbance indicated by tests AZ-8 and AZ-9, no further attempt was made to test this area.

Two tests, AY-6 and BA-7, were placed below the Hylan Boulevard fill embankment on the south side of the road. Test AY-6, closest to Sharrott Avenue, provided no indication of the presence of a prehistoric deposit in the area. A 5" stratum of reddish sand, apparently fill, underlay the humus. This was followed by 16" of dark brown sandy silt and 20" of light brown sandy silt. This was tested to a depth of 43" below the surface. No cultural materials were recovered from this test. Test BA-7 was placed approximately 150' to the west of test AY-6. Seven inches of fill containing modern debris were encountered beneath the surface in this test. This area had apparently been graded, as the subsoil directly underlay the fill deposit at a depth of 8" beneath the surface.

Borings #7, #8, #9, and #10 were used to test beneath the

fill on which Hylan Boulevard is built for about 500'. Since the borings in this area were aimed at testing for surfaces beneath the fill on which the road rests and, in fact, beneath the swamp or peat accumulation under the fill, sampling was begun in the first boring, #7, at 5'. No significant distinctions in the soil were discerned for the full extent of the test -- 14.5'. It consisted of brown sandy silt with some clay, pebbles, and stones, becoming redder in color at about 10.5' below the surface. This is the same soil identified elsewhere as glacial till (subsoil) and appears here to have been used as fill. At 12'8" beneath the surface the matrix became more compact and included more sand but no marsh or peat deposits were encountered. The test was discontinued as samples below 13.5' were lost.

Boring #8, about 150' west of boring #7, was begun at 1' beneath the surface although most of the sample was lost. Sample #2 was also lost. In both, the matrix appeared to be a red sandy silt with gravel toward the top. The bottom of the third sample (5'-7') contained brown silt with stones and cinder. Beneath this (7'-9') was red sandy silt with mineral inclusions and some stones, the characteristic glacial till. Sample #5 (9'-11') contained some gray clay but only as a pocket in the otherwise homogeneous glacial

till. The test was discontinued at 11' below the surface.

In boring #9 fill -- red sandy silt with gravel, and brown sand with coal and cinders -- was encountered to a depth of 4' beneath the surface. Beneath this was a layer of gray sand with rust and tan sand mixed in and pockets of gray silt. Leaves and sticks were recovered from the matrix which appears to represent the top of the marsh. Between 4 and 5.5' bands of gray, brown-yellow, and red sand with a small amount of organic material were identified. Beneath these was a 11.5" thick stratum of light gray clay, interpreted as the base of the marsh. A beach surface -- medium brown silty sand with pebbles -- was present beneath the gray clay (at about 6.5' beneath the present grade). Subsoil or glacial till was encountered under the silty sand.

In boring #10, the fill with gravel extended to a depth of 1'6" beneath the surface. No layer representing the top of the marsh was identified in this test. It may have been destroyed during road construction. Directly beneath the fill were alternating bands of clay and sand (gray/black/red). A gray clay stratum, the bottom of the marsh, was identified in this test at 3'10" beneath the present grade. The clay stratum was 6.5" thick. The old

land surface -- a brown sandy silt with organic material -- was found beneath the clay at 4'4" below grade. Subsoil underlay the sandy silt.

No evidence of prehistoric occupation was recovered from the buried land surfaces in either boring #9 or #10.

One test, BC-1, was placed on the north side of Hylan Boulevard across from the borings where the road is slightly cut into the side of the hill. Coal, glass, and iron were recovered from the topsoil, 2"-9". No cultural material came from the transitional zone, an orange clay between 9" and 20", or from the red clayey silt subsoil. BD-1 and BC-2 were also placed on high ground on the north side of Hylan Boulevard. Ceramic sherds and coal were recovered from the topsoil (2"-13") in BD-1. The subsoil appeared at the base of this stratum. BC-2 was located just south of a playing field, which had obviously been created by grading, within the Mt. Loretto property. Beneath the 1.5" thick sod layer a stratum of brown silty sand and one of red clay apparently reflect the grading process as they were underlain by an 11" thick black loamy stratum, rooted throughout, which was apparently the original ground surface. Historic period ceramic sherds, glass, coal, and cinder were recovered from this stratum. Layers of black

silty clay and mottled gray clay below the old topsoil yielded no cultural material.

Four tests (BB-1, BB-2, BB-3 BB-4) were placed across a previously plowed field on the south side of Hylan Boulevard adjacent to swamp lands further to the south. In all cases the plowzone, between 8" and 14" thick, was encountered beneath a 2" to 3" humus layer. Historic ceramic sherds, glass, coal, cinder and brick were found in some quantity throughout the plowzone. Two flakes were recovered from the plowzone deposit in BB-4. BB-4 was distinguished from the other tests in two ways: it was located at the base of a knoll and the plowzone appeared to overlay a deposit of black greasy silt. No artifactual material was found in the silt. An additional test, BK-3, was placed in this vicinity (ca. 10' east of the original test). A gray chert side scraper, a red jasper decortication blocky fragment, a chert chip, and a jasper resharpening flake were recovered from the topsoil (2"-15") in addition to historic period ceramic sherds, glass, and coal. No artifactual material was recovered from the stratum below, a light gray silty sand with rust mottling and pockets of rust colored sand. The presence of the flakes may either reflect an in situ scatter or be the result of slopewash from the adjacent knoll. Hylan Boulevard is cut through this knoll (see

Appendix D, Photograph 28).

A prehistoric find was also made on the other side (to the west) of the knoll cut through by the boulevard. In this test, BD-2, which was placed just east of a small stream, a chert flake was recovered from a yellow sand layer between 11" and 14" beneath the surface. The upper layers were silt, silty sand, and sand with red mottling. It was presumed at first that the sand layers were subsoil. Beneath the yellow sand, however, 10" of red sand contained whiteware, glass fragments, coal, and plastic. Gray clay, the subsoil, was encountered at 39" below the surface. All the sand layers were apparently fill.

The entrance to Mt. Loretto on the north side of Hylan Boulevard is flanked by grassy open land which appeared to follow natural contours. The three shovel tests (BC-3, BD-3, BB-5) placed there, however, revealed a sequence of deep filling episodes. In BC-3 distinct fill deposits reached a depth of 27" beneath the surface. Ceramics, glass, limestone, and coal were found within the layers of sand and clay. In BD-3 to the west a gray ash and cinder fill between 9" and 18" beneath the surface included ceramics, glass, and cinders. A jasper chip was found in the sod (O-5") of this test but no undisturbed layers were uncovered at

lower levels. In BB-5 fill deposits continued to a depth of 22" beneath the surface. In all these tests subsoil was encountered immediately beneath the fill.

The land on the south side of Hylan Boulevard in this area also appeared to be unaltered. In the two tests (BC-4 and BB-6) placed to the west of the Mt. Loretto driveway, a plowzone was identified between 2" and 18" beneath the surface. Coal and glass fragments were recovered from the plowzone. Beneath the plowzone was a layer of gray and tan sand which yielded some historic artifacts in BC-4. A clayey subsoil was encountered below the sand. In BC-5 a gravel road fill was encountered between 6" and 11" below grade and several clayey fills with modern artifacts at lower depths. The test was closed at 23" beneath the surface.

In test BB-7 fill was encountered to a depth of 15" with the reddish clayey sand subsoil immediately beneath it. In BC-6 the topsoil extended from 2" to 12" with reddish sandy clay subsoil below.

The two tests, BB-8 and BC-3, at the westernmost extent of the Mt. Loretto property on the north side of Hylan Boulevard showed that the land had been stripped and filled

under the sod. In BB-8 a red brown clay silt with hard packed rock and gravel reached a depth of 9" with subsoil beneath that. In BC-3 two fill layers containing road gravel, mortar, and other such materials reached a depth of 13". Gray sandy clay subsoil was encountered beneath the fill.

The two tests on the south side of Hylan Boulevard in this area, BD-5 and BB-9, had topsoil layers beneath the humus. Subsoil was encountered at 11" beneath the surface in BD-5, at 17" in BB-9. No prehistoric cultural materials were recovered.

A test in the vacant lot at the northeast corner of Hylan Boulevard and Richard Avenue revealed heavy disturbance beneath the surface. A ceramic insulator and plastic toy were found in a layer at a depth of 16". The test was discontinued.

SECTION 10

HYLAN BOULEVARD - RICHARD AVENUE TO LORETTO STREET, ca.
4000'

[Appendix A, Sheets 26-31]

INTRODUCTION

Although there are a few houses along Hylan Boulevard in this section, most of the area is wooded with varying amounts of bramble. The ground elevation is relatively high. The 1911/1913 topographic sheets indicate that the maximum elevation in this section, approximately 40 feet, is attained just east of Page Avenue. The topographic sheet shows a stream crossing the present location of Hylan Boulevard between Page Avenue and Bedell Avenue with two other streams between Bedell Avenue and Loretto Street.

A prehistoric site has been recorded in the vicinity of Page Avenue. Skinner mentions prehistoric finds in the Page Avenue vicinity in his discussion of Ward's Point (Pickman and Yamin 1978: II-22). More recently, Staten Island's avocational archaeologists have identified sites in the Page Avenue area. Anderson describes archaeological deposits in this area as "a series of sites scattered throughout the woodlands for some distance" (quoted by Pickman and Yamin

1978: II-23). However, Anderson also mentions the Page Avenue site as covering 30,000 square feet north of Hylan Boulevard. A child burial was reported southeast of the main site, and prehistoric material was also reported from both sides of Page Avenue on the south side of Hylan Boulevard.

Because of the reported sites and the topography of this area, it was considered to be archaeologically sensitive. A nominal testing interval of 100 feet was chosen for section 10, with 40 tests projected. Fifty four tests were actually placed in this section.

The change in soil type discussed in Chapter I of this report was encountered in the eastern portion of section 10. The topsoil west of this area continued to be brown or gray-brown in color, but the texture was much sandier than the silty topsoil encountered to the east. The subsoil strata also consisted of sand, with the color being described as orange, tan, red or greenish yellow, usually becoming yellower with increasing depth. In some tests, a silty or clayey silt soil, similar to the subsoil deposits to the east, was encountered underlying the sand.

RESULTS

Modern houses with graded lawns are located on the south side of Hylan Boulevard at the corner of Richard Avenue. On the northwest corner of the intersection, an obviously graded and disturbed lot extends approximately 200 feet west of Richard Avenue. The first test in Section 10 was placed in an open wooded area past the graded lot. The results of the test (X-4) indicate that the topsoil had been graded off at this location. The reddish clayey silt subsoil was encountered immediately beneath two inches of surface humus. West of test X-4 there is a low marshy area with Phragmites cover on the north side of Hylan Boulevard with higher ground to the east and west. The south side of Hylan Boulevard in this area consists of higher ground with more open woods. The land slopes downward from the south to Hylan Boulevard and also slopes downward from the east and west to a stream bed. This stream bed apparently connected with the marshy area north of Hylan Boulevard before the road was constructed.

Test Y-4 was placed north of the road about 25 feet east of the marshy area. No cultural materials were recovered from the seven inches of humus and brown sandy silt which overlay the red clayey silt subsoil.

Two tests, W-7 and W-8, were placed in the higher ground on the south side of Hylan Boulevard west of the stream bed. Fourteen inches of brown sandy silt topsoil overlay the subsoil in both tests. Except for a few fragments of coal and iron from the topsoil in test W-8, no cultural materials were recovered.

West of the location of test W-7, the south side of Hylan Boulevard has been substantially cut down. This cut is approximately eight feet below the higher ground bordering the road immediately west of test W-7. At the location of test Y-5, the cut was some 3-4 feet. Test Y-5 was placed at this location despite the depth of cut, since this higher ground may have been more attractive to prehistoric peoples than the lower ground north of the road. Seven inches of humus and brown sandy silt topsoil and a three inch transitional layer overlay the red clayey silt subsoil. A few small pieces of coal and clam shell from the topsoil were the only cultural materials recovered from this test.

A lawn which had undergone obvious surface erosion is located on the south side of Hylan Boulevard west of test Y-5. West of the house site, the land has been graded for a baseball field. No tests were placed here.

On the north side of Hylan Boulevard, the land west of the marshy area noted previously continues below the grade of Hylan Boulevard. Test X-5 was placed west of the marshy area. The topmost 15 inches of yellow and orange mottled sand probably represents fill. The approximately five inches of reddish brown sand encountered between the base of the fill and the underlying reddish brown clayey silt subsoil probably represents the natural topsoil in this area. One historic period ceramic sherd from the fill stratum was the only cultural material recovered from this test.

The elevation of the land north of Hylan Boulevard remains lower than that of the road west of the location of test X-5. Testing in this area continued with test Y-6. Except for a fragment of cut stone from the humus, no artifacts were recovered from this test. The soil encountered in test Y-6 was sandy. To a depth of 19 inches, it was described as medium brown silty sand and light brown sand (topsoil and transitional layers). Orange and gray mottled sand was excavated to 32 inches. From 32 to 39 inches the excavated soil was gray silty sand with orange mottling. These soils represent a change from the siltier soils encountered in the eastern portion of the project area. The difference in the

soils was discussed in Chapter I of this report.

The location of test Z-1, west of Y-6, appeared to be disturbed. A stratum of yellow/red clayey soil was encountered immediately below the surface humus. This material is probably fill. At 21 inches a stratum of reddish yellow clayey soil with slate concretions was encountered. This material appeared to be similar to the subsoil in the eastern portion of the project area. However, because of the change in soil type noted above, it is possible that this material is also fill. No cultural materials were recovered from either stratum. Because of the high water table at the test location (18 inches), excavation was terminated at a depth of 25 inches below the surface.

Approximately 125 feet west of test Z-1, and just west of the disturbed area indicated as Eugene Street (an unbuilt or "paper" street) on the project map, there is a small pond immediately north of Hylan Boulevard. Test AA-1 was placed north of the pond and test AB-1 just to the west. The brown sandy topsoil was encountered to a depth of 16 and 18 inches. In these tests the orange and yellow sandy subsoil noted above was encountered below the brown sand and was tested to a depth of 28 1/2 inches in AB-1 and 44 inches

(using the post hole auger) in test AA-1. Except for some coal from the test AB-1 topsoil, no cultural materials were recovered from either of these tests.

West of test AB-1 the land slopes gradually upward toward Page Avenue. Because of the sensitivity of this area, the testing interval was narrowed somewhat. Tests Z-2 and AB-2 were placed in a wooded area, with the stratigraphy similar to that encountered in tests AA-1 and AB-1. No cultural materials were recovered.

West of test AB-2 there is an area of open woods with some bramble extending westward to Page Avenue. A ditch (see Appendix D, Photograph 29), the long sides of which run parallel to Hylan Boulevard, appears to have been dug in an oval pattern. The southern part of the oval is just north of test BF-6. Mounds of dirt are visible in the area, especially north of the oval. This may be dirt dug out of the ditch and/or the results of other grading in the area.

Between Hylan Boulevard and the ditch the land is about three feet higher than the land north of the ditch, and higher than the Hylan Boulevard grade. Two tests, AA-3 and AB-3, were placed in this higher area. The soil in these tests was hard packed and silty, unlike the sandy soil

encountered elsewhere in this area. This hard packed soil was initially tested to depths of 8 1/2 inches in test AA-3 and 23 inches in test AB-3. Subsequently, we re-opened and widened test AB-3 so that it could be excavated to greater depths. The results confirmed our assumption that the silty soil in these two tests was fill. At a depth of 39-44 inches in test AB-3 we encountered the black sand stratum which characterized the area north of the ditch. This was underlain by gray sand and the water table was encountered at 44 inches. No artifacts were recovered beneath the fill. However, this soil was excavated with the post-hole auger because of the depth of the deposits. Therefore only a small sample of the pre-filling stratigraphy could be tested in test AB-3.

Three additional tests were placed east of Page Avenue during the initial testing. Test Z-3 was placed in the eastern part of the area enclosed by the "ditch". In this test eleven inches of sandy fill overlay what appeared to be a former surface. The fill consisted of layers of dark brown and light yellow sand underneath the surface humus which had accumulated since the fill was deposited. The fill was underlain by layers of black and dark brown sand to sixteen inches. This material contained pieces of iron as well as coal and slag, and one window glass fragment. The

dark brown sand was underlain in part by a lens of white cinder and ash containing coal and pieces of slag. The contents of these strata suggest that they may have accumulated during the period of occupation of a house which formerly stood in this area. The 1911 Borough of Richmond topographic sheet shows a house located just east of Page Avenue. A barn associated with this house was located in the vicinity of test Z-3. The layers of black and brown sand and the cinder lens were underlain at 23 inches by a stratum of yellow/orange-brown sand which was tested by means of the post hole auger to a depth of 45 inches.

Test AA-4 was placed approximately 50 feet west and slightly south of the location of test Z-3, somewhat north of the ditch. This test also contained approximately nine inches of brown and red sand fill which underlay the surface humus. Beneath these strata was a 3-4 inch layer of black sand underlain by orange sand which was tested by shoveling to 34 inches and augering to 47 inches. Three flakes, one of which had been heat treated, were recovered from the black sand, and an additional flake was recovered from the orange sand. In addition to these by-products of aboriginal tool-making, a whiteware sherd and a small piece of cinder were recovered from the black sand and 0.3 grams of oyster shell were recovered from the orange sand.

Because of the recovery of the four flakes from test AA-4, four additional tests were placed in the immediate vicinity. Tests BE-8 and BG-7 were located about 18 feet east and west, respectively, of test AA-4. In common with the tests discussed above, test BE-8 contained nine inches of sandy fill overlying a four inch thick black sand stratum and the underlying orange sand which was tested to a depth of 34 inches. The fill strata encountered in the other tests were not present at the location of test BG-7. Six inches of black sand and seven inches of brown sand overlay the orange sand stratum which was tested to 45 inches. No flakes or other indications of prehistoric occupation were recovered from these two tests. Test BG-7 was culturally sterile. Test BE-8 yielded a whiteware sherd and window glass fragments, as well as a few pieces of coal and cinder from the humus/topsoil layer underlying the fill.

Flakes were recovered, however, from tests BE-9 and BF-6. Slightly north and east of the location of test AA-4 is an area which appears to have been dug out, possibly by "pot hunters." Test BE-9 was placed in the north wall of the dug out area and continued below the depth of the previous excavation. It measured some 20 by 26 inches (approximately four square feet), or more than twice the

area of the average shovel test. The ten inches of sandy fill at this location were removed without screening. This was followed by the four inch thick black sand stratum, a two inch thick mottled tan/black transitional stratum and the underlying orange sand stratum. The latter was tested to a depth of 72 inches, the last 13 inches by means of a post hole auger. Three flakes, one of which was a tool resharpening flake, were recovered near the base of the black sand stratum. Ten historic period ceramic sherds (whiteware), 29 bottle glass fragments, and three window glass fragments, in addition to a nail fragment and forty-five grams of coal and 122 grams of brick fragments were recovered from this stratum. The orange stratum in test BE-9 yielded six additional flakes and one "blocky fragment", one of the flakes being a tool resharpening flake. An additional prehistoric artifact was recovered from the orange sand -- a fragment (241.9 grams) of ground stone which could not be further identified as to function. This fragment also appears to have been fire-cracked. One large transfer printed whiteware/ironstone sherd was recovered from fairly deep in this orange sand stratum. Except for 3.7 grams of coal, this sherd was the only historic period artifact recovered from the orange sand stratum. There are two explanations for its presence. One possibility is that this entire area was filled in more than

one episode, with the orange sand representing an earlier fill deposition and the soil above the black sand a second episode. However, there is no clear evidence supporting this explanation. The orange sand is typical of the upper portion of the subsoil in much of the western portion of the project area, as noted above. In addition, none of the other tests in this immediate area yielded historic period artifacts from the orange sand stratum except for a few small pieces of coal. It is more likely, therefore, that the whiteware sherd was deposited in the orange sand through the action of rodents or roots. Although no rodent burrows were noted by the excavators, the indications of a burrow could easily have been missed in the absence of a careful scraping and evaluation of the stratigraphy.

Test (BF-6) was placed approximately 15 feet southwest of test AA-4, in which the initial finds of flakes had been made. This test was cut into the south wall of the ditch which was noted above. As in test BE-9, seven inches of orange sand fill and overlying humus were removed from the test location without being screened. The two inch thick underlying black sand stratum in this test yielded no prehistoric artifacts and only two fragments of bottle glass. However, the underlying orange sand, which was tested to a depth of 40 inches, yielded four flakes. Five tenths

of a gram of cinder was the only other cultural material recovered from this stratum.

Two additional tests were placed east of Page Avenue. Test BH-6 was placed well to the north of the tests discussed above, to attempt to discover whether the flakes in the tests discussed above could be associated with a site further to the north. Approximately 6 1/2 inches of humus and light brown sand fill overlay four inches of black sand which contained asphalt fragments and which may be the remains of a former pavement. An underlying 7 1/2 inch stratum of brown sand, probably the topsoil in this area, contained glass and shell fragments. The underlying rust/yellow, light tan and medium brown sand strata was tested to 45 inches (the last 8 inches being augered). No artifacts were recovered from these strata.

The remaining test east of Page Avenue, AB-4, was placed west of the ditch discussed above, some 50-75 feet northwest of the tests in which the prehistoric artifacts were found. The humus in this test directly overlay five inches of brown sand, with orange red sand underlying this to a depth of 39 inches. Various historic period artifacts, including six whiteware sherds, were recovered from these strata. The excavators noted the presence of a heavy root concentration

in the orange sand stratum, which could account for the presence of the historic period artifacts in this stratum. It should be noted that the test location is near the former house site shown on the 1911 topographic sheet. The orange/red sand is underlain by culturally sterile yellow sand which was tested to 47 inches, with the last six inches being augered. No prehistoric artifacts were recovered from test AB-4.

It appears that the original topsoil layer has been disturbed in the area immediately east of Page Avenue where the above tests are located, being completely removed at most locations. This probably occurred during the occupation of the house shown on the 1911 topographic sheet. During the occupation of this house, the black sand apparently accumulated at the top of the orange sand stratum.

Eight tests were placed between Page and Bedell Avenues. For the most part, this area is wooded with bramble in some areas and more open woods in others. The exception is the Little League baseball field on the north side of Hylan Boulevard. This field has obviously been graded and was not tested. We also noted the presence of what appeared to be a small stream channel about 25 feet east of the location of

test AD-3. Most of these eight tests contained a layer of brown or gray sandy topsoil underneath the surface humus. The exceptions were tests AC-1 and AC-2 where the material under the humus was described as black and yellow mixed sand. The area in which the latter tests were placed may have undergone some form of disturbance. Bottle glass, nail, and cinder block fragments were recovered from the black/yellow sand. A few historic period artifacts were recovered from the humus and underlying dark sand in tests AC-3, AD-1, and AE-1. In addition, three whiteware sherds were found at the top of the underlying red sand in the latter test. The remaining tests were culturally sterile. The subsoil in this area consisted of the same red, yellow and greenish sands noted previously.

A total of eleven tests was placed between Bedell and Joline Avenues. The south side of Hylan Boulevard in this area is covered by open woods. The ground elevation is approximately one foot above the road grade. The north side of Hylan Boulevard is higher for approximately 200 west of Bedell Avenue, forming a small rise which slopes southward down to Hylan Boulevard and also slopes downward to the west. The area immediately east of Joline Avenue is at the base of the slope and is approximately at the grade of the Hylan Boulevard pavement.

We initially placed five tests on the south side of Hylan Boulevard in this area. Two of the tests, AC-4 and AD-4, placed approximately 60 feet apart, yielded a single flake each. In AC-4 the flake was recovered from the brown sandy topsoil (3"-25"). The flake from AD-4 was recovered from the orange sand (6"-28") which underlay the topsoil (2-6"). Tests AE-4 and AD-5, placed about 100 and 190 feet, respectively, west of test AD-4 were culturally sterile, Test AE-3, 75 feet east of test AC-4, yielded only a few historic period artifacts.

A local resident informed us that she knew of previous finds of prehistoric artifacts from the area on the north side of Hylan Boulevard between Bedell and Joline Avenues. Because of this and the flakes recovered from tests AC-4 and AD-4, we conducted additional tests on both sides of Hylan Boulevard.

Four additional tests were placed in the vicinity of the initial finds on the south side of Hylan Boulevard. Test BH-2, placed approximately 10 feet west of test AD-4, yielded a chert spall. In common with the flake from AD-4, this spall was recovered from the orange sand (12"-33") underlying the brown sandy topsoil (4 1/2" - 12"). However,

the other three tests, one placed about 25 feet northwest of test BH-2 (test BI-6), and the other two (BH-1 and BI-5) placed between the location of the two initial finds yielded no prehistoric artifacts.

Similar stratigraphy was encountered in all of the above tests west of Bedell Avenue. The surface humus was underlain by varying depths of brown sand or sandy silt. In tests AE-3, BI-6 and BI-5, a thin layer (2-7 1/2 inches thick) was noted between the humus and brown sand, probably recent fill. The soil underlying the brown sand consisted of a layer described variously as orange, tan/brown, or red sand followed by yellow sand, a similar sequence to that noted in the Page Avenue area, discussed previously. In tests AC-4 and AE-4, however, the yellow sand was described as directly underlying the brown sand. A few historic period artifacts as well as small pieces of coal or cinder were noted in the brown sand layer in tests AE-3, AC-4, BI-6, BH-1, and BI-5. In the underlying orange sand, only a few pieces of coal were noted in test BI-5, and a small whiteware sherd may have been recovered from the top of this stratum in test AD-4.

We considered the possibility that the finds south of Hylan Boulevard could be associated with a site north of the road,

especially in view of the finds reported in this area. Our examination of the rise in the eastern portion of the area north of Hylan Boulevard revealed the presence of shell on the surface at some locations. There also appeared to be evidence of digging in this area, perhaps by local avocational archaeologists. Therefore, we placed two tests, AC-5 and BH-3, in this area. These tests were dug to 45 inches and 61 inches, respectively, with the lower portions excavated using a post hole auger. The stratigraphy in these tests was similar to that noted on the south side of Hylan Boulevard. Brown sandy topsoil underlay the surface humus to depths of 10-12 inches, followed by orange sand. Test BH-3 encountered the underlying "yellow" sand (here described as light tan) at a depth of 59 inches. Except for a small amount of coal and clam and oyster shell in the brown sand, these tests were culturally sterile.

Two additional tests were placed in the lower ground closer to Joline Avenue. Except for a few historic period artifacts and shell fragments from the humus and brown sand stratum in test AC-6, these tests were culturally sterile.

Seven tests were placed between Joline and Sprague Avenues. The south side of the Hylan Boulevard west of Sprague Avenue has been disturbed by the construction of the Tottenville pool. The tests were placed on the north side of Hylan

Boulevard in a wooded area with bramble at lower elevations in the eastern part of the area. A stream channel was noted approximately 15 feet west of the location of test AD-6, and the land slopes upward from the stream bed toward the west. The soil in these tests continued to be the brown, red, yellow and yellowish green sand noted in the tests further to the east. No prehistoric artifacts were recovered. Only a few miscellaneous historic period artifacts and pieces of coal were recovered from the sandy topsoil in tests AC-7, AE-7, AD-7 and from a yellow gray sand fill stratum which underlay the humus in test AC-8. Test AE-7 also contained about 11 inches of fill overlying the original humus layer. The other four tests were culturally sterile. From a point about 75 feet west of the location of test AC-8 to Sprague Avenue there are three houses with graded lawns. No tests were placed in this area.

The residents of the house at the northeast corner of Joline Avenue and Hylan Boulevard showed us a corner notched projectile point (similar to the point recovered from section 13). They were unsure of its provenience, but said that it may have come from an area where there was supposedly a shell heap, located several hundred feet north of Hylan Boulevard and east of the location of test AE-7. Pedestrian reconnaissance indicated the presence of some

shell. However, there appeared to be extensive historic period disturbance of the area.

Six tests were placed in section 10 west of Sprague Avenue. This includes two tests on the north side of Hylan Boulevard which were somewhat west of the line of Lorretto Street, the nominal western boundary of Section 10. Immediately west of Sprague Avenue, the north side of Hylan Boulevard appeared to be heavily disturbed, and past this disturbed area, the north side of the road was substantially higher than the road grade, with the road being cut through this higher ground. The ground south of the road is lower with the south side of Hylan Boulevard being built up on fill. Three tests were placed in this area. The same types of sandy topsoil and subsoil as noted above continued in this area. Test AE-8 was culturally sterile, with a small piece of mortar being recovered from the topsoil in test AD-8. Several whiteware sherds, a bottle glass fragment, and small amounts of coal and cinder were recovered from the sandy topsoil in test AE-9.

On the north side of Hylan Boulevard, the higher ground noted above slopes downward to the west with a wet area in the vicinity of Loretto Street. West of the wet area, the ground rises again to the corner of Sleight Avenue. As

noted in our testing plan, the 1909 topographic sheet indicates the presence of a stream in the area of Loretto Street and this wet area may be a remnant of that water course. Three tests were placed east and west of the wet area. To the east, approximately seven inches of fill had been deposited over the original topsoil at the location of test AC-10. Except for some metal fragments in the humus, this test yielded no artifacts. To the west, test AD-9 encountered layers of asphalt and dark gray silt overlying the original topsoil which yielded a small shell fragment and a few small pieces of asphalt, apparently deriving from the overlying strata. Test AE-10, also placed in this area, was culturally sterile.

The lot on the southeast corner of Hylan Boulevard and Loretto Street has been disturbed and two houses with graded lawns stand on the southwest corner. No tests were placed in this area.

SECTION 11

HYLAN BOULEVARD FROM LORETTO STREET TO SATTERLEE STREET, ca. 3,250' [Appendix A, Sheets 31-34]

INTRODUCTION

The proximity of the Ward's Point Archaeological site to this section and the relatively high elevation of the land (ca. 40' above sea level) as well as the fact that two streams are shown crossing Hylan Boulevard between Main and Satterlee Streets on a 1909 topographic map make the area sensitive for prehistoric occupation. A nominal testing interval of 100' was set for the western portion of the section beginning at Main Street with four tests being allotted to undisturbed spots in the eastern portion, which is either severely cut down for Hylan Boulevard or disturbed by recent construction. A total of 17 tests were conducted, four in the eastern section and the remainder to the west.

RESULTS

In most of the area between Sleight Avenue and Brighton Street, the land on either side of Hylan Boulevard is above the grade of the road. In addition, both sides contain modern homes with graded lawns and areas which have been

bulldozed for new construction. Four tests (AF-1, AF-2, AG-1, AG-2) were conducted in lots which are at present undeveloped. These lots contain woods with much scrub and bramble. It should be noted that test AG-1 was placed approximately 90' south of Hylan Boulevard because the land closer to the road appeared to be more heavily disturbed.

Tests AF-1, AG-1 and AG-2 contained a sandy topsoil layer from which a few pieces of coal and shell were recovered; two historic period sherds from AF-2 and a brick fragment from AG-2. Test AG-1 was culturally sterile. In AF-2 a layer of concrete, perhaps an old pavement, was encountered below the surface humus which prevented further excavation. Because the area appeared to be disturbed, no further tests were conducted.

West of Brighton Street, the south side of Hylan Boulevard is flat, scrubby woods and the north side is cut down or disturbed by recent construction. All but one of the subsurface tests were placed in the woods along the southern side of the boulevard. Seven of the tests (AI-1, AJ-1, AD-1, AJ-2, AJ-3, AK-3, AJ-4) revealed subsoil immediately beneath the humus. The topsoil and transitional layers had presumably been scraped off at some earlier time.

In test AI-2, on high ground at the southwestern corner of the Chelsea/Hylan Boulevard intersection, the topsoil had not been stripped away but it yielded no cultural materials. Subsoil was encountered 18" beneath the surface. AI-3, 200' to the east, had also not been scraped but a 4" thick fill layer of black cinder and sand overlay an 8" thick brown sandy topsoil. A transitional zone was recognized between 17" and 20" with the light brown clayey silt subsoil below.

Between Main Street and Satterlee the land is less flat and has apparently not been radically altered. AJ-1, AK-1, AJ-2, AJ-3, AD-3, AJ-4, AI-4, AJ-5 AK-4 were placed in this area. All but AD-2 were on the south side of Hylan Boulevard. Except for AJ-3, AJ-4 and AK-4, a topsoil layer was recognized between the humus and reddish silty clay subsoil. In some tests it was as thin as 2", in others it was as thick as 11". Very little cultural material was recovered from these tests. AJ-5, however, yielded 3 historic period ceramic sherds, several glass fragments, and some oyster shell from what may be an old topsoil layer between 14" and 21" beneath the surface. The layer was overlain by 5" of dark gray silty sand. In AK-4, AJ-4 and AJ-3, all near existing cross streets or cross streets no longer in use south of Hylan Boulevard, the subsoil was encountered immediately beneath the humus.

In AL-1, which was placed south of a bulldozed embankment bordering Hylan Boulevard, two chert flakes, coal, 14.4 grams of clam shell, and 13.9 grams of oyster shell were found in a 7.5" thick fill layer consisting of brown sandy silt mixed with pockets of tan clayey silt. Another fill layer, brown sand mixed with angular rocks between 10.5" and 14" contained shell and glass fragments. Shell and coal were recovered from the hard packed red sand below (14"-18") also probably fill. Beneath this, at 18" below the surface, was black-gray sand, possibly the old topsoil, with brown sand between 28" and 34" and tan sand between 34" and 60". Tan sand is the characteristic subsoil in this area.

SECTION 12

CARTERET STREET, ca. 1800'
[Appendix A, Sheets CA1-CA3]

INTRODUCTION

Section 12 consists of the Carteret Street lateral, which extends some 1800 feet south of Hylan Boulevard to Billop Avenue. In general, the elevation of the land becomes lower proceeding southward from Hylan Boulevard. There are stands of dense brambly woods adjacent to Carteret Street along much of the route with more open wooded areas elsewhere. An open grassy field adjoins Carteret Street on the west side just north of a small pond located north of Billop Avenue. Our pedestrian reconnaissance indicated that Carteret Street itself had been graded and paved, with the pavement subsequently being removed by human or natural processes. This is consistent with the observation made by Weingartner (1967, cited in Jacobson, 1980) that many streets in this area had been paved in the 1920's with the pavement subsequently being removed. Remnants of the sidewalks bordering Carteret Street were noted in some areas. In addition, it appears that most of Carteret Street between Hylan Boulevard and Billop Avenue was cut down beneath the grade of the adjacent land. For these reasons, our testing plan called

for the placement of only six tests in this section. However, we considered this area to be sensitive for prehistoric occupation because of its proximity to the Wards Point archaeological zone and the Raritan Bay shore. In addition, the 1909 topographic sheet indicated that a stream which ran southward to Raritan Bay was located just east of the present location of Carteret Street. Low lying marshy areas noted east of Carteret Street may represent remnants of the stream course.

If a prehistoric archaeological site were located in this area, truncated features could be present beneath Carteret Street itself. Therefore, we placed a total of 17 tests at approximately 100 foot intervals on either side of Carteret Street east or west of the area which appeared to have been disturbed by the original construction of the street and its adjacent sidewalk.

RESULTS

No indications of prehistoric occupation were found in any of the 17 tests placed in this section. The stratigraphy recorded in four of the tests (AS-1, AS-2, AU-1, and AU-2) indicated that the topsoil had been graded off at these locations. Topsoil was present in the other 13 tests. It is interesting to note that the deposits of sandy subsoil

encountered further west along Hylan Boulevard were not present in this section. Rather, the subsoil in these tests was the same type of silty clay found in the eastern portion of the project area. The topsoil was described as silt or sandy silt.

Eleven of the 17 tests in this section were culturally sterile. Six tests (AU-1, AU-3, AU-6, AT-1, AT-4, and AS-5) yielded a few miscellaneous historic period artifacts including glass fragments, coal and slag. Only one historic period ceramic sherd was recovered. This was found in test AU-1, which was the closest test to Hylan Boulevard. The paucity of historic period artifacts from these tests is consistent with our review of the historic period maps, which show no houses in this area.

SECTION 13

SATTERLEE STREET/CRAIG AVENUE, ca. 1,750'
[Appendix A, Sheets 35-37; CR1-CR2]

INTRODUCTION

Satterlee Street serves as the eastern boundary of Conference House Park and the Ward's Point Archaeological Area, both of which are on the National Register of Historic Places. The street runs along the eastern edge of the Conference House lawn and continues up the hill to the north. To the north of the Conference House the street is about 100 feet east of the portion of Ward's Point called Billop Ridge (see Figure II- 1, from Jacobson 1980: 7). Jerome Jacobson, who published a summary report on the Ward's Point Archaeological Area entitled Burial Ridge: Archaeology of New York City's Largest Prehistoric Cemetery in 1980, describes Billop Ridge as "pits and burials in a sandy ridge about 200 feet north-northwest of the Conference House."

The eastern side of Satterlee Street, opposite Conference House Park and opposite the Billop Ridge area, has been largely disturbed by the construction of modern homes. North of Conference House Park, however, there are older

houses on the west side of the street which appear to date to the nineteenth century and possibly earlier. There is also a Victorian house (#97) on the east side. According to the property owner, this property has remained unaltered for at least 100 years. Beyond the Victorian house the eastern edge of the street is bordered by very new houses on graded lots.

Two stratigraphic sequences were commonly encountered in this section. In the immediate area of the Conference House Park a relatively compact layer of shells was found beneath the thin sandy topsoil stratum under the sod. The shell layer (or layers) were underlain by a stratum, variously described as orange, light brown, orange brown, or red brown sand, which became lighter in color as it got deeper. An underlying deposit of reddish clayey silt was encountered beneath the sand in a few of the tests. A similar deposit of shells, referred to as the "village layer" by Michael Harrington, whose work at Ward's Point Jacobson discusses in his book (Jacobson 1980:18) has been recorded repeatedly within the Ward's Point Archaeological Area to the south of Hylan Boulevard. Shells were also observed eroding out of the Conference House lawn to the north of Hylan Boulevard. Jacobson (1980:18) reports that Donald Sainz, another archaeologist who has worked at Ward's Point, thinks that

the shells "once may have been concentrated in smaller compact mounds or heaps, and that white settlers levelled them in plowing." Sainz has also pointed out that an oyster industry flourished in the Tottenville area in the nineteenth century, which could also account for the shell deposits.

To the north of Conference House Park the concentrated shell layer is not present. There, the stratigraphy is typically a layer of tan sandy topsoil underlain by the same orange sand stratum that underlay the shell layer to the south. The sand gets lighter as it goes deeper and is sometimes underlain by reddish silty clay.

Because of the sensitivity of the Ward's Point/Conference House area, our testing plan called for subsurface tests at 50' intervals for the entire length of Satterlee Street and two on Craig Avenue, a total of 40 tests. Thirty tests were actually conducted on Satterlee Street. Recent disturbance and failure to get permission to test within certain properties prevented us from productively placing any more tests.

RESULTS

Although the southeasterly portion of the Conference House lawn bordering Satterlee Street had been undisturbed at the time our field testing proposal was developed, heavy machinery had recently crossed the area in connection with the removal of the Hylan Boulevard pavement to the west of the boulevard's intersection with Satterlee Street. A sidewalk and bushes had also been installed along the eastern edge of the lawn in this area (see Appendix D, Photograph 31). Two tests (AF-3, AG-3) were placed between the bushes and sidewalk in the hopes that the ground surface there has not recently been altered. In both, a thin layer (5.5" to 6.5") of fill lay under the sod. No cultural materials were found in this layer in AF-3. In AG-3 a whiteware sherd, 2 glass fragments, and a yellow jasper flake were recovered from the sandy fill. It appears that the topsoil had been removed in this area. Beneath the fill in both tests was a yellow clayey sand. It is also possible that the sand stratum, usually orange or tan at the top, was also truncated.

Two tests (AH-1, AG-4) were placed in the wooded area between AG-3 and the Conference House driveway. At the location of AH-1 the topsoil appears to have been removed.

A deposit of fill reached a depth of 25" beneath the surface and was underlain by light tan sand.

The test to the north, AG-4, was at a lower elevation and further from the Satterlee pavement and sidewalk. Immediately beneath the humus was a layer of black sand (1"-3.5") followed by 4.5" of gray brown sand, probably a buried topsoil. Some shell was recovered from this stratum. Orange sand began at 8" beneath the surface continuing to 26.5".

Shell was observed on the ground surface on both the south and north sides of the Conference House driveway where the land appears to be slightly higher than in the just discussed wooded area further to the south. A profile cut in the bank south of the driveway revealed a distinct shell layer beneath the humus or sod.

Initially, one test (AF-4) was placed south of the driveway and one (AH-2) north of the driveway. A brown orange sand containing 379 grams of clam shell and 140 grams of oyster shell was encountered beneath the humus between 3 and 10 inches. Beneath this stratum, which probably represents a mixture of more recently deposited soil with shells from the underlying stratum, was a dark brown sand (10-19") mixed

with a higher concentration of shells -- 3,002.4 grams clam, 784.5 grams oyster plus a small amount of snail -- and an orange brown mottled sand transitional stratum which also contained considerable amounts of shell -- 1,585.3 grams clam and 544 grams oyster -- between 19 and 21 inches. Six flakes, 3 glass fragments (1 heavily patinated) and a possibly hand wrought nail were recovered from the dark brown sand with shell. Three flakes were also recovered from the transitional orange brown mottled sand layer along with a piece of modern glass, fishbones, and seeds. Very little shell was found in the orange sand below (21"-49"). However, eight flakes were recovered from this stratum.

To the north of the driveway the shell layer was considerably less concentrated. The black and brown sand (3"-6") beneath the humus contained 87 grams of clam shell and 110 grams of oyster shell. Four historic period glass fragments were recovered from this layer. A second black and brown sand layer mixed with tan sand contained 13 flakes and a utilized chert blocky fragment as well as 55.6 grams of clam shell, 44 grams of oyster, and a fragment of firecracked rock. Six flakes were also found in the light tan sand between 9 and 31 inches. No cultural material was recovered from the light tan sand tested with the auger between 31-38" or from the underlying reddish clayey silt.

Three additional tests (BE-1, AM-1, BF-1) were placed by the Conference House driveway in a disturbed area east of the lawn and closer to the Satterlee Street pavement. The tests, which were below the elevation of the stratum in which the shell deposits were encountered, were intended to determine whether the culture bearing strata below the shell layers were intact next to the road. In BE-1, south of the driveway, fill was encountered to a depth of 7" beneath the surface. Below the fill were 13" of orange-tan sand. The clayey silt was reached at 20" beneath the surface.

The test to the north of the driveway, AM-1, contained a small amount of shell in the upper strata (humus 0-3"; dark brown gray silty sand, 3"-7"). A flake was recovered from the humus. A high concentration of stone (granite and quartzite) was found in a matrix of light brown sand at a depth of 7". The stone may relate to a historic period property or field boundary marker.

A second test, BF-1, was placed northwest of AM-1 to avoid the rock concentration. No cultural material was recovered from this test beneath the humus. Two layers of fill reached a depth of 8" with a mottled orange-brown sand (8"-32") beneath that. Excavation was discontinued at 32", the

depth of the water table.

Two tests (AG-5 and AG-6) were placed at the edge of the brambly woods north of the Conference House driveway and west of Satterlee Street. The topsoil layer, a dark brown sand in both tests, reached a depth of between 10.5 and 12.5 inches beneath the surface. A small amount of shell (100.07 grams in AG-5 and 33.5 grams in AG-6) and historic period materials were present in this stratum. A very small amount of shell and coal were retrieved from the deep orange sand stratum below the topsoil which reached 35" in AG-5 and 32" in AG-6.

North of the bramble area the roadside appears to have been graded for a distance of approximately 300 feet in a north/south direction and 70 feet to the west. A test (AJ-6) was placed just to the south and west of this graded area in a thicket of brambles. Beneath the four inch thick humus was a ten inch buried topsoil layer, described here as a dark gray silty sand. Glass and a clam and oyster shell fragment were recovered from this stratum. Three flakes, some glass and a small amount of shell were recovered from the dark yellow sand between 14" and 24". At the interface with a deeper stratum of light yellow sand (24"-38") another flake and an oyster shell fragment were found. Tests BG-1, BE-2 and BG-2 were placed to the north, south, and west of

this original test. Prehistoric materials were found in all three tests and the stratigraphy was comparable except for the fact that to the west (BE-2) and south (BG-2) the red brown clayey silt was encountered beneath the sand at 38.5" and 28" respectively. The other test did not penetrate beneath the sand. In BG-1, to the north of AJ-6, historic material and a small amount of shell were found in the brown sandy topsoil between 6" and 20" beneath the surface. Two flakes and some shell fragments were recovered from the yellow orange sand below the topsoil. In BE-2, to the south of AJ-6, a light gray chert core fragment was recovered from the brown sandy silt (5.5"-12.5") and a flake from the sand stratum (12.5"-38.5") below. A small amount of shell was present in both strata. In BG-2, to the west of AJ-6, a flake, coal, and some shell were found in the topsoil (4"-11.5") and a fragment of miscellaneous fire cracked ground stone and a flake in the yellow orange sand (11.5"-28").

The locale of these finds is adjacent to the portion of Ward's Point known as Billop Ridge. A large pot hunter's hole was noted approximately 50' west of our tests. Shell and prehistoric materials could be seen eroding out of the walls of this hole.

Two tests (AN-1, AN-2) were placed in the flat bulldozed

area to the north and east of the tests discussed above. This flat land is due east from the portion within the Ward's Point Archaeological Area known as Billop Ridge and is separated from the woods by a mound (about 2' high) presumably created by the limits of the bulldozer's activity. In both tests a stratum of rubble-filled sand underlay the humus. At a depth of 5" in AN-1 and 14.5" in AN-2 a third stratum was encountered which appeared to be the buried topsoil found elsewhere immediately beneath the humus. A historic period sherd, window glass and oyster shell were found in this stratum in AN-1; no historic materials were found in AN-2. Beneath the topsoil, at 11.5" in AN-1 and at 14.5" in AN-2, was orange sand. No prehistoric artifacts were found in the tests; a small amount of shell was recovered from AN-2. The sand became lighter at 19" below the surface in AN-1 and 22" in AN-2.

North of the bulldozed area on the east side of Satterlee Street is a rather distinguished though small Victorian house, #97, which is bounded on the south by a vacant lot (a former pond, according to the owner) running through to Craig Avenue and on the north by a steep slope ending at Pittsville Avenue. Two tests (AK-5, AL-2) were placed within the lawn area.

It is probable that the two soil layers beneath the sod in AK-5, a brown pebbly silt and red brown sand with shell, represent landscaping episodes. Both layers included historic artifacts and a small amount of clam and oyster shell. A flake was recovered from the brown sandy silt below the fill (15"-23"). The silt, possibly an old topsoil, became redder at 23" and continued to a depth of 53". It included coal, clam, and oyster. The lowest layer identified -- red sand beginning at 53" was excavated to a depth of 71 inches below the surface. No artifacts were recovered.

The other test on the lawn, AL-2, was placed on the slope north of the house and approximately 50' from AK-5. Fill layers constituted the upper strata in this test. At 15" beneath the surface a stratum of brown/tan silt with rocks and pebbles was encountered, apparently the original topsoil. No artifacts were recovered.. The red-brown clayey silt was reached at 27 inches beneath the surface.

Three tests (AI-5, AO-1, AO-2) were placed on the west side of Satterlee Street north of the bulldozed area and south of the large fenced in property at the top of the slope -- immediately north of Pittsville Avenue -- the Bedell house. In AO-1, on the lawn of #90 Satterlee, the dark brown sandy

topsoil layer contained 38.1 grams of clam shell and 176.5 grams of oyster. A concentration of shell was found at the top of the underlying brown sand stratum (11.5"-46.5") below but no artifacts were recovered. The soil became lighter as it went deeper. AO-2, in underbrush to the north of AO-1 and in a high spot above the roadway, was also fundamentally sterile. The topsoil layer, described as brown sandy soil between 6 and 17 inches, contained a piece of coal, 1 clam shell fragment, and 2 oyster shell fragments. As in AO-1, the underlying light brown sand stratum beginning at 17" below the surface got lighter as it went deeper. No additional cultural materials were found.

The Bedell House, a Greek Revival house considered by Loring McMillen to be worthy of New York City Landmark status (Pickman and Yamin 1978: II-25), is now owned by a Mr. Peterson, an elderly gentleman who granted permission to dig inside the split rail fence that separates his lawn from Satterlee Street. The property, about 165 feet wide along the street, reaches all the way back to the bluff overlooking the Arthur Kill with the house situated quite close to the bluff edge. Some shell was visible on the surface of the lawn. Initially one test (AM-2) was placed south of the driveway and another (AO-4_) north of the driveway.

In AM-2 the topsoil layer, a dark brown silty sand containing historic ceramic sherds, coal, and some clam shell reached a depth of 11 inches. Three flakes and clam and oyster shell fragments were recovered from the dark orange sand (11"-21") below the topsoil. A concentration of firecracked rock was encountered 23 inches beneath the surface in the yellow orange sand (21"-41"). A second test (AM-3) was placed 2' west of AM-2 in order to investigate the nature of the rock concentration. A flake was recovered from the humus in this test. Other strata were identical but no additional prehistoric materials were found. The rocks did not continue to the west.

North of the driveway in test AO-4, a flake and coal, cinder, clam and oyster shell were recovered immediately beneath the humus in the mottled black/brown silty sand topsoil. Coal and clam shell fragments were recovered from the brown sandy stratum (9"-35") below.

Because prehistoric material was recovered from the above tests, two additional tests were placed on the lawn, one just north of the driveway (BE-3) and another on the northern edge of the property (BF-2). Prehistoric materials were recovered from both. In BE-3 a corner-notched

projectile point and a fire cracked ground stone fragment were recovered from the brown sandy topsoil zone (3"-15") that also contained charcoal, some clam and oyster shell fragments, glass, coal, and cinder. Only charcoal was recovered from the orange sand (15"-39") below.

The gray chert, corner-notched projectile point recovered from test BE-3 (see Appendix D, Photograph 37) measures 30.98 millimeters in length and has a maximum width of 23.95 mm. The maximum thickness is 4.77 mm. and the basal width is 20.28 mm. Its weight is 3.6 grams. There is no indication of basal or edge grinding.

The metrics of this point place it within the range of variation of two of the projectile point types discussed by Ritchie (1971): Brewerton Corner Notched and Jack's Reef Corner Notched. The former type is assigned by Ritchie to the Archaic period and the latter to the late Middle Woodland or early Late Woodland period. The thickness of the specimen recovered from test BE-3 (approximately 3/16") is more typical of the Jack's Reef type. Ritchie notes that the majority of the Brewerton specimens are approximately 5/16 inch in maximum thickness. On the other hand, our specimen has a trianguloid blade outline, which Ritchie notes is a characteristic of the Brewerton Corner Notched type,

while the Jack's Reef Corner Notched type is ovoid or pentagonal in outline.

No prehistoric material was found in either the topsoil of BF-2 or in the orange sand that reached a depth of 30" beneath the surface. Ten unutilized flakes and one utilized flake were recovered from a grayish orange sand stratum that extended between 30 and 40 inches below the surface. Coal and cinder were also found although it is very possible that they migrated through the sand to this level. Another possible explanation is that the roots noted by the excavators of the test were responsible for the depth at which both historic and prehistoric cultural materials were found. No cultural materials were recovered from the red clayey silt encountered at 40". The test was closed at 43" beneath the surface.

Three more tests (AN-4, AM-4, AM-5) were placed along the western edge of Satterlee Street between the Peterson lawn and the intersection of Satterlee Street and Amboy Road. All three were within lawns of houses more than 50 years old; none of the lawns appears to have been graded. Prehistoric material was found in only one of the three tests, AN-4, on the lawn of #46 Satterlee, immediately north of the Peterson property. The owner of #46 said he had

found historic materials within the property and that there is an "Indian village site out in back" (an overgrown lot that sloped down to the bluff above the Arthur Kill). Orange sand with black mottling was encountered immediately beneath the sod in this test. The topsoil had apparently been removed. Two flakes, historic ceramic sherds, a cut nail, wire, and coal were recovered from the orange mottled layer, apparently fill, which extended to a depth of 24". Two flakes, a nail fragment, and shell were also found in the stratum of orange sand with no mottling between 24 and 36 inches. The orange sand continued to a depth of 42 inches where it began to have clay inclusions. No additional artifacts were found.

Permission could not be obtained to test within the lawns of either #44 or #42 Satterlee. No cultural materials were recovered from test AM-4, on the lawn of #40, which had the usual sequence of sod, topsoil, and sand strata. The test was excavated to a depth of 39" below the surface. Glass and coal were recovered from the humus in AM-5, within the property of #20 Satterlee. No cultural materials came from the topsoil (2"-6"), light orange sand (6"-19") or silty clay (19"-25") layers.

As Satterlee Street approaches Amboy Avenue it is cut down

CHAPTER III SECTION 13

below the level of the house lawns. No further tests were placed in the Satterlee portion of this section.

SECTION 13, CRAIG AVENUE PORTION

INTRODUCTION

Craig Avenue, about 250' east of Satterlee Street and parallel to it, is lined with modern houses built on graded lots. Only two small areas, one of which runs through to #97 Satterlee Street, appeared to be worth testing manually. The remainder of the area, considered sensitive because of its proximity to the Ward's Point Archaeological Area, was tested with borings beneath the Craig Avenue pavement.

RESULTS

The lot which runs from #97 Satterlee Street through to Craig Avenue did not appear on the surface to have been graded. A test location was chosen in a high area that would have overlooked the stream or pond that used to run along the southern edge of this property. In the test, AN-3, two layers of brown sand containing historic materials and probably related to landscaping activities were identified beneath the sod. No cultural materials were recovered from the buried topsoil layer, a light brown sand between 17.5" and 31" beneath the surface. A red brown clayey silt, the subsoil, was reached at 31" beneath the surface.

Only one other area, in addition to the lot which runs through from Satterlee to Craig Avenue, did not appear to have been graded along Craig Avenue. Shovel test A0-3 was placed within this lot. No cultural material was recovered from the test which could only be excavated to a depth of 20" beneath the humus because of the impenetrability of the matrix -- a moist red clay with dense amounts of large gravels and rocks. The lot appears to have been heavily disturbed probably by house construction activities on either side which involved extensive bulldozing.

The remainder of Craig Avenue was investigated with borings made through the pavement. Sampling was begun immediately beneath the roadbed (at a depth of 12") as there was no indication that this area had been filled. In boring #11, the boring closest to Hyland Boulevard and approximately in line with the Conference House, 2 oyster shell fragments were recovered from the first sample (1"-3") but most of the material which washed out of the spoon appeared to have been tan sand with gravel, the road base. Sample #2 (3'-5') contained 6" of tan sand and a ten inch layer of tan sand mixed with green clayey silt. Below a depth of 4'4" there was a 3.5" layer of green gray clayey silt with some sand and 10 inches of mottled red and orange sandy silt mixed

with some clay. Sample #3 (5'-7') contained a reddish sandy silt with pebbles and larger cobbles. The boring gave no indication of cultural deposits.

In order to make certain that the shell fragments noted in the first sample from boring #11 did not originate in a deposit of archaeological interest, we placed boring #11A, approximately 8 feet further north. The two borings had similar stratigraphy to five feet. No shell fragments were recovered from boring #11A. It is likely that the shell fragments noted in boring #11 originated in the road bedding material.

Boring #12, approximately 400 feet to the north of boring #11 and on a slight slope, was taken to a depth of 6' beneath the surface. Sample #1 (1'-3') consisted of 9" of sandy brown yellow silt with gravel (road base material) and 15" of red sandy silt with pebbles and rocks, the subsoil or glacial till. The glacial till continued to a depth of 6' with the rocks becoming larger and more numerous at greater depths. The subsoil was noticeably more compact in Sample #3 (4.5'-6') than was observed elsewhere in the project area (100 blows to penetrate 1.5').

Boring #13, approximately 300 feet north of B-12 and higher

yet on the slope, was taken to a depth of 17' beneath the surface in order to get below an unexpected sequence of variously colored sand layers. Within sample #1 (1'-3') the red sandy silt with pebbles and rocks, similar to the subsoil encountered at other locations, was encountered at 6" beneath the surface and continued into the next sample to a depth of 4'8". Bands of sand -- 4" of brown yeollow sand, 4" of black very fine sand with organic fibers and wood, 18" of yellow fine sand, 16" of gray fine sand, 6" of banded pale green and yellow sand, and 22" of fine gray sand mottled with yellow sandy clay -- reached a depth of 10'2" beneath the surface. At this point a very compact red sandy silt was encountered spotted with darker red clay like inclusions -- the glacial till. The remaining samples were contaminated by mixture from above. The layers of sand presumably represent an old marsh; no peat or material with organic (or cultural) material was noted beneath the sands.

At the top of the hill, 61' south of the intersection with Amboy Road, boring #14 was taken to a depth of 7' beneath the surface. Shell had been observed on lawns on either side of Craig Avenue in this area; none had been noticed further south on Craig. In Sample #2 (3'-5') there was a greenish gray sandy silt with orange mottling beneath the tan sand. At a depth of 4'2" the soil was a mottled

red/orange/gray sandy silt with pebbles. This layer reached a depth of 6'6" beneath the surface and was underlain by a pinkish red silty sand with pebbles and black mineral inclusions.

The borings do not indicate the presence of occupation surfaces or cultural features sealed beneath the Craig Avenue pavement. The prehistoric activity recorded at Ward's Point either did not extend as far east as where Craig now runs or its remains have been completely obliterated by both road and house construction. It is noteworthy that no homeowners or avocational archaeologists have reported finds in this specific area.

SECTION 14

AMBOY ROAD (FROM CRAIG AVENUE TO LOCATION OF PUMPING STATION 12), ca. 750' [Appendix A, Sheets 37-38]

INTRODUCTION

Amboy Road between Craig Avenue and Hopping Avenue is a residential street with sidewalks. The land, particularly on the south side of the street, appears to have been graded for construction although some older lawns on the north side, about 2' above the level of the roadway and reached by steps up from the sidewalk, may not have been graded. A resident pointed out that a sewer line runs under one side of the street (man-hole shown on map #38) and a gas line under the other side. No subsurface tests were placed in this section.

Beyond Hopping Avenue (sewer map not provided for this section), Amboy Road goes down to the water. This shoreline area is the indicated location of Pumping Station 12 and the original location of the first Perth Amboy ferry (see Chapter II) which probably replaced an aboriginal crossing point at the same location. This area has been severely altered by recent construction but one test (AT-6) was placed just north of the pumping station site to determine

whether any undisturbed strata lay beneath the fill deposits associated with construction on the south side of the street.

RESULTS

Fill was encountered to a depth of 26" below the surface in AT-6. The rotting wood recovered from the lower portions of the fill may have derived from piers which are visible protruding into the water at the edge of the beach. These piers are presumably part of the ferry dock at this location that was still in operation in the nineteenth century. Beneath the fill was a layer (26"-48") of light orange and reddish tan sand containing a few shell fragments. No cultural material was recovered from this deposit which represents the subsoil in this area.

SECTION 15

HOPPING AVENUE, ca. 1250'
[Appendix A, Sheets 39-40]

INTRODUCTION

Hopping Avenue runs parallel to the bluff overlooking the Arthur Kill. A prehistoric find was reported by a resident (Pickman and Yamin 1978: II-22) and the bluff is just north of where "a strong battery [was] created to cover the retreat of the British Army from Perth Amboy, in case of attack by American forces" during the Revolutionary War (Pickman and Yamin 1978: II-25). The street is lined with houses most of which, based on architectural criteria, appear to have been built in the 19th century. Three houses are shown on the 1874 Beers atlas (Figure II-3). The 1909 Borough of Richmond topographic sheet shows lots laid out along the length of Hopping Avenue on both sides of the street. Houses are shown on most of the lots. With the exception of the wooded lot at the corner of Hopping and Amboy, all archaeological tests were placed on lawns or in the grassy median strip between the sidewalk and the street. Fifteen tests were originally targeted for this section. Twenty-two were actually conducted.

RESULTS

Two tests, AR-1 and AR-2, were placed in the wooded lot on the northwestern corner of Hopping Avenue and Amboy Road. The lot appeared to be heavily disturbed on the surface but only subsurface excavation could determine the depth of the disturbance. The test closest to Hopping Avenue and in a relatively flat area, AR-1, revealed disturbance to a level of 43 inches beneath the surface. Quantities of shell, coal, cinder, and brick were found to that depth in a sequence of strata including reddish brown silt, yellow silt with red clay inclusions, and light yellow tan silt and sand. Below 43" an apparently undisturbed stratum of light yellow sand was encountered. In AR-2 the yellow sand was encountered between 10" and 39" below the surface. A small amount of charcoal and clam shell was recovered from this stratum. This test, further back from Hopping Avenue and on a slight slope towards the water, was also disturbed. Glass, concrete pavement and oyster shell were retrieved from the stratum above the yellow sand, five inches of dark gray to brown silt. No cultural material was recovered from a stratum of reddish yellow sandy clay with pebbles below the yellow sand.

An initial test, AO-5, placed in the median between the

sidewalk and Hopping Avenue, indicated that beneath Stratum I, the humus, and Stratum II, a seven inch thick layer of fill consisting of black/brown sandy soil with coarse gravel, the stratigraphy was undisturbed. Stratum III consisted of 3" of brown sandy soil, Stratum IV was seven inches of orange clay with sand, and Stratum V was very moist gray clay with red clay inclusions. No cultural materials were recovered from this test.

The next two shovel tests, at 100 foot intervals moving north along Hopping Avenue, had similar stratigraphy. In AQ-1 the fill reached a depth of 11 inches below the surface; in AP-1 a layer of ash and cinder at the base of the fill reached a depth of 14 inches beneath the surface. A flake was recovered from the fill (7"-11") above the ash layer. No cultural materials were found in either test below these depths.

Permission was acquired to place a shovel test on the lawn in front of #99 Hopping Avenue. According to the owner, the house was built five years ago but an old tree and a 20' diameter circle of land around the tree in the front yard was left undisturbed during construction. The test (AQ-2) was placed within that circle. Stratum I (0"-3"), a red pebbly sand was underlain by a 9.5 inch thick stratum of

rubble-filled brown sand (stratum II). Beneath this fill, a one-inch sod layer (stratum III), apparently the pre-construction ground surface, was encountered. Stratum IV, beneath the sod was a 17.5 inch thick black and brown sand containing historic period ceramics, shell, coal, cinder and two flakes. The stratum appears to represent a buried topsoil layer. An 80 year old resident of the street said he remembered the street before it was paved and had been lined with large gardens at that time. The topsoil layer apparently relates to the gardening period. A piece of shell and a piece of coal were the only cultural materials recovered from Stratum V, light brown sand between 31 and 65 inches beneath the surface.

Because the flakes were encountered in the small portion of the lawn in front of house #99 that was undisturbed a test was placed within the median in front of the property. In this test, AQ-3, the humus and shallow fill layers were underlain by tan sand in the western third of the test and by tan sand mixed with a red sandy clay in the remainder. This latter deposit apparently related to road or telephone pole construction activities. The tan sand (4.5"-28") contained a small amount of clam and oyster shell. A piece of gray salt-glazed stoneware, clam and oyster shell were recovered from the sand and red sandy clay deposit. A

prehistoric grit tempered ceramic sherd (see Appendix D, Photograph 38) was also recovered but its exact provenience was somewhat unclear. It could conceivably have come from either the tan sand or the sand with red sandy clay. Another test, AQ-4) was therefore excavated northwest of AQ-3, far enough from the road and telephone pole to preclude mixing of fill with the tan sand. In this unit, Stratum III, between 6.5 and 14 inches beneath the surface, consisted of reddish brown sand. Four dark gray chert flakes, seven historic period ceramic sherds, coal, cinder, and shell were recovered from this zone. This appeared to have been an old topsoil deposit comparable to Stratum IV in AQ-2. The stratum beneath 14"-30" was the tan sand encountered in the western portion of AQ-3. Although a chert blocky fragment was recovered from this zone it was at the interface with the stratum above and most likely related to the topsoil deposit. It therefore appears that the prehistoric sherd found in AQ-3 did not come from the tan sand.

Permission was not granted to test within the property immediately to the north of #99. The next shovel test, AP-2, was therefore placed in the lawn of #85 Hopping Avenue. A red quartz flake, a piece of amber bottle glass, coal, cinder and shell were recovered from the two inch thick

humus. It is highly probable that the cultural materials from the humus relate to the stratum below, a 5 inch thick brown sandy silt with pebbles which again may be an old topsoil or garden zone. Glass, coal, cinder, charcoal, and shell were found in this stratum. The layer below, a red sandy silt with green and gray mottling between 7 and 13 inches could be the subsoil, but also could represent an early filling episode. The test was discontinued because the ground was so impenetrably hard. The next test to the north, AQ-5, was located 52' from AP-2. It unfortunately intersected a builders trench for a gas line, a heavily disturbed area.

Shovel test AR-3 was placed in the curb strip of #79 Hopping Avenue. Like other tests in the median, the humus (Stratum I) was underlain by a modern fill layer (Stratum II), a dark brown silty sand containing metal, cinder, and shell. A coal lens marked the base of the fill deposit. Stratum III, between 13 and 20 inches below the surface, consisted of reddish yellow sand. Stratum IV, 20 to 43 inches, was dark gray sand. Coal and glass were found in this test to a depth of 43 inches beneath the surface. Because the water table was encountered at 43 inches an auger was used to reach 47 inches. No cultural materials were recovered from this stratum, a gray white tan sand.

Shovel test AP-3 was placed between #79 and #73 Hopping Avenue within the lawn of #73. No cultural materials were recovered from the 4 inch topsoil (Stratum I) or from the 7 inch layer of red clayey silt below (Stratum II). Several historic glass fragments, all of which could date as early as the 18th century (hurricane lamp glass), were recovered from Stratum III, a 4 inch thick layer of brown/orange sandy silt which appeared to be the transition between the silt above and the orange sand of Stratum IV below. No materials were recovered from the orange sand (15"-29") or from the gray-green sandy subsoil (29"-44"). Considering the possibility that a historic site related to Revolutionary War activity could be located on the bluff, we placed a second test (BF-3) in this area. A small amount of coal and glass were found in Stratum III but nothing to indicate the presence of a significant historic deposit. No materials were found either above or below this stratum.

A test (AP-4) was placed on the front lawn of #65 Hopping Avenue. No cultural materials were recovered from Stratum I, the sod (0-4.5") or from Stratum II, a mottled brown/orange sand and silt between 4.5 and 10 inches. Some cinder, shell and a worked black chert blocky fragment were found in Stratum III, a clean red sand between 10 and 31

inches. The prehistoric artifact was found at 13 inches below the surface in association with a concentration of shell. No cultural materials were found below 31 inches. Because of the prehistoric find a test, AP-5, was placed closer to Hopping Avenue within the curb strip in front of the property. As in other curb strip tests there was fill beneath the humus to a depth of 8 inches and 2 inches of coal and ash beneath that. The underlying stratum (10"-23.5"), described as a red sandy silt, was not identical to Stratum III in AP-4. A single piece of whiteware was recovered from this stratum. No material was found in the subsoil below, an orange mottled clay.

Another test, AP-6, was placed 60 feet to the south in the median. The stratigraphy consisted of 3 inches of topsoil, six inches of mottled fill, a 7 inch thick orange sand layer, and the mottled green red sandy clayey subsoil. No cultural materials were recovered beneath the topsoil.

Test AQ-6 was placed 42' south of AP-6. The sequence of strata was comparable to the tests on either side -- humus, fill, a third stratum of red/brown sand, a fourth of tan sand, and a gray green sandy subsoil. The only artifacts recovered were a piece of plastic from the fill and coal and cinder fragments from the red/brown sand. No cultural

materials were recovered at lower depths.

Beyond #65 Hopping Avenue the land on either side of the stream running down to the Kill is wooded. A local resident described this area as originally a gorge which had been filled, but the extent of the fill area was unclear from surface examination. A test, AR-5, was placed to the north of what would have been the stream bed. Below the humus were several layers of fill (Stratum II, dark gray silt; Stratum III, shell mixed with silt; Stratum IV, dark tan and yellow silt) containing high concentrations of shell, cinder, and coal. The subsoil, a reddish yellow sand with clay concretions, was encountered at 26 inches beneath the surface.

Shovel test AR-6 was placed in the curb strip north of AR-5 to determine whether the area closer to the road was less disturbed. This area proved to be disturbed to a depth of 45 inches beneath the surface. Beneath Stratum I (humus, 0-2"), was a 6 inch thick red and black fill, and 30 inches of yellow and tan sand mixed with coal and shell. Coal and shell were also recovered from Stratum IV, a dark gray sand.

BG-3, between AP-5 and AR-6, also revealed a sequence of filling episodes to a depth of 46" below the surface. 4

inches of red and black fill, a 3 inch layer of cinder, 17 inches of dark brown sand with glass, shell and coal, and 18 inches of light yellow silty sand with coal, shell, iron and brick.

Although the east side of Hopping Avenue appeared to be cut down for most of its distance, the lawn in front of house #28 followed what could have been a natural slope. A test, AR-4, was placed on this lawn. Beneath the 3" thick humus, Stratum II, 3"-11", consisted of dark gray silt with concentrations of coal, ceramics, and shell. This deposit is apparently fill. Stratum III, 11-32 inches, was a reddish-yellow sand with reddish clay concretions. Historic period ceramics and shell were also recovered from this stratum.

The remainder of Hopping Avenue north to Amboy Road is cut down between 3 and 4 feet below the grade of the lots on which houses are built. Many of the properties have steps from the lawn areas down to the pavement. No additional subsurface tests were placed within this section.

SECTION 16

BENTLEY STREET/ARTHUR KILL ROAD/MAIN STREET, ca. 2000'
[Appendix A, Sheets 40-42 - Bentley Street portion only]

INTRODUCTION

The portions of Bentley Street, Arthur Kill, and Main Street in the project area date to the heyday of Tottenville in the nineteenth century and are lined with houses, most of which appear to have been built at that time. Where there are not standing structures--portions of Bentley and Main Streets--there is heavy recent disturbance (bulldozed lots, areas used as garbage repositories). No subsurface tests were conducted in this section.

At the foot of Bentley Street rotting wooden pilings are visible next to the shore and out in the water (Appendix D, Photograph 10). The former probably relate to the Bentley Dock and the latter to the ferry slip. Pilings are also noticeable in the water at what used to be the foot of Main Street and was the location of Totten's Dock (Photograph 11). The two docks and the ferry slip are discussed in Chapter II of this report.

SECTION 17

ELLIS STREET, ca. 3300'
[Appendix A, Sheets 42-46]

INTRODUCTION

Section 17 follows Ellis Street from its intersection with Main Street to its intersection with Arthur Kill Road, a distance of approximately 3300 feet. At the start of this survey, one of the projected routes of construction for the Oakwood Beach Interceptor would have passed just north of a structure which stands on the west side of Main Street, opposite the western end of Ellis Street, crossing open water and connecting with the northern end of Bentley Street. The standing structure (Appendix D, Photograph 18), now undergoing renovation, was built in the late 19th century and was known as Streeter's Hotel. We had anticipated the need to test the hotel property to determine if any archaeological features or other deposits associated the hotel were still intact. However, Mr. Michael Renard, of the New York City Department of Environmental Protection informed us that this route is no longer under consideration (personal communication, May 15, 1984). Instead, the interceptor route will follow Arthur Kill Road and Main

Street, passing beneath the railroad tracks and then turn eastward onto Ellis Street. This alteration in the route precluded the necessity of testing the Streeter Hotel property.

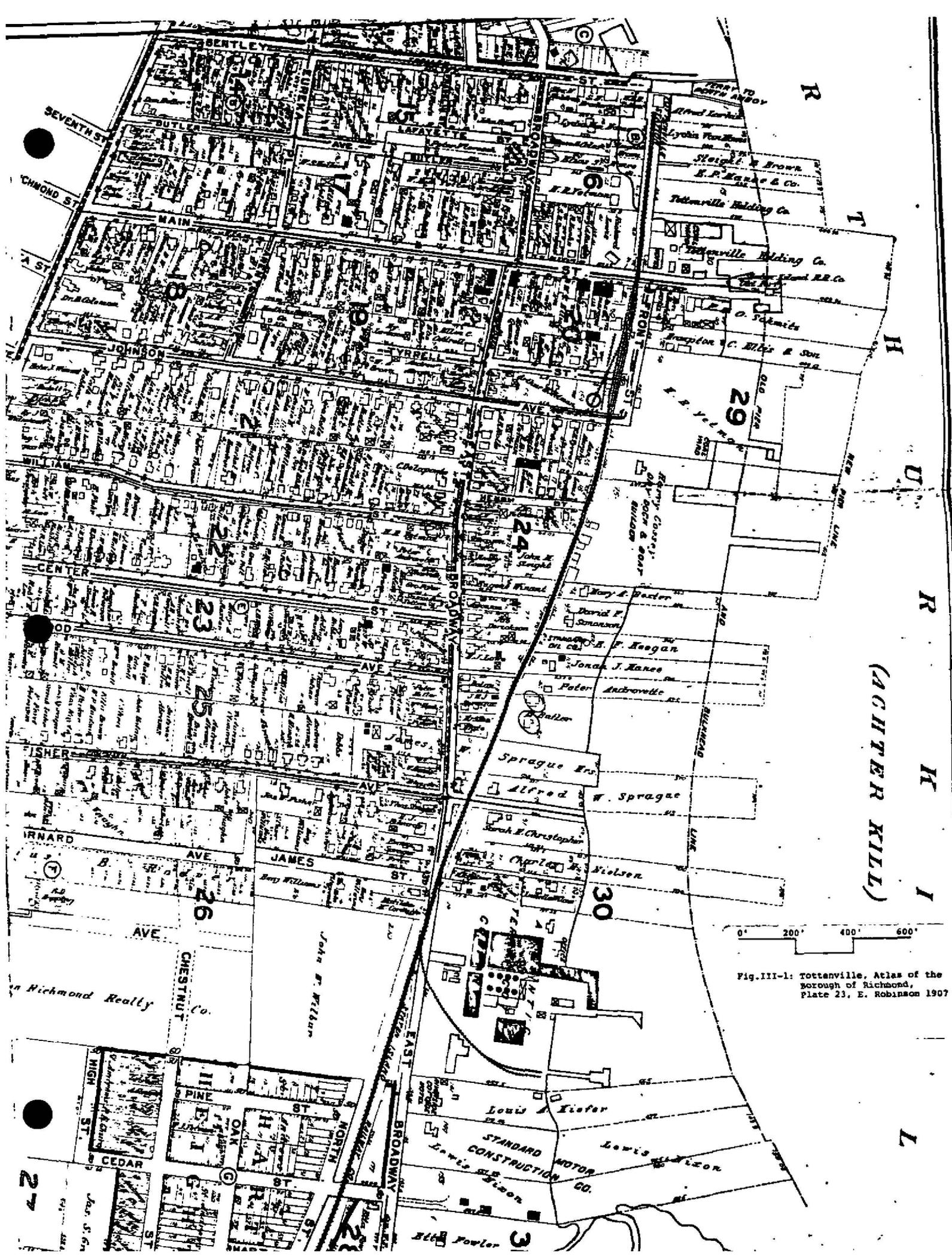
In general, the nature of the terrain in this low lying area, and the absence of any reported archaeological sites or find spots, suggests that it has a low potential for prehistoric occupation. However, examination of 19th and early 20th century maps indicates that Ellis Street contained a number of residential, commercial and industrial sites dating to the mid-late 19th century.

The 1874 Beers atlas (Figure II-3) shows a street named La Tourette Place at the current western end of Ellis Street. At this time the railroad terminated at the southeast corner of La Tourette Place and Main Street. La Tourette Place bordered the railroad tracks for some 1100 feet east of Main Street. The Atlas shows this street ending here. However, there must have been a lane running immediately north of the tracks east of this point to provide access to the houses shown between the tracks and the Arthur Kill. The 1853 Butler map (Figure II-2) shows structures in the area where La Tourette Place was later located. However, this map does not show a street here. It should be noted that the Butler

map was drawn prior to the construction of the railroad.

The 1907 Robinson atlas (Figure III-1) shows Front Street at the present location of Ellis Street between Main Street and Johnson Avenue. At this time the railroad had been extended westward with the terminal at its present Bentley Street location. As with the earlier maps, no street is shown east of the end of Front Street.

Our observations of the grade of Ellis Street and the adjacent land, as well as the analysis of previous borings contained in the Phase Ia report (Pickman and Yamin 1978) indicate that portions of Ellis Street are built on fill. The road is also clearly wider than the narrow lane which bordered the railroad tracks in the 19th century. Therefore, it is possible that the front portion of the foundations of buildings which stood north of Ellis Street in the late 19th and early 20th century are intact under the present pavement. However, the archaeological features (e.g., cisterns, privies, wells, and trash deposits) which would provide valuable archaeological data are most commonly found at the rear of structures. Therefore, any such deposits would probably not be adversely affected by the construction of the interceptor.



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Fig. III-1: Tottenville, Atlas of the Borough of Richmond, Plate 23, E. Robinson 1907

Our testing plan projected 15 tests for section 17, including testing of the Streeter Hotel property. Ten tests were actually conducted in this section.

RESULTS

As noted above, the construction alternative chosen by the City of New York would not impact the Streeter Hotel property. North of the hotel property there is a flat grassy area extending north to the banks of the Arthur Kill. Mr. Michael Renard of the New York City Department of Environmental Protection noted that this area could be used for the staging of equipment (personal communication, May 15, 1984). Therefore, we placed tests AW-2, AW-3 and AX-3 in this area. No structures are shown here on the 1853 Butler map or the 1874 Beers Atlas. A small outbuilding is shown just north of the line of Ellis Street on the 1887 Beers map. The 1907 Robinson Atlas shows three small structures just west of Main Street. Additional structures associated with a coal yard are shown further to the west.

Test AW-2 encountered large stones which prevented excavation below a depth of eight inches. This suggests that this test may be at the location of the outbuilding shown in this area on the 1887 and 1907 maps. Test AW-3 was

placed closer to the west side of Main Street to avoid the foundation. This test reached a depth of 46 inches. The results suggest that the soil to this depth is fill. The topmost strata, while containing a few sherds of 19th century ceramics, also contained modern artifacts. The soil between 12 and 25 inches contained a high density of shell. The stratum of tan mottled red sandy clay between 25 and 41 inches yielded no artifacts but shell continued to be recovered from this stratum. The red brown sand between 41 and 46 inches was tested with the post hole auger. Shell was also recovered from this stratum but the concentration was lower than in the overlying strata. Three fragments of bottle glass were recovered from this stratum. In addition, it yielded portions of a decorated kaolin pipe bowl. The design on the bowl included leaf elements along the bowl's mold seam and "stars" around the rim. The presence of this artifact and an examination of the 19th century maps suggest that this area may have been filled in the 19th century, before the outbuildings shown on the late 19th and early 20th century maps were constructed.

Test AX-3 was placed approximately 55 feet north of test AW-3. The foundation of an outbuilding, possibly one of those shown on the early 20th century maps, was observed approximately eight feet south of the test location. This

location also appears to have been filled. Unlike the fill in test AW-3, no identifiable 19th century artifacts were recovered from this test. In addition, a greater amount of coal was recovered here, possibly associated with the former use of the area as a coal yard. It is possible that this land was filled later than the land closer to the hotel.

Since only surface disturbance would occur in this area if it were to be used for equipment staging, we did not attempt to continue these tests to greater depths.

Visual inspection indicates that the land on the northeast corner of Ellis and Main Streets contains a building foundation. Several steps remain on the corner leading upward from the street level to a raised area which was apparently the ground level of the building (Photograph 19). All of the 19th century maps examined show a structure at this location. The 1887 Beers map and the 1907 Robinson Atlas show a hotel on this site. The former map indicates the proprietor as P.P. Grosgeon and the later map shows the owner as being Eva Beditel. It is likely that the presence of the railroad station and the ferry dock at the end of Main Street stimulated the development of the two hotels in this area in the late 19th century. The maps suggest that the "rear" of the hotel would have faced the Arthur Kill.

Visual observation indicates that the foundation extended to within several feet of the present location of the Ellis Street pavement.

We placed test AS-8 in a wooded area approximately 75' east of Main Street, somewhat east of the location of the foundation to determine whether there are any archaeological deposits in the area. Beneath the surface humus was a layer of mottled orange/black sandy silt containing whiteware and pearlware sherds in addition to window glass fragments, nails, brick fragments and shell, and a 4 1/2 inch long spike. Beneath this stratum, at a depth of five inches, was a one inch layer of ash and coal. This layer was underlain by a four inch thick layer of gray/orange/ brown mottled sandy silt. This stratum contained gray stoneware and whiteware sherds, window glass and nail fragments, a 7" spike and a cut mammal bone fragment, in addition to fragments of shell and coal. Below this stratum, we encountered a deposit of dark brown sandy silt between 10 and 15 inches which appears to contain an undisturbed deposit of trash associated with the 19th century occupation of the adjacent structure. The sample of this deposit from test AS-8 contains domestic refuse, including a high density of clam and oyster shell, five pieces of mammal bone, 12 ceramic sherds, including whiteware, pearlware and edgeware,

and three kaolin smoking pipe fragments. One pipe bowl fragment is decorated with raised lines running lengthwise. These lines could be associated with a more pronounced gadrooned decoration on the bowl similar to that on several of the 19th century bowls depicted by Noel Hume (1982:303, Figure 97). The sample also contains coal and cinder fragments, thirty-six nail fragments and 13 pieces of window glass.

The strata immediately overlying this deposit, including the layer of ash, perhaps derived from a later occupation of the structure. The soil immediately underlying the occupational deposit was somewhat less silty and lighter in color. It contained a few whiteware sherds and a substantial density of shell. This deposit probably represents the base of the occupational deposit and a transition to the underlying sterile sand.

Since this site would not be affected by the planned construction, no further tests were placed in this area.

For a short distance north of Ellis Street, Main Street is wider than it is closer to the Arthur Kill. North of this wider area there is a flat grassy strip immediately west of the building foundation mentioned above. We placed test AV-

3 in this area to determine whether there are any deposits here associated with the structure. At a depth of 15 inches, this test encountered a number of Belgian blocks, probably the former surface of Main Street, which was apparently wider in the past. We did not attempt to remove the blocks for deeper testing.

East of the location of test AS-8, there is another wooded lot where a foundation is visible approximately 15-20 feet north of Ellis Street. This cellar hole has a concrete slab floor. We did not attempt to test between the road and the cellar hole.

Test AU-6 was placed in a low lying area north of Ellis Street and east of the wooded area. Ellis Street appears to be built up on fill beginning at the approximate location of this test. The area tested appears to have been disturbed. The original topsoil was apparently stripped off and approximately 14 inches of soil deposited containing miscellaneous debris.

Beginning approximately 75 feet east of the location of test AU-6, the land bordering the north side of Ellis Street has been heavily disturbed and is now being used as a marina. Past the marina there are three structures, apparently

dating to the 19th century. The first is now being used as a commercial building. The ground between the road and the building appears to have been disturbed. The other two buildings are residential structures (Photographs 20 and 21). Past the easternmost of these two structures, is what appears to be a former tidal creek bed. The banks of this creek appear to have been raised with fill. Test AU-7 was placed in a wooded area east of the creek bed. This area also appears to have been filled to a depth of 32 inches. We could not test below this depth because of the presence of large rocks in the fill.

Immediately east of the wooded lot where test AU-6 was located there are a number of dilapidated buildings, probably dating to the 19th century. Ellis Street is constructed on fill above the grade of the adjacent land, which appears to have been disturbed.

On the southwest corner of Ellis Street and Weir Lane there is a burnt out house, probably dating to the 19th century. Ellis Street is built up approximately 3 feet above the grade of the land surrounding this structure, and the front of the house is only some 12-15 feet north of the road. As noted previously, examination of the nineteenth and early 20th century maps suggests that there was probably only a

narrow lane between the railroad tracks and the late 19th century buildings in this area. Thus the land underlying the Ellis Street fill may incorporate a portion of the front yard of this structure. We placed test AV-2 below the embankment between Ellis Street and the house to determine if there are any occupational deposits in this area. The test indicates the presence of approximately 11 inches of fill, perhaps associated with the embankment. Beneath this fill were strata of black, dark orange, and lighter orange sand. No artifacts were recovered from these strata.

East of Weir Lane there are two small houses. East of these houses is a fenced-in, overgrown lot to which we were unable to obtain access. An area of approximately 250 feet east of this lot has been graded and contains a commercial structure. Three small houses, probably also dating to the 20th century, stand east of the graded area. Test AV-1 was placed east of these houses in a scrub covered lot. Ellis Street is built up on fill to a height of more than 10 feet between this point and Arthur Kill Road. Test AV-1 contained five inches of miscellaneous fill which yielded only some modern glass from the surface humus. Below this fill, between five and nine inches, was a deposit of cinders, and beneath this stratum, between nine and 19 inches, the test contained a stratum of tan/orange sand

containing pockets of clay and black sand. This deposit is probably also fill. However, it contained 17 pearlware sherds, a fragment of clear bottle glass and a few clam shell fragments. This fill may have been deposited in the 19th century. We tested a stratum of light orange sand underlying this deposit until the water table was encountered at a depth of 49 inches. This culturally sterile deposit probably represents the subsoil at this location.

Test AW-1 was placed in an area of open woods east of the scrub covered lot. At the test location, 14 inches of fill has apparently been deposited above the sandy topsoil. The black/dark brown sandy topsoil stratum between 14 and 19 inches contained five whiteware sherds, two bottle glass fragments, one possible glass tableware fragment, and three pieces of fish and mammal bone. Seven nail fragments, four of them from cut nails, were also recovered. The 1874 Beers atlas and 1887 Beers map show houses in this general area, and the material recovered from the test may represent a domestic deposit from the late 19th century occupation. The light brown, yellow, and red sand layers below this stratum were tested to a depth of 50 inches. The water table was encountered at 39 inches. The yellow and red sand most likely represent the naturally occurring subsoil and the

light brown sand the transitional layer. The small pieces of glass, shell and fish bone recovered from the yellow sand may have derived from the overlying deposit. Since this location will not be directly affected by construction, we did not place further tests in the vicinity of test AW-1.

Tests AX-1 and AX-2 were placed in an area of scrub vegetation east of the wooded area. These tests contained strata of brown, tan and orange/tan sand beneath the surface humus. The deposits were tested to depths of 66 and 48 inches respectively. The stratigraphy corresponds to the usual topsoil, transitional and subsoil layers encountered in undisturbed and unfilled areas. The topsoil in AX-1 yielded three pearlware sherds, in addition to three bottle glass fragments, one window glass fragment and some coal and cinder. Several concrete fragments were also recovered. However, the topsoil in test AX-2 yielded only a few pieces of miscellaneous glass. The transitional and subsoil strata in these tests were culturally sterile.

SECTION 18

ARTHUR KILL ROAD - ELLIS STREET TO KREISCHER STREET, ca. 5000'
[Appendix A, Sheets 46-52]

INTRODUCTION

Section 18 extends along Arthur Kill Road for approximately 5000 feet from its intersection with Ellis Street to Kreischer Street. In the southernmost portion of this area, Arthur Kill road crosses a tidal creek and adjacent marsh. Six archaeological borings were placed in this area. The objective was primarily to determine if submerged prehistoric archaeological sites were present beneath the marsh deposits and overlying fill. In addition, our initial examination of the 19th century maps discussed elsewhere in this report suggested that Arthur Kill Road followed the same course during the 19th century as it does at present. We were therefore interested in determining whether the fill contained any concentrations of cultural materials from that period. Subsequent examination of the maps, however, indicated that in the 19th century Arthur Kill Road crossed the tidal cove west of the location of the present crossing.

North of the marsh area, the land rises in stages to the

highest point of land some 950 feet south of Kreisler Street. Since the high ground immediately north of the tidal cove may have been attractive to prehistoric populations, our testing plan called for tests at 100 foot intervals here. The remainder of this section was judged to be less sensitive, and the nominal testing interval in this area was 150 feet.

There are a substantial number of standing commercial and residential structures in this area, particularly south of the Outerbridge Crossing. While some of the residential structures are older, the recent commercial construction has resulted in substantial disturbance to the area.

The ground cover in many currently undeveloped areas consists of dense brambly woods. There are also some stands of Ehragmites in wetter areas. Our testing plan noted that high ground overlooking these wetter areas may have been attractive as prehistoric campsite locations.

A total of 20 tests was projected for this section, although the number required was difficult to predict in advance because of the presence of many disturbed areas. Nineteen tests were actually conducted. The test results confirm that much of this section has been heavily disturbed.

ARCHAEOLOGICAL BORINGS

Prior to the conduct of the archaeological borings in this section we examined the stratum descriptions and profile drawings of previous borings conducted here by the City of New York. These data suggested the presence of 6-9 feet of fill in most of the area. The base of the peat and organic silty marsh deposits underlying the fill appeared to slope downward gradually from south to north, and then dip rapidly in the vicinity of the tidal creek. This suggests that in prehistoric times, before the land surface was inundated by the rising sea level, the creek was probably a fresh water stream which ran in a channel later filled by the deposits of peat and organic silt which formed after the creek became tidal. The fresh water stream appears to have been somewhat wider than the present tidal creek.

Initially, four borings, #15-18, were placed in this area. The planned location of boring #17 turned out to be in the middle of the culvert which carries Arthur Kill Road over the creek. Since this area would probably have been covered with running fresh water even when the adjacent land was dryer, as noted above, we moved boring #17 further south, to the intersection of Arthur Kill Road and Nassau Place.

The borings indicated the presence of approximately 9 1/2 feet of fill at the location of boring #17, 8 feet in boring #15, and 6 1/2 feet in boring #18. The fill at the location of boring #16 appeared to be deeper, approximately 10 1/2 - 12 1/2 feet. Sampling problems in this test prevented a more precise determination of the depth of fill.

We attempted to sample the fill in three of the borings; #15, #16, and #18. In some cases the loose nature of the fill prevented sample recovery. In these cases, the casing was driven down and a screen placed to catch a sample of the material washed out of the casing.

The testing indicated that the fill does not contain any significant deposits of historic period artifacts. Only some shell fragments were noted in the fill in some of the samples.

In boring #15, approximately one foot of peat was noted between 8 and 9 feet below the Arthur Kill Road pavement. Below the peat, we sampled four feet of dark gray medium sand with organic fibers in the topmost 1-2 feet of the stratum. The gray sand became mottled with red sand between 13 and 14 feet. This dark gray sand probably represents the

pre-inundation ground surface. The presence of only a foot of peat suggests that this area was near the edge of the pre-filling marsh area, and that it was inundated in relatively late prehistoric times.

Boring #18 was located on the north side of the Creek. This boring indicated the presence of approximately 4-5 feet of peat beneath the fill, extending to approximately 11 1/2 - 12 1/2 feet beneath the present surface of Arthur Kill Road. The approximately one foot of gray sand underlying the peat probably represents the pre-inundation ground surface.

In boring #16, approximately 17 feet of gray organic silt and clay with lenses of gray sand were encountered to a depth of approximately 29 feet below the Arthur Kill Road pavement. The much greater depth of organic silt at this location is consistent with the records of the previously conducted borings which were discussed above and suggests that the fresh water stream channel extended to this area before the inundation of the land.

No cultural materials were recovered from either the peat and organic silt or the underlying gray sand in any of these borings. The presence of oyster shell was noted throughout the organic silt and clay in boring #16.

The stratigraphy noted in boring #17 varied from that in the borings discussed above. Only about three inches of gray clay at a depth of 9 1/2 feet were noted beneath the fill in this test. The thicker deposits of peat and organic silt present in the other tests were not encountered. This is in keeping with the location of boring #17 at the edge of the marsh area. Immediately beneath the clay we encountered approximately eight inches of dark gray sand containing a comparatively large quantity of oyster shell. However, this stratum also included pieces of gravel and larger cobbles which appeared to be similar to road gravels. It is thus possible that the sand underlying the clay was contaminated by material carried downward from the overlying fill by the sampler. However, because of the presence of substantial amounts of shell in the sample, it was subjected to flotation in the laboratory. The heavy fraction of the flotation sample contained a small, grit tempered, prehistoric ceramic sherd. (Appendix D, Photograph 39). The sherd measures approximately 4 mm x 6 mm and is 3 mm thick. Two possibilities were considered. Either the shell and ceramic sherd represent a prehistoric deposit or the sherd, the shell and the gravel were carried downward from the fill. If this material does indicate the presence of a prehistoric site, the formation of only three inches of clay

over it would suggest that the site was innundated fairly late in the prehistoric period. This would be consistant with the presence of ceramics at the site.

Because of the presence of shell and the recovery of the ceramic sherd from the boring #17 flotation sample, we decided to conduct additional borings at this location.

Boring #17a was placed one foot north of boring #17. At a depth of approximately 13 feet, a deposit of dark gray sand containing shell fragments was encountered immediately beneath the fill which was recorded as consisting of tan coarse sand containing road gravel. At this location, the dark gray sand was recorded as being six inches in thickness with the shell concentrated in the lower four inches. Unlike boring #17, no clay stratum was recorded overlying the dark gray sand with shell. However, problems were encountered in taking the sample containing the sand/shell stratum. The sampling tube was not completely full. Consequently, the six inch thickness of the stratum is an estimate based on the relative proportions of the various strata within this sample. The sampling problems could also account for the absence of the gray clay layer from the sampling tube. Underlying the dark gray sand were tan and red sands and clayey sands, probably glacially deposited,

extending to the bottom of the test at 20'.

Because of the sample recovery problems in boring #17a, we placed a second boring, #17b, one foot south of boring #17. This test contained similar stratigraphy to that encountered in boring #17. A deposit of gray organic clay underlay the fill deposits at a depth of approximately 11 feet. A four inch thick deposit of dark gray sand containing shell was encountered beneath the clay although the shell density in this sample was substantially lower than in the samples from borings #17 and #17a.

The thickness of the gray clay stratum overlying the sand/shell layer in boring #17b is uncertain. Approximately eight inches of the clay were recovered from the base of the first sample taken (7 1/2 - 9 1/2 feet). The top of the second sample (9 1/2 - 11 1/2 feet) contained approximately 3 inches of gray clay followed by about 10 inches of tan sand and another two inches of gray clay. It is possible that the first two of these layers represent material disturbed from the overlying strata as the sampler was reinserted into the hole. If this is so, the total thickness of the clay stratum would be approximately 10 inches.

The sand with shell was underlain in boring #17b by a two inch thick layer of wood. Beneath this were deposits of red sandy clay and tan, red, and rust colored sands. Again, the top portion of the sample below that containing the dark gray sand with shell appears to contain soils intrusive from above.

The samples of the dark gray sand with shell recovered from borings #17a and #17b were washed through 2mm and 500 micron mesh screens in the laboratory and the residue examined under a microscope for signs of human occupation. A small fish scale fragment was recovered from the boring #17b sample. This, as well as the oyster shell fragments from both samples could be deposited by either natural or human agency. In addition, the boring #17b sample contained a small sliver of gray chert. Again, this could be present due to natural or human activity.

The results of borings #17a and #17b suggest that the stratum of dark gray sand with shell is an in situ deposit underlying the deposit of gray organic clay. The absence of the latter stratum from boring #17a may be due to sampling problems. This stratigraphy suggests the deposition of the sand with shell prior to the inundation of the land by rising waters of the adjacent tidal creek. Since the shell

contained within the gray sand stratum in boring #17 appears to be in situ, the strong possibility is raised that the prehistoric ceramic sherd is also in situ.

Despite the ambiguities caused by sampling recovery problems, the results of the borings, including the presence of a prehistoric ceramic sherd in the small sample of the gray sand/shell stratum recovered from the three borings, suggests the possibility that an in situ prehistoric archaeological deposit is located here.

It should be noted that manual testing east and west of Arthur Kill Road was not possible since visual inspection indicated that amounts of fill comparable to those beneath Arthur Kill Road are present in these areas.

RESULTS - MANUAL TESTING

Three tests (AV-4, AX-4, and AW-4) were placed west of Arthur Kill Road between the marsh and Richmond Valley Road, atop the low bluffs which overlook the tidal creek and adjacent marsh. Between the locations of tests AV-4 and AX-4 there is an old railroad cut, shown on the 19th century maps. Indications of historic period occupation were noted on the surface south of the railroad cut. Several

foundation holes were noted here, one of which was slightly south of test AW-4. Between the location of test AX-4 and Richmond Valley Road, the west side of Arthur Kill Road has been bulldozed, with the earth piled up north of the test location. The east side of the road contains a modern house with a graded lawn. No tests were placed at this location. Tests AW-4 and AV-4, south of the railroad cut, contained 4 1/2 and 10 inches of fill, respectively, overlying a buried sandy topsoil layer. The subsoil in these tests was similar to the red clayey silt noted in tests in the eastern portion of the project area. A few historic period artifacts, including a whiteware sherd were recovered from the topsoil stratum in test AW-4. Test AV-4 was culturally sterile. Test AX-4, north of the railroad cut, yielded miscellaneous modern debris from the humus and topsoil. This test contained a stratum of reddish tan sand between the topsoil and the clayey silt. Both of these strata were culturally sterile.

Immediately north of Richmond Balley Road, Arthur Kill Road has been cut through higher ground, with the adjacent land approximately 2 1/2 - 3 feet above the road. In addition, the lot on the northeast corner of Richmond Balley Road and Arthur Kill Road has been bulldozed. No tests were placed in this area.

Arthur Kill Road continues in a cut northward to the location of #4914 Arthur Kill Road. This appears to be an old, probably 19th century, residential structure set well back from the road. We placed test AX-5 here in a grassy area approximately 6-7 feet east of Arthur Kill Road. The test area has apparently been disturbed. The soil underlying the sod was a brown silt mixed with tan sand and brown clay. This stratum, which continued to a depth of 32 inches, is probably fill. In addition to some shell, cinder and coal fragments, the only artifact recovered was a small ceramic sherd. This may be pearlware, raising the possibility of 19th century deposition of the fill. The stratum underlying the fill was tan sand, suggesting that the original topsoil had been graded off before the deposition of the overlying fill.

Two tests, AW-5 and AV-5, were placed in an area of higher ground on the west side of Arthur Kill Road north of the Staten Island Animal Hospital. The hospital grounds themselves have been heavily disturbed, with a paved parking lot adjacent to the hospital. The east side of the road in this area has been bulldozed and is now the location of a construction supply storage yard. Test AV-5 was culturally sterile, while a few pieces of glass and a few brick and

shell fragments were recovered from the humus and topsoil layers in test AW-5. These tests contained an orange sand stratum between the topsoil and the underlying clayey silt.

North of the location of test AV-5, most of the land bordering Arthur Kill Road for approximately 900 feet has been disturbed by the construction of commercial buildings and associated parking lots.

Test AW-6 was placed on the west side of Arthur Kill Road south of the area disturbed by the construction of the Outerbridge crossing. The test location is at the edge of a lower lying area with Ehragmites cover. The topsoil has been graded off at this location with sixteen inches of what is apparently fill overlying the red/orange clayey subsoil, which was tested to a depth of 42 inches. Bottle and window glass and a single blue-on-white porcelain sherd was recovered from the fill.

North of the Outerbridge crossing, the land west of Arthur Kill Road slopes downward to a wet marshy area. The east side of the road consists of higher ground. Test AV-6 was placed just south of the wet area, where the ground surface is approximately level with the grade of Arthur Kill Road. In general, Arthur Kill Road is cut down only about 1 1/2 -

2 feet on this side, while the cut on the east side is approximately four feet. Another test, AX-6, was placed on the west side of Arthur Kill Road between the road and the marsh. Both of these tests were culturally sterile. The location of test AV-6 appears to have been graded, with the subsoil immediately below the surface humus. The tan clayey silt with orange silt mottling which underlay the humus in test AX-6 is probably also subsoil although it could possibly be clean fill. In this test the water table was encountered immediately below the surface.

The Ehragmites vegetation on the west side of the Arthur Kill Road continues north to Veterans Road. A commercial structure, probably constructed on fill is located opposite Veterans Road. Most of the land on the east side of Arthur Kill Road in this area appears to have been bulldozed.

On the east side of Arthur Kill Road, just south of Veterans Road, there is a narrow strip of woods between the lawn of an older house at #4720 Arthur Kill Road and an area which has been bulldozed for the construction of a new house. Test AY-1, placed in the wooded strip, indicated that approximately 10 inches of sterile fill have been deposited over a stratum of dark gray silty sand. No cultural materials were recovered.

North of Veterans Road, the Phragmites area continues on the west side of Arthur Kill Road. The lot on the east side immediately north of Veterans Road has been bulldozed and is being used as an equipment storage area. North of this lot, a hill slopes upward to the north. Test AZ-1 was placed just north of the bulldozed area at the base of the slope. The test indicates that the topsoil has been graded off at this location. The underlying 3 1/2 inches of brown-red clayey silt yielded a few metal and coal fragments, most likely deposited when the area was graded.

North of the location of test AZ-1, Arthur Kill Road is cut through higher ground on either side. On the west side of the Road, past the house at #4675 Arthur Kill Road, the grade of the land west of the road embankment is only slightly above that of Arthur Kill Road. Test BA-1 was placed here. Except for some coal and glass from the topsoil, no artifacts were recovered.

The land rises steeply on the east side of Arthur Kill Road north of test AZ-1. The road is apparently cut through this higher ground. Opposite the location of the house at #4655 Arthur Kill Road, an old stream channel cuts through the higher ground. Even though Arthur Kill Road has been cut

through to a depth of approximately 10 feet in this area, we placed test AZ-2 on the higher ground south of the stream channel since this area may have been attractive to prehistoric peoples. Only one fragment of miscellaneous glass was recovered from the brown clayey topsoil.

North of the stream channel, the high ground falls abruptly and then rises again approximately 300 feet further to the north. Visual examination suggests that the lower area has been dug out of the higher ground. Test AZ-3, placed in this lower area, confirmed that it has been disturbed as the red clayey subsoil directly underlay the surface humus.

North of the location of test BA-1, the grade of the land for approximately 175 feet west of Arthur Kill Road is approximately level with the road before falling steeply to the Arthur Kill. This area is covered with dense bramble. Tests AY-2 and AY-3 were placed in this bluff top area. In test AY-3, approximately 11 inches of sandy fill overlay what appeared to be the original topsoil. Except for a whiteware sherd and a bottle glass fragment from the surface humus, no cultural materials were recovered from either the fill or the underlying topsoil and subsoil strata. At the location of tests AY-2, the topsoil had apparently been graded off. No artifacts were recovered. This test was

excavated using the post hole auger since a dense root tangle prevented the use of the shovel.

The grade on the east side of Arthur Kill Road north of the dug out area is approximately 8 feet above the road grade, sloping downward gradually to the north. The ground cover consists of dense brambly woods. Two tests, BA-2 and AZ-4, were placed where the land is approximately 2-3 feet above the road grade. Test AZ-4 yielded only a single whiteware sherd from the topsoil and test BA-2 yielded only a fragment of miscellaneous glass from immediately below the surface humus. It should be noted that these tests contained a thick topsoil layer (27-34 inches).

Approximately 100-125 feet past the location of test AZ-4, a deep cut extends westward from Arthur Kill Road. This may be a natural stream channel, but it is more likely an old railroad cut leading to the Kreisler Brick Works site (see Section 19). A railroad spur is shown in this area on the 19th and early 20th century maps. Test AB-3 was placed north of the cut. No cultural materials were recovered from this test.

The ground on the west side of Arthur Kill Road slopes downward from the location of test BA-3 to Kreisler Street. Tests BA-4, placed in this area, is discussed in Section 19.

On the east side of Arthur Kill Road, the land slopes upward to a hill on which the Kreisler house (see Photograph 23) stands. Arthur Kill Road is cut through the side of the hill with the Kreisler house property well above the road grade. Test AZ-4 was placed at the edge of brambly woods on the southern edge of the Kreisler estate. The land here is 3-4 feet above the grade of Arthur Kill Road. Except for shell and brick fragments recovered from the topsoil, the test was culturally sterile.

SECTION 19

KREISCHER STREET, ca. 300'
[Appendix A, Sheet 52 - Portion of Section]

INTRODUCTION

Section 19 extends from Arthur Kill Road to the Kreischerville pumping station site and includes the latter. At the beginning of this project we were informed that the pumping station site under consideration was at the northeast corner of Kreischer and Androvette Streets. Our testing plan noted the presence of a 19th century structure at this site.

During the last week of our field testing program, we were informed orally by representatives of Woodward-Clyde Consultants, Inc., that the pumping station location had been changed, and that it would now be located approximately at station 3+00 (approximately 300 feet west of Arthur Kill Road) on the south side of Kreischer Street.

Because it is generally low-lying area and lacks reported sites, we did not consider this area to be sensitive for prehistoric occupation. However, the location of the

pumping station as now planned would place it at or near the site of two 19th and early 20th century brick works. As noted in the phase Ia report (Pickman and Yamin 1978), the Kreisler Brick Works were established in 1854. The factory is not shown on the 1853 Butler map (Figure II-2). The 1874 Beers atlas (Figure II-9) shows the large main brick factory building west of Arthur Kill Road, with a railroad spur leading to it. A smaller structure is shown north of the road which leads westward to the factory from Arthur Kill Road. Comparison of this map with modern maps indicates that this road does not run in the same course as the present Kreisler Street. This road probably is the dirt road which now joins Kreisler Street just west of Arthur Kill Road. The 1907 Robinson Atlas (Figure II-10) shows Kreisler Street in its present configuration, with the Kreisler Brick Manufacturing plant approximately 200' to the south. By this time, another brick works had been constructed north of the original Kreisler factory, between the latter structure and the present location of Kreisler Street. This later building may incorporate the building shown north of the Kreisler plant on the 1874 atlas. This second factory is shown as the New York Anderson Pressed Brick Company. The 1887 Beers map (Figure II-6) indicates the presence of the Anderson factory, although both structures are not clearly shown due to the scale of this

map. It is therefore likely that the second factory was constructed between 1874 and 1887. Both factories are still shown on the 1913 Borough of Richmond topographic sheet (Figure III-2). Pedestrian reconnaissance in this area indicates the presence of extensive remains of both of these factory complexes throughout the brambly wooded area southwest of Kreisler Street (Appendix D, Photograph 36).

The 1907 and 1913 maps clearly show a slip immediately north of the Anderson factory which may have been used to load the output of both works on ships or barges. Pilings from this slip are visible around the periphery of the inlet which is still present in this area.

We attempted to place tests as close as possible to the planned site of pumping station construction. Because of our testing schedule, we located our tests based on the oral description of the site location. The tests were conducted on May 16, 1984. After these tests were completed we were provided with a drawing which showed the pumping station site to be slightly north of the location of our shovel tests.

At present, the area tested in Section 19 is wooded with dense bramble in most portions. Our testing plan called for

the placement of four tests in this section. Seven tests were actually conducted.

RESULTS

Three tests, BA-4, AZ-6, and AY-4, were placed west of Arthur Kill Road and south of Kreischer Street. In all three of these tests, there was an ashy layer underlying the surface humus and sandy topsoil. This deposit was more greasy and clayey in texture in test BA-4 and AZ-6 and sandier in test AY-4. In the latter test, the deposit contained slag. The ashy stratum was underlain by a deposit of reddish clay in test AY-4, and a deposit of green/gray clay with red inclusions in test AZ-6. In test BA-4, red clay was noted as being included in the lower portion of the deposit of greasy ash. These deposits may be associated with the 19th and early 20th century industrial activity in this area. A deposit of brown sand, most likely representing the ground surface prior to the industrial activity was encountered in tests AZ-6 and AY-4 at depths of 28" and 12" beneath the surface. In test BA-4, there was a deposit of slag beneath the ash and red clay which continued below the water table at 25 inches. The only artifacts recovered beneath the surface humus and topsoil in these tests were fragments of window glass and one clear bottle glass

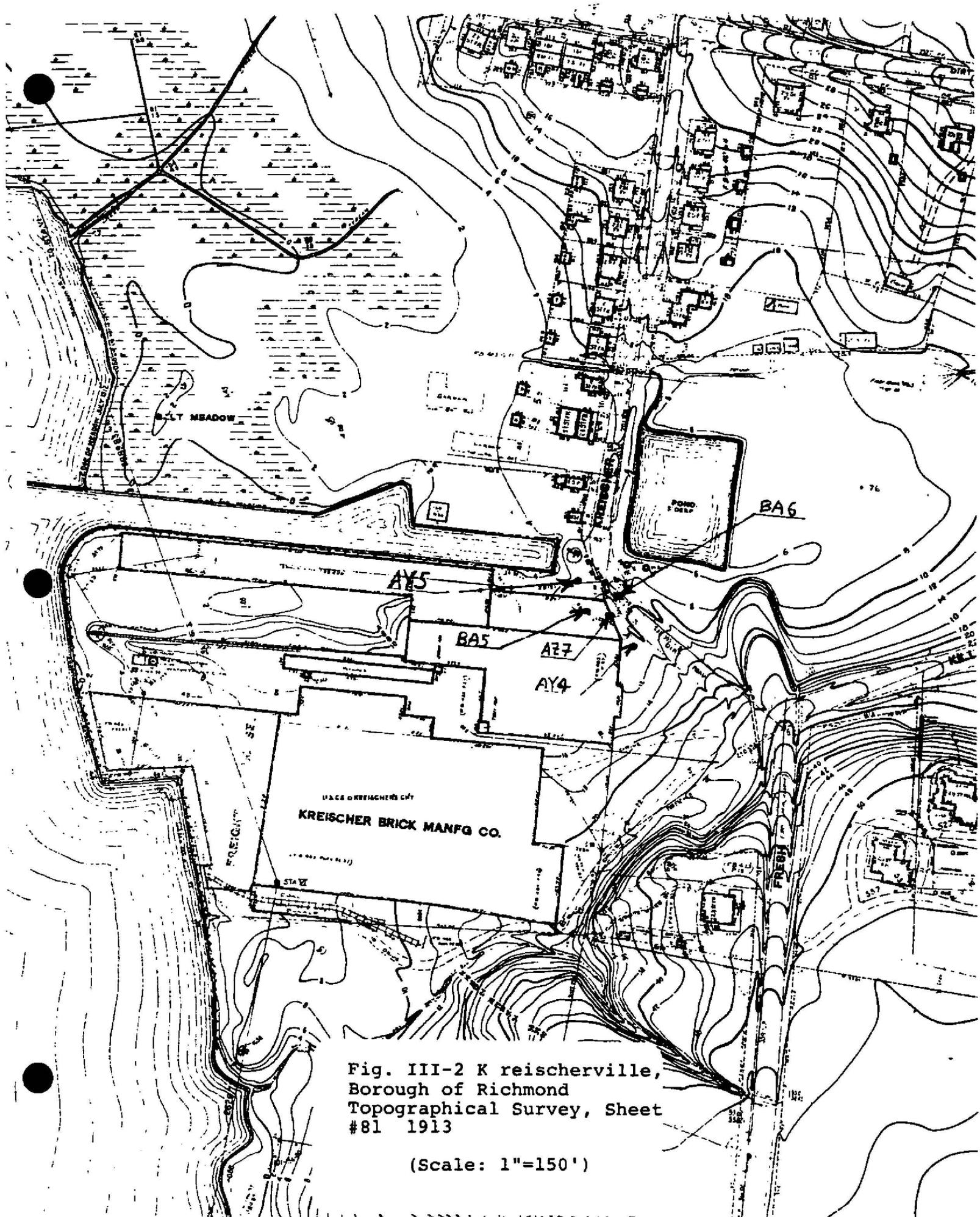


Fig. III-2 K reischerville,
Borough of Richmond
Topographical Survey, Sheet
#81 1913

(Scale: 1"=150')

fragment from the white "ashy" layer in test AY-4.

Five tests were placed just east of the planned site of pumping station construction. Of the tests in this area, only test BA-5 contained the stratum of white greasy/sandy ash noted above. No artifacts were recovered from this deposit in test BA-5. The brown sand, black clay and reddish brown clayey silt underlying this deposit in test BA-5 are interpreted as the "natural" stratigraphy prior to the 19th century industrial activity, with the reddish brown clayey silt representing the subsoil in this area. No artifacts were recovered from these strata.

The location of test BA-6, just south of Kreischer Street, appears to have been filled, perhaps in conjunction with the construction or repair of the road. The brown sand stratum encountered at a depth of 31" may represent the prefilling ground surface. The gray/blue clay layer immediately above the sand may have been naturally deposited or may have been deposited by the 19th century industrial activity. No artifacts were recovered from these strata.

The results of test AZ-7 are of particular interest since this test exposed the side of a wall which began approximately six inches below the surface. The wall is

constructed of white glazed bricks. The soil next to the wall is apparently fill, which was either placed inside the foundation subsequent to structural demolition or which represents a construction trench for the wall. The fill encountered in the test consisted mainly of culturally sterile brown sand, but also included a lens of clayier soil containing brick chips. A layer of gravelly fill was encountered next to the topmost five inches of the wall and also overlying it. It should be noted that the location of test AZ-7 is about 25' northwest of a foundation which is visible amongst the dense brambly woods.

We have indicated the approximate location of our tests on the 1913 Borough of Richmond topographic sheet (Figure III-2). This suggests that the wall encountered in test AZ-7 may be that of a northern "annex" to the Anderson brick works structure which is indicated on the map. The visible foundation located southeast of test AZ-7 may be that of the main portion of the building. An alternate explanation would be that the wall is part of an outbuilding associated with the brick works.

One additional test, AY-5, was placed in the pumping station area. The test encountered what appears to be fill to a depth of 21 inches, where the presence of a large rock

prevented further excavation. The water table was encountered at 12" below the surface in this test.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Documentary research indicates that there was a widespread prehistoric occupation of the portion of Staten Island to be affected by the proposed Oakwood Beach Water Pollution Control Project. The results of the field tests reported here confirm this. Of the 377 manual tests described in this report, 58 yielded evidence of prehistoric activity. In most cases, this evidence was in the form of waste flakes and chips from the manufacture of stone tools by prehistoric peoples. In nearly all cases, additional tests were placed in the immediate vicinity of tests where prehistoric artifacts were recovered. Analysis of data suggests that in some cases, the finds represent isolated remnants of a general scatter of flakes deposited through the woodlands during thousands of years of prehistoric occupation. In other instances, the flakes appear to derive from deposits of fill, rather than representing a primary archaeological deposition. However, in twelve areas the patterning of finds indicates the possible presence of prehistoric archaeological sites immediately adjacent to the area to be directly affected by construction. These areas are located along Satterlee Street (three locations), Hopping Avenue,

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

Arbutus Avenue (two locations), Holten Avenue, Hylan Boulevard west of Holdridge Avenue, Hylan Boulevard east of Huguenot Avenue, Hylan Boulevard east of Page Avenue, Hylan Boulevard west of Bedell Avenue, and Hylan Boulevard west of Sharrott Avenue. In addition, the results of archaeological borings on Arthur Kill Road immediately north of Nassau Place suggest the possibility that a prehistoric site is present in the immediate vicinity.

The above areas appear to have possible archaeological integrity and to possibly retain information important to the study of prehistoric tool technologies, settlement patterns, subsistence systems, and/or other data relevant to a study of prehistory. Therefore, they may be eligible for the National Register of Historic Places under criterion 36 CFR 60.4 (d), and thus under Section 110 (a) (2) of the National Historic Preservation Act. We recommend that Phase II archaeological investigations be conducted in the above areas.

It should be noted that there is a rapidly increasing rate of development in this portion of Staten Island. It is likely that the opportunities to study the patterns of aboriginal activity in this portion of Staten Island will be increasingly diminished with time. Visual observations and

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

discussions with local residents indicate that the areas along Hylan Boulevard mentioned above near Holdridge, Page and Bedell Avenues are threatened in the immediate future. Possible archaeological sites in the project area should be treated with caution in light of these considerations.

Our study of historic period maps indicates that no historic period deposits of possible archaeological significance would be found beneath the roadways where interceptor construction would take place. However, the construction of the Kreisler Street pumping station would occur in the immediate vicinity of a 19th-early 20th-century brick works. Shovel testing indicated the presence of buried architecture in addition to the building foundations visible on the surface. A Phase II archaeological investigation is recommended in this area.

A possibly undisturbed deposit of artifacts associated with the 19th century occupation of the area was encountered north of Ellis Street. This location would not be directly impacted by the project. However, a Phase II archaeological evaluation is recommended prior to any use of this area for equipment staging or other project activities.

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

The following discussion reviews our findings and recommendations for each section of the project area. The areas in which Phase II archaeological investigations are recommended are indicated on Figure IV-1.

SECTION I

HYLAN BOULEVARD - RICHMOND AVENUE TO LIPSETT AVENUE

Two tests (E-2 and E-3) located on the south side of Hylan Boulevard approximately 45' and 60' west of Holdridge Avenue (Appendix D, Photograph 24), yielded a single flake each. Two additional tests placed approximately 10' from the find spots yielded no prehistoric artifacts.

As noted in our testing plan, the 1913 topographic sheet shows a stream located at the present location of Holdridge Avenue. The flakes recovered may be due to the aboriginal utilization of the stream and a more substantial concentration of archaeological material could be present in the area. Furthermore, Hylan Boulevard is constructed on approximately 3'-4' of fill in this area, with the find spots approximately 10'-15' south of the fill embankment. Archaeological material could be preserved beneath the fill. We recommend that a Phase II archaeological examination be

conducted in this area.

SECTION 2
LIPSETT AVENUE

A total of three flakes were recovered from two tests (E-5 and H-1) located approximately 45'-60' east of Lipsett Avenue at Oceanview Drive. However, two of the three flakes derived from disturbed contexts. In addition, two tests (H-2 and D-8) located approximately 90' northwest and southwest of test E-5, did not yield indications of prehistoric activity.

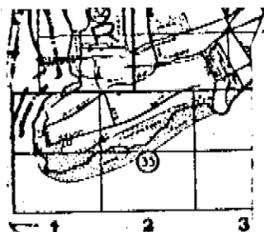
The 1913 topographic sheet and visual examination of the area indicate the presence of a knoll approximately 150'-200' northeast of the find spots. The presence of the flakes as well as the shell noted on a house lawn on the northeast corner of Lipsett Avenue and Oceanview Drive may be due to slope wash from a possible prehistoric site located on this knoll (approximately 200' east of the area to be affected by construction). The flakes could also have been deposited during grading of the area. No further archaeological investigations are recommended.



- Areas of Recommended Phase II Archaeological Investigations
- ⊙ Structures Listed on the National Register of Historic Places
- ⊖ Standing Structures Recommended for Further Evaluation

Scale: 2000'

Fig. IV-1: Project Area Map showing resources recommended for further investigation



KILL

ARTHUR

ARTHUR

RARITAN

PRINCE'S BAY

MOUNT LORETTO

CONFERENCE HOUSE PARK

ISLAND OF MIDDON

GEORGETOWN PARK

CIRCLE PARK

POND

PS 5

PS 6

PS 7

PS 8

PS 9

PS 10

PS 11

PS 12

PS 13

PS 14

PS 15

PS 16

PS 17

PS 18

PS 19

PS 20

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CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

SECTION 3

HYLAN BOULEVARD - LIPSETT AVENUE TO ARBUTUS AVENUE

No finds of prehistoric artifacts were made in this section and no further archaeological investigations are recommended.

SECTION 4

POILLON AVENUE

No finds of prehistoric artifacts were made in this section and no further archaeological investigations are recommended.

SECTION 5

ARBUTUS AVENUE

Arbutus Avenue runs along the top of the bluffs overlooking Arbutus Lake (a former tidal cove). This area was considered to be archaeologically sensitive, and six of the 20 tests placed in this section yielded prehistoric material. Four of the tests yielded a single flake, with one test (L-1) yielding three flakes, and another (N-1) yielding two. The patterning of finds indicates aboriginal

utilizations of the land bordering the edge of the bluffs.

The flake recovered from one test (L-2) was probably deposited by stream wash. The other finds were located on two "promontories" which extend eastward from Arbutus Avenue toward Arbutus Lake. One of these promontories is located approximately 700'-900' south of Hylan Boulevard (Photograph 25). Three tests (L-1, J-2, K-3), located approximately 80'-110' west of Arbutus Avenue, yielded a total of five flakes. All of the finds derived from the topsoil. The cluster of finds suggests the possibility of a camp site in this vicinity. Tests placed closer to Arbutus Avenue in this area (J-1, BJ-7, K-4), encountered disturbed stratigraphy.

The second promontory is located approximately 1400'-1700' south of Hylan Boulevard. The two find spots in this area (J-4, N-1) are approximately 200' apart and 130' and 55' east of Arbutus Avenue, respectively. Two tests (BF-1, M-1) placed closer to Arbutus Avenue yielded no prehistoric artifacts although the latter test did yield a quartz chip which was probably naturally flaked.

Immediately south of both "promontories," Arbutus Avenue runs immediately along the edge of the bluff for approximately 100'-125'. The artifact depositions could

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

continue along the bluff edge south of the promontories at the present location of Arbutus Avenue. Although construction of the roadway may have disturbed the topsoil layer, archaeological features could remain undisturbed beneath Arbutus Avenue.

The results of our testing indicate that further study of the Arbutus Avenue bluff area could produce data about the aboriginal utilization of bluff edge and tidal cove resources. This is of particular interest since little is known about the utilization of these resources, or about overall aboriginal subsistence strategies on Staten Island.

We recommend that Phase II archaeological investigations be conducted in the areas of the two promontories, including the land immediately south of each where Arbutus Avenue immediately borders the bluff edge.

SECTION 6

HYLAN BOULEVARD - ARBUTUS AVENUE TO HOLTEN AVENUE

A total of three flakes and a core fragment were recovered from three tests (N-5, BK-1, BK-2) placed within a fifteen foot radius on the south side of Hylan Boulevard, approximately 100' east of Huguenot Avenue and 30'-40' south

of the Hylan Boulevard curb. The tests were located in an area of open undulating woodlands. The ground elevation is approximately the same as or slightly above the elevation of the Hylan Boulevard pavement. All of the finds derived from the topsoil layer. Although the construction of Hylan Boulevard may have removed this stratum, archaeological features could be preserved beneath the pavement. We recommend that a Phase II archaeological investigation be conducted in this area.

One flake was recovered from each of two tests (0-3, 0-5) located north of Hylan Boulevard and west of Arbutus Avenue. The two tests were located 300' apart and 100'-200' north of Hylan Boulevard. Tests in this area placed between the find spots and closer to Hylan Boulevard yielded no indication of prehistoric activity. No further archaeological investigation is recommended in this area.

SECTION 7

HOLTEN AVENUE - JOHNSTON TERRACE - BAYVIEW AVENUE

Holten Avenue, for much of its length borders the east bank of Wolfe's Pond, a former tidal cove. The area was considered to be archaeologically sensitive, and 7 of the 22

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

tests in this section yielded flakes. Each test yielded one flake, except for test P-5 which yielded two.

Three tests (P-2, BJ-2, and BJ-6) placed within a 7' radius yielded one flake each (Photograph 26). The finds in all three tests were recovered from the topsoil stratum. The location of these finds is approximately 20'-30' from the edge of a bluff overlooking the head of the former tidal cove. The location of the other finds in this section are at lower elevations adjacent to the water.

The finds in tests P-2, BJ-2 and BJ-6 could indicate the presence of a camp site in this area. These tests were located approximately 850' south of Hylan Boulevard and 50' east of Holten Avenue. Test BJ-7, placed approximately 15' closer to Holten Avenue than the find spots, confirmed our visual impression that the area between the find spots and Holten Avenue has been disturbed, the topsoil having been graded off. It is possible that the site extends beyond the disturbed area to the location of Holten Avenue. While road construction may have removed the topsoil beneath the Holten Avenue pavement, archaeological features could be preserved. We recommend that a Phase II archaeological investigation be conducted in this area.

It should be noted that, in common with the Arbutus Avenue area, the area discussed above is located near the edge of bluffs overlooking a former tidal cove. However, the find spots further to the south (P-5, Q-3, Q-4 and R-7) are only slightly above the elevation of the water, a situation dissimilar to that at Arbutus Avenue. Tests placed in the immediate area of each of the latter find spots yielded no prehistoric artifacts. This suggests a less intensive utilization of these lower areas than the bluff tops. No further archaeological investigations are recommended in these areas.

SECTION 8

HYLAN BOULEVARD - HOLTEN AVENUE TO SHARROTT AVENUE

Test U-2, on the north side of Hylan Boulevard between Holten and Seguine Avenues, yielded one flake. However, tests T-2 and V-2, placed 150' east and west of the test location, yielded no indication of prehistoric activity. An additional test (BJ-1) placed in the immediate vicinity of test U-2, 5 1/2' closer to Hylan Boulevard, also yielded no indication of prehistoric activity. The flake from test U-2 probably is representative of the general scatter in this portion of Staten Island. It could also have been deposited

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

by slope wash from the higher ground to the north. No further archaeological investigations are recommended in this area.

A flake was recovered from test V-7, on the south side of Hylan Boulevard between Bayview and Woodvale Avenues. Two additional tests (BH-4 and BH-5) placed within fifteen feet of test V-7 yielded no indication of prehistoric activity. The flake recovered apparently represents a stray find from the general scatter in this portion of Staten Island. No further archaeological investigations are recommended in this area.

A total of nine tests were placed in a large open field on the south side of Hylan Boulevard between Woodvale and Sharrott Avenue. The test results indicate that this field has been heavily disturbed by grading. The topsoil and transitional layers have been graded off in most areas, while portions of these strata remain in others. A single flake was recovered from two of the nine tests (X-3 and W-5). Because of the amount of disturbance and because Hylan Boulevard is cut down to a depth of 3'-4' in this area, no further archaeological investigation is recommended.

SECTION 9

HYLAN BOULEVARD - SHARROTT AVENUE TO RICHARD AVENUE

A total of five flakes and blocky fragments, in addition to a small broken scraper were recovered from two tests (BB-4, BK-3) located on the south side of Hylan Boulevard approximately 1320' west of Sharrott Avenue. The find spots are near the base of a knoll which rises to the west (Photograph 28). However, visual observation indicates that the road north of the find spots may be built up slightly on fill. The finds were recovered from the topsoil. The underlying stratigraphy suggests that the area may have been wetter in the past, and the finds may have been deposited as a result of slope wash from a site on the knoll.

A third test (BD-2) west of the knoll (approximately 600 west of the above mentioned find spots) yielded an additional flake from a fill deposit. However, the presence of this flake supports the inference of a site in the area, perhaps located atop the knoll.

While the materials at the find spots may have been deposited by slope wash, it is also possible that a portion of the site extended to the location of Hylan Boulevard. While the maximum depth of cut through the center of the

knoll (approximately 3'-4') would probably have removed all traces of any but the deepest features, truncated features could be present on the sides of the knoll or at its base.

We recommend that a Phase II archaeological investigation be conducted in this area.

SECTION 10

HYLAN BOULEVARD - RICHARD AVENUE TO LORETTO STREET

PAGE AVENUE AREA

A total of 18 flakes, including three tool resharpening flakes, in addition to a fragment of miscellaneous ground stone, were recovered from three tests (AA-4, BF-6, BE-9) located within a 22' radius, 80'-115' east of Page Avenue and 45'-75' north of Hylan Boulevard (Photograph 29). Although three other tests 20'-30' from the find spots yielded no indications of prehistoric activity, the number of flakes recovered (18) plus the recovery of a ground stone fragment suggests the presence of at least a camp site in this vicinity. The description given by Anderson (quoted in Pickman and Yamin 1978:II-22) of the prehistoric occupation in the Page Avenue area as "a series of sites scattered throughout the woodlands" is not inconsistent with the presence of this type of site.

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

Thirteen of the nineteen prehistoric artifacts were recovered from the orange sand stratum. As discussed elsewhere in this report, this stratum was present in several segments of the western portion of the project area, and artifacts were recovered from this stratum at several locations. Artifacts have also been recovered from this stratum in other parts of Staten Island.

Six of the flakes were recovered from a black sand stratum which overlay the orange sand. This does not appear to be the original topsoil. This may have been removed and the black sand deposited during the 19th - early 20th century occupation of a house in the immediate vicinity which is shown on the historic period maps. The flakes from the black sand may have originally been located at the top of the orange sand and subsequently incorporated into the black sand as this stratum was formed.

Measurements with a level line indicate that the elevation of the Hylan Boulevard pavement is approximately two feet below the ground elevation at the location of the tests in which the finds were made. The orange sand stratum began approximately 9"-16" below the surface of these tests, some 8"-15" above the road surface. The excavation procedures

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

used in the shovel tests did not include the stratigraphic control necessary to determine the position of the prehistoric finds in the orange sand. However, with this stratum being more than 3' thick, as noted in some of the tests in this area, there is a possibility that the artifact bearing stratum is still intact beneath Hylan Boulevard. Furthermore, Hylan Boulevard probably was not cut down as much as the 2' difference in elevation would suggest. Rather the ground probably originally sloped downward from the find spots toward Hylan Boulevard. The area between Hylan Boulevard and the find spots has been filled. The results of test AB-3 and the level line measurements indicate that the surface in this area prior to the filling was lower than that at the find spots and was probably at the approximate elevation of the present road surface.

We recommend that a Phase II archaeological investigation be conducted east of Page Avenue.

BEDELL - JOLINE AVENUE AREA

A single flake was recovered from each of three tests (AC-4, AD-4 and BH-2) located on the south side of Hylan Boulevard approximately 115'-180' west of Bedell Avenue and approximately 25' south of the Hylan Boulevard pavement

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

(Photograph 30). In one test the flake was recovered from the topsoil and in the other two from the underlying orange sand. Three other tests placed within 15'-25' of these find spots yielded no indication of prehistoric activity. However, the reports of finds of prehistoric artifacts north of Hylan Boulevard in this area and the observed disturbance from amateur archaeological excavations north of the Boulevard suggest the presence of an archaeological site in this area. The elevation of the Hylan Boulevard pavement is only slightly above that of the ground south of the road. Therefore, artifact bearing strata in the orange sand, as well as archaeological features could be intact beneath the Hylan Boulevard pavement. We recommend that a Phase II archaeological investigation be conducted in this area.

SECTION 11

HYLAN BOULEVARD - LORETTO STREET TO SATTERLEE STREET

One test in this section (AL-1), located south of Hylan Boulevard approximately 15' west of the line of Craig Avenue yielded a single flake. However, the flake was not *in situ*. It was recovered from a stratum apparently deposited as a result of grading in this area. No further archaeological investigations are recommended in this section.

SECTION 12
CARTERET STREET

No finds of prehistoric artifacts were made in this section and no further archaeological investigations are recommended.

SECTION 13
SATTERLEE STREET/CRAIG AVENUE

Because this section is located in the vicinity of known archaeological sites, including the Ward's Point Archaeological area, and is situated atop the bluffs bordering the Arthur Kill, it was considered to be archaeologically sensitive. Fourteen of the 26 tests placed along Satterlee Street yielded evidence of prehistoric occupation. The patterning of the finds suggests three loci of prehistoric activity immediately west of Satterlee Street. It is possible, however, that further investigation would reveal that at least the two southernmost of these loci are actually part of one continuous archaeological site. In the following discussion, the three areas are discussed separately.

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

It should be noted that the southernmost two areas are within the currently defined boundaries of the Ward's Point Archaeological Area, which has been determined eligible for listing on the National Register of Historic Places. The northernmost area is north of the Ward's Point Archaeological Area.

AREA #1 - CONFERENCE HOUSE LAWN

The southernmost of the three areas is located approximately 250'-300' north of Hylan Boulevard (Photograph 32). Two tests (AF-4 and AH-2) placed on either side of the Conference House driveway yielded a total of 35 flakes, two of which have been utilized. The results of the test suggest the possibility that the materials recovered derived from two separate occupations of the area.

Eighteen of the flakes were recovered from a 9"-11" thick layer of dark brown soil containing a high density of shell, as well as the underlying transitional layer. During our reconnaissance of the area we observed this shell layer on other portions of the lawn located east and south of the Conference House. Historic period artifacts and some mammal and fish bone were also recovered from this stratum in our tests.

Seventeen of the flakes recovered from the two tests originated in the underlying orange sand. This material could have been deposited during an earlier occupation of the site.

Two tests placed between the Conference House lawn and the Satterlee Street pavement suggest that the shell layer and some of the orange sand has been removed from this area. Measurements taken using a level line indicate that the surface of this roadside area is approximately 30" below the surface elevation of the area where tests AF-4 and AH-2 were placed. However, Satterlee Street is a "high crown" road and the elevation of the pavement in the center of the street is only some 20" below the ground elevation of the two tests, and some 10" higher than the roadside elevation.

The orange sand extended from 21"-49" below the surface of test AF-4, and from 9"-38" in test AH-2. This suggests that portions of the archaeological material in at least this lower stratum may remain undisturbed beneath the road surface in addition to archaeological features originating in either of the strata.

AREA #2 - BILLOP RIDGE

Four tests (AJ-6, BE-2, BG-1, BG-2) placed in the Billop Ridge area, approximately 100'-150' north of area #1, and 75'-115' west of Satterlee Street, yielded a total of 12 flakes, a core fragment and a small fragment of fire-cracked ground stone. Jacobson reports the presence of known prehistoric burials on Billop Ridge. An examination of the map published by Jacobson (1980), included in this report as figure II- , as well as the 1909 Borough of Richmond topographic sheet indicates that Billop Ridge continues eastward of the area from which burials were reported and could extend beneath Satterlee Street. Of the prehistoric artifacts recovered from these four tests, 3 were recovered from the topsoil, and 11 from the underlying orange sand, some from depths in excess of two feet.

The recovery of artifacts from the orange sand suggests that some site components could be preserved beneath the Satterlee Street pavement even where the topsoil was graded off.

AREA #3 - BEDELL (PETERSON) HOUSE LAWN

Six tests placed west of Satterlee Street in an area extending for approximately 200' north from the line of Pittsville Avenue (Photographs 33 and 34) yielded prehistoric artifacts. The finds include 15 flakes, one corner notched projectile point (Photograph 37), a small fragment of fire-cracked ground stone, and three fragments of fire-cracked rock. Of these finds, 4 derived from the topsoil and 15 from the underlying sand. A test (BF-2) in the northern portion of the area suggests that occupation layers may be present in the sand at depths reaching 2 1/2'-3'. The test yielded 11 flakes from this depth. Measurements taken with a level line indicate that the surface of the lawn in which the tests were placed is approximately 2' above the surface of Satterlee Street. Therefore, material from occupations originating in the sand stratum as well as archaeological features originating in either the orange sand or the topsoil could remain intact below the pavement.

We recommend that Phase II archaeological investigations be conducted in each of the three areas discussed above.

SECTION 14

AMBOY ROAD

Only one test was placed in this section because of heavy disturbance in the area. No finds of prehistoric artifacts were made and no further archaeological investigations are recommended.

SECTION 15

HOPPING AVENUE

A total of 10 flakes and a prehistoric ceramic sherd were recovered from a cluster of tests west of Hopping Avenue in the vicinity of house #99, located approximately 350' north of Amboy Road (Photograph 35). Six of these flakes were recovered from what appeared to be a buried topsoil layer in tests AQ-2 and AQ-4. An additional flake was recovered from the upper portion of an underlying tan sand stratum in the latter test.

Three flakes and the sherd (Photograph 38) were recovered from what appeared to be disturbed contexts in three tests in the vicinity (AP-1, AP-2 and AQ-4). The pattern of finds indicates the probability that at least a small prehistoric site is located in this area.

Since 7 of the flakes and the sherd were recovered from tests AP-1, AQ-3 and AQ-4, located within 5' of the Hopping Avenue pavement, there is a strong possibility that the occupation area extended to the present location of the pavement. The Hopping Avenue pavement in this area is at approximately the same elevation as the ground to the west where the finds were made. Although construction of the Hopping Avenue pavement may have removed the topsoil layer in which artifacts were recovered in tests AQ-2 and AQ-4, archaeological features could still remain intact beneath the pavement. It should be noted, however, that an approximately 5'-10' wide strip of the approximately 30' wide pavement area would have been disturbed to a greater depth for the installation of an existing sanitary sewer. However, this sewer does not extend south of the location of #99 Hopping Avenue. Although no in situ prehistoric materials were recovered from the tests located immediately south of #99 Hopping Avenue, the site could extend south of this property at the location of the street.

We recommend that a Phase II archaeological investigation be undertaken in this area.

A single flake associated with a concentration of shell was

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

recovered from test AR-4 on the lawn of #65 Hopping Avenue, approximately 300' north of the area discussed above. However, no indications of prehistoric activity were present in two tests (AP-5 and BG-3) located closer to Hopping Avenue. No further archaeological investigations are recommended in this area.

SECTION 16

TOTTENVILLE (BENTLEY STREET, ARTHUR KILL ROAD, MAIN STREET

No tests were placed in this section because of heavy disturbance. No further archaeological investigations are recommended.

SECTION 17

ELLIS STREET

There were no finds of prehistoric artifacts in this section. However, the results of test AS-8 indicate that an undisturbed deposit of refuse, probably associated with the 19th century hotel which was located immediately west of the test, is present at the test location, approximately 40' north of Ellis Street and 75' east of Main Street. Construction of the interceptor beneath Ellis Street should not directly affect this deposit. However, should this area

be used for the staging of equipment or other construction associated activities, a Phase II archaeological investigation should be conducted in this area.

SECTION 18

ARTHUR KILL ROAD - ELLIS STREET TO KREISCHER STREET

Three archaeological borings (#17, #17A, #17B) placed in Arthur Kill Road approximately 30 feet north of Nassau Place indicated the presence of a stratum of dark gray sand containing shell fragments. The stratum was recorded as being approximately 4-8 inches thick and was encountered approximately 10-13 feet below the Arthur Kill Road pavement. In two of the three borings the stratum was directly overlain by approximately 3-9 inches of gray organic clay, suggesting that the underlying sand/shell stratum was deposited prior to the inundation of the land by the rising waters of the adjacent tidal creek. The absence of the clay stratum from the third boring may be due to sample recovery problems. Flotation and microscopic examination of the sand/shell stratum from boring #17 led to the recovery of a small prehistoric ceramic sherd (Photograph 39). Although sampling problems created some ambiguities in interpreting the results of the borings,

there is a strong possibility that the sherd was in situ in the dark gray sand/shell stratum.

Although the presence of the sherd is the only definite indication of prehistoric activity recovered from these three borings, the total size of the sample of the stratum was small. The presence of the sherd, as well as the shell, in this small sample may indicate the presence of a prehistoric site in the immediate vicinity. Since this site would have been completely preserved by the overlying clay deposits, it would probably yield significant archaeological data. We recommend that a Phase II archaeological investigation be conducted in this area.

SECTION 19

KREISCHER STREET

Pedestrian reconnaissance and the results of our field testing indicate that buried, as well as visible, architectural remains (Photograph 36) of the 19th and early 20th century Anderson brick works are located in the vicinity of the planned pumping station. The planned site is approximately at the head of a former slip adjacent to the brick works.

Construction of the pumping station could affect sub-surface remains associated with the northern "annex" of the Anderson brick works. Results of test AZ-7 indicate that remains of this structure are intact beneath the present surface. Although none of the maps examined indicate the presence of former structures at the head of the slip, facilities associated with the mooring and servicing of vessels could have been present at this location. In addition, it is possible that outbuildings, including privies, not shown on the maps could be present in the area to be affected by construction. A Phase II archaeological investigation should be conducted in the area to be affected by pumping station construction.

Because present plans do not call for construction to take place north of Kreischer Street, no tests were placed on that side of the road. However, it should be noted that the 1913 topographic sheet indicates the presence of two wells on this side of the road, directly opposite the planned pumping station. Since important archaeological data is often recovered from wells, construction activity should not be conducted in this area without further archaeological examination.

PHASE II CULTURAL RESOURCE INVESTIGATIONS -
ARCHAEOLOGICAL

The objectives of the Phase II cultural resource investigations recommended above are to determine the extent, cultural affinities and type of archaeological deposits present; to assess the impact of the proposed project; to provide information necessary for a determination of the National Register eligibility of archaeological sites to be made and to discuss options for the mitigation of adverse impacts.

Phase II archaeological investigations in the areas where possible National Register eligible prehistoric sites are present could include excavations beneath existing road surfaces to test the areas where construction will actually occur. The best way to accomplish this would be to remove the entire pavement in the area to be disturbed by construction in each area subject to Phase II investigation.

In the area to be investigated on Arthur Kill Road north of Nassau Place, the removal of 10'-13' of fill and marsh deposits would be necessary to examine the underlying stratum. This would require a shored trench and possibly dewatering of the trench.

The Phase II investigation recommended in the area of the 19th and early 20th century brick works in the vicinity of the planned Kreischer Street pumping station would not require the removal of existing road surfaces. It would, however, require the use of power equipment to remove fill, overburden and/or demolition debris, in conjunction with manual excavations.

STANDING STRUCTURES

The Preservation League of Staten Island is at present preparing a National Register nomination for a Staten Island Multiple Resources Area. This nomination would consider both standing structures and archaeological resources throughout the Borough. Elsa Gilbertson of the League reviewed those structures in the vicinity of the project area which may be eligible for inclusion in this nomination. These structures are present in three portions of the project area, Prince's Bay, Tottenville and Kreischerville. All or portions of these areas may be eligible for the National Register as historic districts, in addition to individual structures which may be eligible or are already listed on the Register.

Prince's Bay

The Manee-Seguine Homestead

The original section of this structure was constructed in the 1690's. It is currently being considered for New York City landmark status and will be included in the proposed Staten Island Multiple Resource Area National Register Nomination. It is located on the northeast corner of Seguine Avenue and Purdy Place, approximately 300' north of the proposed route of construction of the Johnston Terrace lateral.

The Sequine House

This Greek Revival structure is already listed on the National Register of Historic Places and is a New York City Landmark. This structure is located on the west side of Sequine Avenue, approximately 900' north of the planned construction route.

The S.S. White Dental Manufacturing Plant

This building is considered to have played a significant role in the history of Prince's Bay and of Staten Island as a whole. The factory complex is the only large late 19th century manufacturing plant on Staten Island which still

stands. The Preservation League is considering the inclusion of this plant in their Staten Island Multiple Resource Area nomination. It is located immediately adjacent to the Johnston terrace W.P.C.P. lateral.

Prince's Bay Historic District

The Prince's Bay area in general may have the potential for nomination as a historic district. Elsa Gilbertson notes (see chapter II) that "the diversity of the styles and types of the historic structures here embrace the area's entire history". In addition to the structures noted above, the components of such a historic district closest to the proposed construction route would be a group of 19th century houses on Purdy Place, east of the Seguire-Manee Homestead and approximately 450' north of the Johnson terrace lateral.

Tottenville

The Conference House

This structure was built c. 1675. It is a National Historic Landmark and is listed on the National Register of Historic Places. The structure is located approximately 225 feet west of the Satterlee Street lateral.

Tottenville Historic District

Elsa Gilbertson notes (see Chapter II) that a Tottenville Historic District will not be included in the Multiple Resource Nomination currently being prepared but that a historic district may be proposed here at a later date. The reason for not proposing such a district in Tottenville as a whole is that "although there are many fine buildings here, they are interspersed with others (often historic structures that have been altered) which would not contribute to the character of a district." It should be noted however, that the project area includes the oldest part of Tottenville (see Chapter II). Nearly all of the structures along the route of construction on Bentley Street, Arthur Kill Road and Main Street appear to be of 19th century construction, although, as Gilbertson notes, some of these have undergone varying amounts of modification.

Kreischerville

The Kreischer House

This 19th century Gothic structure stands on the southeast corner of Arthur Kill Road and Kreischer Street. It is listed on the National Register of Historic Places. It is located approximately 175' east of the proposed interceptor route on Arthur Kill Road.

Kreischerville Historic District

Gilbertson notes that several Kreischerville buildings are being considered for inclusion in the Multiple Resource Area National Register nomination. She states that "many of the village structures, including those that have been altered, are significant to the history of Staten Island." The theme of a district in this area would be the resources associated with the Kreisler and associated Anderson brick works. This would include workers' housing, as well as the Kreisler house, noted above. A number of examples of workers' housing are standing on the east side of Kreisler Street, approximately 400'-600' north of the proposed location of the Kreisler Street pumping station. It should be noted that the archaeological remains of the brick works, discussed previously, could be included in a Kreischerville Historic District.

**PHASE II CULTURAL RESOURCE INVESTIGATIONS -
STANDING STRUCTURES**

A Phase II cultural resources study should be conducted in each of the areas noted above. Except for those structures already listed on, or determined eligible for the National

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS

Register (the Conference House, the Seguine House and the Kreisler House), the study should provide information on each structure or district sufficient to permit a determination of eligibility to be made. Such an evaluation should be coordinated with the ongoing efforts of the Preservation League of Staten Island in order to avoid a duplication of effort.

In addition, an engineering evaluation should be made to determine whether actual construction operations in each area would cause structural damage. This would require an evaluation of the effects to be produced by the actual construction techniques to be used in each area, as well as a structural evaluation to determine the impact of construction. Adverse impacts on standing structures could occur through three processes; vibration caused by any necessary blasting or tunneling operations, subsidence of foundations due to dewatering operations, and adverse visual impacts from pumping station construction.

REFERENCES CITED

- Anonymous
1935 "The Fathers Have Told Us, Facts and Traditions Told by Lovers of their Hometown". Scrapbook in the Collection of the New York Public Library, Tottenville Branch.
- Arnold, Herbert J.
1936 The Selection, Organization, and Evaluation of Localities Available for Unspecialized Field Work in Earth Sciences in the New York City Region. Camden, New Jersey.
- Florance, Charles A.
1982 National Register of Historic Places Inventory - Nomination Form, Ward's Point Conservation Area, Richmond County, New York.
- Gratacap, L. P.
1909 Geology of the City of New York. Third Edition. New York: Henry Holt.
- Jacobson, Jerome
1980 Burial Ridge Tottenville, Staten Island, N. Y.: Archaeology at New York City's Largest Prehistoric Cemetery. The Staten Island Institute of Arts and Sciences.
- Joline, Benjamin Franklin
1950 "Tottenville in Retrospect". Scrapbook in the Collection of the New York Public Library, Tottenville Branch.
- Morris, Ira K.
1898- Morris' Memorial History of Staten Island. New
1900 York Memorial Publishing Company. (2 Volumes).
- Pickman, Arnold and Rebecca Yamin
1978 Preliminary Cultural Resources Assessment: Literature Search and Windshield Survey. Oakwood Beach Water Pollution Control Project. EIS Background Document.
- Ritchie, William
1969 The Archaeology of New York State. Revised Edition. Garden City: The Natural History Press.

REFERENCES

- 1971 "A Typology and Nomenclature for New York Projectile Points". New York State Museum and Science Service Bulletin. Number 384. Revised Edition. Albany.
- Salisbury, Rollin D.
1902 "Pleistocene Formations" in F.J.H. Merrill, H.H. Dartin, et al., Description of the New York District. U. S. Geological Folio No. 83. pp. 11-17.
- Silver, Annette
n.d. "The Smoking Point Site (STD-14-3). Staten Island, New York". Proceedings of the Staten Island Institute of Arts and Sciences. In Press.
- Smith, Carlyle Shreeve
1950 The Archaeology of Coastal New York. Anthropological Papers of the American Museum of Natural History. Volume 43, Part 2.

LIST OF MAPS CONSULTED

- 1853 Map of Staten Island or Richmond County. James Butler.
- 1874 Atlas of Richmond County, Staten Island, New York. J. B. Beers and Co.
- 1878 A Bird's Eye View of Tottenville. Fowler and Evans.
- 1887 Map of Richmond County, Staten Island, New York. J. B. Beers and Co.
- 1907 Atlas of the Borough of Richmond, City of New York. 2nd and Revised Edition. E. Robinson.
- 1907- Borough of Richmond Topographical Survey
1913
- 1917 Atlas of the City of New York, Borough of Richmond. Vol 2. Bromley.
- 1937 Insurance Maps of New York, Borough of Richmond. Vol 4. Sanborn Map Co.