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GOETHALS BRIDGE REPLACEMENT

RICHMOND COUNTY, NEW YORK
AND
THE CITY OF ELIZABETH, UNION COUNTY, NEW JERSEY

PHASE I ARCHAEOLOGICAL REPORT

Prepared For:

The United States Coast Guard

United States Coast Guard
U.S. Department of Homeland Security

Project Applicant:

The Port Authority of New York and New Jersey

THE PORT AUTHORITY OF NY & NJ

Prepared By:

The Louis Berger Group, Inc./Parsons Brinckerhoff JV

August 2007

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Kristofer M. Beadenkopf, RPA
Zachary J. Davis, RPA

MANAGEMENT SUMMARY

SHPO Project Review Number: NYSOPRHP # 04PR03162

Involved State and Federal Agencies: Port Authority of New York and New Jersey (PANYNJ);
United States Coast Guard (USCG);
U.S. Army Corps of Engineers (USACE)

Phase of Survey: Phase I Archaeological Survey

Location Information:

Location: Goethals Bridge Corridor spanning the Arthur Kill beginning near the convergence of the east and west lanes of I-278 at Route 440 in Staten Island, New York and extending to the New Jersey Turnpike Interchange Exit 13 in Elizabeth, New Jersey

Minor Civil Division: Staten Island; Elizabeth
County: Richmond County, New York; Union County, New Jersey

Survey Area (Metric; English):

Length: 3,960.88-meters; 12,995-feet
Width: 365.76-meters; 1,200-feet
Depth: 0.61 to 0.91-meters; 2.0 to 3.0-feet
Number of Acres Surveyed: 47.09-acres

USGS 7.5 Minute Quadrangle Map(s): *Elizabeth, NJ-NY; Arthur Kill, NY-NJ*

Archaeological Survey Overview:

Number and Interval of Shovel Tests: 259 Shovel Test Pits at 15-meter (50-foot) intervals; 4 Radial Shovel Tests Pits 3.05-meter (10-foot) intervals; 18 Radial Shovel Tests Pits at 1.52-meter (5-foot) intervals
Number and Size of Units: N/A
Width of Plowed Strips: N/A
Surface Survey Transect Interval: N/A

Results of Archaeological Survey:

Number and Name of Prehistoric Sites Identified: NYSM #7215; NYSOPRHP #s A085-01-2366 and A085-01-0134: "Old Place Creek Site"
Number and Name of Historic Sites Identified: 0
Number and Name of Sites Recommended for Phase II/Avoidance: N/A

Results of Architectural Survey: N/A

Report Author(s): Kristofer M. Beadenkopf, RPA

Date of Report: August 2007

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

CHAPTER **PAGE**

LIST OF FIGURES

LIST OF FIGURES (continued)

LIST OF PHOTOS

LIST OF PHOTOS (Continued)

LIST OF TABLES

1.0 INTRODUCTION

1.1 Project Description

The Port Authority of New York and New Jersey (PANYNJ) has proposed to erect a new span over the Arthur Kill to replace the existing Goethals Bridge linking Elizabeth, New Jersey, and Staten Island, New York. The Goethals Bridge is part of the Port Authority's Interstate Transportation Network and serves as a major link between northern New Jersey and New York City for vehicular traffic, along with the George Washington Bridge, the Holland and Lincoln Tunnels, the Outerbridge Crossing Bridge, and the Bayonne Bridge. The Goethals Bridge, built in 1928, is also considered a primary transportation route within the metropolitan area's Southern Corridor, connecting the New Jersey Turnpike (Interstate 95) and U.S. Routes 1 and 9 in New Jersey with Brooklyn and ultimately Long Island, New York, via the Verrazano Narrows Bridge and the Staten Island Expressway (Interstate 278) roughly paralleling Staten Island's north shore (Figure 1).

1.2 Purpose of Study

This report summarizes the results of the Phase I archaeological survey undertaken by The Louis Berger Group, Inc./Parsons Brinckerhoff Joint Venture (Berger/PB JV), on behalf of the United States Coast Guard (USCG) as part of the Goethals Bridge Replacement Environmental Impact Statement (GBR EIS). The purpose of the investigation was to determine (1) the presence or absence of archaeological resources in the project area, (2) whether any deposits are present that are eligible for the National Register of Historic Places and that may be subject to impacts arising from the Proposed Project, and (3) archaeologically sensitive areas that may preclude the use of certain project alternatives.

All services performed under this contract have complied with the instructions and intents set forth by Section 101(b)(4) of the National Environmental Policy Act of 1969; Sections 1(3) and 2(b) of Executive Order 11593; Section 106 of the National Historic Preservation Act; 23 CFR 771, Final Rule of August 28, 1987; 36 CFR 66; and the amended Procedures for the Protection of Historic and Cultural Properties as set forth in 36 CFR 800, September 2, 1986.

Section 106 of the National Historic Preservation Act (NHPA) requires that federal agencies or applicants for federal funding and authorizations, take into account the effects of the undertaking on historic properties including prehistoric and historic archaeological sites and objects included in or eligible for inclusion in the National Register of Historic Places (NRHP). The process by which the federal agency must achieve compliance with Section 106 is described in 36 CFR 800. It directs the agency to consult with the respective state's State Historic Preservation Officer (SHPO) to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize, or mitigate adverse effects on historic properties.

In the State of New York, the responsible state agency is the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP). Consultation and review of archaeological issues in New York is conducted under authority of Article 14 of the New York State Historic Preservation Act of 1980 (Chapter 354 of Parks, Recreation and Historic Preservation Law). In addition, all archaeological work must comply with the New York Archaeological Council Standards (NYACS) (1994) and the Cultural Resource Standards Handbook (2000) prepared by the New York Archaeological Council Standards Committee.

Under New York City's Landmark Preservation Law (Landmarks Law), the New York City Landmarks Preservation Commission (NYCLPC) has the authority to designate City Landmarks, Interior Landmarks, Scenic Landmarks, and Historic Districts, and to regulate any construction, reconstruction, alteration, or demolition of such Landmarks and Districts. The NYCLPC also has established procedures with respect to archaeological resources that must be followed. These procedures are outlined in NYCLPC's publication, Landmarks Preservation Commission Guidelines for Archaeological Work in New York City (2002).

In the State of New Jersey, the responsible state agency is the New Jersey Historic Preservation Office (NJHPO), which is part of the New Jersey Department of Environmental Protection (NJDEP). Consultation and review of archaeological issues in New Jersey is conducted under authority of the New Jersey Register of Historic Places Act of 1970 (N.J.S.A. 13:1B-15.1328 et. seq.). In addition, all work must conform to the Guidelines for Archaeological Investigations established by the NJHPO (2000).

Preliminary consultation and coordination with the NYSOPRHP and the NJHPO was initiated in July 2004 with the submission of a briefing package for the Goethals Bridge EIS followed by a meeting with the NYSOPRHP on

FIGURE 1: Aerial View of the Study Corridor

SOURCE: PANYNJ 2004, NJ DEP GIS 2002

August 11, 2004 to discuss archaeological resources and fieldwork strategies. In June 2005, the USCG initiated formal consultation with the NYSOPRHP and NJHPO pursuant to Section 106 (see Appendix CA).

1.3 Proposed Project and Definition of Area of Potential Effect (APE)

PANYNJ is planning to construct a new crossing in a 377.82-acre corridor in Richmond County, New York and Union County, New Jersey as part of a proposed project for the Goethals Bridge Replacement. The APE is a corridor spanning the Arthur Kill beginning near the convergence of the east and west lanes of I-278 at Route 440 in Staten Island, New York and extending to the New Jersey Turnpike Interchange Exit 13 in Elizabeth, New Jersey (Figure 2). The project area is currently a mix of commercial properties, residential developments and wetlands.

The first step in the Section 106 process was to determine the area of potential effect (APE) for archaeological resources. The APE is the geographic area in which the undertaking may directly or indirectly cause changes in the character or use of historic properties. The identification of new-crossing alternatives within the 377.82-acre corridor focused on the existing Goethals Bridge corridor, which encompasses the bridge itself and its approach alignments extending from Bayway Avenue and the SIRR tracks in New Jersey to its eastern limits at Forest Avenue in Staten Island. The proposed new-crossing alternatives and their approaches are located immediately north and south of the existing bridge and connect to New Jersey Turnpike Interchange 13 to the west and to the Staten Island Expressway to the east, consistent with the existing crossing's termini.

Based on the proposed alternatives and consideration of potential construction-related impacts, the archaeological APE was defined as 500-feet north and 700-feet south from the centerline of the existing I-278 and Goethals Bridge extending west 500 feet from the edge of the overall footing of the interchange system in New Jersey and including the I-278 and West Shore Expressway (SR-440) Interchange in Staten Island as its eastern boundary.

1.4 Scope of Work and Project Personnel

The Phase I archaeological survey consisted of background research, field reconnaissance, and subsurface testing to investigate the archaeological sensitivity of the APE. Supplemental background research was conducted between August and September, 2004 to update the cultural resource sensitivity models developed by Berger in 1992 and further refined as part of the Staten Island Bridges Program (SIBP) EIS in 1997 (Berger 1992; USCG 1997). Senior Archaeologists, Susan D. Grzybowski and Zachary J. Davis, an RPA-certified archaeologist, served as Principal Investigators for this project. Archaeologist Gerard Scharfenberger, RPA, conducted a field reconnaissance in May 2004 and also conducted the background research. The archaeological field effort was conducted in October 2004 and was supervised by Mr. Scharffenberger, Archaeologist Kristofer M. Beadenkopf, RPA and Field Supervisor, Robert Jacoby. The report was written by Mr. Beadenkopf. Mr. Davis also assisted in the preparation of report graphics and imagery.

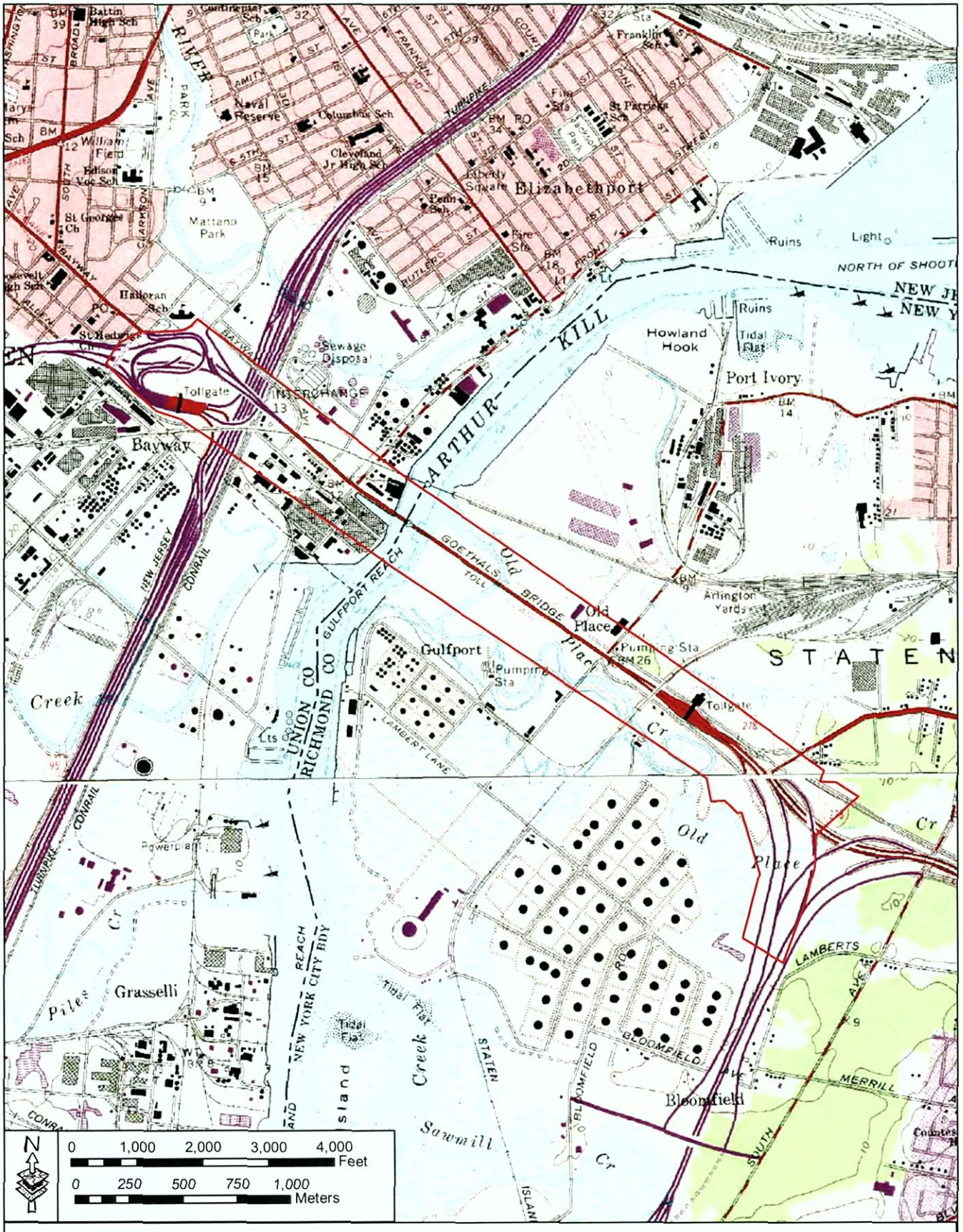

FIGURE 2: Archaeological Area of Potential (APE)

SOURCE: USGS Quad, 7.5' Series, Elizabeth, NJ-NY and Arthur Kill, NY-NJ, 1981

2.0 ENVIRONMENTAL HISTORY and CURRENT CONDITIONS

2.1 Environmental History

Reconstructing environmental and landscape changes through time is integral to identifying areas of archaeological sensitivity. Certain environmental settings are known to have been preferred locations for prehistoric settlement. The climatic, hydrologic, and vegetational conditions in the APE have changed during the period of human occupation. For example, the earliest evidence for human occupation in what is now New York and New Jersey occurred during the Late Pleistocene when climate was considerably colder. Changes in climate since the end of the Pleistocene have affected the evolution of waterways in the APE and the types of plant and animal resources that human populations were dependent upon. Paleoenvironmental reconstructions of the APE provide a model for predicting prehistoric settlement history and potential site locations. When Native Americans first inhabited the New York City area, sea levels may have been 300 feet lower than at present, which would have caused the Atlantic shore to regress approximately 60 to 90 miles from its current position (Kraft 1977a). By 5,000 BP (Before Present), the sea level had risen to just 30 feet below its present level, and it continued to rise to a point some 14 feet below the present level by 2,000 BP. Therefore, over the course of human occupation, the environment changed from an upland and inland location of oak/pine forest and grasses into a coastal lowland zone (Silver 1984:5).

2.1.1 New York Section

The New York section of the APE, situated in Staten Island, Richmond County, New York, is within the Atlantic Coastal Lowland physiographic province and although it is separated by the Kill Van Kull and the Arthur Kill waterways is geographically related to New Jersey (Skinner 1909). The bedrock consists of Serpentine and Stockton sandstone of the Triassic period, which forms the hills at the core of the island; one of these, Todt Hill, is at 410 feet above sea level, the highest point not only in New York City, but along the entire Atlantic coastline south of Massachusetts (Schuberth 1968:98, 249). The New York section of the APE lies along the east bank of the Arthur Kill.

Surface features and landforms within the New York section of the APE are mainly the result of continental glaciation which deposited unsorted and un-stratified sediments, part of the Harbor Hill terminal moraine that extends from Pennsylvania east through Perth Amboy, New Jersey, across Staten Island and Long Island to Cape Cod, Massachusetts (Schuberth 1968:184-186, 249). Soils within the New York and New Jersey section of the APE were formed in glacial till and the related outwash sediments.

By ca. 13,000 BP, the Wisconsin ice margin had receded north of New Jersey (Schuberth 1968). At this time, sea level is estimated to have been approximately 100 meters lower than the present level. This would have exposed a large area of the continental shelf, possibly as far as 150 km east of the present coastline. As a result, many of the islands in New York Harbor, including Staten Island, would have been connected to the mainland.

The Arthur Kill began in the Early Holocene as a narrow, probably brackish stream (Eisenberg 1978). As the sea level rose, this steep valley gradually became a wide estuary, lined with marshes. Channelization of Arthur Kill may have resulted from effects of erosion related to the rapid drainage of a glacial lake (Sirkin 1977). As sea levels continued to rise, the Arthur Kill gradually became a brackish estuary.

During the period of glacial retreat, the regional vegetation changed from an open, spruce forest to mixed hardwood vegetation in the uplands and grasses and wetlands forests in the lowlands (Sirkin 1976, 1977). Changes in faunal communities accompanied the shifts in climate and vegetation. Large cold-adapted species, such as mammoth, mastodon, and caribou, were replaced by more temperate species, such as white-tailed deer.

With the rise in sea levels, the APE changed from an inland setting to a coastal setting. These changes would have had an enormous effect on potential for population movements and resource exploitation. Upland terrain would support mixed hardwood forests while lowlands would support a variety of wetland and lowland forest vegetation. Expanding wetlands and waterways in the APE would have provided environments for numerous migratory birds, waterfowl, fish, and mollusks.

2.1.2 New Jersey Section

The New Jersey section of the APE is situated within the Piedmont Lowlands physiographic province of New Jersey, near the Atlantic Coastal Plain (Wacker 1975:5). The terrain of this province is characterized by an undulating surface that slopes gradually from the New Jersey Highlands to the Coastal Plain. The lowlands,

however, are interrupted by a plateau-like topography developed on resistant Longatong argillites and conspicuous ridges elsewhere underlain by igneous rock (Wolfe 1977). The underlying bedrock consists of sandstones and shales of the Brunswick Formation that were formed during the Triassic Period (Robichaud and Buell 1973). These rocks are overlain by glacial deposits. The terminal moraine which marks the extent of the Wisconsin glaciation extends as far south as Perth Amboy and cuts across Staten Island. Soils in the APE are derived from glacial deposits, organic decomposition, and urban fill.

Toward the end of the last Ice Age (circa 20,000-14,000 years ago) more than half of the Piedmont Lowlands had suffered the effects of glacial advances and retreats. The southern limits of the Wisconsin glacier are visible today in the form of a terminal moraine consisting of piles of boulders and gravel that were "bulldozed" in front of the advancing ice.

By ca. 13,000 BP, the Wisconsin ice margin had receded north of New Jersey (Schuberth 1968). At this time, sea level is estimated to have been approximately 100 meters lower than the present level. This would have exposed a large area of the continental shelf, possibly as far as 150 km east of the present coastline. As a result, many of the islands in New York Harbor, including Staten Island, would have been connected to the mainland.

Lowlands, like the Newark Basin, provided natural drainages for glacial meltwater. However, the terminal moraine created a dam across the lower section of what is now Newark Bay, causing water to accumulate in a large lake, known as Glacial Lake Hackensack. An outlet formed about 10,000 years ago, draining the lake. The deep deposits of silt and clay that remained from the lake bottom formed the foundation for vast meadowlands (Widmer 1963).

The Arthur Kill began in the Early Holocene as a narrow, probably brackish stream (Eisenberg 1978). As the sea level rose, this steep valley gradually became a wide estuary, lined with marshes. Channelization of Arthur Kill may have resulted from effects of erosion related to the rapid drainage of a glacial lake (Sirkin 1977). As sea levels continued to rise, the Arthur Kill gradually became a brackish estuary.

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With the rise in sea levels, the New Jersey section of the APE changed from an inland setting to a coastal setting. These changes would have had an enormous effect on potential for population movements and resource exploitation. Upland terrain would support mixed hardwood forests while lowlands would support a variety of wetland and lowland forest vegetation. Expanding wetlands and waterways in the New Jersey section of the APE would have provided environments for numerous migratory birds, waterfowl, fish, and mollusks.

The salt marshes that were originally present within the New Jersey section of the APE, however, would not have been favorable for prehistoric occupation. Any prehistoric settlement in this region would probably have occurred on higher areas near streams, such as the Elizabeth River.

2.2 Officially Documented Soils within the APE

2.2.1 New York Section

Three soils are documented within the New York section of the APE (Figure 3). The majority of the New York section of the APE is considered Ipswich-Pawcatuck-Matunuck mucky peats, 0 to 3 percent slopes (Map Unit 6) characterized by "low lying areas of tidal marsh that are inundated by salt water twice each day at high tide, with a mixture of very poorly drained soils which vary in the thickness of organic materials over sand" (New York City Soil Survey Staff 2005:15). The next most prevalent soil type within the New York section of the APE is described as "Pavement & buildings, wet substratum-Laguardia-Ebbets complex, 0 to 8 percent slopes" (Map Unit 101). This soil unit consists of "nearly level to gently sloping urbanized areas filled with a mixture of natural soil materials and construction debris over swamp, tidal marsh, or water" and "a mixture of anthropogenic soils which vary in coarse fragment content, with 50 to 80 percent of the surface covered by impervious pavement and buildings" (New York City Soil Survey Staff 2005:16). The last soil type within the New York section of the APE is the Boonton-Haledon complex, 0 to 8 percent slopes (Map Unit 370) located in the northeastern corner of the APE. Those soils are characterized by "nearly level to gently sloping areas of till plains that are relatively undisturbed and mostly wooded; a mixture of well drained and somewhat poorly drained soils formed in red till" (New York City Soil Survey Staff 2005:23).

FIGURE 3: Soils within the New York Section of the APE

SOURCE: New York City Soil Survey Staff, 2005

2.2.2 New Jersey Section

Soils within the New Jersey section of the APE are described as "Urban Land" (UR). Urban land (UR) consists of areas which have more than 80 percent of the surface is covered by development (Figure 4). Most are moderately sloping to level and most have fill material. As a result, no typical pedon is available for this unit (Soil Science Data Mart 2006).

2.3 Current Landscape

2.3.1 New York Section

The New York section of the APE is currently composed of a mix of commercial properties, residential developments, roadways, and wetlands. A field reconnaissance of the New York section of the archaeological APE was conducted on May 12, 2004 to augment information derived from previous cultural resource studies and EIS documents conducted within and in the vicinity of the APE through a re-evaluation of the archaeological potential of the APE. This field reconnaissance included the documentation of changes to the natural landscape of the APE that have occurred within the APE since the initial Staten Island Bridges Program FEIS was completed in 1997. These modifications included disturbances resulting from additional construction, the creation of impervious surfaces such as parking lots, or other such landscape modifications; disturbances which were not previously documented and which might affect the archaeological sensitivity of the APE.

One of the most significant disturbances observed during that field reconnaissance was the addition of the Keyspan complex on the south side of the Staten Island approach to the Goethals Bridge within the New York section of the APE (Photo 1). This construction resulted in the addition of numerous buildings and paved surfaces in an area that was previously open land. It is likely that construction of this magnitude would have necessitated the importation of significant amounts of fill, and as a result, areas within the complex not covered by impervious surfaces would have been capped by fill of varying depths and densities. Another, albeit minor, change, appears to have occurred in an area located south of the bridge roadway under the Staten Island approach. A large debris pile at the R.T. Baker site that was recorded in that location in 1997 appears to have expanded slightly (Berger 2004:4). This debris pile is located adjacent east of a large tract of open marshland (Photo 2) No further changes to the New York section of the APE were apparent.

2.3.2 New Jersey Section

The New Jersey section of the APE is currently composed of a mix of commercial properties, residential developments, roadways, and wetlands (Photo 3). A field reconnaissance of the New Jersey section of the archaeological APE was also conducted on May 12, 2004 to augment information derived from previous cultural resource studies and EIS documents conducted within and in the vicinity of the APE through a re-evaluation of the archaeological potential of the New Jersey section of the APE.

One recent change to the natural landscape of the New Jersey section of the APE was noted on the north side of the New Jersey approach to the Goethals Bridge in a roughly rectangular area bounded by the bridge roadway to the south, relocated Bayway Avenue to the west, a sewage treatment plant to the north and First Street to the east. At the time of the visit, heavy equipment was observed excavating several feet of soil in advance of the construction of a new railroad station. This activity effectively removed any potentially culture-bearing strata from examination. No further changes to the New Jersey section of the APE were apparent

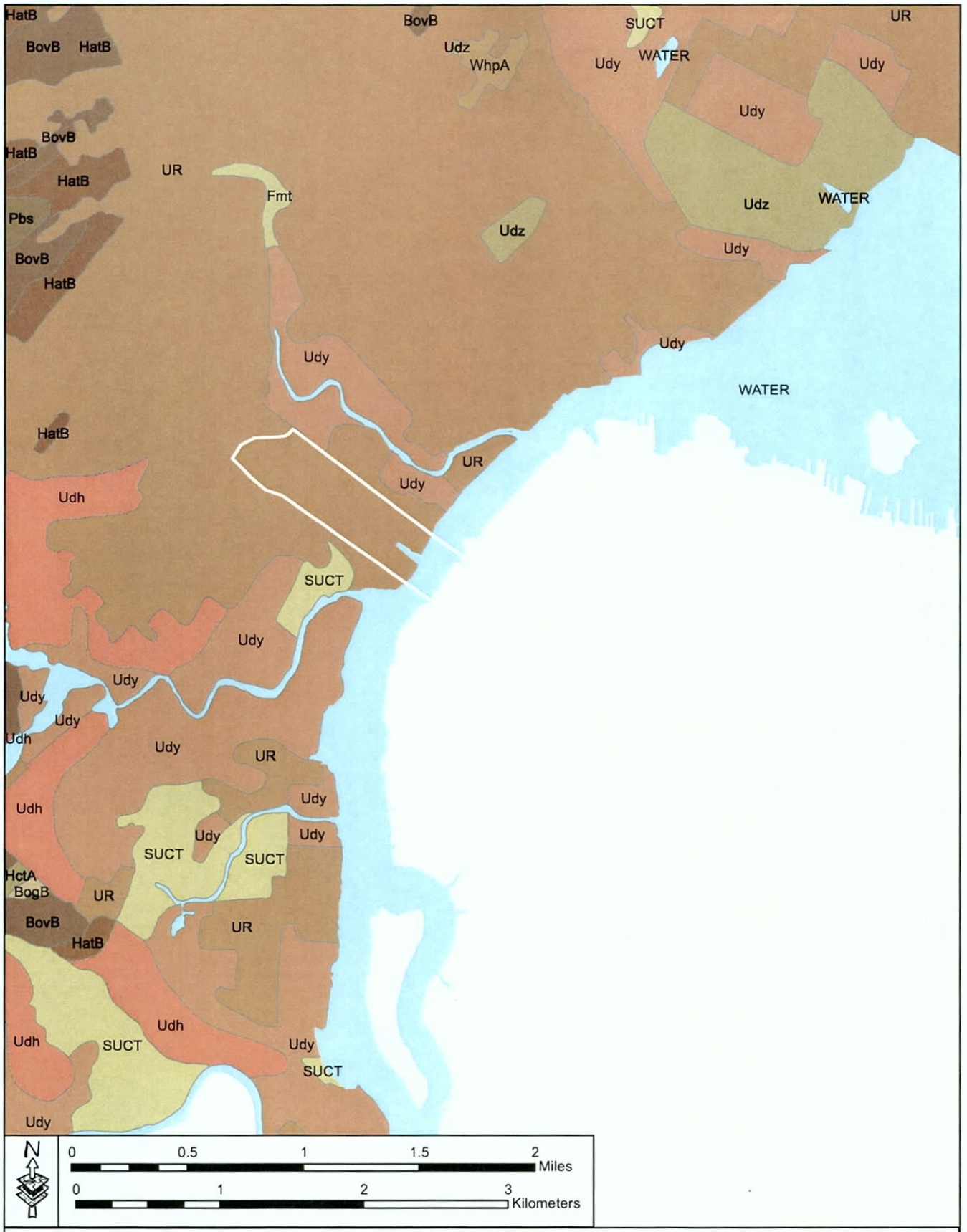

FIGURE 4: Soils within the New Jersey Section of the APE

SOURCE: Soil Science Data Mart 2006

Photo 1: Keyspan Facility on the Southern Side of the Goethals Bridge Approach. View Southeast.

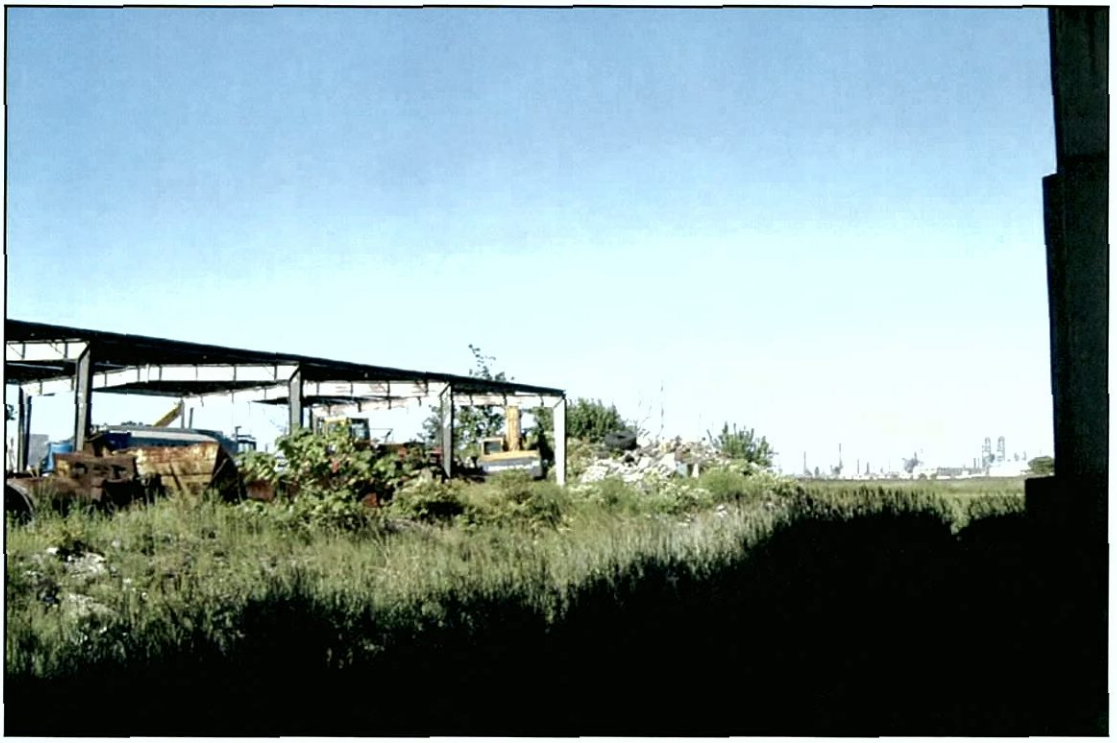

Photo 2: Debris Pile located at the R.T. Baker Site Adjacent to a Large Tract of Open Marshland. View West.

Photo 3: Aerial View of the New Jersey and the Goethals Bridge. View Southwest. *Source: USCG 2006.*

3.0 BACKGROUND RESEARCH

3.1 Methods

Supplemental background research was conducted between August and September, 2004 to update the cultural resource sensitivity models developed by Berger in 1992 and further refined as part of the Staten Island Bridges Program (SIBP) EIS in 1997 (Berger 1992; USCG 1997). This background research included an examination and analysis of selected historical maps and secondary histories available at the New York City Public Library in Manhattan, the Staten Island Institute of Arts and Sciences (SIIAS), the St. George Library Center in Staten Island, and the New Jersey State Library in Trenton, New Jersey. Additional historic maps were collected from online-digital historic cartographic clearinghouses such as the American Memory Map Collection of the Library of Congress and the Davis Rumsey Historical Map Collection. Archaeological site files and previous cultural resource studies and EIS documents were reviewed at the following institutions: the NYSOPRHP and the New York State Museum (NYSM) in Albany, New York; the New York City Landmarks Preservation Commission; the New Jersey State Museum in Trenton, New Jersey; and the New Jersey Historic Preservation Office, also in Trenton, New Jersey. This research provided an inventory of known prehistoric and historic archaeological sites in and adjacent to the APE and also provided information about regional patterns of prehistoric settlement from which a model of prehistoric and historic site potential was determined.

3.2 Prehistoric Background

3.2.1 General Overview

Three major periods are commonly used to describe the prehistoric cultures of the New York/New Jersey region—Paleoindian, Archaic, and Woodland. The earliest recognized Native American occupation of this area dates to the Paleoindian period (11,000-9000 BP), which is characterized by the use of distinctive fluted lanceolate points. The location of known Paleoindian sites suggests a preference for high, well-drained ground, located near streams or wetlands, offering vantage points for observing game. It is probable that many Paleoindian sites were situated on what is now the continental shelf, which has been submerged as a result of rising sea levels since the retreat of the Wisconsin glacier (Edwards and Merrill 1977). Paleoindian economy was dominated by game hunting, an adaptation to the open-forest environments and to the colder climate of the time. The Port Mobil Site, located on the southwestern shore of Staten Island, has produced Paleoindian remains including fluted points, unfluted trianguloid points, scrapers, knives, borers, and gravers (Brennan 1977; Eisenberg 1978).

Climatic warming during the Holocene led to sea level rise and changes in drainage patterns as well as vegetation; by 8500 BP, oak and hemlock forests replaced the predominantly pine forests of the area. The ecological changes brought about by the warmer Holocene climates subsequently encouraged population migrations and the development of the new subsistence strategies which characterize the Archaic period (9000-3000 BP). Compared with the Paleoindian period, a wider variety of artifact types was used during the Archaic. This suggests that a greater diversity of subsistence and technological activities was pursued, although hunting still appears to have been the major focus.

Differences in tool assemblages, projectile point types, and preferred lithic materials characterize the Early, Middle, and Late Archaic sub-periods (Coe 1964; Ritchie 1980). Early Archaic sites identified on Staten Island include the Old Place Creek Site, the Ward's Point Site, and the Richmond Hill Site, all of which have produced Kirk components dated circa 7260 to 8250 BP; the Richmond Hill Site also contained a Palmer component that may be associated with a radiocarbon date of 9360 BP (Ritchie and Funk 1971, 1973:38-39).

With the exception of several Kanawha and LeCroy-like points from the Ward's Point Site (Jacobson 1980:56), Middle Archaic remains are rare on Staten Island. This is possibly the result of unclear typological definitions for this period. In contrast, Late Archaic sites are relatively common and are characteristically located along tidal inlets, coves, and bays. Site setting and content suggest that marine resources were important to Late Archaic subsistence, a trend related to the stabilization of coastal environments (Edwards and Merrill 1977).

The Terminal Archaic or Transitional period (3000-2700 BP) is characterized by distinctive technologies that included production of soapstone vessels and a variety of broad-bladed projectile point types. The appearance of soapstone or steatite vessels and artifacts during this period provides evidence of interregional trade and also suggests increased residential stability, since stone bowls are items not easily transportable from site to site. Terminal Archaic remains on Staten Island also have been found in association with shell middens, which represent an intensification of coastal-oriented economies.

The Woodland period (2700 BP to European Contact) is identified by the manufacture and use of ceramics. This period is divided into three sub-periods–Early, Middle, and Late–that are characterized by distinctive projectile point types and ceramic styles. The earliest ceramics found in coastal New York are grit-tempered wares similar to Vinette I, which are characterized by crushed rock temper, and cord-marked exterior and interior surfaces (Wall 1992). Middle Woodland ceramics include shell-tempered wares with cord and net impressions, and Late Woodland ceramics include various collared vessels with incised, dentate, and cordmarked decoration. The Woodland period is also associated with horticulture; the earliest evidence of domesticated plants occurs in the Middle Woodland.

At the time of European contact, this portion of New York and New Jersey was occupied by the Munsee, a group of the Algonquian-speaking Lenape, also called the Delaware Indians, who lived in what is now eastern Pennsylvania, New Jersey, and southern New York. The Native populations maintained loosely structured, autonomous bands that resided in small dispersed settlements. The territories of the various Native groups that have been distinguished linguistically are uncertain, partly due to the lack of fixed "tribal" boundaries. Increased contact with European traders and settlers resulted in the breakdown of traditions and increased reliance on European goods in exchange for land and furs (Goddard 1978; Kraft 1986).

3.2.2 New York Section of the APE: Previously Documented Prehistoric Archaeological Sites

Research conducted at the NYSOPRHP indicates that numerous prehistoric archaeological sites have been documented on Staten Island, including prehistoric intermittent hunting camps, lithic production centers, shell middens, and burial grounds. Many of these prehistoric sites date from the Paleo-Indian through the historic contact periods and are characteristically situated on tidal inlets, coves, and bays found throughout the island (see Boesch 1994:115; Greenhouse Consultants, Inc. 1994:5-6; Jacobson 1980; Parker 1922; Silver 1984; Skinner 1909). Specific to the New York section of the APE, the records of the NYSOPRHP and the NYSM list nine prehistoric sites within a one-mile radius of the New York section of the APE (Table 1). Many of the prehistoric sites within a one-mile radius of the APE are multi-component, reflecting the repeated occupation of preferred habitats, such as sandy uplands overlooking streams and wetlands. Although most of the prehistoric archaeological sites did not yield diagnostic and dateable materials, the Old Place Creek Site (NYSM #7215; NYSOPRHP #s A085-01-0134 and A085-01-2366), a large portion of which may be located within the New York section of the APE, dates to the Early Archaic (10,000 to 8000 BP) through the Late Woodland periods (AD 700 to 1600) (Ritchie and Funk 1973:39).

The majority of the previously documented prehistoric sites are based on information and descriptions from the turn of the twentieth-century. Early avocational archaeologists such as Alanson Skinner and A.C. Parker often gave general information such as "traces of occupation" and "small lithic scatters" to the sites. While this provides an overview of the presence/absence of prehistoric settlement in a given area, it often gives little information regarding the temporal and spatial attributes of a site.

The Old Place Creek Site, portions of which may be located within the APE, is located approximately 0.5-miles to the east of the Goethals Bridge on Black Point (Tunissen's Neck), just north of Old Place Creek and north of the Staten Island Expressway. Skinner (1909) described the Old Place Creek Site as a large village with shell pits, refuse pits, and fireplaces. Prehistoric ceramics from the Old Place Creek Site were compared to Iroquoian pottery. In addition, a brass arrow point, gun flints, lead bullets, a pewter ring, and trade pipe fragments indicated early contact period settlement. Archaeological investigations in this area by Anderson (1964) provided diagnostic lithic artifacts that represent prehistoric occupation from the Early Archaic through Late Woodland, including substantial Late Archaic, Transitional, and Early Woodland components. The long sequence of Native American occupation at this site, from ca. 7000 BC to the eighteenth century, is probably the result of the upland location surrounded by productive wetlands. Archaeological investigations associated with the Howland Hook Marine Terminal Expansion identified prehistoric remains north of Old Place Creek, on what was Black Point recovered artifacts that included lithic tools, debitage, fire-cracked rock (Payne and Baumgardt 1986). Despite the amount of documentation involving the Old Place Creek Site that has taken place over the past century the precise boundaries of the Old Place Creek Site, however, have not been established, and as stated above, portions of this site may be located within the New York section of the APE.

Table 1: Prehistoric Archaeological Sites within a One-Mile Radius of the New York Section of the APE.

NYSOPRHP Site #	Additional Site #	Approximate Distance From APE M (ft)	Time Period	Site Type
	NYSM 7216; ACP-RICH	Within APE	Archaic	Traces of *Occupation*
A085-01-0134	A085-01-2366; NYSM 7215	Within APE	Early Archaic through Late Woodland	Multi-Component Camps
A085-01-2375		184m (600ft) North	Prehistoric; No Information	Traces of Prehistoric Occupation
	NYSM 4595; ACP-RICH-05	914m (3,000 ft) North	Prehistoric; Historic Native American, Possibly Iroquoian	Large Village
	NYSM 732	1,067m (3,500 ft) Northeast	Archaic	Traces of Occupation
	NYSM 8503	Within One-Mile North of the APE N	Prehistoric; No Information	Camp
	NYSM 8504	Within One-Mile North of the APE N	Prehistoric; No Information	Traces of Occupation
	NYSM 7324	Within One-Mile North of the APE N	Transitional Archaic	Traces of Occupation
	NYSM 6496	Within One-Mile North of the APE N	Late Woodland	Triangular projectile points, four fire pits

3.2.3 New Jersey Section of the APE: Previously Documented Prehistoric Archaeological Sites

A review of the records of the New Jersey State Museum indicates that no known prehistoric archaeological sites are present within a one-mile radius of the New Jersey section of the APE. The salt marshes that were originally present on the New Jersey side would not have been favorable for prehistoric occupation. Any prehistoric settlement in this region would probably have occurred on higher areas near streams, such as the Elizabeth River. One favorable area would have been the rise to the north of the APE that is crossed by Elizabeth Avenue and the New Jersey Turnpike. This is near the area from which Skinner and Schrabisch (1913) reported prehistoric finds. Cross (1941), however, does not mention any sites in the area.

In summary, the overall lack of prehistoric archaeological sites within the New Jersey section of the APE is encapsulated by the following observation made by Herbert Kraft in 1977b:

> "With few exceptions, our survey, both archaeological and archival, has revealed that the Elizabeth River from Arthur Kill to near the Kean Estate in Hillside and Union Townships, has been so thoroughly destroyed and its attendant river banks so excessively modified in the three centuries since colonization... an essentially devastated environment" (Kraft 1977b:25).

3.3 Historic Background

3.3.1 New York Section of the APE: Historic Background

From 1621 to 1664, Staten Island was part of the Province of New Netherland. The province was administered by the Dutch West India Company, under whose jurisdiction the island received its name. The Native American population resisted Dutch settlement, culminating in the Peach War of 1655, which vastly depopulated the island. In 1662, a handful of dwellings and a small blockhouse were erected on a site above Lower New York Bay, a short distance south and west of the high ground at The Narrows. This settlement, known as Oude Dorp (Old Town), consisted chiefly of Dutch and French colonists from the Palatinate.

In 1664, New Netherland, including Staten Island, was taken over by Great Britain. The last Native American claims to Staten Island were extinguished in 1670, and in 1683 the island was organized as the County of Richmond. Settlement continued under the British, with significant numbers of Huguenots arriving in the last years of the seventeenth century. However, the entire population of Staten Island was only 727 by the year 1698; ten-percent of which were slaves (Steinmeyer 1950:18). By the mid-eighteenth century, Staten Island's population was a mix of people of Dutch, French, Belgian, English and African descent (LBA 1985:11).

The earliest European colonization of Staten Island occurred in 1639 with a small band of settlers led by Captain Pieterz De Vries. Another of the earliest European settlements on Staten Island was approximately four miles southeast of the APE in the Richmondtown area. Richmondtown was first settled by European colonists in 1680, and by 1710 the area was developing as a small crossroads hamlet (Baugher et al. 1989:48). Richmondtown was first known as Cocklestown (or Cuckoldestowne), because of the multitude of oysters harvested on the shores of Staten Island. Richmondtown became the county seat in 1728 and remained so until 1898, when Staten Island became a borough of the City of New York and the seat of government was moved to St. George.

Between 1750 and 1760 two gristmills were constructed on streams south of the APE (Baugher et al. 1989:60). During the eighteenth century Staten Island developed as a primarily agricultural and fishing community with its county seat at Richmond town, its principal village. Some of the products raised at that time were beef, pork, wheat, rye, and apples. Fish, oysters, and clams were commonly taken from the waters about the Island, and salt hay was gathered from its extensive salt meadows in the towns of Northfield, Southfield, and Westfield (Akerly 1843; Smith 1970). Peter Kalm, a Swedish naturalist who traveled extensively throughout the colonies during the eighteenth century made this observation upon visiting Staten Island:

> "Near the inn [in Elizabethtown] where we had passed the night, we were to cross a river and we were brought over, together with our horses, in a wretched, half-rotten ferry....The country was low on both sides of the river, and consisted of meadows. But there was no other hay to be got, than such commonly grows in swampy grounds; for as the tide comes up in this river, these low plains were sometimes overflowed when the water was high. The people hereabouts are said to be troubled in summer with immense swarms of gnats or mosquitoes, which sting them and their cattle. This was ascribed to the low swampy meadows, on which these insects deposit their eggs, which are afterwards hatched by the heat" (Kalm cited in Steinmeyer 1950:19).

This description appears to refer to the New York section of the APE. The river that Kalm mentions is likely the Arthur Kill. Also, the proximity to Elizabethtown and the description of "swampy grounds" indicates that the ferry landing was located somewhere in the vicinity of the present-day Goethals Bridge, although no remains of the ferry have been mentioned in more recent cultural resource literature.

In July 1776, British forces landed on Staten Island and proceeded to establish a military rule that lasted until the close of the Revolutionary War in 1783 (LBA 1985:11). The Island served as a staging area for British attacks into Long Island and New Jersey, and as a source of produce, wood, and fodder for the increasing military and civilian population. The Revolutionary War had profound effects on the citizens of Staten Island. For example, a study of the house of Christopher Billopp, a wealthy naval officer, revealed that few items reflective of his high social status had survived. Baugher and Venables (1987:49-50) attribute the absence of such items to British confiscation and American looting.

During the Revolutionary War, the Richmondtown courthouse and church were destroyed, and in 1808 a Dutch Reformed church was built on the site of the former church (Baugher et al. 1989:60). Period maps show little development in the northwest quadrant of Staten Island, with the major roads located to the west and south (Figure 5). However, British troops engaged in a skirmish and occupied a site in the vicinity of Western Avenue and Goethals Road North (Payne and Baumgardt 1986). The 1781 Taylor and Skinner map (Figure 6) shows Richmond Terrace, a road that runs along the northern coastline of Staten Island approximately 0.8-miles north of the APE, in place with a number of structures along the south side.

Following the War for Independence, residents of Staten Island initially re-established the Colonial agrarian socioeconomic system (Figure 7). Beginning in the 1830s, Staten Island caught the attention of wealthy New Yorkers as a fashionable bathing resort and summertime retreat. They built large summer houses along the shores and gradually began to remain year-round, particularly in communities such as New Brighton, Stapleton, and Clifton. They were accompanied, if not preceded, by developers, such as Daniel Low, who established the Staten Island Association to promote development along the eastern shore. As a result, many large tracts of formerly agricultural land were gradually subdivided, and former farmhouses, such as the Austen House at Clifton, were remodeled as Victorian Acottages@ (Berger 1983:33; Goldstone and Dalrymple 1976:473). By the early 1840s,

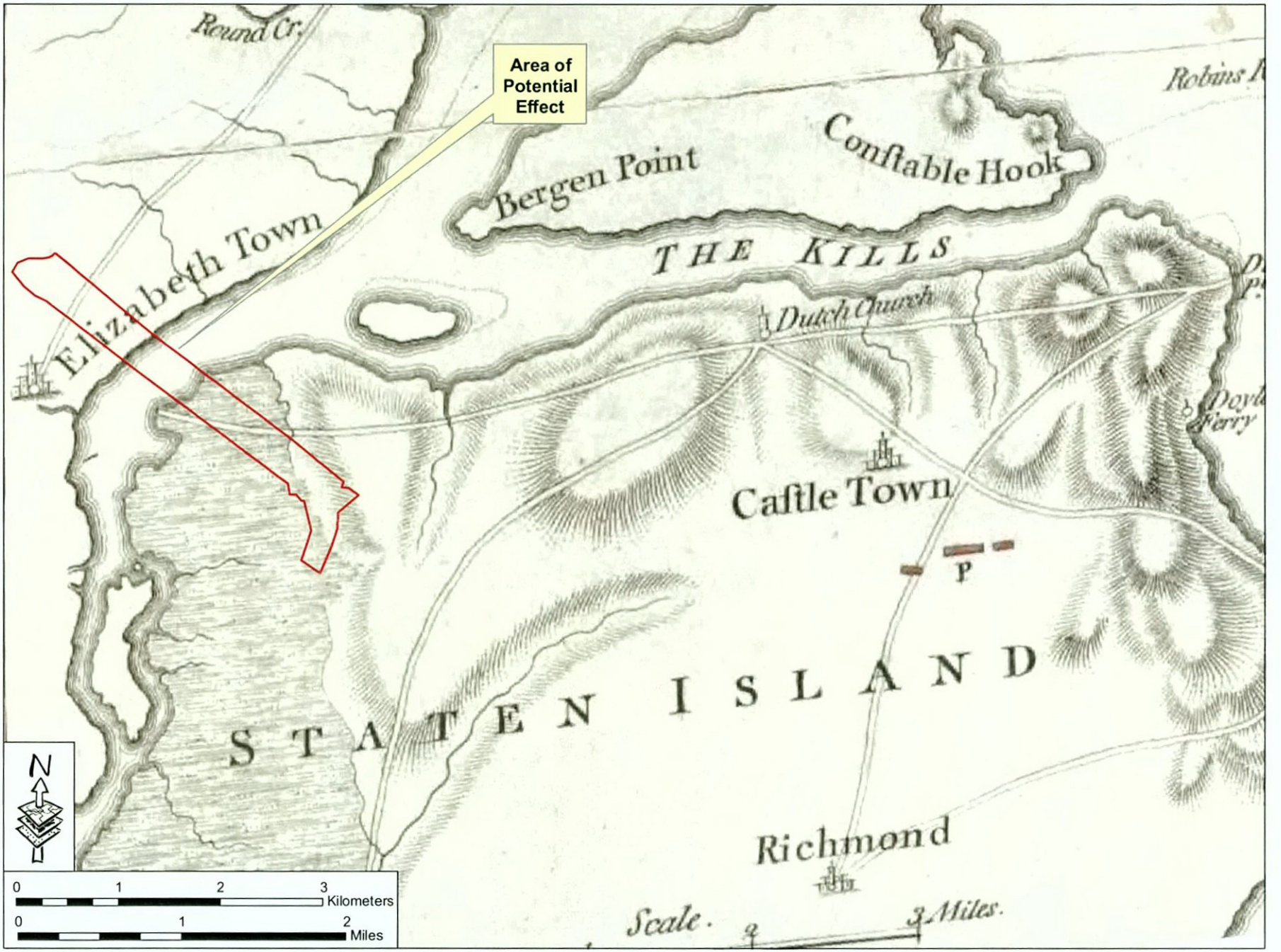

FIGURE 5: New York Section of the APE in 1776

SOURCE: Faden 1776

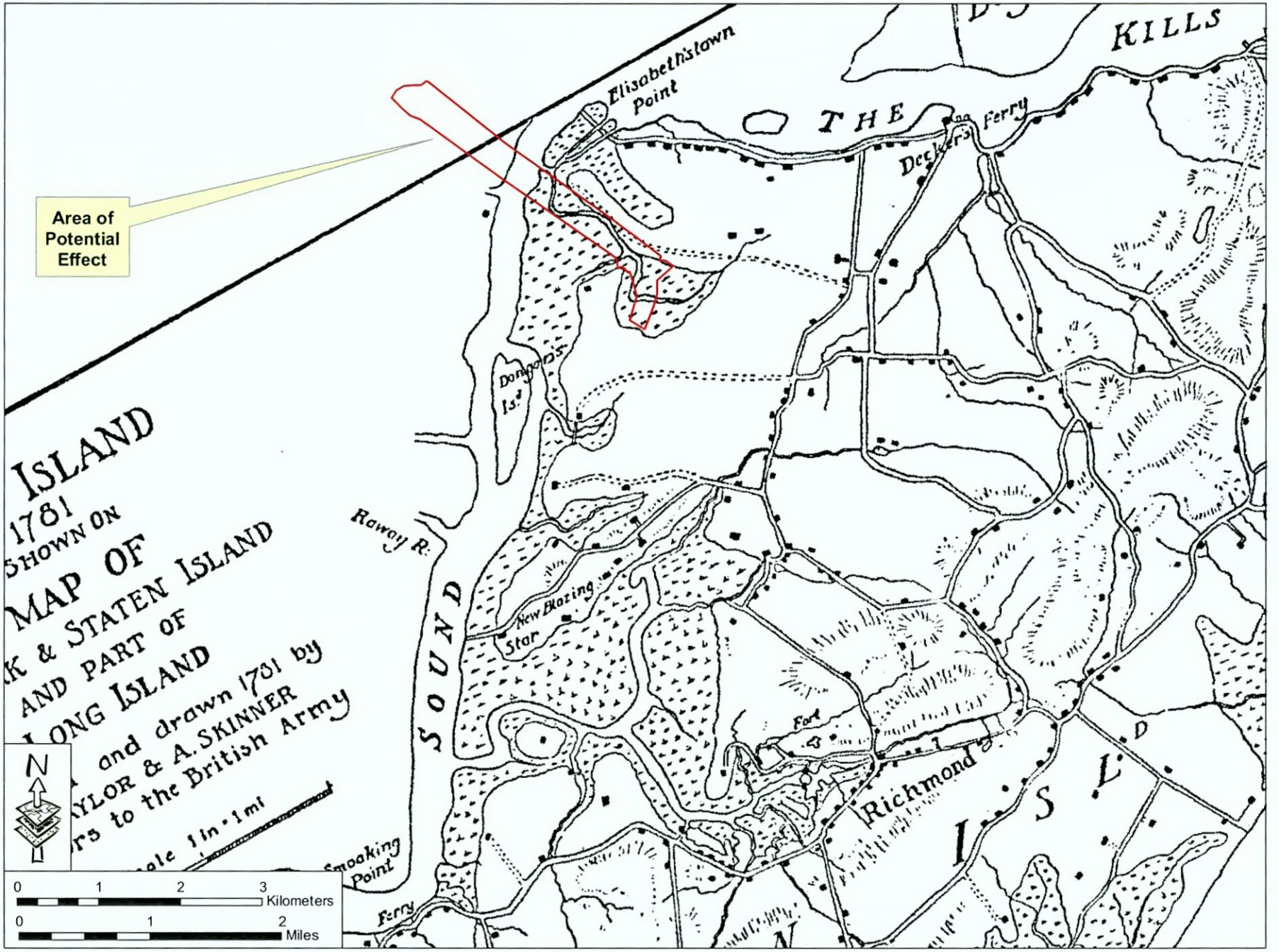

FIGURE 6: New York Section of the APE in 1781

SOURCE: Taylor and Skinner 1781

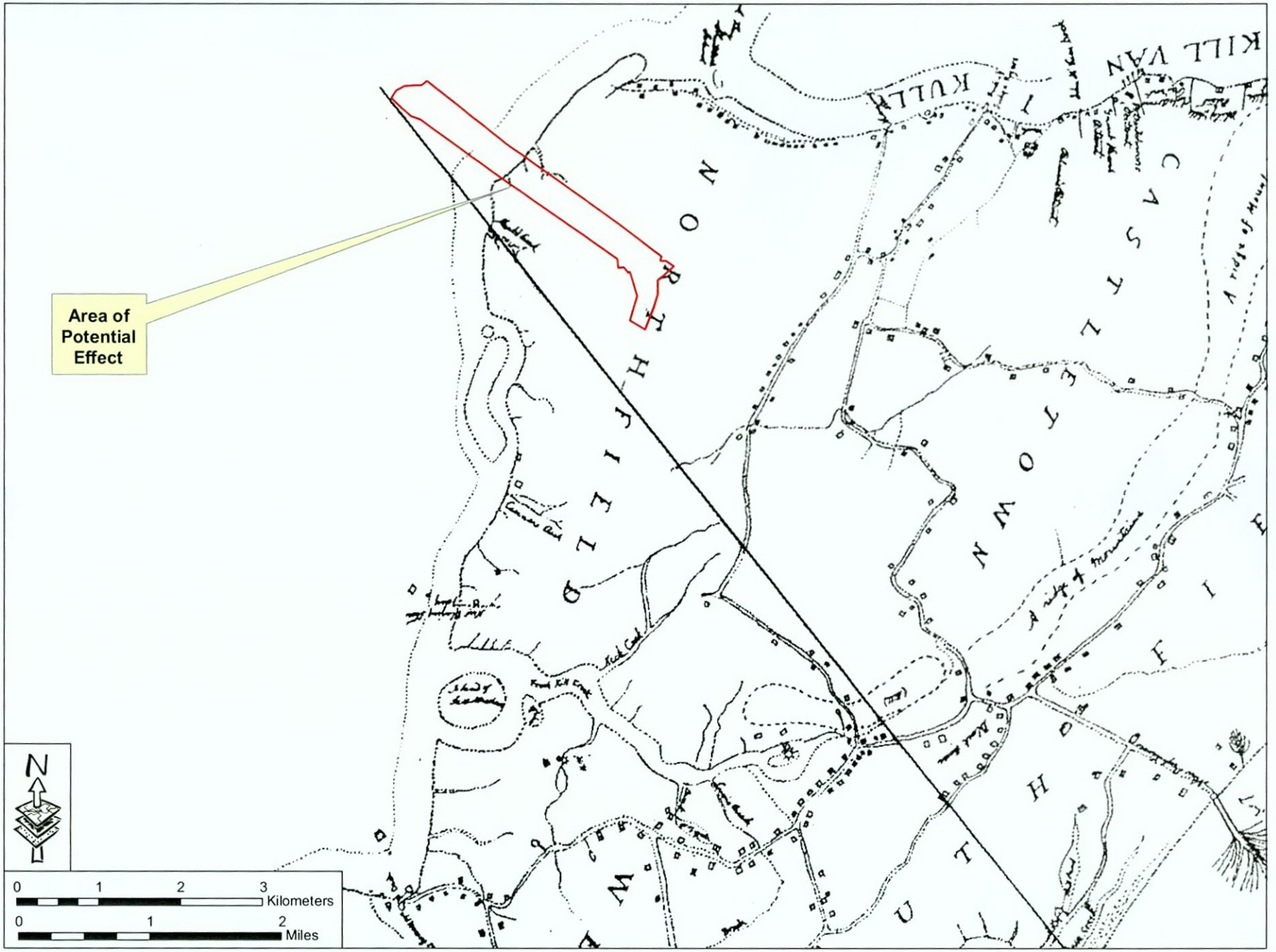

FIGURE 7: New York Section of the APE in 1797

SOURCE: Unknown 1797

according to a contemporary writer, Athe whole eastern shore@ down to Fort Richmond had become "almost a continued village. . .occupied by country seats and town plots" (Akerly 1843:199).

The earliest historic settlement of the APE dates to around 1680, although the first structure does not appear on a map until the time of the American Revolution. This structure, known as the Tunnisen House, is believed to have been located in the vicinity of the Howland Hook Marine Terminal west of Western Avenue (Payne and Baumgardt 1986). A tidal mill was also reported to have existed during this time, but does not appear on any maps (Payne and Baumgardt 1986). A second tidal mill, built in 1804 and possibly a successor to the colonial-era mill, was destroyed by fire around 1898 (Figure 8) (Morris 1898:378, Steinmeyer 1950:90). The APE remained largely agricultural after the Revolution until the early twentieth century. The gradual shift from an agricultural/residential community to an industrial/transportation corridor resulted in the removal of the majority of the early domestic buildings and industrial structures by the middle of the twentieth century.

While the New Jersey side of the Arthur Kill saw tremendous industrial growth during the nineteenth century, the west side of Staten Island remained largely undeveloped. The few industrial enterprises begun during the mid-nineteenth century include the Kreischer Brick Works, the Tottenville Copper Company, the American Linoleum Manufacturing Company and the Atlantic Terra Cotta Company (Brighton 1997:11). Development within the APE during the second half of the nineteenth century was limited to the area along Western and Washington Avenues (Figure 9; also see Figure 17). The 1874 Beers Atlas of Richmond County shows six structures along Old Place Road (Washington Avenue) west of Western Avenue (Figure 10). All appear to be farmhouses situated on lots ranging in size from eight to 13 acres. A flouring mill was depicted east of Western Avenue along the south side of Old Place Creek in the vicinity of the APE. The residence of the mill proprietor was located opposite the mill on the north side of Old Place Road.

The 1898 Atlas of the Borough of Richmond County shows the APE to be largely in the possession of private owners, with corporate ownership represented by several tracts listed as the ANew York Transit and Terminal Company@ (Figure 11). Western Avenue and Washington Avenue (the current Goethals Bridge service road) are depicted close to their current alignments. The 1907 Atlas of the Borough of Richmond County shows a number of new streets extending north from Washington Avenue (Figure12). These streets, McKinley Street and Elizabeth Avenue would be short-lived, as they lie directly in the future path of the Goethals Bridge. The flouring mill first depicted on the 1874 atlas is still standing at this juncture. The 1917 Bromley Atlas of the City of New York Borough of Richmond depicts many of the former farms in the possession of industrial corporations or large realty companies (Figure 13). The 1917 Sanborn Insurance Map shows a cluster of buildings that were demolished when the Goethals Bridge began construction in 1925 (Figure 14). This same map shows the nineteenth-century flouring mill and associated buildings to have been demolished. Other buildings that were present on nineteenth-century atlases are also gone by this time, evidence of the transition from a farming community to an industrial area, and were replaced by Howland Hook Ferry Company complex along the Arthur Kill shoreline.

3.3.2 New York Section of the APE: Previously Documented Historic Archaeological Sites

Research conducted at the NYSOPRHP indicates that numerous historic archaeological sites have also been documented on Staten Island, including the location of a Revolutionary War skirmish, a troop barrack, and troop burial sites, as well as the remains of historic farmsteads dating from the seventeenth through early twentieth centuries. Specific to the New York section of the APE, the records of the NYSOPRHP and the NYSM list six historic sites within a one-mile radius of the New York section of the APE (see Table 2). All of the historic archaeological sites that were recorded within a one-mile radius of the APE are clustered along North Washington Avenue west of Western Avenue. These sites were recorded by Payne and Baumgardt in 1986 and have been impacted by construction associated with the Howland Hook Marine Terminal facility. Furthermore, the locations of Revolutionary War era burials was noted by Skinner in 1909 but no further human remains have been recovered by subsequent archaeological investigations (see Payne and Baumgardt in 1986).

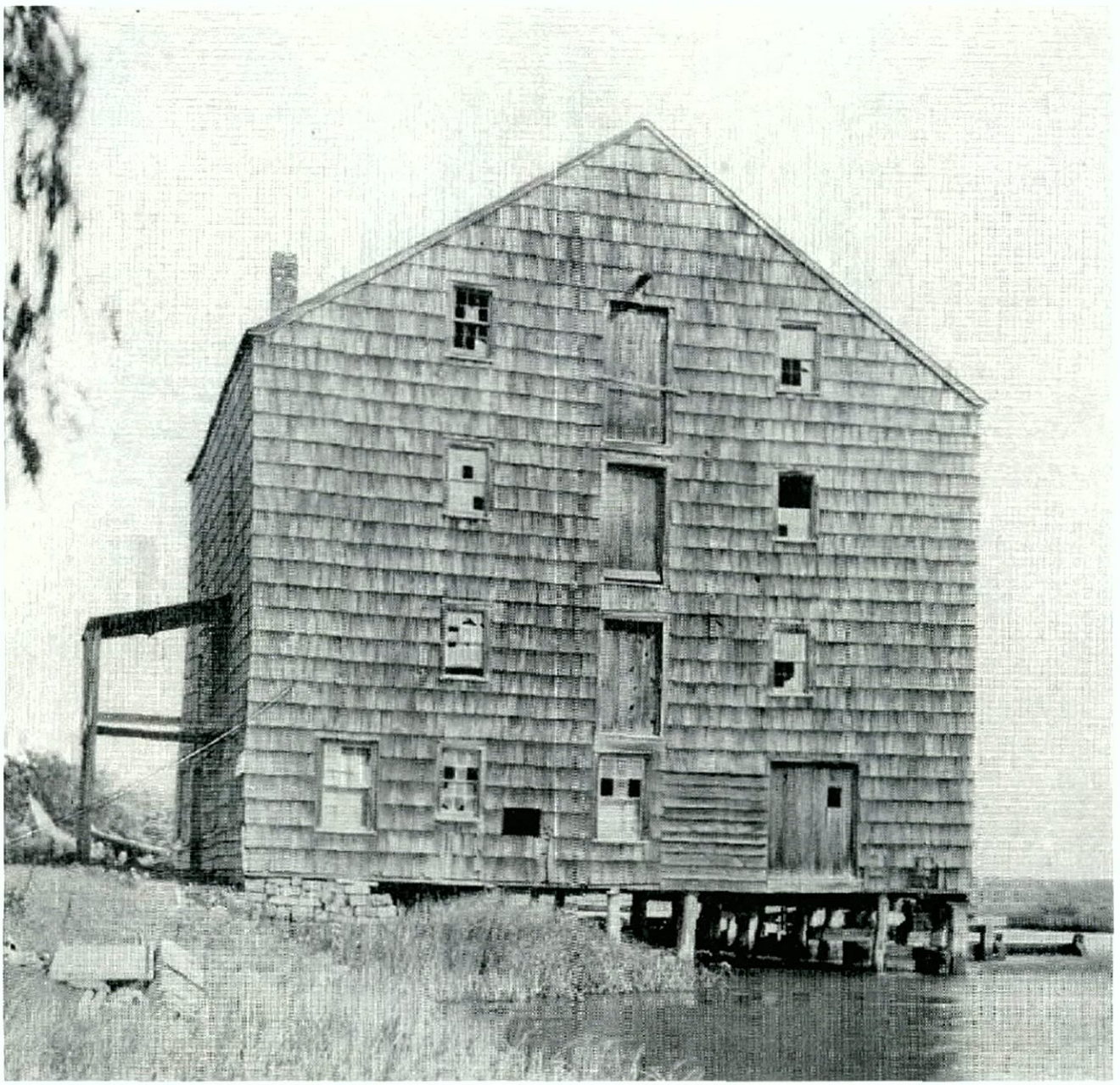

FIGURE 8: Circa 1804 Mill along the Old Place Creek

SOURCE: Morris 1898

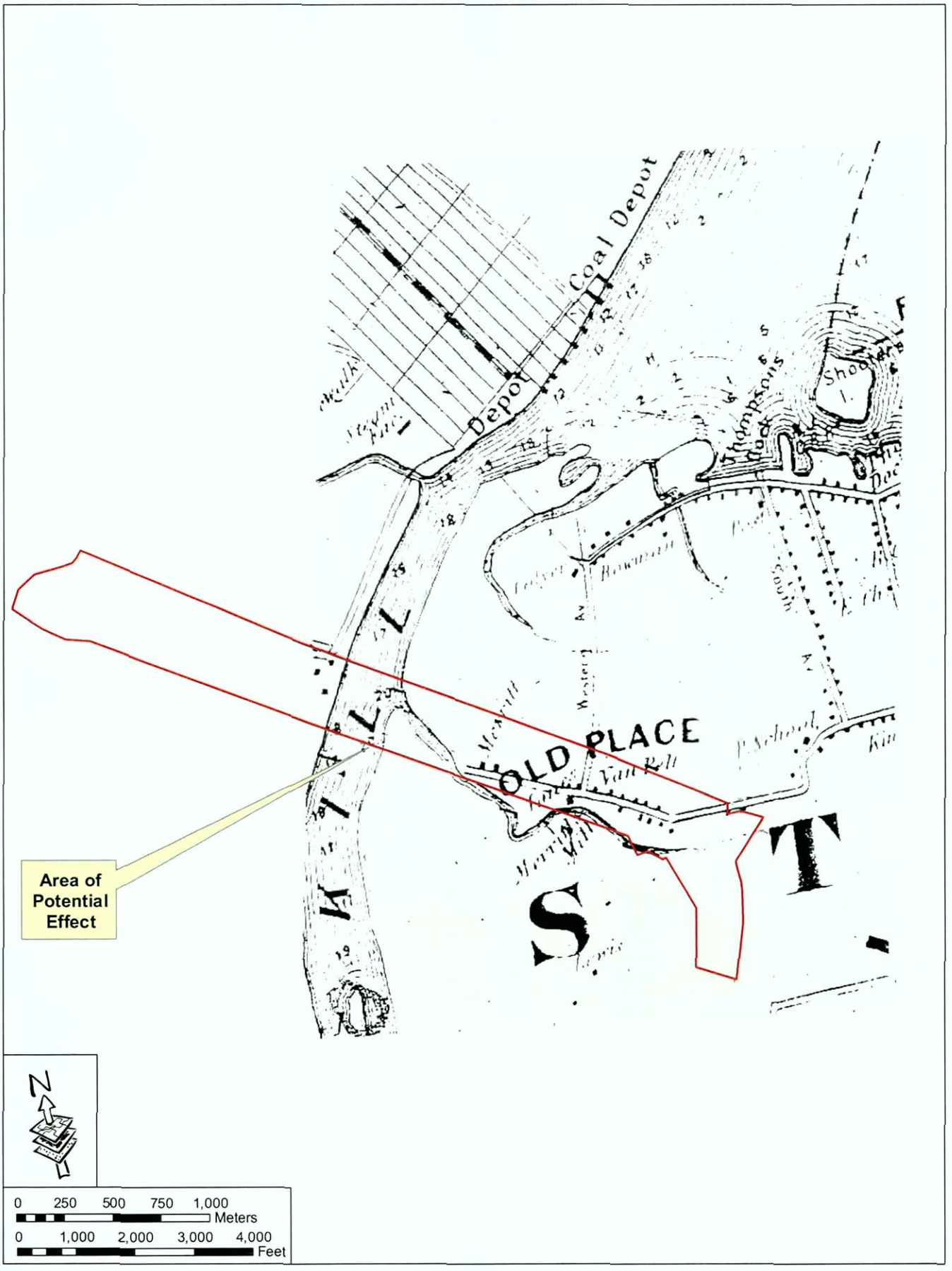

FIGURE 9: New York Section of the APE in 1860

SOURCE: Grover and Baker 1860

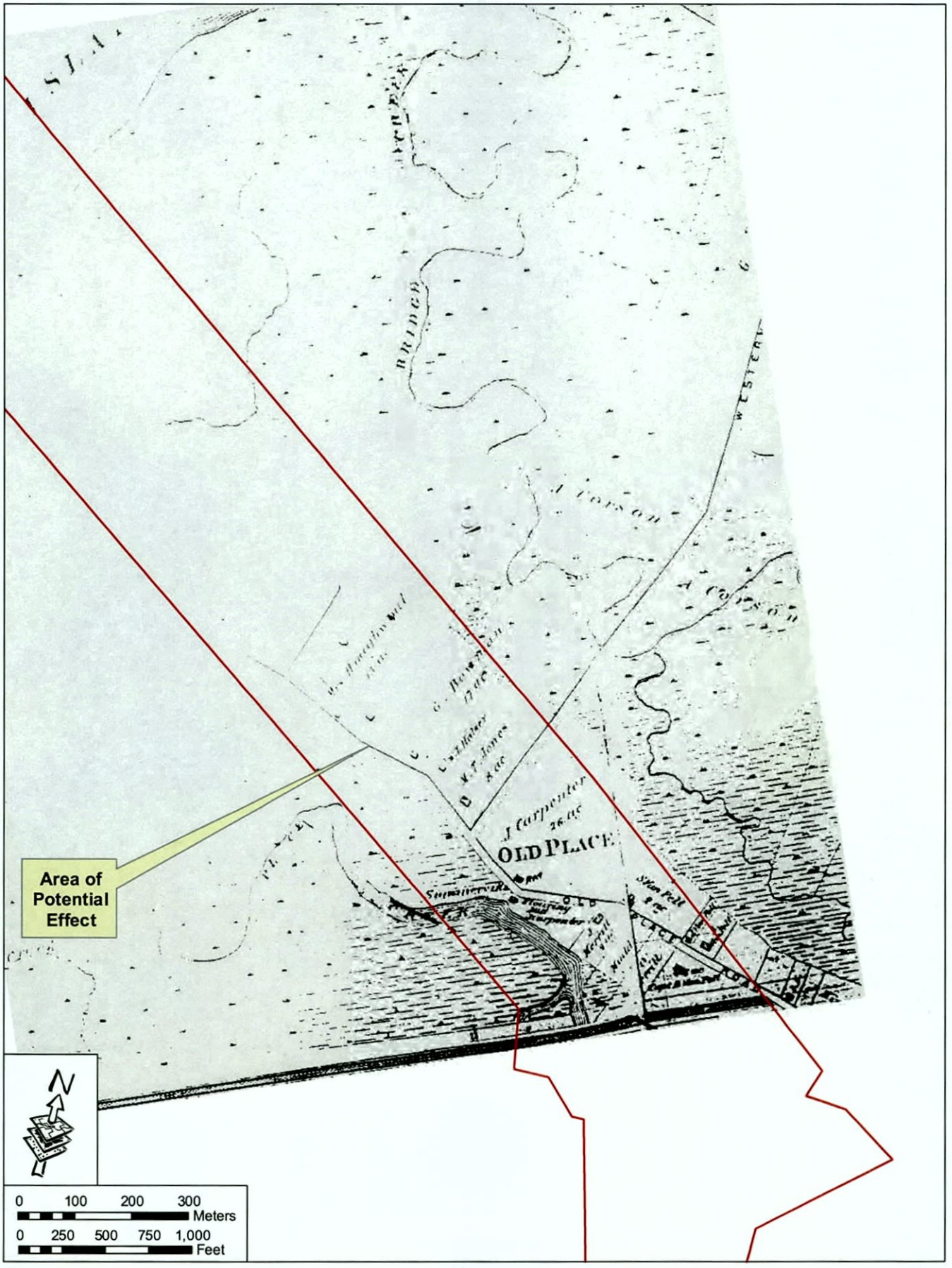

FIGURE 10: New York Section of the APE in 1874

SOURCE: Beers 1874

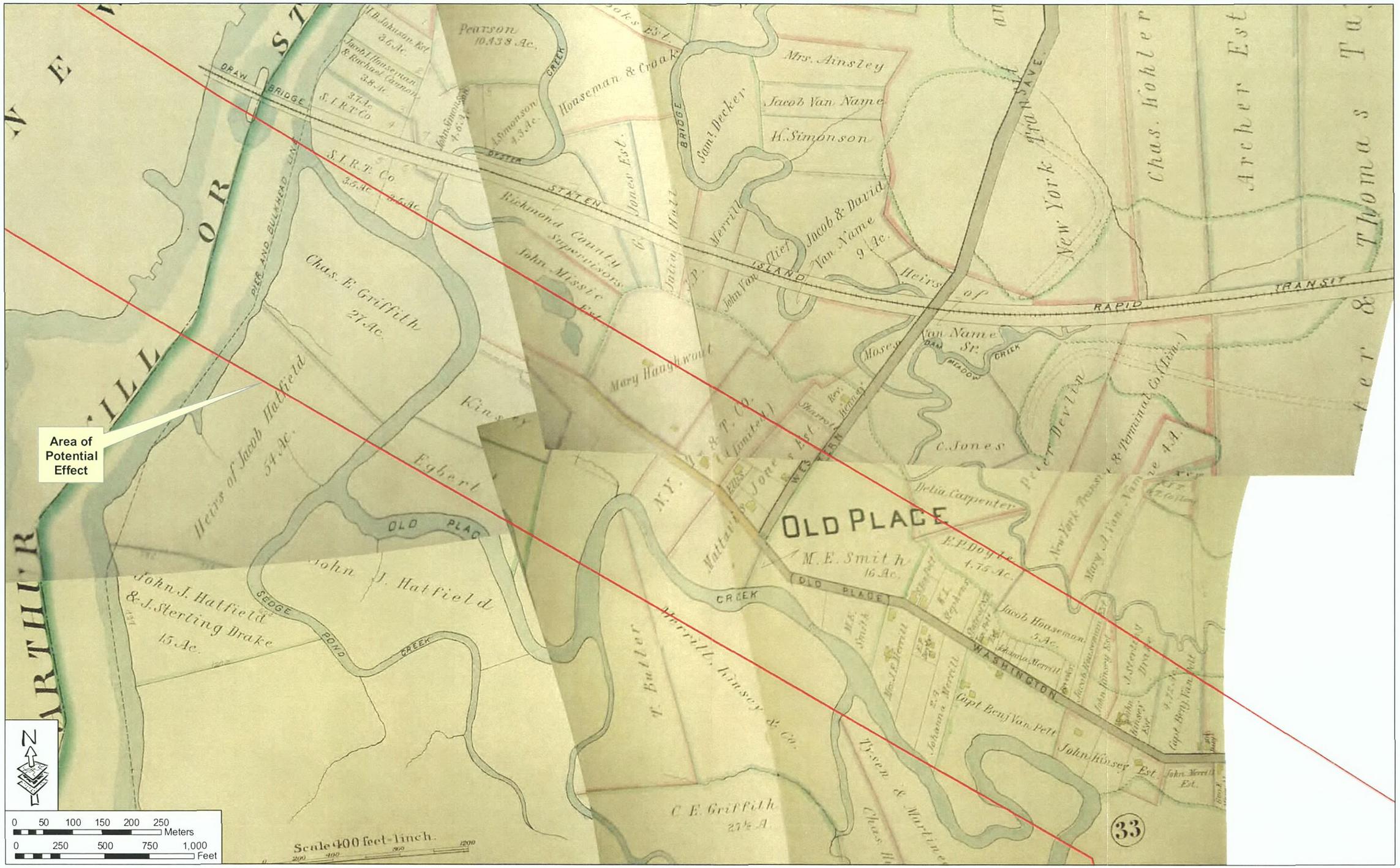

FIGURE 11: New York Section of the APE in 1898

SOURCE: Robinson 1898

FIGURE 12: Portion of the New York Section of the APE in 1907

SOURCE: Robinson 1907

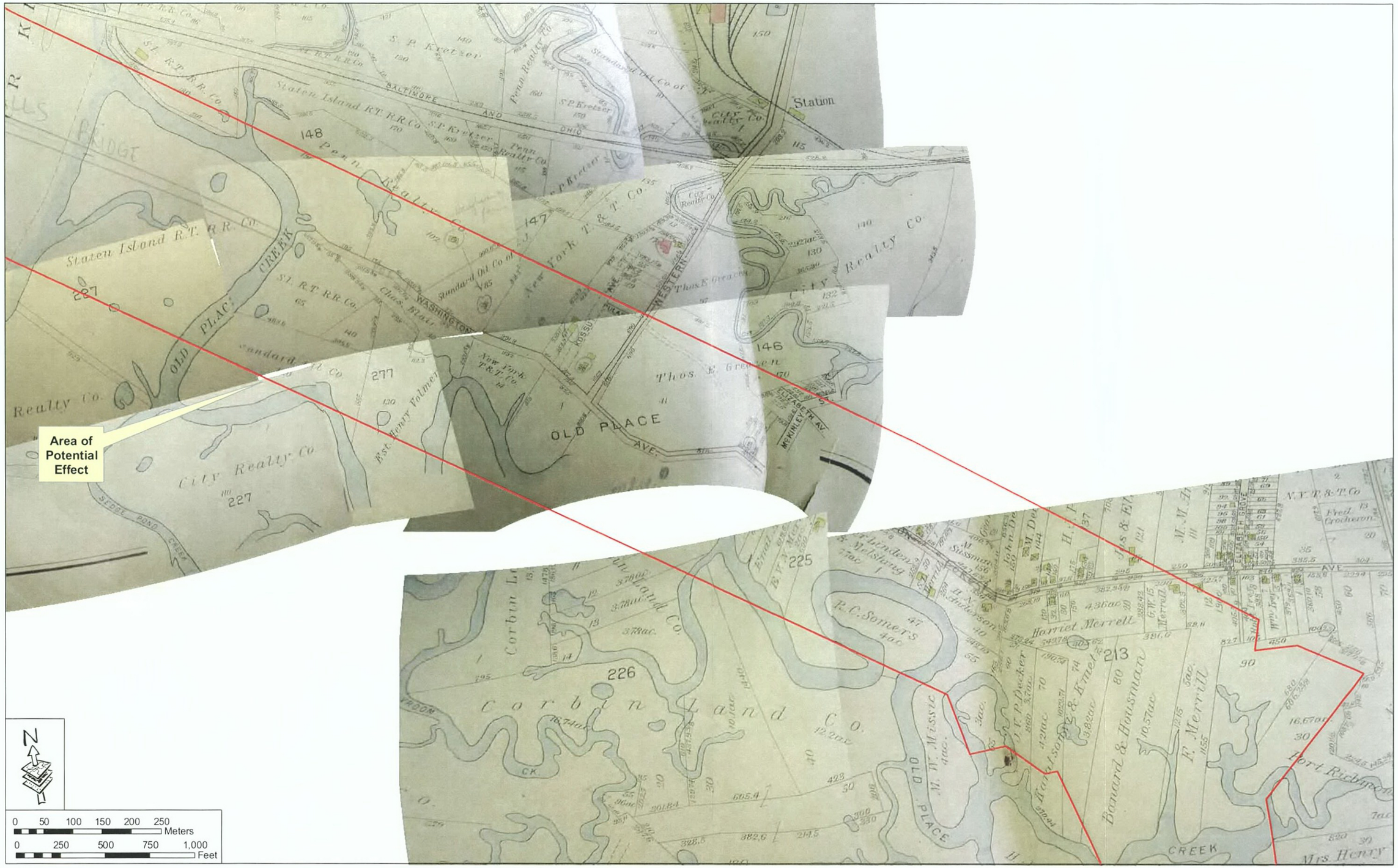

FIGURE 13: Portion of the New York Section of the APE in 1917

SOURCE: Bromley 1917

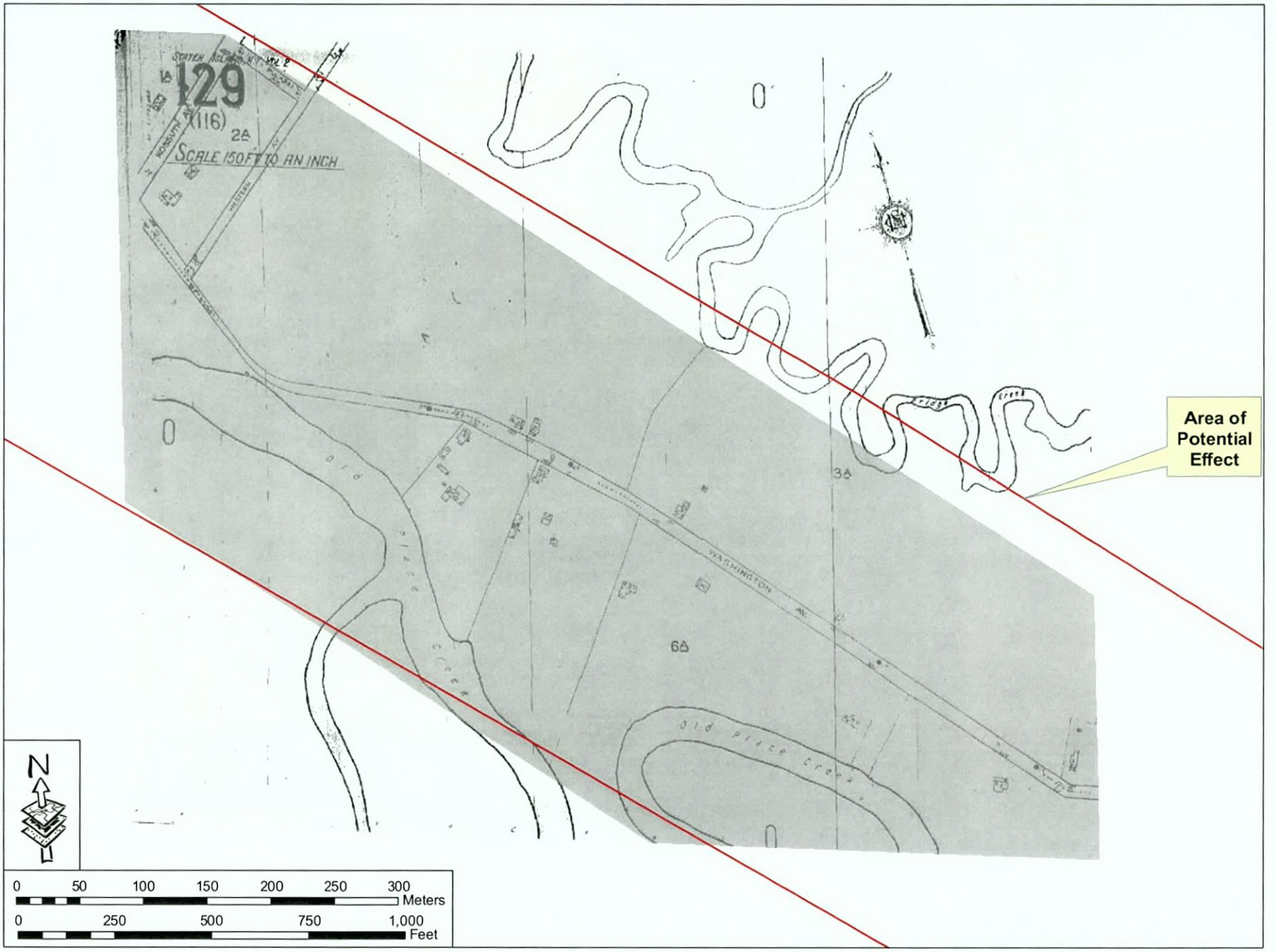

FIGURE 14: Portion of the New York Section of the APE in 1917

SOURCE: Sanborn 1917

Table 2: Historic Archaeological Sites within a One-Mile Radius of the New York Section of the APE

NYSOPRHP Site #	Additional Site #	Approximate Distance From APE M (ft)	Time Period	Site Type
A085-01-2372		Within APE	Historic; 1790	Domestic Site
A085-01-2374		Within APE	Historic; 1680	Domestic Site; Tunissen House
A085-01-2373		Within APE	Historic; 1790	Unidentified Structure Probably Associated with 1790 Structure
A085-01-2369		Within APE	Historic; 1790	Domestic Site
A085-01-2368		Within APE	Historic; 1790	Domestic Site; Possibly the Haughwout House
A085-01-2375		184m (600 ft) North	Historic; 18th Century	Revolutionary War Skirmish, Barracks, Euro-American Burials

3.3.3 New Jersey Section of the APE: Historic Background

The western terminus of the Goethals Bridge in New Jersey is in the City of Elizabeth, about 1,500 feet south of the Elizabeth River. Elizabeth, formerly called Elizabethtown, was the site of the first permanent English settlement in the state (Figure 15). An association of eastern Long Islanders bought a large tract of land between the Passaic and Raritan rivers from Native Americans living on Staten Island. This tract encompassed Union County and parts of Morris, Somerset, Essex, and Middlesex counties (Heritage Studies 1985:55). The area bordering the Arthur Kill was known as Elizabeth Point, or Governor's Point, as it was the site of Phillip Carteret's landing in 1665. The area at the mouth of the Elizabeth River remained sparsely settled, and was noted mainly for the ferry to Staten Island, established in 1697 at the foot of Elizabeth Avenue.

Settlers from eastern Long Island and Connecticut arrived in 1664/1665 onto the banks of the Elizabeth River and selected a site two and one-half miles from its confluence with the Arthur Kill. The initial settlement and the encompassing tract of land were named Elizabethtown in honor of the wife of Sir George Carteret, a proprietor of East Jersey. The Elizabethtown colony was organized according to the New England town plan, as a nucleated village containing a meeting house with farm lots surrounding the village. In Elizabeth, four-acre home lots were surveyed on the first upland beyond the salt marsh along both banks of the Elizabeth River extending for two miles up river (Wacker 1975:249). These "townlots" were surveyed in the form of long lots, with their short sides abutting the river, providing each with river frontage. Surrounding the town were outlying farm lots (Heritage Studies 1985:56). The Elizabeth River provided navigation and hydropower for shipping and milling as well as drinking water (Leo et al. 1979).

Settlement along Newark Bay and the Arthur Kill continued with the founding of Newark (1666) to the north and Woodbridge (1668) to the south, thereby fixing the boundaries of the Elizabethtown settlement and the future Union County. In 1682 the General Assembly of the Province of New Jersey created four counties in East Jersey: Bergen, Middlesex, Monmouth, and Essex. The Elizabethtown territory as well as Newark was included within the bounds of Essex County. In 1693 the Assembly further divided these counties into townships and finally, in 1740, Elizabethtown Township received the status of Borough by Royal Charter. The following year its western boundary was defined with the formation of Somerset County (Snyder 1969).

The centralized New England town plan of Elizabeth soon broke down as dispersed hamlets and clusters of farms appeared in different localities (Ricord 1897). These hamlets, such as Lyons Farms (Hillside), Connecticut Farms (Union), and Rahway, developed westward from Elizabeth along rivers and streams between 1669 and 1738. Communities too far from the civic and religious center of Elizabeth built their own churches and schools and were designated wards of Elizabeth. Such wards were Westfield (1735), New Providence (1738), Connecticut Farms (1740), Rahway (1741), and Springfield (1746).

Elizabeth Point became a strategic location during the Revolutionary War, seeing many crossings by British troops. From 1777 to the end of the war, the British maintained fortifications at the Point to guard their troop crossing. Two battles occurred at the Point, the first on July 21, 1778, the second on June 8, 1780 (Figure 16). After the

FIGURE 15: New Jersey Section of the APE in 1690

SOURCE: Lea 1690

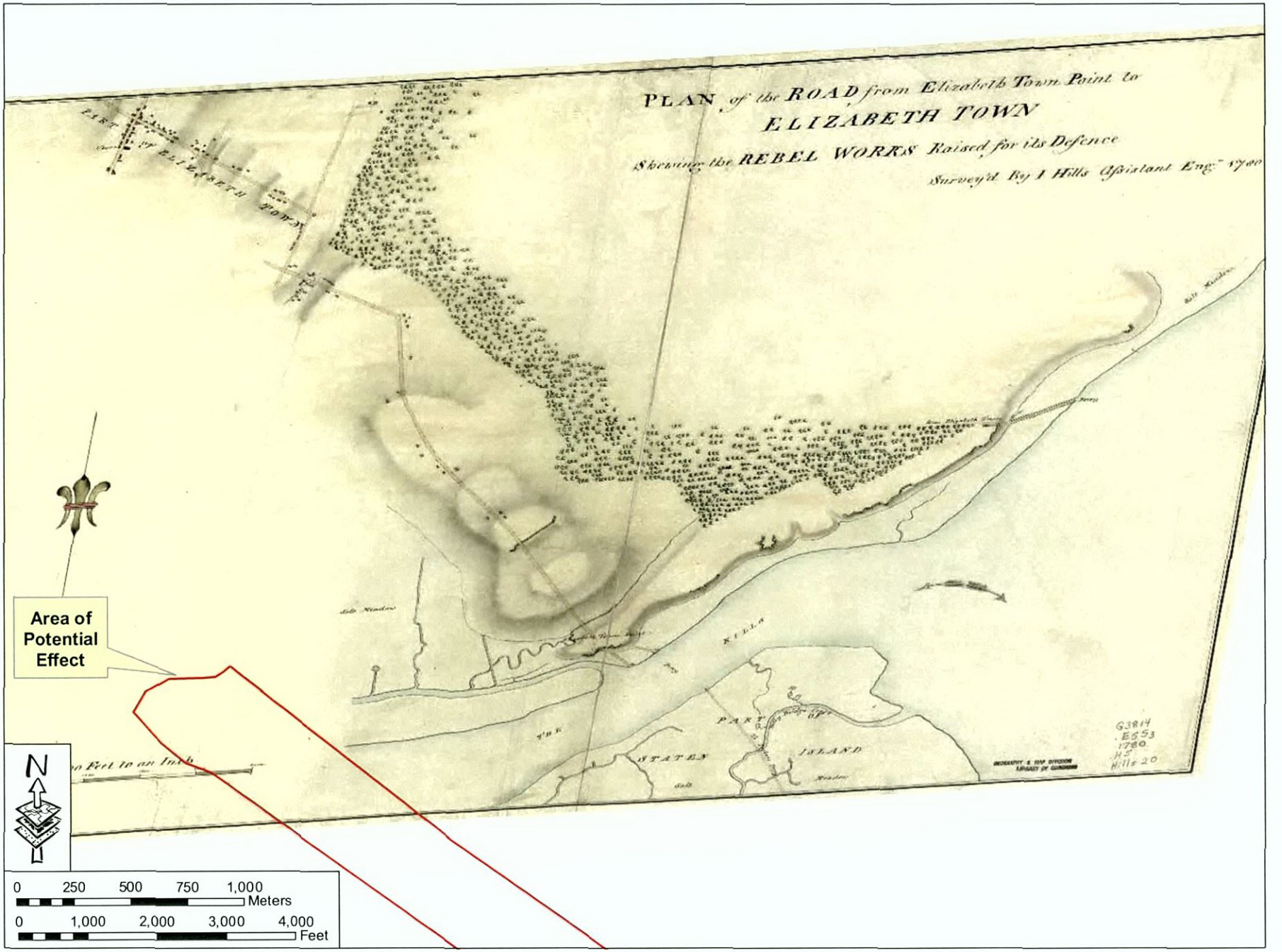

FIGURE 16: New Jersey Section of the APE in 1781

SOURCE: Hills 1781

Revolutionary War, Elizabethtown territory was divided into townships, with the older villages serving as administrative centers (Union County Cultural and Heritage Programs Advisory Board 1982:5-6).

Farming continued to be the mainstay of Union County after the Revolutionary War. The extensive salt meadows adjacent to the Arthur Kill, Rahway River, and Morse's Creek, provided excellent grazing lands. During the course of the nineteenth century, the farms of the area continued to produce a variety of raw and processed grain and livestock products. Farms located adjacent to navigable waterways thrived, having the most efficient access to the New York, Elizabeth, and Perth Amboy marketplaces. Between 1801 and 1829, thirty turnpikes were built in New Jersey. The improved roads increased the efficiency of overland transportation, and together with an expanding road network, facilitated access to fresh farmland (Community Pride Publications 1985:23; Heritage Studies 1979:3; New Jersey Department of Transportation [NJDOT] 1975:5-9; Union County Department of Parks and Recreation 1986).

Elizabeth Point did not become developed until after the Elizabethtown-Somerville Railroad was built to reach there in 1835 (Figure 17). A group of New York City businessmen, drawn by the shipping and transportation facilities, laid out the town of Elizabethport (SSI 1982:15-19). A large railroad depot was built on the southwest corner of Broadway and Front Street, just north of the APE (Figure 18). The railroad tracks ran down the center of 100-foot-wide Broadway (Rolfe 1835). Expansion of the railroad system occurred in the 1870s. A roundhouse, freight depot, and other railroad structures were built in the vicinity of the APE on the Arthur Kill (Sanborn 1889). During the middle and late nineteenth centuries, as urban areas of New York, Newark, and Elizabeth expanded, settlement focused along the railroad corridors serving the cities (Sanborn 1886, 1891, 1896a, 1896b, 1901a, 1901b). This pattern of growth was typical of many regions of the country, in which railroads created "metropolitan corridors" along which industrial development and suburban growth took place (Stilgoe 1983, 1988). In 1865, the Pennsylvania Railroad built a branch line from Rahway to Perth Amboy, now part of Conrail's Perth Amboy Division, located west of the APE. The villages of Colonia and Avenel, promoted as pleasant retreats from New York City and fitting settings for country estates, were established along this line in the 1870s. As railroads wove a tight web of transportation corridors across the region in the later 1800s, the large farm tracts established during the colonial period were subdivided into smaller farms. These small and more specialized farms engaged in truck gardening, emphasizing the production of perishable vegetables, fruit, and berries for the growing urban markets in Elizabeth, Perth Amboy, and New York (Clayton 1882:396; Fridlington 1981; Heritage Studies 1979:3; Ricord 1897:636; Union County Department of Parks and Recreation 1986).

Late nineteenth century expansion of railroad lines and steamship transportation, combined with industrialization and rapid growth of the ports of Elizabeth and Newark, supplied the forces which transformed the land in the vicinity of the APE from a rural hinterland to a heavily populated extension of urban New York and Newark. In 1871, the Pennsylvania Railroad gained control of the key route between New York and Philadelphia by leasing the several railroad companies, including the Philadelphia & Trenton Railroad, the Camden and Amboy Railroad, and the United Canal & Railroad Companies of New Jersey, for a period of 999 years. By 1876, the Perth Amboy and Elizabethport Railroad was in place, paralleling the earlier New Jersey Railroad to the west, and flanking the APE on the east. This line became the Long Branch Division of the Central Railroad of New Jersey by 1882. Attracted by the flat land and nearby shipping facilities, industries, including chemical and fertilizer companies and iron works, were established along the shoreline of the Arthur Kill between Perth Amboy and Elizabeth during the 1870s, 1880s, and 1890s (Clayton 1882:396; Drury 1992:255-256; Everts and Stewart 1876; Honeyman 1923:448; Robinson 1882:59; NJDOT 1975:21; USGS 1900, 1905; Wall and Pickersgill 1921:473).

Late nineteenth century links to the New Jersey Central and Pennsylvania railroads crossed the APE and served developing industrial areas along the Arthur Kill (Everts and Stewart 1876; Robinson 1882; USGS 1900, 1905). The New Jersey Terminal Railroad, built by 1900, connected industrial developments at Chrome and Star Landing with the Pennsylvania Railroad at Rahway. The line is now abandoned. The Port Reading Branch of the Philadelphia and Reading Railroad was built in 1890-1892. Running parallel to the southern end of the APE, this line transported coal and freight to the Port Reading shipping terminus on the shore of the Arthur Kill (Everts and Stewart 1876; Linden Centennial Committee Corporation c.1961:26; Ludewig 1970; USGS 1900, 1905, 1955, 1956, 1981a; Wall and Pickersgill 1921:409-410).

During the early twentieth century, the section of the Arthur Kill between Perth Amboy and Elizabeth continued to develop as a center of heavy industry (Sanborn 1901a, 1901b, 1908, 1909, 1912, 1916a, 1916b, 1920, 1924a, 1924b, 1929, 1931). The iron, fertilizer, and chemical plants of the late nineteenth century were replaced by larger plants focusing on oil refining, and the production of steel, chrome, and tin. A steel factory opened at Chrome (now part of Carteret) in 1902. The Standard Oil Company (Exxon) established the first oil refinery on the Arthur Kill in Linden in 1909. Grasselli Chemical Company, now a part of E.I. du Pont de Nemours, was established in Linden during

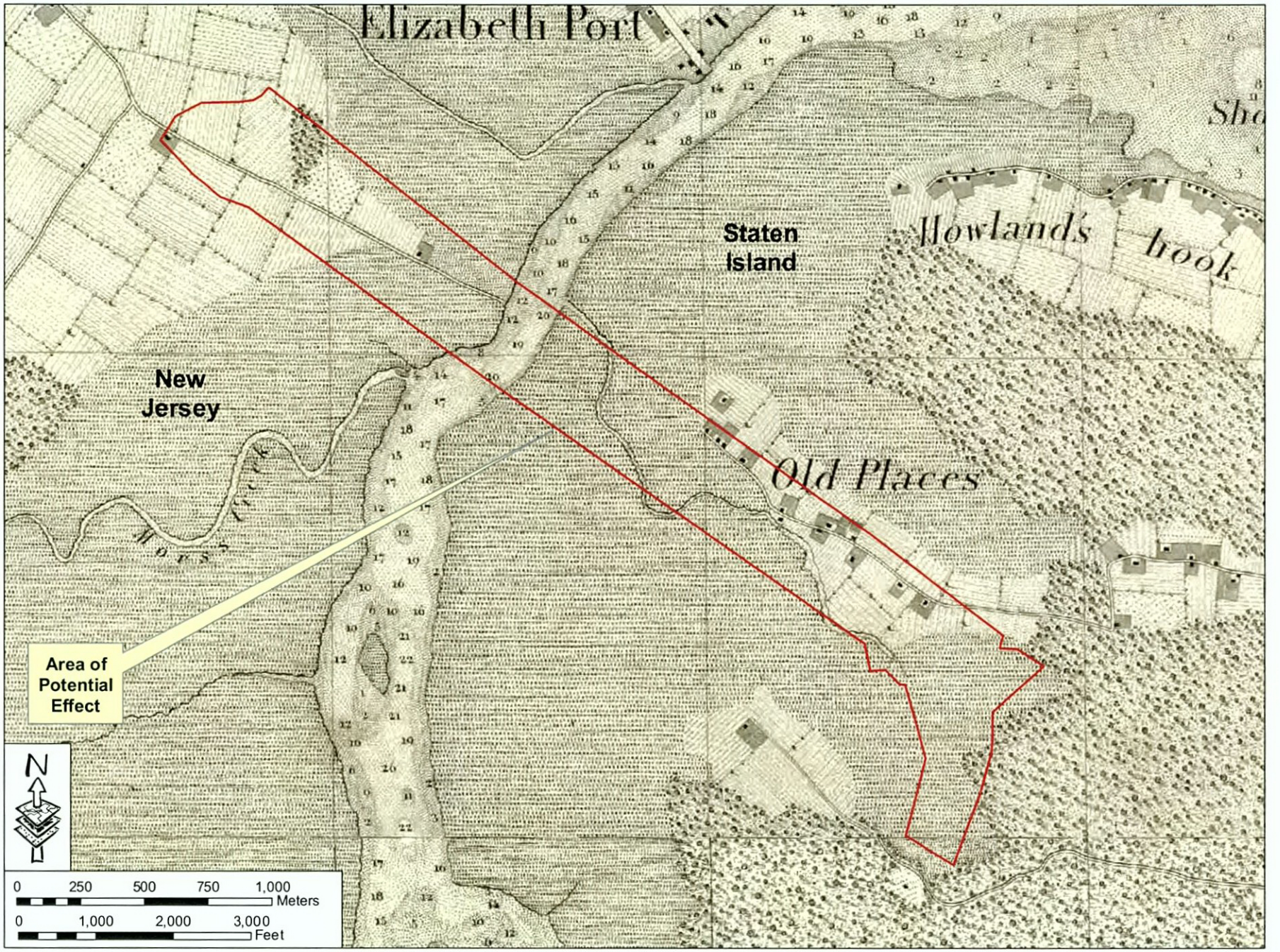

FIGURE 17: Area of Potential Effect in 1844

SOURCE: U.S. Coastal Survey 1844

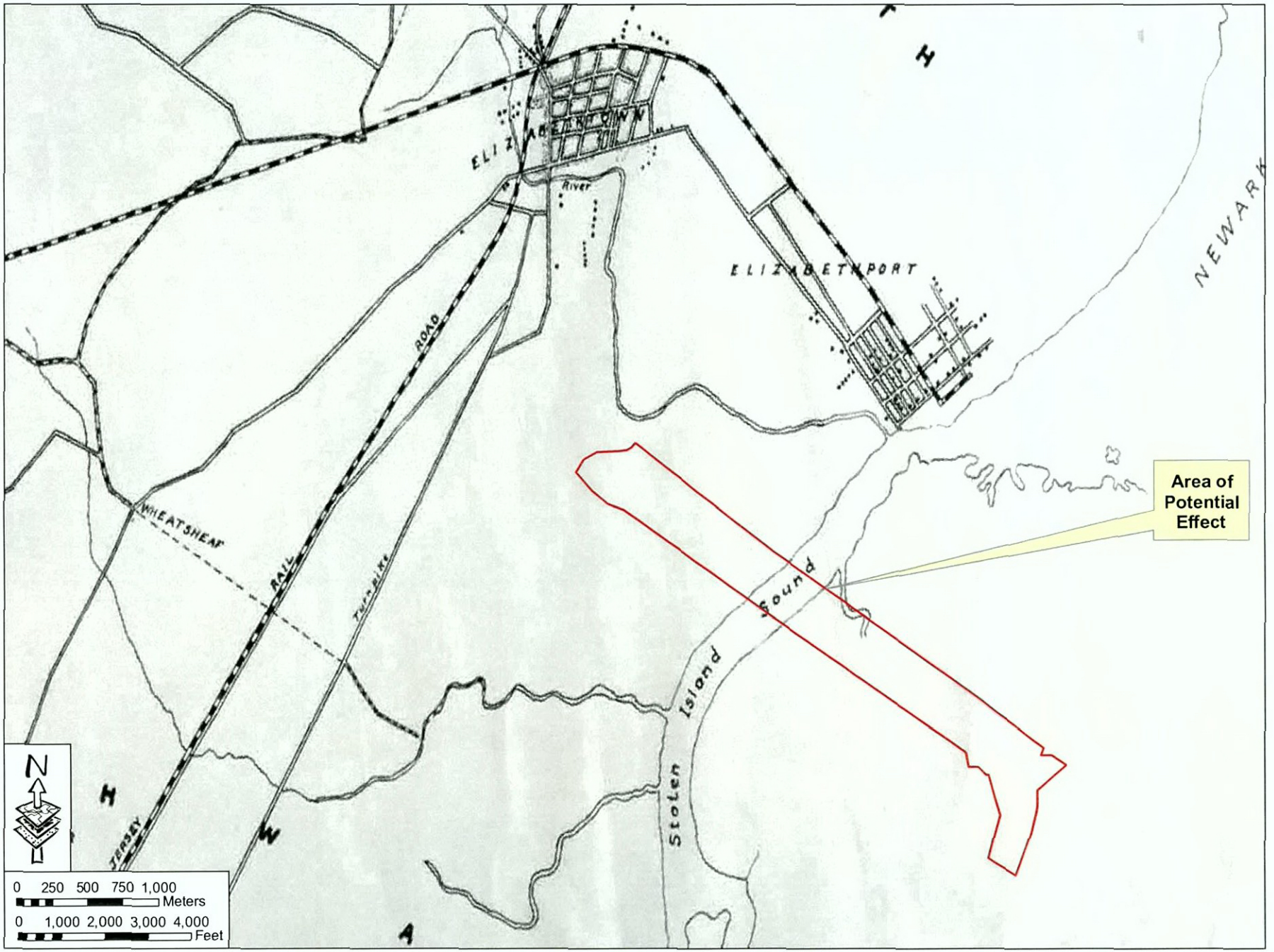

FIGURE 18: New Jersey Section of the APE in 1850

SOURCE: Sidney 1850

World War I (Heritage Studies 1979:1; Honeyman 1923:448; Union County Department of Parks and Recreation 1986; Wall and Pickersgill 1921:473).

Railroad and industrial expansion continued to stimulate residential and commercial development around the industrial plants and along the railroad lines leading to Newark and New York during the early twentieth century. Some residential developments provided homes for increasing numbers of immigrant laborers seeking work in the burgeoning industrial economy. Pockets of this housing still exist along the north side of Bayway Avenue and Krakow Street.

The development of electric street cars or trolleys provided efficient mass transportation for northern New Jersey's expanding population. By 1900, trolley lines had appeared in almost all the urban areas in New Jersey, and long distance excursions were common. As trolley lines expanded, electric companies consolidated to help bear the costs of operating the associated power stations. The Public Service Corporation, composed of the Public Service Gas Company and the Public Service Electric Company, was founded in 1903, to provide gas and electric services to the general public and electric power for street railways. In 1907, the corporation created a third division, the Public Service Railway Company, which assumed all trolley-related business and activities, including the operation of the "Fast Line" which made the trip from Jersey City to Trenton in five hours (NJDOT 1975:22-23). The opening of the Goethals Bridge in 1928 expanded the role of the automobile as an important transportation link between New York and New Jersey.

Large-scale development along the Arthur Kill shoreline recommenced during the Second World War, with the establishment of large tank farms providing storage for gas, oil, and chemicals. Between 1947 and 1951, Public Service Electric & Gas completed four of the five generating stations on the Arthur Kill, and by 1970 the fifth and largest, the Sewaren Generating Plant, had been brought on line. This same period saw the construction of the GAF and American Cyamid chemical plants, the Linden Chlorine Plant, and several petroleum fuel terminals on Tremley Point in Linden (Ludewig 1970:77; Mason 1989:28; USGS 1955; 1956).

With the intent of easing problems of traffic congestion and providing efficient transportation for the growing post-war suburban population, Route 100, the precursor to the New Jersey Turnpike, commenced construction in Woodbridge and Carteret in 1947. The New Jersey Turnpike itself, running 147 miles from the Delaware River Bridge to the George Washington Bridge, was quickly completed by 1952. The turnpike provided residents of Woodbridge, Carteret, and Linden with easy access to the greater metropolitan area, enabling them to seek employment elsewhere, and enabling workers from outside the area to make the reverse commute (Gillespie and Rockland 1989:23, 37-38; Kraft 1977c:9; NJDOT 1975:45; USGS 1955; 1956; 1981a; 1981b).

The far-reaching road improvements of the 1950s and the success of motor buses in mass transportation led to the demise of the Public Service Electric Trolley lines. Abandoned by 1961 as a trolley line, the former electric trolley corridor currently functions as an active utility right-of-way providing passage for electric lines and gas and oil pipelines (Geological Survey of New Jersey 1922; 1930; NJDOT 1975:23; Sanborn 1920; 1924b; 1931; USGS 1955, 1956).

An analysis of historic maps shows a steady development away from open meadow land to a heavily industrialized area beginning in the second half of the nineteenth century. A map depicting the APE at the time of the American Revolution shows the APE to be open meadow, located south of lots lining either side of the Elizabeth River (Figure 19). The 1862 Meyer and Witzel Topographic Map of Union County shows the city of Elizabeth to be extensively developed and docks and a ferry landing present along the shore north of the APE (Figure 20). The area south of the Elizabeth River appears to be relatively untouched by commercial development. The 1882 Robinson Atlas of Union County depicts the modern street grid largely in place, with paper block lines representing some of the streets. A number of unidentified structures are present along the south side of Bayway Avenue east of South Front Street (Figure 21). The 1889 Sanborn Insurance Map illustrates the accelerated pace of the industrialization of the New Jersey section of the APE. A large complex belonging to the Bowker Fertilizer Company, along with a refinery and extraction works are present at the end of Bayway Avenue at the shoreline of the Arthur Kill (Figure 22). The 1903 Sanborn Insurance Map shows the Bowker complex to have been expanded to include additional acid tanks and heavy chemical manufacturing building connected by a rooftop tramway (Figure 23). The Standard Oil Company facility is shown opposite the Bowker complex on the west side of South Front Street. Interestingly, several tenements are pictured on the northwest corner of Bayway Avenue and South Front Street. The 1906 Bauer map shows the network of rail lines leading directly two the large industrial complexes situated along the Arthur Kill (Figure 24). The 1922 Sanborn Insurance Map shows the entire shoreline to be occupied by elaborate industrial complexes consisting of refineries, manufacturing plants and underground tanks (Figure 25). The 1929 Map of Union County is one of the earliest maps to depict the Goethals Bridge through the APE (Figure 26). The bridge,

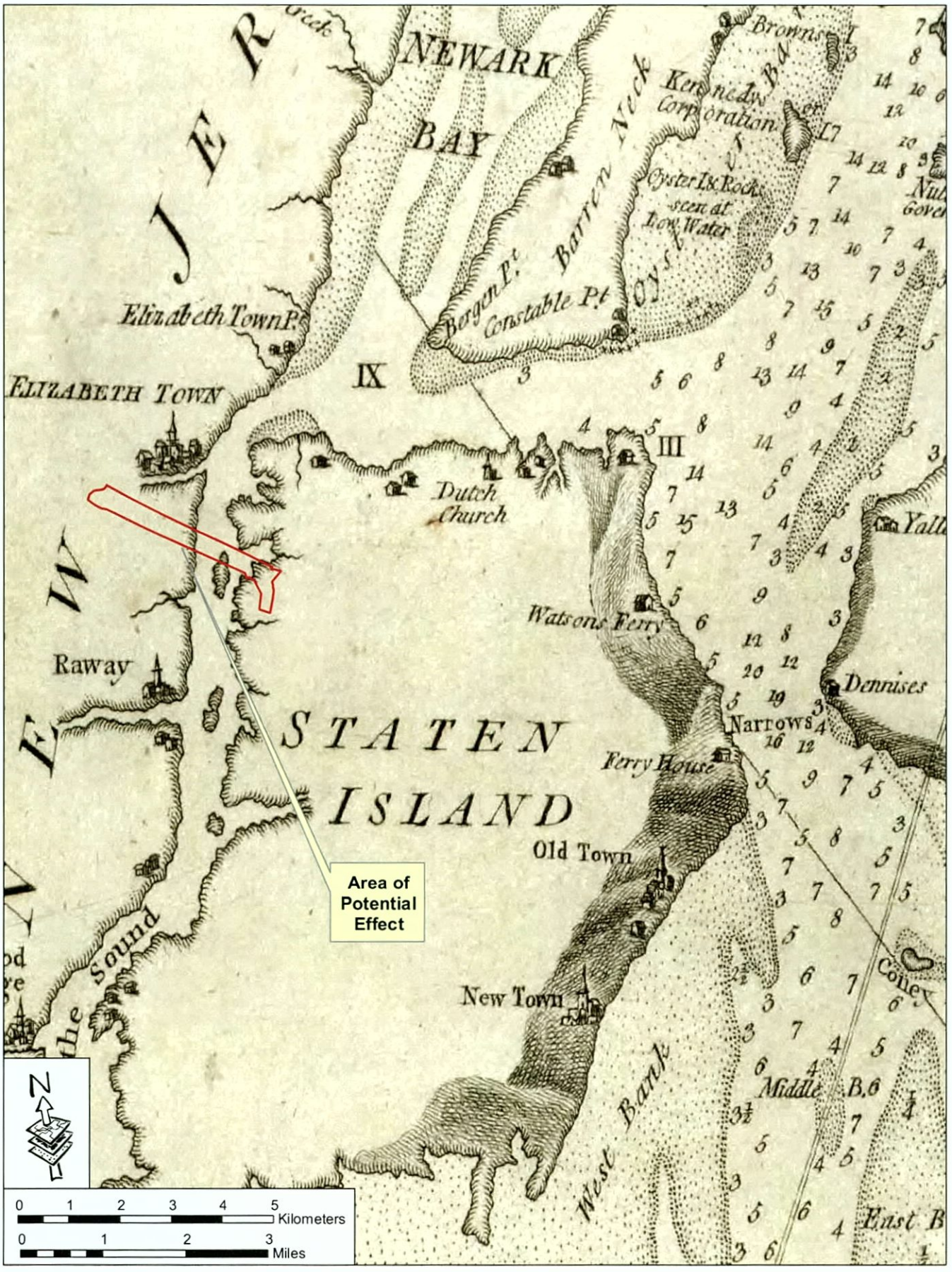

FIGURE 19: New Jersey Section of the APE in 1776

SOURCE: Sayre and Bennett 1776

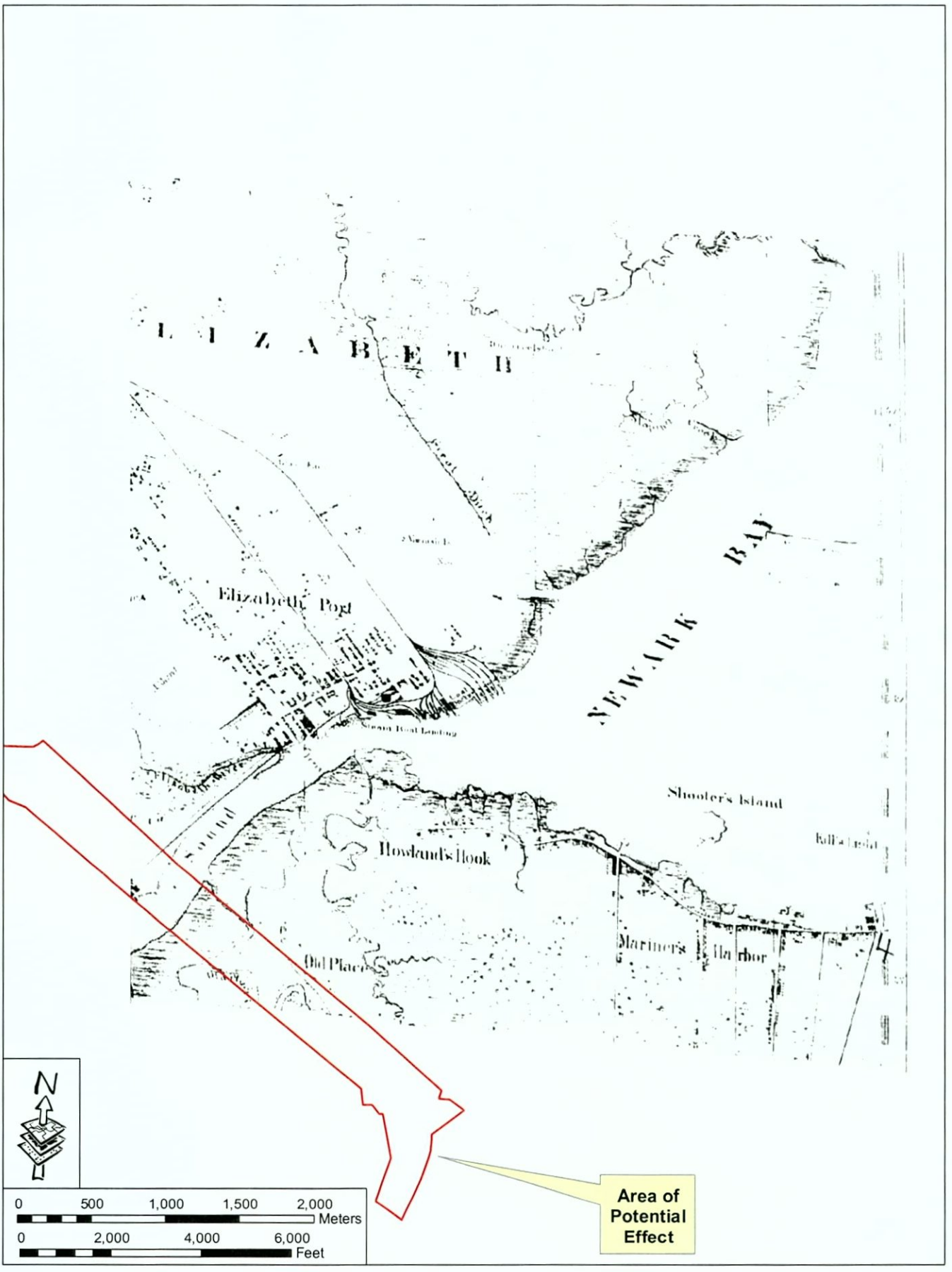

FIGURE 20: New Jersey Section of the APE in 1862

SOURCE: Meyer and Witzel 1862

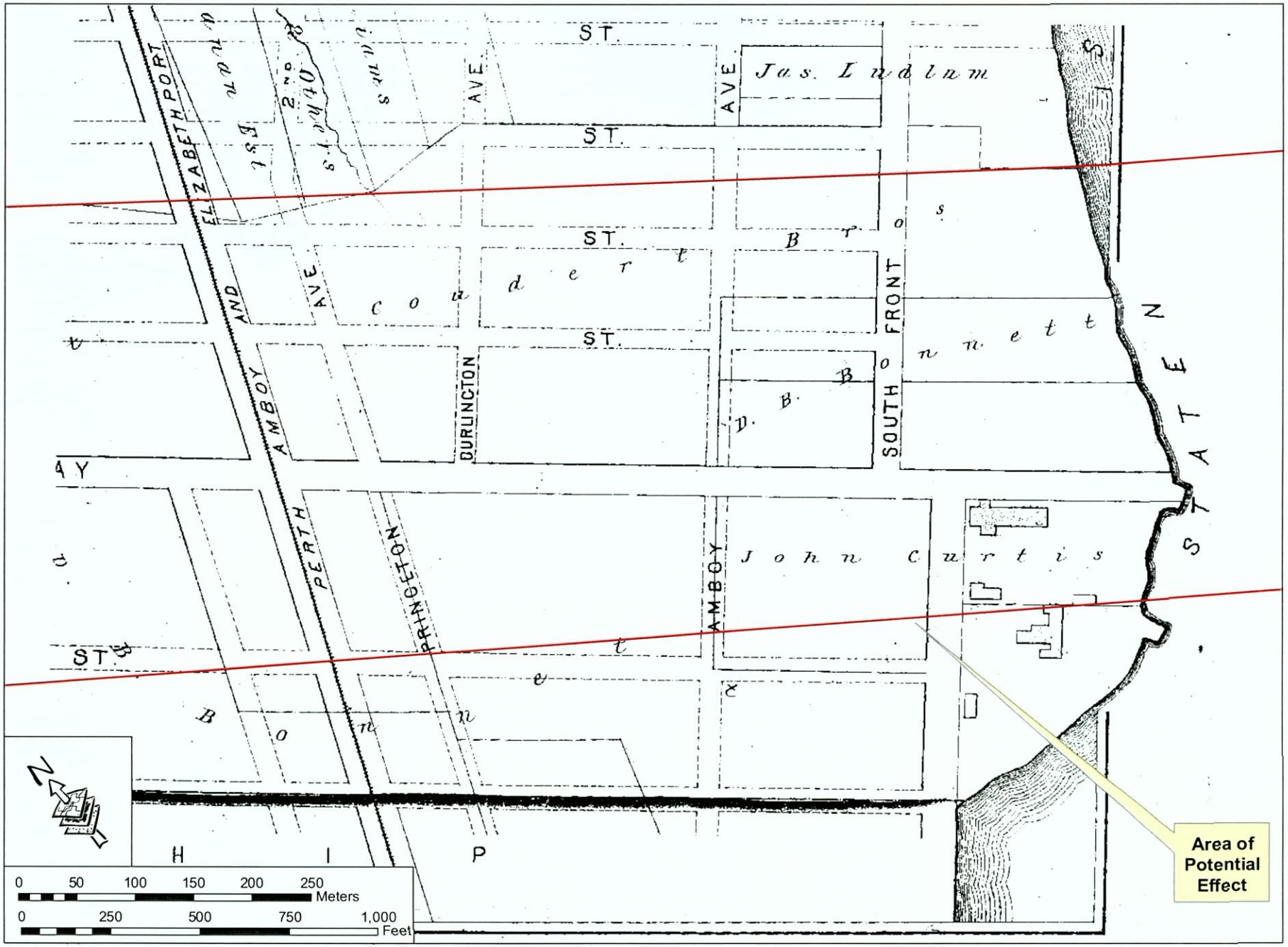

FIGURE 21: Portion of the New Jersey Section of the APE in 1882

SOURCE: Robinson 1882

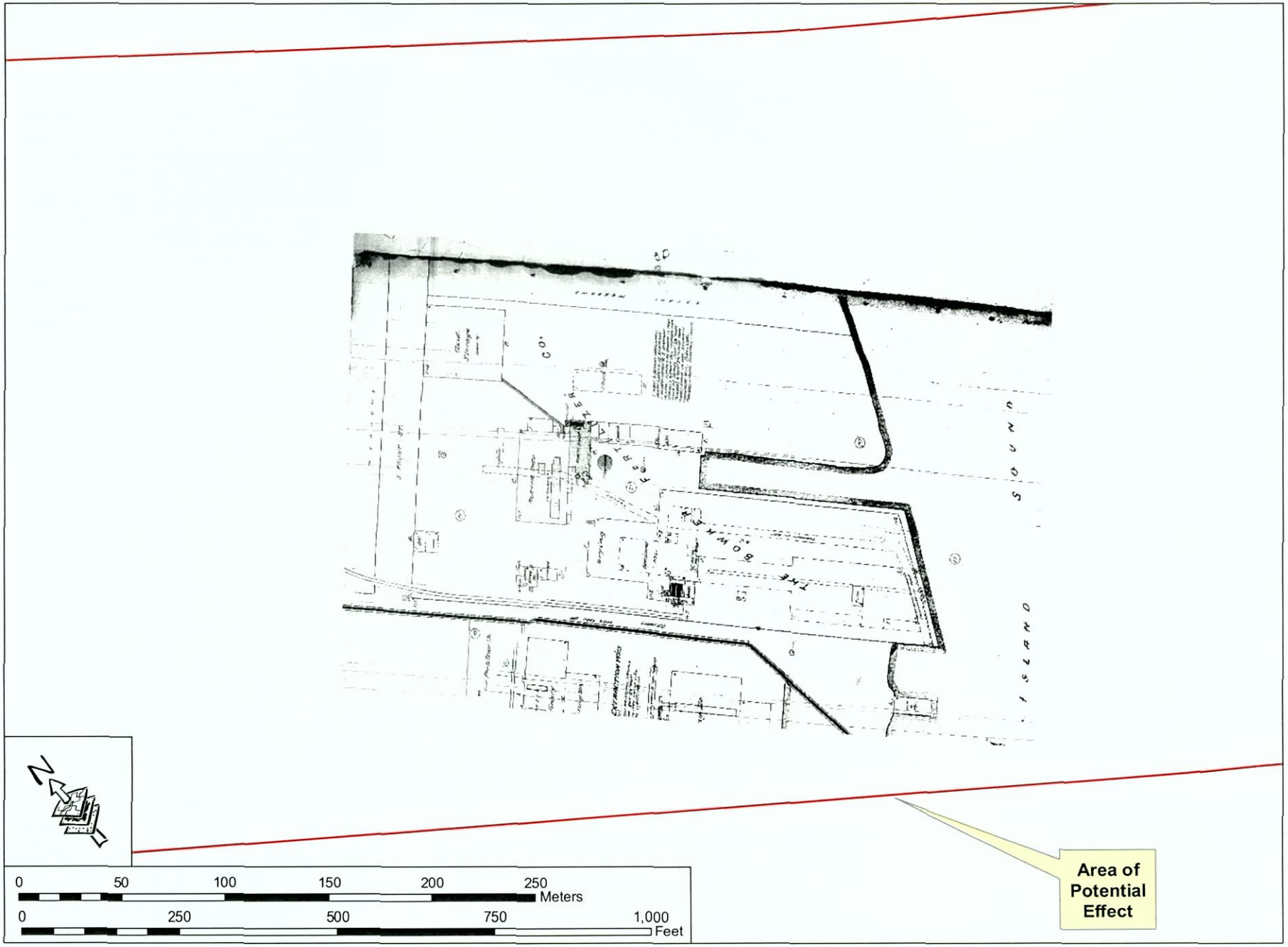

FIGURE 22: Portion of the New Jersey Section of the APE in 1889

SOURCE: Sanborn 1889

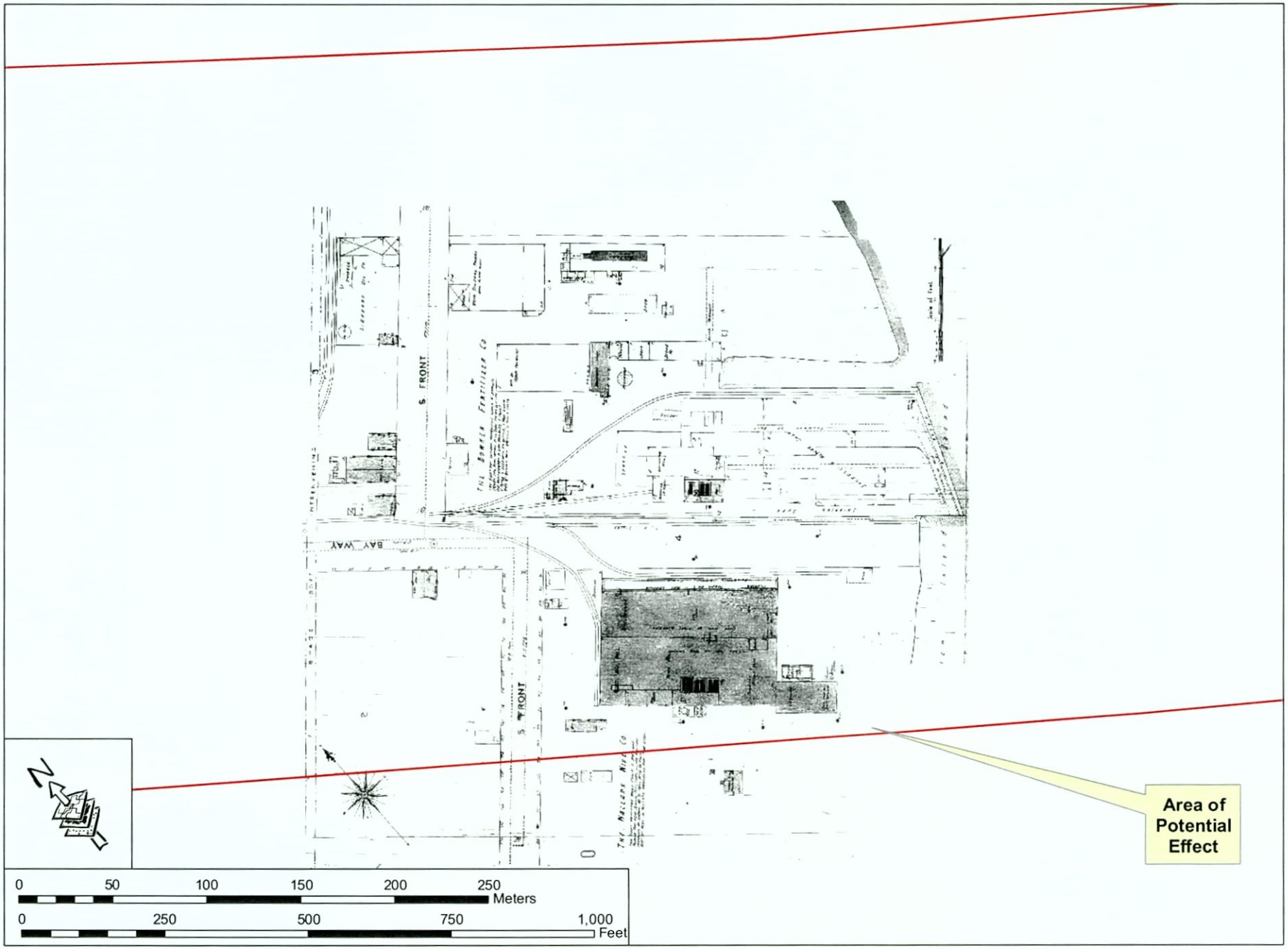

FIGURE 23: Portion of the New Jersey Section of the APE in 1903

SOURCE: Sanborn 1903

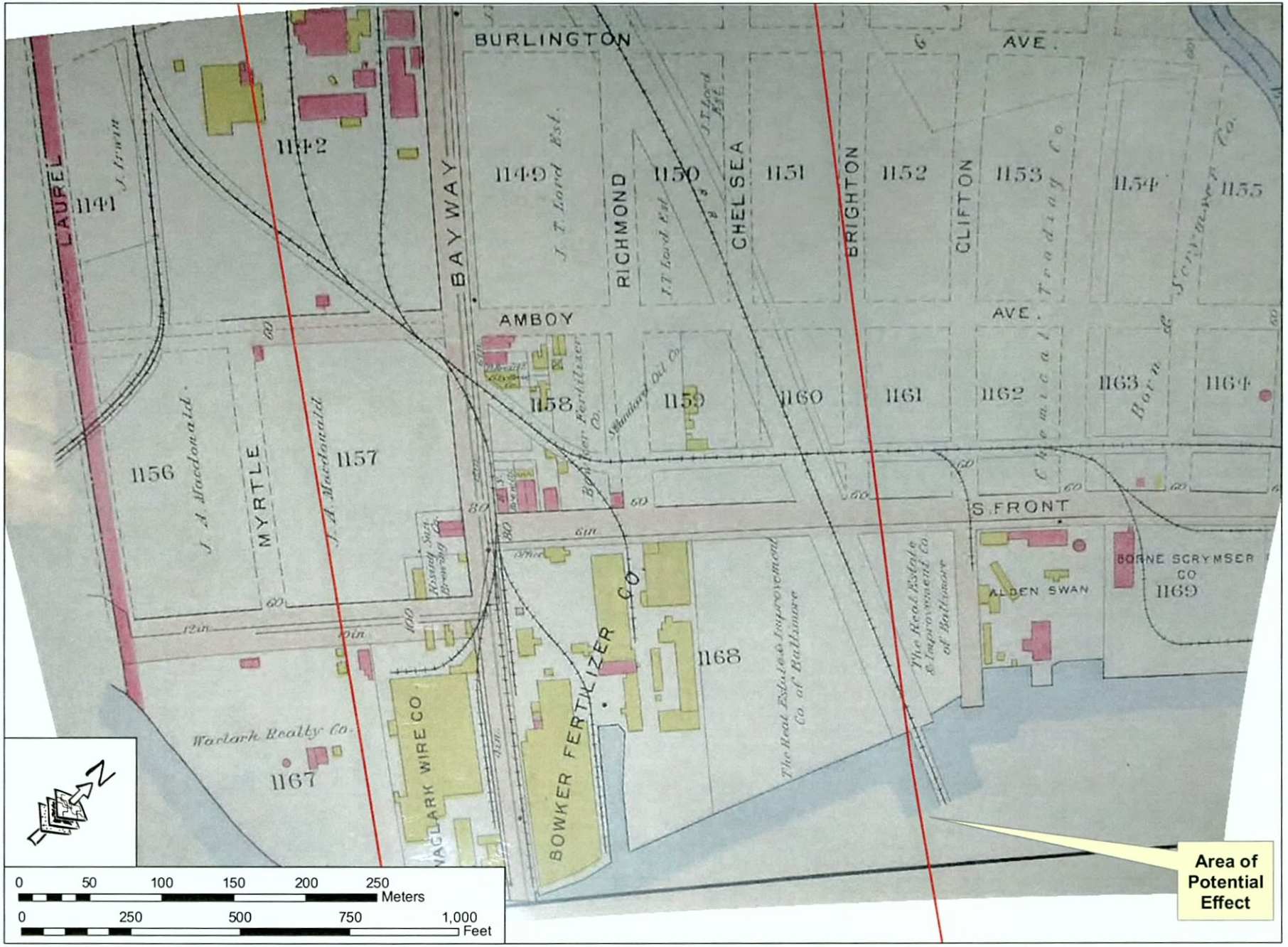

FIGURE 24: Portion of the New Jersey Section of the APE in 1906

SOURCE: Bauer 1906

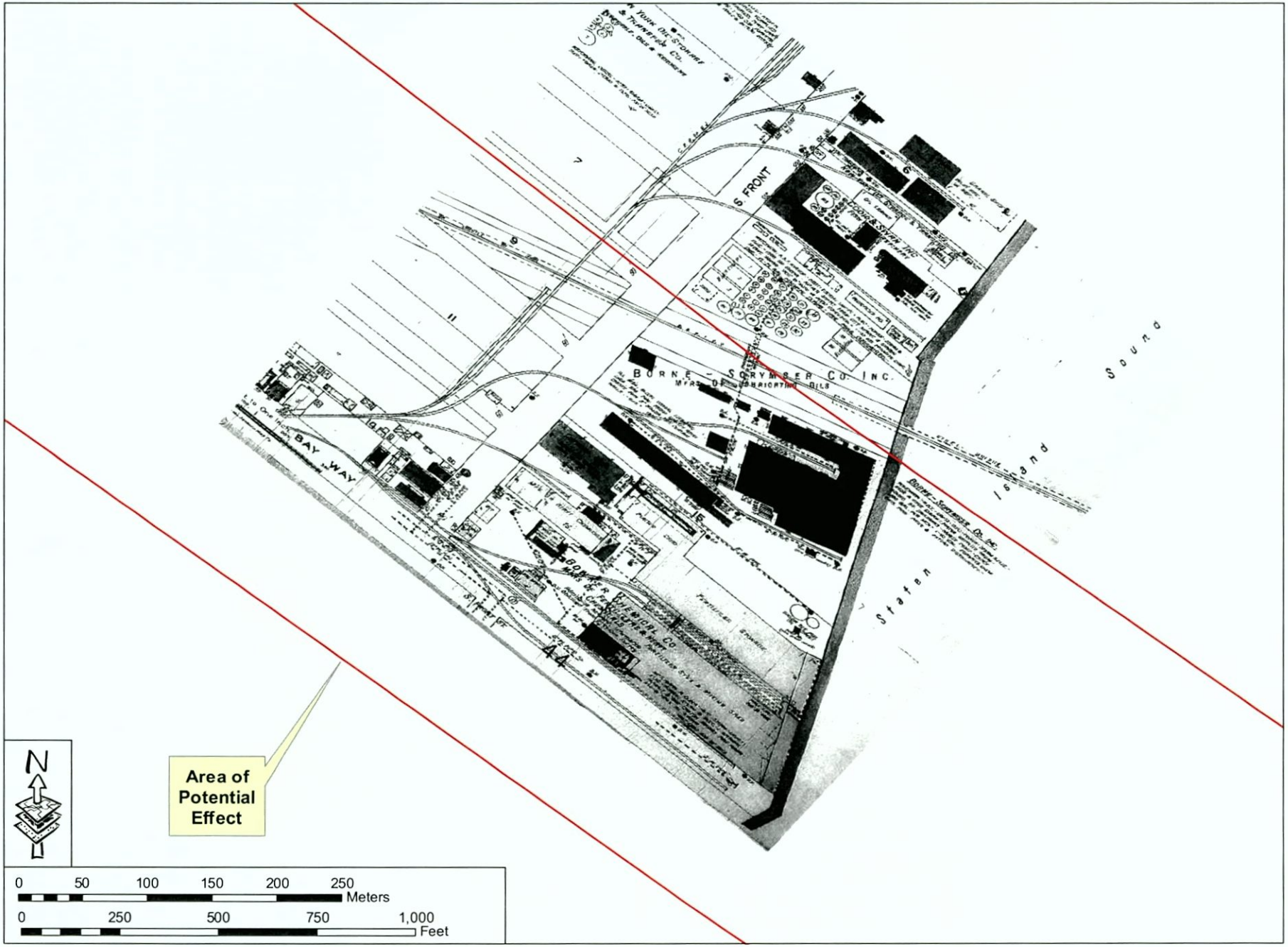

FIGURE 25: Portion of the New Jersey Section of the APE in 1922

SOURCE: Sanborn 1922

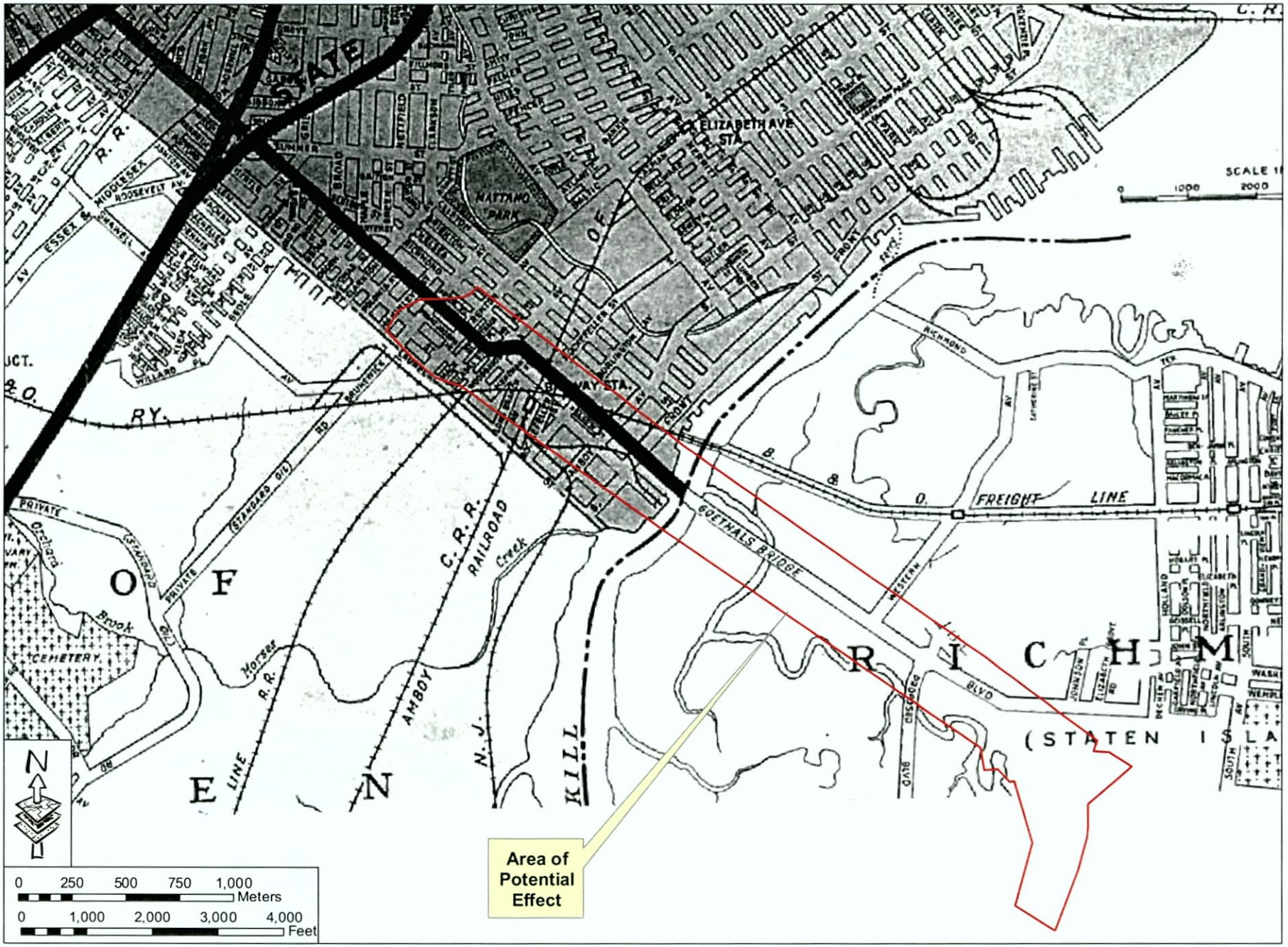

FIGURE 26: New Jersey Section of the APE in 1929

SOURCE: Bauer 1929

along with the numerous railroad lines and street grid, created a labyrinth of features, which by that time had obliterated any vestiges of the early nineteenth-century shoreline meadows. The 1930 Sanborn Insurance Map shows a rather narrow approach ramp for the Goethals Bridge just north of Bayway Avenue (Figure 27). The 1922 Sanborn Insurance Map updated in 1950 depicts the Phelps Dodge complex and the approach to the Goethals Bridge to be part of the continually changing New Jersey shoreline (Figure 28).

3.3.4 New Jersey Section of the APE: Previously Documented Historic Archaeological Sites

Although the New Jersey section of the APE was developed by European colonists as early as 1697 a review of the records of the New Jersey State Museum indicates that no previously documented historic archaeological sites are present within a one-mile radius of the New Jersey section of the APE. Much like the New York section of the APE, the gradual shift from localized seventeenth and eighteenth century urban communities and scattered agricultural/residential communities to an industrial/transportation corridor throughout the nineteenth and twentieth centuries resulted in the removal of the majority of the early domestic structures within the New Jersey section of the APE by the middle of the twentieth century. Early to mid-twentieth century industrial development and the construction of the Goethals Bridge further removed earlier mid-to-late nineteenth century industries and residences.

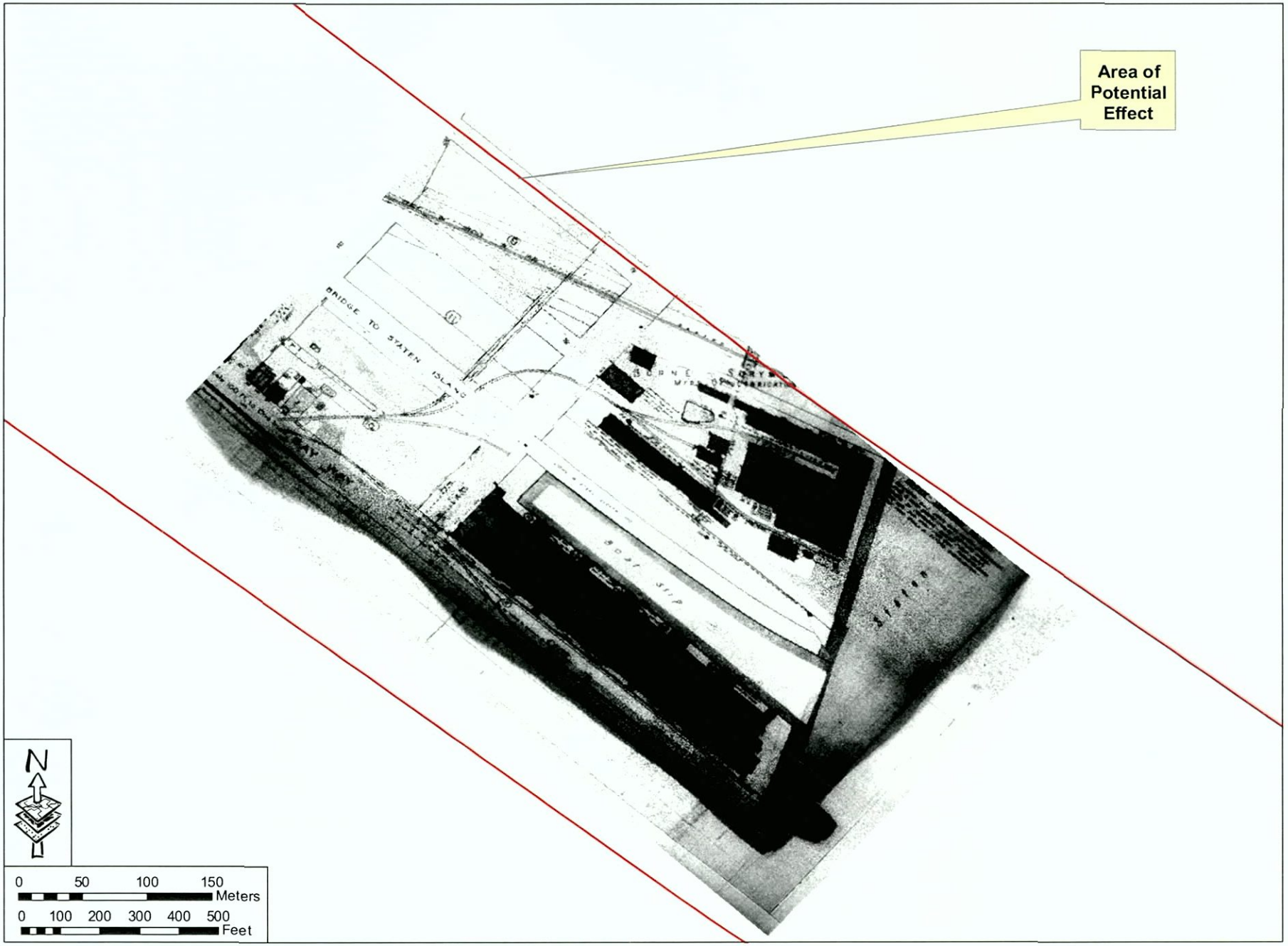

FIGURE 27: Portion of the New Jersey Section of the APE in 1930

SOURCE: Sanborn 1930

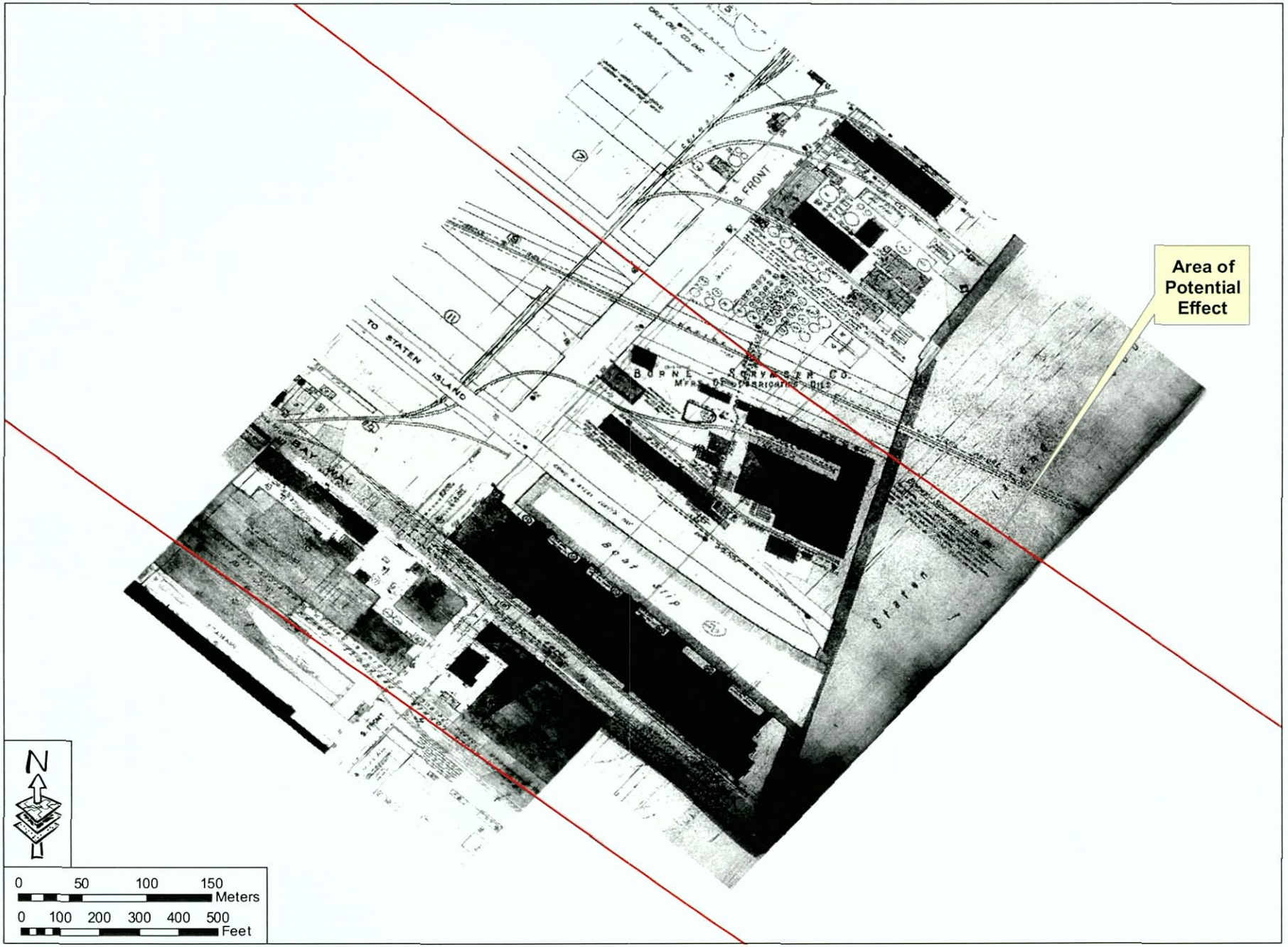

FIGURE 28: Portion of the New Jersey Section of the APE in 1922 [1950]

SOURCE: Sanborn 1922 [1950]

4.0 ARCHAEOLOGICAL SENSITIVITY ASSESSMENT

4.1 New York Section of the APE

According to the *Archaeological Evaluation and Sensitivity Assessment of Staten Island, New York* by Eugene Boesch (1994) which lists the following criteria to assess prehistoric archaeological sensitivity: (1) proximity of known sites or surface artifacts from the immediate vicinity; (2) freshwater source nearby; (3) proximity of marsh, shoreline, river or stream mouth, or ridge; (4) high ground overlooking water with slopes less than 30 percent; and (5) well-drained soil, the New York section of the APE is considered to have a *high* prehistoric archaeological sensitivity, as it is situated near the Arthur Kill and Old Place Creek and their associated wetlands, which would have provided extensive resources for prehistoric populations. Additionally, the sandy ridges overlooking the tidal wetland system, such as Black Point (Tunissen's Neck), would have provided ideal environments for prehistoric settlement. Moreover, as the background research has indicated, nine previously recorded prehistoric archaeological sites have been documented within and around the general vicinity of the New York section of the APE. As a result, it was determined that additional prehistoric remains may be preserved in locations within the New York section of the APE that have not been heavily disturbed by historic and modern developments.

Soil borings that were excavated within the current New York section of the APE in 1996 by Geoarchaeology Research Associates as part of the earlier Staten Island Bridges Program indicated that the portion of the New York section of the APE between the R.T. Baker property on the southern side of I-278 and the intersection of Western Avenue and Gulf Avenue contained 4.0 to 10.0 feet of twentieth century fill and an additional 3.0 feet thick layer of peat (mostly phragmites) and was determined to possess very low sensitivity for containing National Register-eligible cultural resources (Geoarchaeology Research Associates 1997; Hartgen Archaeological Associates 1997: C-12). Marine sands, believed to have the most potential for containing archaeological deposits, however, were encountered beneath the fill and layer of peat within these soil borings. As these soil borings were placed at broad intervals ranging from 200-300-feet, this central-southern portion of the New York section of the APE possessed some potential, albeit minimal, for prehistoric deposits.

Based upon the available primary and secondary historic resources collected during the background research stage of this survey, the historic archaeological sensitivity of the New York section of the APE is minimal. Although the New York section of the APE was developed by European colonists as early as 1680, the gradual shift from scattered seventeenth and eighteenth century agricultural/residential communities to an industrial/transportation corridor throughout the nineteenth and twentieth centuries resulted in the removal of the majority of the early domestic structures within the APE by the middle of the twentieth century. Early to mid-twentieth century industrial development and the creation of the Staten Island Expressway and the Goethals Bridge further removed mid-to-late nineteenth century industries and residences. Additionally, although six historic archaeological sites, containing 18th and 19th century domestic artifacts, were previously identified within and immediately adjacent to the New York section of the APE by Payne and Baumgardt (1986) and although burials related to a Revolutionary War skirmish that was reported to have occurred near the New York Section of the APE were noted by Skinner (1909) these locations have been impacted by construction associated with the Howland Hook Marine Terminal and Coca-Cola facilities, as well as the construction of the Goethals Bridge in the 1920s (Payne and Baumgardt 1986). Based on the background research, the historic archaeological potential of the New York section of the APE is, therefore, characterized as low.

4.2 New Jersey Section of the APE

According to the model described above, the salt marshes that were originally present on the New Jersey section of the APE would not have been favorable for prehistoric occupation. Any prehistoric settlement in this region would probably have occurred on higher areas near streams, such as the Elizabeth River. One favorable area would have been the rise to the north of the APE that is crossed by Elizabeth Avenue and the New Jersey Turnpike. This is near the area from which Skinner and Schrabisch (1913) reported prehistoric finds. Areas in New Jersey with both high and low potential for prehistoric sites have been greatly impacted by fill operations and, urban and industrial development. Therefore, the New Jersey section of the APE was determined to have a low potential for prehistoric sites.

Likewise, the historic archaeological sensitivity of the New Jersey section of the APE is also minimal. An analysis of historic maps dating from 1781 through 1950 shows a steady development within the New Jersey section of the APE away from open meadow land to a heavily industrialized area with large industrial complexes situated along the Arthur Kill along with numerous railroad lines, a street grid, creating a labyrinth of features that by the early

twentieth century had obliterated any vestiges of the early nineteenth-century shoreline meadows and its scattered domestic residences.

5.0 ARCHAEOLOGICAL SURVEY

5.1 Field Methods

To further supplement the available documentary information regarding the archaeological sensitivity of the APE and information regarding the current conditions of the APE obtained during the May 2004 field reconnaissance, Phase IB systematic subsurface testing was conducted within the APE in October 2004 in accordance with the New York Archaeological Council Standards (NYACS) of 1994 and the NJHPO archaeological guidelines of 2000. The subsurface survey involved the collection of the following data: the presence or absence of archaeological deposits within the APE; an assessment of the degree of disturbance within the APE; and a determination of the presence or absence of fill and its depth. The archaeological fieldwork conducted for the Phase IB survey involved a surface inspection and subsurface survey in those parts of the New York and New Jersey sections of the APE not obscured by impervious surfaces and which did not contain disturbed/contaminated soils. As much of the APE contains topographic obstructions including wetlands, standing water, as well as impervious impediments, such as buildings and roadways, the APE was divided into nine archaeologically testable Areas (Areas A through I) each with one transect (Figure 29). Areas/transects "A" and "E" were located along the western side of Gulf Avenue and the eastern side of West Shore Expressway (SR-440) respectively in Staten Island, New York; Areas/transects "F", "G", and "H" were located on the northern and southern sides of Goethals Road North in Staten Island, New York; Area "H" also extended northward along the banks of Old Place Creek; Areas/transects "B", "C", and "D" were located on the southern side of I-278 and service road in Staten Island, New York; Area/transect "I" was located within a grassy portion of the median at Interchange 13 of the New Jersey Turnpike in New Jersey. These transects were largely contiguous along an east-west axis throughout most of the APE. Areas "E" and "C" are exceptions, however, as roadway configurations necessitated the excavation of shovel test pits along two parallel transects with the same letter designation, one on either side of the roadways.

All undisturbed portions of the APE were considered to have a high potential for the recovery of cultural resources, and the shovel tests were therefore placed at 15-meter (50-foot) intervals. This resulted in 278 proposed shovel test locations. Wetlands were omnipresent, particularly on the New York portion of the APE. As a result, a significant number of shovel tests were placed on the margins of wetlands between standing water and the toe slope of existing roadways. In some cases, the locations of shovel tests fell directly in standing water. When it was impossible to offset the shovel test in an alternate location, it was simply assigned a shovel test designation and noted as unexcavated. A total of 19 of the 278 proposed shovel test locations fell in areas with standing water or in disturbed areas, or were not excavated due to lack of entry permission and were not excavated. Twenty-two additional shovel tests were placed radially around five shovel tests that produced prehistoric material or dense historic/faunal material within a buried A-horizon. The total number of excavated shovel tests within the APE was therefore 281.

The subsurface archaeological survey involved the excavation of 281 shovel test pits which included 259 shovel test pits at 15-meter (50-foot) intervals along nine (9) transects within nine testable Areas of the APE and twenty-two additional "radial" shovel test pits that were excavated in the four cardinal directions at five of the original shovel test pit locations to further investigate the presence of prehistoric artifacts. Eighteen of these "radial" shovel test pits were excavated 1.52-meters (5-feet) from the original shovel test pit and four "radial" shovel test pits were excavated 3.05-meter s (10-feet) from the original shovel test pit. Each shovel test was positioned using tape and compass and were assigned a codified nomenclature referencing the location of the shovel tests and sequential number designation; for example shovel test pit E-10 is the tenth shovel test that was excavated in Area E. The shovel tests measured approximately 0.46 meters (1.5 feet) in diameter and were excavated into sterile soils, the water table, or impenetrable impasses. Average depth of excavation was approximately 3.0-feet below the ground surface. During excavation, changes in soil color, composition, and texture were used to determine stratigraphic levels.

In every subsurface test, each soil stratum was assigned a letter from an alphabetic sequence reflecting its relative position in the test profile. Thus, three strata encountered in a single shovel test would be designated respectively as Stratum A, Stratum B, and Stratum C, with Stratum A located at the top of the profile. Results of individual shovel tests were recorded on standardized field forms developed by Berger. All soils were described in terms of color and texture using Munsell color designations and USDA textural classifications. All soils were screened through 0.25-inch (0.01-meter) hardware mesh for systematic artifact recovery. When artifacts were recovered, they were bagged by shovel test according to stratigraphic provenience. In accordance with the NYACS (1994), a minimum of four additional shovel test pits were excavated in the vicinity of isolated shovel test pits which contained prehistoric artifacts. Small quantities of modern artifacts, such as bottle glass, amorphous metal objects, wire, and plastic, were deemed not to be significant if derived from surface strata, construction fill, or other disturbed layers. Such artifacts were either sampled to provide a temporal marker or discarded in the field, and in either case, were noted in the field

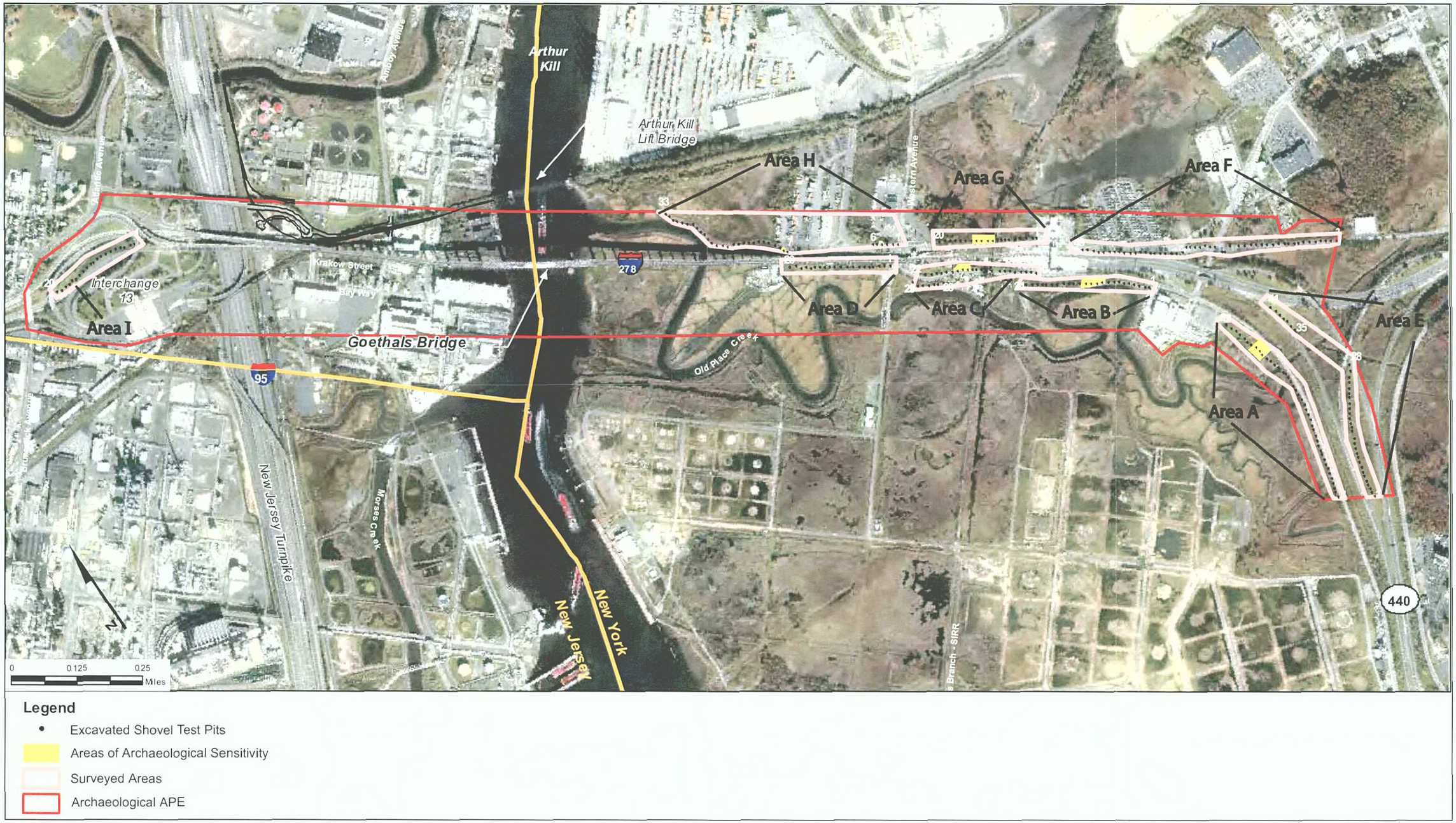

FIGURE 29: Archaeologically Tested and Sensitive Areas within the Archaeological APE.

Source: Basemapping Port Authority of New York and NewJersey, 2002; Berger Field Data 2004.

records. Artifacts retained for analysis during subsurface testing were placed into Mylar bags with detailed provenience information. All shovel test pit excavations were backfilled and the ground surface restored as nearly as possible to its original condition.

5.2 Archaeological Survey Results

This section describes the results of the Phase IB archaeological fieldwork within the context of each archaeologically testable "Areas" identified within the APE. All shovel test profiles are provided in Appendix CB.

5.2.1 Area A: New York Section of the APE

Area A was located along the southern edge of Gulf Avenue and extended from the easternmost portion of the New York section of the APE to the eastern edge of the paved Keyspan parking lot (Figure 30) (Photos 4 and 5). A total of 42 shovel tests were proposed and 40 were excavated in Area A; the total number of excavated shovel test pits within Area A includes 36 originally planned shovel test pits four radials that were excavated around shovel test pit A-38. This area was characterized by dense vegetation consisting mainly of phragmites and wet, tidally-influenced soils. The shovel tests were placed in an area between the inundated wetlands and the toe slope of the Gulf Avenue sidewalk, at a distance that varied between 30 and 40-feet from the edge of the road. Shovel tests were offset where possible to avoid standing water.

The average depth of the shovel tests excavated was approximately 1.8-feet below the ground surface. Soils in Area A were quite variable. Of the 42 proposed shovel tests within Area A, six fell in standing water and were not excavated. Of the 40 shovel test pits that were excavated, 27 shovel tests were excavated to the water table. Shovel Tests A-1 to A-28 were located on the margins of wetlands. Shovel Tests A-29 to A-42 and radials A-38a to A-38d were located in a vacant lot west of a culvert and east of the Keyspan facility. In general, better drained sandy soils were present closer to Old Place Creek and its various tributaries. The gravel content noted within the shovel test pits excavated within Area A was also quite variable, with both angular and rounded in various sizes represented.

Shovel Tests A-2, A-11 and A-13 illustrate the stratigraphy in the southern portion of Area A. Strata A and B in Shovel Test A-2 were variable fill layers comprised of a very dark grayish brown (10YR 3/2) silty loam and dark brown (10YR 3/3) sandy loam respectively. This was underlain by a light gray (10YR 7/2) mottled with 10YR 6/6 brownish yellow sandy clay Stratum C, and a dark gray (7.5YR 4/1) sandy clay Stratum D. Augering at a depth of 3.4-feet encountered a dark gray (10YR 4/1) medium sand Stratum E. At a depth of about 4.2-feet, water was encountered. This shovel test was set up on the toe slope, therefore, the upper strata, perhaps A, B and C likely represent fill associated with the construction of Gulf Avenue. Shovel Test A-11 consisted of two strata: a black (10YR 2/1) silty loam Stratum A underlain by, a dark brown (10YR 3/3) sandy loam. Stratum B yielded a large number of modern artifacts including wire nails, curved glass and plastic; all of which were sampled. This is an example of a low lying area. In Shovel Test A-13, Stratum B was a dark yellow brown (10YR 3/4) silty loam, overlying a brown (10YR 5/3) sandy loam with chunks of fire clay. The latter stratum likely represents natural soils, with the overlying strata comprised of fill soils identical to those encountered along the toe slope of the road.

Shovel Tests A-36 and A-38 are representative of the stratigraphy encountered in the northern portion of Area A. Shovel tests in this area were placed approximately 80-feet south of the road edge. Shovel Test A-36 was characterized by several extremely dense, impassable rubble layers. A dark brown (10YR 3/3) silty loam Stratum A was punctuated by brick at a depth of 0.15-feet, asphalt at 0.5-feet, a second level of asphalt at 0.85-feet, and a third, impenetrable asphalt layer at 1.5-feet. Artifact material included clear curved glass, amber curved glass, cement fragments and coal. Shovel Test A-38 consisted of three distinct strata; the upper two strata included a dark brown (10YR 3/3) silty loam Stratum A and dark grayish brown (10YR 4/2) sandy loam fill layers. Both contained large chunks of brick and concrete, along with pieces of rebar and glass. Stratum C, however, appeared to be undisturbed subsoil comprised of a dark brown (7.5YR 4/4) medium sand with 40 percent cobbles. Stratum C was encountered at a depth of 1.8-feet below the surface, which may indicate the approximate depth of disturbance within this portion of Area A. This stratum yielded one prehistoric artifact; a jasper core trimming element/border flake. As a result, four radial shovel tests were placed at a distance of 10-feet in each of the cardinal directions from Shovel Test A-38. Similar to other shovel tests in this area, all four radial shovel test pits contained varying amounts of building rubble; a gun flint fragment, however, was recovered near the base of Stratum B (2.7-feet below the surface) in Shovel Test A-38c.

FIGURE 30: Shovel Test Pits, Area A, New York Section of the APE

SOURCE: Berger Field Data 2004

Photo 4: Birds Eye Photograph of Area A. *Source: Pictometry 2006.*

Photo 5: Current Conditions of Area A along Gulf Avenue. View North.

5.2.2 Area B: New York Section of the APE

Area B was located along the southern edge of Gulf Avenue and extended from the western edge of the paved Keyspan parking lot to the eastern edge of an abandoned office structure (Figure 31) (Photos 6 and 7). This area was characterized by thinly wooded vegetation on a sandy terrace overlooking the Old Place Creek to the east, and a vacant lot with thin underbrush to the west. The shovel tests were placed at a distance that varied between 10 and 80-feet from the edge of the road. The wide variation was due to the severe bend in the Old Place Creek, which caused the irregular measurements as shovel tests were placed near the creek edge. Shovel tests were offset where possible to avoid standing water.

The average depth of the shovel tests excavated was approximately 2.9- feet. A total 27 shovel test pits were excavated within Area B, including 23 of the 24 originally proposed shovel test pits and four additional shovel test pits in each of the four cardinal directions around shovel test pit B-8. Shovel Tests B-1 to B-16 were located along the Old Place Creek in the eastern portion of Area B and Shovel Tests B-17 to B-24 were located in a vacant lot in the western portion. The latter tests were placed approximately 50-feet from the edge of the road, except in instances when they were offset to avoid a surface obstruction. All but one of the shovel tests proposed for Area B were excavated. That shovel test pit, B-3, was located in standing water and was not excavated. Three of the shovel tests pits excavated within Area B were excavated to the water table. Soils in Area B were quite variable. Two shovel tests, Shovel Tests B-1 and B-2 were placed near the road edge in a grassy area parallel to the sidewalk to avoid a severe slope that terminated at the creek's edge. Fill was encountered to significant depths in each of these shovel test pits, 4.2-feet and 3.8-feet respectively. Augering within these shovel test pits, however, uncovered sterile sands with pockets of clay to depths of 5.1-feet in each. This soil stratum is likely representative of undisturbed, natural soils which were capped below the fill layers.

Shovel Test B-8 was located on a steep terrace overlooking Old Place Creek. This test consisted of three natural strata with no evidence of fill soils. Stratum A was a non-culture-bearing layer consisting of a very dark grayish brown (10YR 3/2) sandy loam, underlain by a dark brown (7.5YR 3/2) sandy loam, also devoid of cultural material. These strata overlay a dark brown (7.5YR 4/4) medium sand. This stratum was similar in color and texture to the culture-bearing strata in Area A that was determined to be natural subsoil. A fragment of jasper block shatter was recovered from Stratum C in Shovel Test B-8. As a result, four radial shovel tests were excavated 5.0-feet in each of the cardinal directions from Shovel Test B-8. The variation in distance of the additional shovel test pits from was due to a steep slope to the south and thick tree roots in the other three directions. Similar to Shovel Test B-8, all

FIGURE 31: Shovel Test Pits, Area B, New York Section of the APE

SOURCE: Berger Field Data 2004

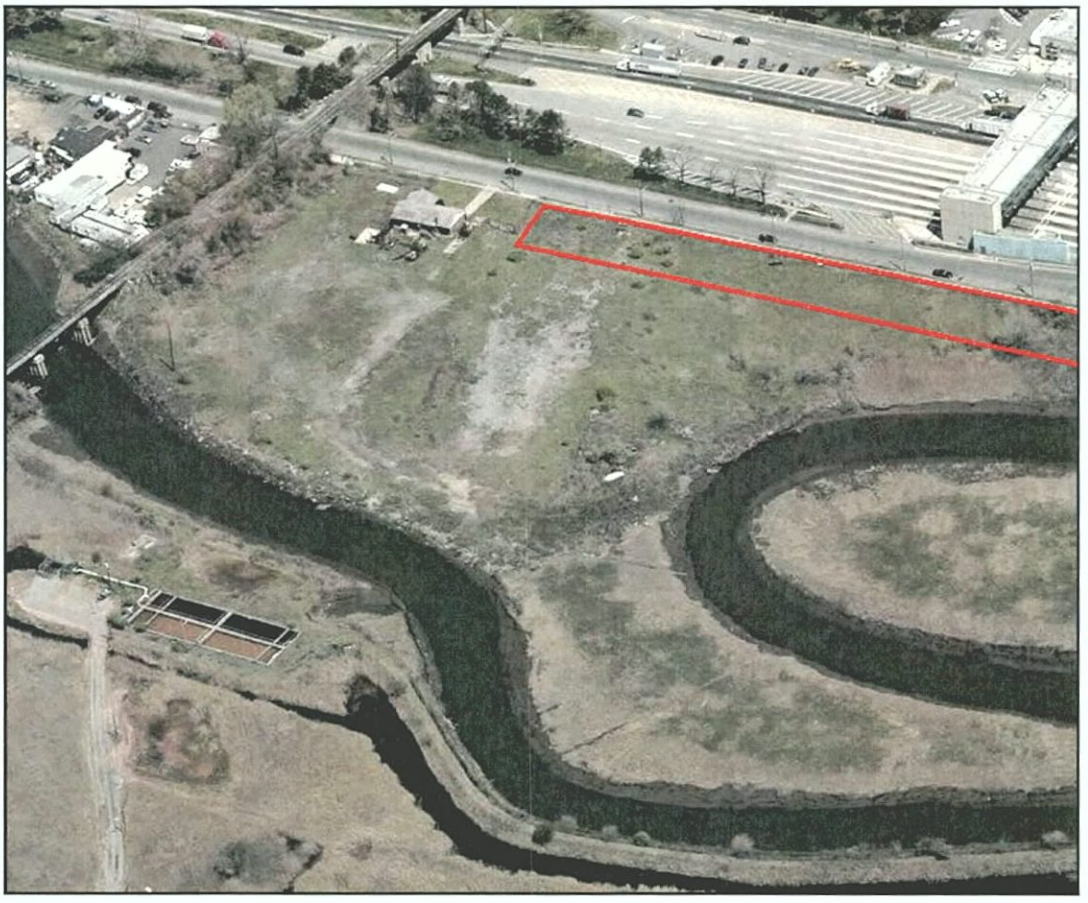

Photo 6: Birds Eye Photograph of the Western Portion of Area B. *Source: Pictometry 2006.*

Photo 7: Current Conditions of Area B. Note the Dense Undergrowth and Scattered Trees. View East.

four of the radial shovel test pits consisted of three strata. Shovel test B-8c yielded several historic artifacts in Strata A and B. Stratum C of Shovel test B-8c, however, yielded a prehistoric chert early reduction flake.

The western portion of Area B was reminiscent of the western portion of Area A, namely, a vacant lot filled with significant amounts of subsurface building rubble. Shovel Tests B-17 to B-19 were placed 50-feet south of the road edge. The remaining tests were placed approximately 80-feet south of the road edge. Shovel Tests B-18 to B-22 all consisted of variable fill soils and were terminated when blacktop/asphalt impasses were encountered at depths ranging from 0.8 to 1.2-feet below the surface. Shovel Tests B-23 and B-24, however, contained no such obstructions. Shovel Test B-24 consisted of three strata: a very dark brown (10YR 2/2) sandy loam Stratum A, underlain by a dark yellowish brown (10YR 3/4) sandy loam Stratum B, overlying a dark yellowish brown (10YR 4/6) medium sand. The upper strata likely represent fill soils containing brick, glass and redware fragments. Stratum C appeared similar to undisturbed soils encountered below fill layers evident throughout Area B.

5.2.3 Area C: New York Section of the APE

Area C deviated from the proposed testing strategy in that a second transect was placed on the north side of Gulf Avenue parallel to the initial transect along the south side (Figure 32) (Photo 8). The inclusion of an additional shove test pit transect was deemed necessary due to the close proximity of Area C to the Old Place Creek site (NYSM #7215; NYSOPRHP #s A085-01-0134 and A085-01-2366), which is believed to be located in the vicinity of the present Goethals Bridge toll booth plaza. The area where the northern transect was placed was characterized by an open, grassy shoulder of eastbound Interstate 278 that starts at the toll plaza to the east and extends to the PANYNJ parking area to the west. The Travis Railroad Bridge bisected the northern transect. The second transect consisted mainly of wet, tidally-influenced soils along the bank of the Old Place Creek located between a plumbing supply facility to the east and the access road for the GATX complex to the west. A total of 39 shovel tests were excavated in Area C, including 29 originally proposed testing location and ten additional radial shovel test pits. Shovel Tests C-1 to C-22 and radials C-9a to C-9d and C-15a to C-15f were placed along the northern transect and Shovel Tests C-23 to C-29 were placed along the southern transect.

The average depth of the shovel tests excavated was approximately 2.9-feet below the present ground surface. Soils in Area C were quite variable. All of the 29 originally planned shovel tests and ten additional redial shovel tests were excavated, including four around shovel test C-9 and six around shovel test C-15. Representative shovel tests from the northern transect in Area C include Shovel Tests C-5, C-9 and C-15. Shovel Test C-5 was located east of the Travis Branch Railroad Bridge and contained four strata. Stratum A was a dark yellowish brown (10YR 4/6) silty loam overlying a relatively thin (0.7-1.0-feet) yellowish brown (10YR 5/8) coarse sand. Both were determined to represent fill layers. These were underlain by a reddish brown (5YR 4/4) fine sand Stratum C and brown (7.5YR 4/4) medium sand. The lower strata, particularly Stratum D, are identical to soils determined to be natural from Areas A and B. Stratum C contained a nominal amount of historic artifacts, however, the light density and location near the top of the stratum suggests that they may be intrusive. Shovel Test C-9 was located immediately west of the Travis Branch Railroad Bridge and contained only two strata. Stratum A was a dark brown (10YR 3/3) sandy loam overlying a thick (0.8-3.3-feet) dark brown (7.5YR 3/3) sandy loam Stratum B. At a depth of 1.6-feet, a large fragment of redware sewer pipe was encountered. Near the base of Stratum B, five fragments of animal bone were recovered within a natural soil context. Four additional radial shovel tests were excavated around Shovel Test C-9 to determine if additional bone was present. These additional shovel tests were excavated at a distance of five feet from the original shovel test in each of the cardinal directions. No additional faunal material was recovered and concrete impasses were encountered in two of the four tests, indicating a significant amount of disturbance in the area surrounding Shovel Test C-9 and may represent natural soils that were disturbed during the construction of the bridge overpass during the 1930s.

Shovel Test C-15 was located just south of a sewer line and contained five strata. Stratum A was a very dark grayish brown (10YR 3/2) silty loam overlying a yellowish red (5YR 4/6) clayey loam Stratum B. Both are fill layers and contained a variety of modern artifacts including clear bottle glass, green bottle glass and ceramics. Stratum C was a brown (7.5YR 4/4) medium sand that may also have been a fill layer although only one fragment of glass was recovered. Augering at 2.3-feet revealed two additional strata. Stratum D was a reddish brown (5YR 4/4) fine sand overlying a brown (7.5YR 4/3) medium sand Stratum E. A number of artifacts were recovered from the latter, including colorless and green bottle glass fragments and an argillite biface reduction flake. As a result, four radial shovel test pits were excavated at a distance of five feet in each of the cardinal directions from Shovel Test C-15. One of the radials, Shovel Test C-15b produced one additional chert finishing flake. Two of the four radial shovel test pits contained rock impasses at a depth of 1.3-feet below the ground surface. To allow for a thorough examination of this area, two additional radials were placed at a distance of five feet east and west of Shovel Test C-15c. Both were terminated at a depth of 2.1-feet below the surface when concrete impasses were encountered.

FIGURE 32: Shovel Test Pits, Area C, New York Section of the APE

SOURCE: Berger Field Data 2004

Photo 8: Birds Eye Photograph of the Western Portion of Area C. *Source: Pictometry 2006.*

A total of seven shovel tests were excavated along the southern transect in Area C, which conformed to the shoreline of the Old Place Creek. Shovel Tests C-23 and C-24 were situated on a rise overlooking the creek. Fill soils extending down to the water table were encountered in both shovel tests. Shovel Test C-25 consisted of two strata: a very dark grayish brown (10YR 3/2) sandy loam Stratum A underlain by a dark reddish brown (5YR 3/3) clay Stratum B. The excavation of Shovel Test C-25 was terminated when at a depth of 1.8-feet due to the presence of a large wood fragment impasse within the fill.

The remaining four shovel tests were excavated to the water table which was encountered at a depth ranging from 0.7 to 2.5-feet below the present ground surface. The soils and artifacts encountered along the southern transect of Area C are the result of dumping and the accumulation of alluvium from the tidal condition of the creek.

5.2.4 Area D: New York Section of the APE

Area D was located along the southern edge of Gulf Avenue and extended from the western edge of the GATX access road to the eastern edge of the R.T. Baker property in the New York portion of the APE (Figure 33) (Photo 9). This area was characterized by dense vegetation consisting mainly of phragmites and wet, tidally-influenced soils. The shovel tests were placed in an area between the inundated wetlands and the fence line demarcating the PANYNJ property directly underlying the bridge. The shovel tests were placed between the fence line and the edge of the wetlands at a distance that varied between 15 and 40-feet from the fence line. Shovel tests were offset where possible to avoid standing water. It should be noted that permission for access to the GATX property was not secured when excavations in Area D commenced. However, it was believed that permission was forthcoming. As a result, the transect was laid out from the beginning of the GATX driveway to the edge of the R.T. Baker property, but excavations began with Shovel Test D-7, which was the first one located on NYSDEC property. It was assumed that Shovel Tests D-1 to D-6 would be excavated after the permission for access to the property was granted. Unfortunately, permission to enter the property was never given and only 13 of the 20 shovel tests in Area D were excavated as shovel test pit D-15 was located in standing water and was not excavated. The shovel test pits that were excavated within Area D, shovel test pits D-7 through D-14, consisted mainly of fill/disturbed soils containing large concentrations of building rubble and modern trash. This portion of the transect traversed an area of Area D that was underwater from south of the New York section of the APE north to the edge of the bridge.

Shovel Tests D-16 to D-20 were situated in an area that was frequently inundated. As a result, subsurface excavations within this portion of Area D were dependant on low tide which exposed a saturated ground surface. The average depth of these shovel tests was approximately 1.5- feet, at which point the water table was encountered. All five of these shovel test pits contained only one stratum: a very dark grayish brown (10YR 3/2) silty loam.

FIGURE 33: Shovel Test Pits, Area D, New York Section of the APE

SOURCE: Berger Field Data 2004

Photo 9: Birds Eye Photograph of Area D. *Source: Pictometry 2006.*

5.2.5 Area E: New York Section of the APE

Area E was located in the median between Interstate 278 East and West beginning at the easternmost portion of the APE and continuing west to the fork in the highway (Figure 34) (Photos 10 and 11). This area was characterized by dense vegetation consisting mainly of phragmites and wet, tidally-influenced soils. A total of 41 shovel test pits were excavated within Area E placed in the dry area between the inundated wetlands and the toe slope of the roadway. A portion of the transect was bifurcated by a tributary of the Old Place Creek. Thus, Shovel Tests E-35 to E-41 were placed on grassy high ground at the convergence of the east and westbound extensions of Interstate 278.

Fill of varying thickness was encountered in every shovel test in Area E. Natural soils were encountered in a number of shovel tests, while others contained fill deposits that were too thick to penetrate. The varying depth of the water table is also testament to the irregular terrain and discontinuous series of wetlands within this portion of the APE. A representative shovel test for the eastern portion of the transect is Shovel Test E-10, which consisted of a very dark grayish brown (10YR 3/2) silty loam Stratum A, underlain by a dark brown (10YR 4/3) sandy loam Stratum B overlying a reddish brown (5YR 4/3) sandy loam Stratum C. All three layers contained modern artifacts and appeared to be fill layers. Stratum D was encountered at a depth of 2.2-feet below the ground surface and consisted of a non-culture-bearing gray (10YR 5/1) clay. This last and deepest layer likely represents natural subsoil.

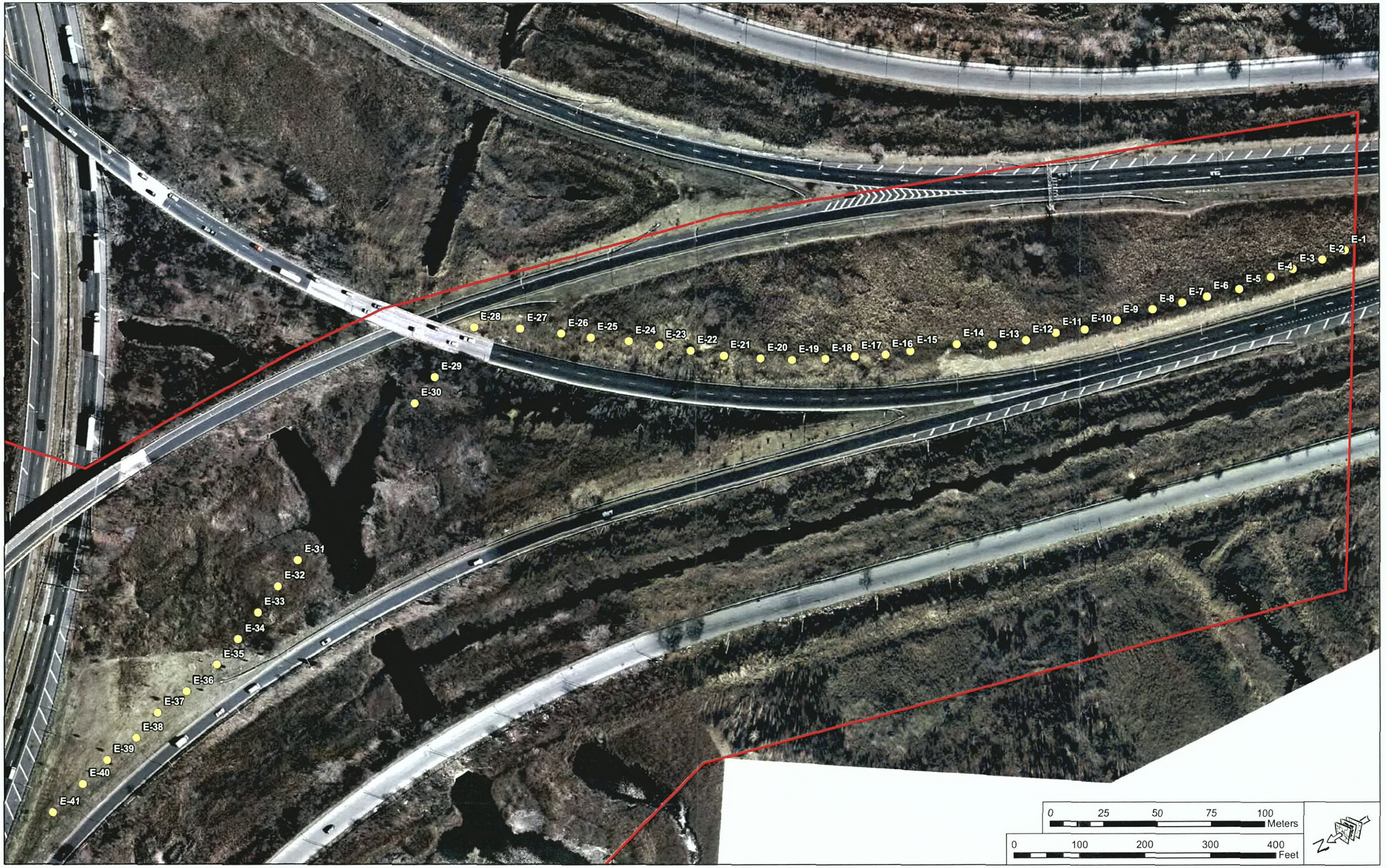

FIGURE 34: Shovel Test Pits, Area E, New York Section of the APE

SOURCE: Berger Field Data 2004

Photo 10: Birds Eye photograph of the Northern Portion of Area E. *Source: Pictometry 2006.*

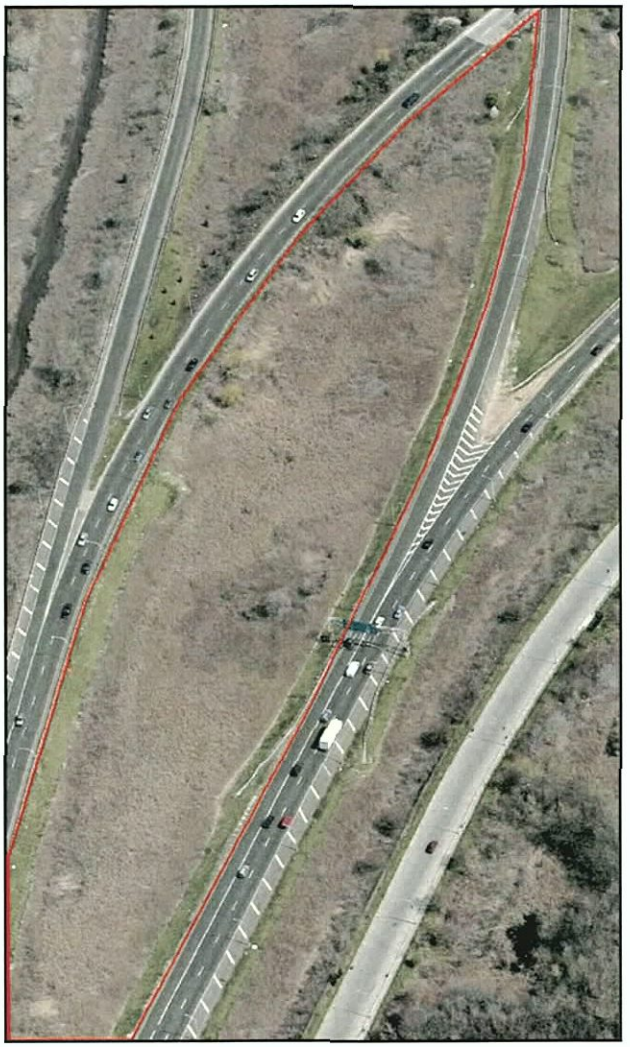

Photo 11: Birds Eye photograph of the Southern portion of Area E. *Source: Pictometry 2006.*

Shovel Test E-26 contained two strata: a very dark grayish brown (7.5YR 3/2) silty loam Stratum A, underlain by dark brown (7.5YR 4/3) mottled with a brown (7.5YR 5/3) sand Stratum B. Both are fill layers that overlay a large concrete impasse encountered at a depth of 1.4-feet below the present ground surface. Shovel Test E-28 consisted of three fill layers that extended below three feet. The water table was encountered in Shovel Tests E-22, E-23, E-25, E-30, E-31 and E-33 at depths ranging from 1.1 to 2.9-feet below the present ground surface.

Shovel Tests E-35 to E-41, located along the western end of the transect exhibited even more disturbance and fill density than in the eastern portion of the transect. Concrete impasses were encountered in Shovel Tests E-35 and E-36 at a depth of 0.9-feet below the ground surface. Concrete was encountered in Shovel Test E-37 at a depth of 0.5-feet. This extended to a depth of 1.2-feet. A second, impassable concrete obstruction was encountered at a depth of 2.5-feet. Concrete impasses were also encountered in Shovel Test E-38 at a depth of 1.2-feet, Stp-39 at 2.0-feet and Shovel Test E-40 at 1.7-feet. Concrete fragments were encountered in Shovel Test E-41; however, they were small enough to be removed. A concentration of large cobbles was encountered at a depth of 2.4-feet. The cobbles were loosely positioned and a void directly underneath became evident. This void extended down to a depth of four feet and in order to avoid compromising the stability of the ground surface, the excavation of this shovel test was terminated at this depth.

5.2.6 Area F: New York Section of the APE

Area F was a discontinuous transect of four distinct segments in which 44 of the originally planned 49 shovel test pits were excavated. The first segment, which consisted of Shovel Tests F-1 to F-20 was located along the northern edge of the Goethals Bridge North service road beginning at the extreme northeast corner of the APE in New York and just west of a public storage facility continuing east to Forest Avenue (Figure 35) (Photo 12). The eastern end of the segment was characterized by moderately thick woods continuing into gradually wetter soils that supported thick stands of phragmites and thorny underbrush (Photo 13). The next segment consisted of two shovel tests, F-21 and F-22, which were offset to the south side of the Goethals Bridge North service road at Forest Avenue to avoid a large expanse of standing water at the end of the first segment. The third segment was placed along the southern edge of Joseph Manna Park, a small triangle-shaped parcel formed by Goethals Bridge North service road to the south, Forest Avenue to the east and an unnamed service road to the northwest (Photo 14). Shovel Tests F-23 to F-29 were excavated in this area. The final segment in Area F was located between the Goethals Bridge North service road and the exit ramp of Interstate 278 West (Photo 15). This area was directly across from the Goethals Trailer Park at the eastern and central portions and the PANYNJ offices at the extreme western end. Shovel Tests F-30 to F-49 were excavated in this location.

Shovel Tests F-1 to F-6 were located in a wooded lot adjacent west of a public storage facility. All six were fairly uniform, consisting of three distinct strata including a dark gray to black silty loam, overlying two mottled sand layers. The water table was relatively high in all of the shovel tests, having been encountered at a depth of between 1.1 and 2.7-feet. No cultural material was recovered from any of these tests. Shovel Tests F-7 to F-20 were located on the margins of wetlands characterized by phragmites and thick, thorny underbrush. Where possible, shovel tests were located as far from the toe slope of the road as possible without going into the inundated areas. Still, five of the shovel test locations fell unavoidably in standing water and were not excavated. Shovel Test F-8 was typical of tests closer to the edge of the road and further away from the wetlands. Three strata were present: a dark gray (5YR 4/1) sandy loam Stratum A, overlying a dark yellowish brown (10YR 4/4) loamy sand Stratum B, underlain by a black (7.5YR 2.5/1) loamy sand Stratum C. Large amounts of plastic, metal and other forms of modern trash were present throughout the entire test. Shovel Test F-11 was representative of those tests closer to the edge of the wetlands. Stratum A was a very dark brown (10YR2/2) silty loam underlain by a yellowish brown (10YR 5/8) sandy loam mottled with a pale brown (10YR 6/3) fine sand with chunks of fire clay overlying an olive brown (2.5Y 4/3) medium sand Stratum C. No cultural material was recovered from this test.

Shovel Test F-21, one of two shovel tests that were offset to the south side of the Goethals Bridge North service road at Forest Avenue contained only one stratum, a very dark grayish brown (10YR 3/2) silty clay loam modern A-horizon/fill. Excavations were terminated at a large stone impasse encountered within this modern A-horizon/fill soil at a depth of 1.1-feet below the surface. The area immediately adjacent to the shovel test pit was probed, however, revealing that the stone slab continued to the east and west, thereby precluding further off set excavations.

Shovel Tests F-23 to F-29 were placed in Joseph Manna Park. Fill layers were present in all seven shovel tests, however, natural soils were encountered in several. Shovel Test F-26 consisted of a very dark grayish brown (10YR 3/2) silty loam Stratum A, overlying a brownish yellow (10YR 6/6) mottled with brown (10YR 3/3) sandy loam, underlain by an olive yellow (2.5Y 6/6) mottled with a yellowish brown medium sand Stratum C, overlying a brown (7.5YR 4/4 medium sand Stratum D. The latter two strata likely represent natural soils. In addition, Stratum D is

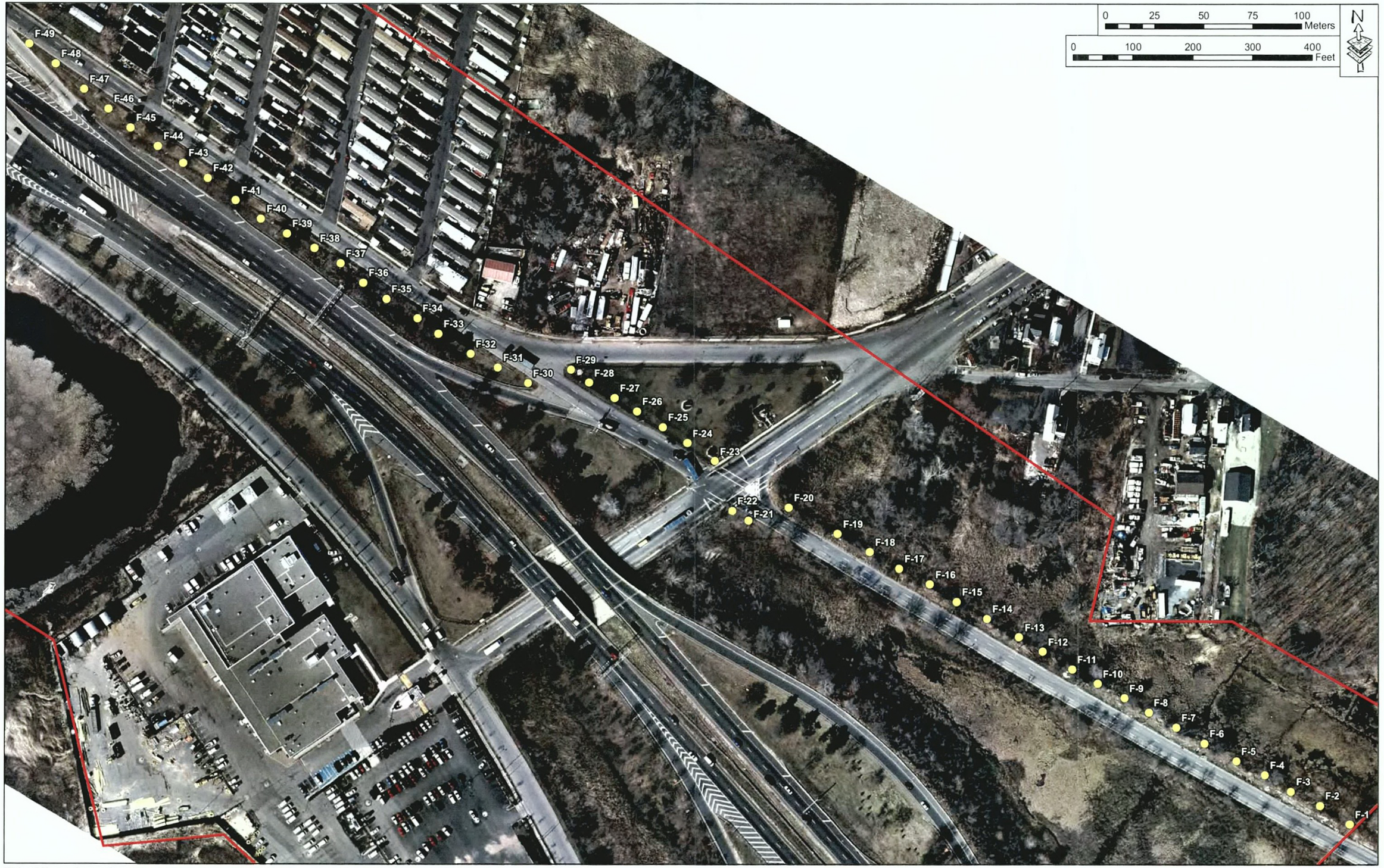

FIGURE 35: Shovel Test Pits, Area F, New York Section of the APE

SOURCE: Berger Field Data 2004

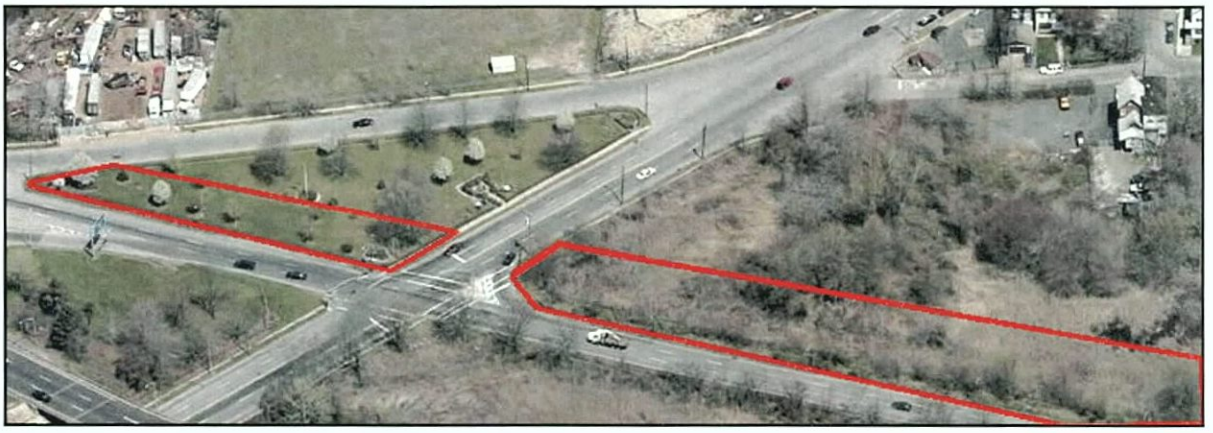

Photo 12: Birds Eye Photograph of a Portion of Area F. *Source: Pictometry 2006.*

Photo 13: Portion of Area F along Goethals Road North. Note Moderately Thick Wood Line and Dense Undergrowth. View West.

Photo 14: Portion of Area F through Joseph Manna Park. View East.

Photo 15: Portion of Area F between the Goethals Bridge North Service Road and the Exit Ramp of Interstate 278 West. View West.

similar in color and texture to soils in other areas that had been determined to be natural and contained prehistoric artifacts. However, disturbed soils were present deeply buried within sections of the park. Shovel Test F-29 is an example of the degree of disturbance. Stratum A was a very dark grayish brown (10YR 3/2) silty loam underlain by a dark brown (10YR 3/3) mottled with a yellowish brown (10YR 5/4) sandy loam Stratum B. A stoneware sewer pipe fragment was encountered at a depth of 2.0-feet and the excavation was terminated when a blacktop impasse was encountered at a depth of 2.4-feet.

Shovel Tests F-30 to F-49 were placed between the Goethals Bridge North service road and the exit ramp of Interstate 278 West. The majority of these tests were comprised almost entirely of fill, however, natural soils were encountered in the eastern end of this segment of the transect. Shovel Test F-30 contained four strata. Stratum A was a very dark grayish brown (10YR 3/2) silty loam, overlying a reddish brown (5YR 4/4) clayey loam Stratum B, underlain by a brown (7.5YR 4/4) sandy loam with chunks of fire clay Stratum C, overlying a dark yellowish brown (10YR 4/4) medium sand Stratum D. The latter two strata likely represent natural soils. The degree of disturbance and density of fill increased substantially as the transect progressed to the west. Shovel Test F-34 contained five fill strata. Stratum A was a very dark grayish brown (10YR 3/2) silty loam, overlying a brown (7.5YR 4/4) sandy loam mottled with a yellowish brown (10YR 5/6) medium sand Stratum B, underlain by a yellowish red (5YR 4/6) clay mottled with a gray (10YR 6/1) clay Stratum C, overlying a yellowish brown (10YR 5/4) medium sand with chunks of fire clay Stratum D, underlain by an olive yellow (2.5Y 6/6) fine sand. Excavations were terminated at a depth of 2.8-feet when a layer of blacktop fragments was encountered. Similarly, Shovel Test F-41 contained four strata: a very dark grayish brown (10YR 3/2) silty loam Stratum A, overlying a dark brown (7.5YR 4/4) silty loam Stratum B, underlain by a brownish yellow (10YR 6/8) sandy loam mottled with a gray (10YR 6/1) fine sand with chunks of fire clay Stratum C, overlying a strong brown (7.5YR 5/8) coarse sand Stratum D. The excavation was terminated when a concrete impasse was encountered at a depth of 1.9-feet.

5.2.7 Area G: New York Section of the APE

Area G was located along the northern edge of the Goethals Bridge North service road and extended from the western edge of the PANYNJ headquarters to the Texas Eastern property (Figure 36) (Photos 16 and 17). A total of 20 shovel tests and 4 radial shovel tests around Shovel Test G-11 were excavated in Area G. The Travis Branch Railroad Bridge bisected Area G between Shovel Tests G-8 and G-9. The eastern area was characterized by an open grassy area at the extreme eastern end (Shovel Tests G-1 to G-8), which became dense vegetation consisting mainly of phragmites and a thinly wooded area terminating at the Travis Branch Railroad bridge. To the west of the bridge, shovel tests were placed in a wooded area that was relatively dry.

Shovel Tests G-1 to G-4 were placed in an area that constituted the side yard of the PANYNJ facility. Shovel Test G-2 is representative of the degree of disturbance and density of fill in this section of Area G. Shovel Test G-2 contained three strata: a dark brown (7.5YR 3/2) silty loam Stratum A, overlying a dark reddish brown (5YR 3/4) clay Stratum B, underlain by a dark yellowish brown (10YR 4/4) loamy sand. The excavation was terminated when an asphalt impasse was encountered at a depth of 2.8-feet. Shovel Test G-7 was also comprised entirely of fill that was likely introduced prior to road and/or bridge construction to fill in what was once a low-lying, marshy area. Stratum A was a very dark brown (10YR 2/2) silty loam, underlain by a heavily mottled clayey loam. Numerous architectural and glass fragments were recovered from this stratum, which terminated at the water table at a depth of 1.7-feet.

Shovel Test G-9 was situated immediately west of the Travis Branch Railroad Bridge. This test consisted of three strata: a very dark brown (10YR 2/2) silty loam Stratum A, overlying a dark brown (10YR 3/3) silty loam Stratum B, underlain by a brown (7.5YR 4/3) medium sand Stratum C; the latter is natural undisturbed subsoil, while the two upper layers are fill. Stratum B was characterized by a dense deposit of ash and large chunks of slag, likely related to the railroad. There was also a large density of artifacts including historic ceramics, window glass, and a complete bottle, which was recovered at the base of Stratum B at a depth of 2.0-feet. Shovel tests to the west of Shovel Test G-9 exhibited, little, if any fill soils or disturbance. Shovel Test G-11 is representative of Shovel Tests G-10 to G-20. Three strata were present: a very dark brown (10YR 2/2) silty loam Stratum A, overlying a dark yellowish brown (10YR 4/4) silty loam Stratum B, underlain by a brown (7.5YR 4/3) medium sand Stratum C. A chert biface reduction flake was recovered from Stratum C. As a result, four radials were placed at a distance of five feet in each of the cardinal directions from Shove Test. G-11. No additional prehistoric materials were identified; however, a sherd of cobalt decorated gray salt-glazed stoneware was recovered from Stratum B in Shove Test G-11b. This suggests an early historic as well as a prehistoric presence nearby.

FIGURE 36: Shovel Test Pits, Area G, New York Section of the APE

SOURCE: Berger Field Data 2004

Photo 16: Birds Eye Photograph of a Portion of Area G. *Source: Pictometry 2006.*

Photo 17: Eastern Portion of Area G along Goethals Road North. View East.

5.2.8 Area H: New York Section of the APE

Area H was located along the northern edge of the Goethals Bridge North service road and extended from the corner of Gulf Avenue to the western most edge of the New York section of the APE along the Arthur Kill (Figure 37) (Photo18). A total of 33 shovel test pits were excavated within Area H. Shovel Tests H-1 to H-6 were placed in the front yard of the Coca-Cola bottling plant approximately 35-feet from the edge of the Goethals Bridge North service road. This area was characterized by an open grassy area with thick fill soils. Shovel Tests H-7 to H-33 were placed along the edge of the Old Place Creek extending to the convergence with the Arthur Kill. This area was characterized by alternating terraces and wet, marshy soils.

Shovel Tests H-2 and H-3 were typical of the deposits encountered in Area H along the front yard of the Coca Cola Plant. Shovel Test H-2 contained three strata: a dark brown (10YR 3/3) silty loam, overlying a brown (7.5YR 4/4) sandy loam Stratum B, underlain by a dark yellowish brown (10YR 4/4) fine sand Stratum C. All appeared to be fill layers. This test was terminated when the water table was encountered at a depth of 3.2-feet. Shovel Test H-3 also consisted of three fill layers. At a depth of 2.2-feet, a dense concentration of wood chunks was encountered and excavations were terminated. Shovel Test H-6 contained a fourth stratum underlying three fill strata. This stratum, Stratum D, was encountered at a depth of 2.1-feet and consisted of a dark yellowish brown (10YR 3/4) medium sand. This likely represents undisturbed natural soils. No cultural material was recovered from Stratum D.

Shovel Tests H-7 to H-33 were placed along the edge of the Old Place Creek north of the Goethals Bridge. Shovel Tests H-7 to H-12, and Shovel Test H-16 were placed on a pronounced rise overlooking the creek. This allowed for excavations down to an average depth of 2.5-feet. The remaining shovel tests were located in low-lying areas consisting of phragmites and salt hay. The average depth of these shovel tests was 1.4-feet. Shovel Test H-8 consisted of three strata: a black (5YR 2.5/1) sandy loam Stratum A overlying a dark brown (10YR 3/3) medium sand Stratum B, from which one fragment of quartz block shatter was recovered. Stratum B was underlain by a dark reddish brown (5YR3/2) medium sand Stratum C, which was consistent in color and texture to soils determined to be undisturbed natural soils encountered in other portions of the APE. No additional shovel test pits were excavated in the immediate vicinity of Shovel Test H-8 due to landscape limitations to the south (Old Place Creek) and observable disturbances to the north resulting from the construction of parking lot facility of the Coca-Cola plant. No additional shovel test pits were excavated to the west and east of Shovel Test H-8 due to observable disturbances between Shovel Tests H-8 and H-7 to the east and between Shovel Tests H-8 and H-9 to the west. Shovel Tests H-13 to H-29 were excavated in an area that was subject to tidal inundation. All but one consisted of two strata and were excavated to the water table.

FIGURE 37: Shovel Test Pits, Area H, New York Section of the APE

SOURCE: Berger Field Data 2004

Photo 18: Birds Eye Photograph of the Western Portion of Area H. *Source: Pictometry 2006.*

5.2.9 Area I: New Jersey Section of the APE

Area I represents the only area available for testing in the New Jersey portion of the APE. This transect was placed along a median formed by the entrance/exit ramps of the Goethals Bridge (Figure 38) (Photo 19). A total of 20 shovel tests were excavated within Area I. Shovel testing in Area I indicates that a significant amount of fill was brought in to construct a large berm that covers almost half of the parcel. Much of this fill consisted of clayey soils, with large boulders or broken concrete/asphalt. As a result, ten of the 20 shovel tests were terminated when impassable obstructions were encountered. However, shovel tests in the extreme eastern portion of the transect (Shovel Tests I-1 through I-6) indicate that the fill is thinnest in this portion of the median and natural soils are present at a depth of approximately 2.0-feet below the present ground surface.

Shovel Test I-2 is representative of the tests where fill layers were penetrable. This test consists of four strata: a dark brown (10YR 3/3) silty loam Stratum A, underlain by a strong brown (7.5YR 4/6) mottled with yellowish red (5YR 4/6) clayey loam Stratum B, overlying a reddish brown (5YR 4/4) clayey loam Stratum C, underlain by a yellowish brown (10YR 5/6) fine sandy loam Stratum D. Stratum B yielded a large amount of modern artifacts. Stratum C contained no cultural material; however, it is similar to soils that comprise the berm and is therefore believed to be a fill layer. Stratum D is similar to the sandy subsoil encountered within the New York section of the APE. Shovel Test I- 7 is representative of the degree to which grading and filling has occurred within this portion of the APE. This test consisted of two fill strata: a 10YR 3/3 dark brown silty loam overlying a 7.5YR 4/6 strong brown silty clay. At a depth of 1.0-foot below the surface, a layer of asphalt was encountered. This was broken through at a depth of 1.4-feet, only to reveal a second layer of asphalt. At a depth of 1.7-feet, excavations of this shovel test were terminated.

FIGURE 38: Shovel Test Pits, Area I, New Jersey Section of the APE

SOURCE: Berger Field Data 2004

Photo 19: Aerial View of Area I. *Source: New Jersey Image Warehouse 2002.*

6.0 ARTIFACT ANALYSIS

6.1 Overview

A total of 1,159 artifacts were recovered from the entire APE, including 1,149 historic/modern period artifacts, 7 prehistoric artifacts, and three non-cultural lithics including two small fragments of hematite and one clam shell fossil. The overwhelming majority of the artifacts (N=1,006), including 996 historic/modern artifacts and all seven of the prehistoric artifacts, were recovered from the New York Section of the APE; a result of the larger number of shovel tests excavated in that portion of the APE. The remaining 153 artifacts, all of which date to the historic/modern period(s), were recovered from the New Jersey section of the APE. All of the artifacts were recovered from fill or disturbed contexts (N=618), or non-feature natural soil contexts (N=541) within the New York and New Jersey sections of the APE. Although isolated pockets of intact soils were encountered periodically throughout both sections of the APE, no evidence of cultural features were noted within these natural soils. Moreover, early diagnostic historic artifacts, including Pearlware (1775-1840) and Creamware (1762-1820), and all of the prehistoric artifacts that were recovered from these non-feature natural contexts were often found in association with more recent/modern artifacts such as window glass and modern bottle glass. Artifacts from each section of the APE are discussed in greater detail below. The full inventory of artifacts retained from the APE is presented in Appendix CC.

6.2 Laboratory Processing

All artifacts were transported from the field to Berger's laboratory. In the field, artifacts were bagged in 4-mil, resealable polyethylene bags. Artifact cards bearing provenience information were included in the plastic bags. A Field Number was assigned to each unique provenience in the field. This number appears will all the provenience information and is used throughout processing and analysis to track artifacts.

In the laboratory, provenience information on each artifact card was checked against a master list of Field Numbers with their proveniences. Any discrepancies were corrected at this time and a Catalog Number was assigned to each provenience according to the New York State Museum and New Jersey State Museum guidelines.

Prehistoric lithics and most historic artifacts were washed in water with a soft toothbrush. Faunal material and fragile artifacts were wet-brushed with a soft natural-bristle paint brush or were simply dry-brushed. Metal objects were cleaned using a dry toothbrush or stainless steel wire brush. All artifacts were laid out to air-dry in preparation for analysis.

During analysis, individual Specimen Numbers were assigned to artifacts within each Catalog Number for each analytical Class: historic ceramics, curved (vessel) glass, small finds/architectural, historic tobacco pipes, lithics, and faunal.

After analysis, the artifacts were re-bagged into clean, perforated 4-mil resealable polyethylene bags. Artifacts are organized sequentially first by Site Number, then by Catalog Number, and finally by artifact Class and Specimen Number within each Catalog Number. An acid-free artifact card listing full provenience information and analytical class was included in each bag.

Artifacts were marked with provenience information following the format below, using black waterproof India ink on a base of Rhoplex. The label was then sealed with a top coat of 10% polyvinyl acetate (PVA) in acetone.

Acc# (Accession #)	Eg.	Acc# 2000.057
(State Site Number)		13JK132
(Catalog #) – (Specimen #)		356-12

6.3 Analytical Methods

All artifact analyses were conducted by the Laboratory Supervisor and/or Material Specialist(s). Berger maintains an extensive comparative collection and laboratory research library to contribute to the completeness and accuracy of the analyses.

Berger has developed a flexible analytical database system that fully integrates all artifacts in one database for use in data manipulation and interpretation. The computerized data management system is written using Paradox® 9, a relational database development package that runs on a Windows® platform.

Each class of artifacts (historic ceramics, curved (vessel) glass, small finds/architectural, historic tobacco pipes, lithics, and faunal) has a series of attributes, sometimes unique to that class, that are recorded to describe each artifact under analysis. Artifact information (characteristics), recorded on the data entry forms by the analysts, was entered into the system. The system was then used to enhance the artifact records with the addition of provenience information. Berger maintains a complete type and attribute coding book for each material class.

The artifact coding system employs a Type/SubType system developed by Berger's Cultural Resources Division. The format for the historic artifacts is based on the South/Noël Hume typology (South 1977), as modified for use in a computerized system (Berger 1987; Stehling and Janowitz 1986). The prehistoric lithics system is based on Taylor, et al (1996) modified for use in a computerized system.

The Type/SubType system is comprised of a three-letter code followed by a number (integer). The first letter of the code represents the specific Class to which that artifact belongs: C, for Historic Ceramics; G, for Curved (Vessel) Glass; S, for Small Finds/Architectural; P, for Historic Tobacco Pipes; L, for Lithics; and Z, for Faunal. The second and third letters and number represent further subdivisions of the artifact groups within the class and are defined in the below discussions for each analytical class.

Pattern (group and class) codes, based on form or material type, were assigned to each artifact entry. The pattern categories used follow the work of South (1977), as modified by Berger (1987).

Artifact function codes were generated only for historic ceramics and glass. The functional categories used follow Beidleman et al (1983) and Klein and Garrow (1984), as modified by Berger (1987). Historic ceramic Function codes are linked to identify vessel forms and the Function codes for glass are linked to the Type/Subtype codes.

The Notes field allows for individual written comments applicable to a specific entry. In general, notes are used to describe particulars of decorative motifs or unusual characteristics, or to record bibliographic references used for identification or dating. Comment codes refer to information not covered in other fields.

6.3.1 Historic Ceramic Analysis

The ceramic tabulation provides the following information: identification of ware types and techniques of surface decoration; dates based on manufacturing and decorative techniques and, if present, maker's marks; identification of vessel forms and functions; and descriptions of decoration motifs. The following are explanations of the variables used in the coding process.

Type/SubType. As mentioned previously, the first letter in the type codes for Historic Ceramics is always C. The second letter refers to general ware groups: E, for Coarse Earthenwares; R, for Refined Earthenwares; S, for Coarse Stonewares; and P, for Porcelain. The third letter refers to specific ware types: e.g., R, for Redware; W, for Whiteware; and L, for Gray or Buff Stoneware. The Subtype numbers refer to particular decorative treatments or named types: e.g., CRW50 – Whiteware with Blue Transfer-Printed Decoration.

Begin/End Dates. Type/Subtype may be descriptive and undated or have specific dates which are automatically assigned by the database. Sources for these dates include, but are not limited to: Cameron (1986), Denker and Denker (1985), Ketchum (1983), Miller (1991), Noël Hume (1969), and South (1977). When more precise dates can be determined from maker's marks or particular decorations or forms, these fields are entered manually.

Form (Var 5). Form indicates the shape and possible function of the complete vessel as represented by the sherds present. General categories, such as "Body – General," are used for sherds whose small size or ambiguous characteristics make determination of form problematical. Part (Var 7) is used to indicate what part of a vessel is represented by the sherd(s) present, if this information is not already noted in the Form field. Definitions of forms are based, for the most part, on Beaudry et al (1983) Greer (1981), and Ketchum (1983).

6.3.2 Curved (Vessel) Glass Analysis

The glass artifacts from the collection were broken down, for analytical purposes, into four functionally distinct groupings based on Bottle, Table, Lighting, and Other use-categories. Window glass, considered more functionally inclusive under an architectural group of artifacts, was subsumed for analysis under Small Finds/Architectural materials, as discussed below. The following are explanations of the variables used in the coding process.

Type/Subtype. The first letter of the Type code for Glass is always G. The second letter denotes the functional groupings: B, for Bottle; T, for Table; L, for Lighting; and O, for Other. The third letter denotes specific function within the appropriate use category, e.g., A, for Alcohol; G, for General; L, for Lamp; and U, for Unidentified. The Subtype numbers denotes vessel form, e.g., GBA3 – Wine/Liquor Bottle; GTG5 – Bowl; GLL11 – Lamp Chimney Body Fragments; and GOU1 – Total Unidentified Glass.

All artifacts identified as to specific function and forms were coded as such regardless of the degree of fragmentation. The specific vessel part(s) encountered is indicated by the coding of the appropriate fields, i.e., Base (Var 7) or Finish (Var 8).

Begin/End Date. Dating of the glass artifacts was completed according to established diagnostic criteria. These criteria, utilized either singly or in combination, can include various technological aspects of glass manufacture such as finish treatments, tooling methods, empontilling techniques, mold markings, Brand (Var 3), Maker's Marks (Var 1), and Color (Var 6). Sources for glass dating include, but are not limited to: Jones and Sullivan (1985), Munsey (1970), Noël Hume (1969),and Toulouse (1971).

Finish (Var 8). Finish and rim type were identified as specific types within one-part (100s) and two-part (200s) categories. Common names such as "Blob-top", "Crown", and "Screw", were used when appropriate.

Base (Var 7). The majority of coded base types in the collection indicate the marks on the basal surfaces of glassware. Machine-made basal markings were also coded, if identifiable.

Manufacturing Technique (Var 5). Manufacturing Technique refers to the distinctive mold seams and markings found on the bodies (and sometimes bases, finishes, or rims) of glassware.

6.3.3 Small Finds/Architectural Analysis

For the small finds/architectural analysis, each artifact was identified by its group and class, Material Type (Var 3), and Characteristic (Var 3), and received a count and/or weight. Additional information, including Maker's Marks (Var 1), Color (Var 6), and Decoration (Var 4), was recorded as identified for the individual artifacts. Definitions of the variables used are presented below.

Type/Subtype. The first letter of the Type code for Small Finds/Architectural is always S. The second letter denotes the group of the artifact (e.g., A, for Architecture), and the third letter denotes a class within that group (e.g., F, for Fasteners). The Subtype number denotes the specific artifact type, (e.g., SAF6 – Wire Nail).

Begin/End Date. Dates for certain artifact were generated automatically in the database based on the Type/Subtype. Other dates were entered manually and were based on various artifact characteristics. References used for dating of artifacts include, but is not limited to: Edwards and Wells (1993), Gurcke (1987), Luscomb (1967), Nelson (1968), and Noël Hume (1969).

Characteristic (Var 3). A modifier that best described the form or manufacturing technique of each artifact was entered in this field. If no diagnostic attribute was evident, the artifact was simply coded as being whole or fragmented.

6.3.4 Historic Tobacco Pipes Analysis

The presence of one tobacco pipe bowl fragment **(PTE98)** is noted.

6.3.5 Faunal Analysis

The analysis of the faunal material allowed for the identification of species, Element (Var 5), and any modification to the specimen.

Type/SubType. The first letter of the Type code for Faunal material is Z (for zoological). The second letter denotes the class of the animal (i.e., M, for Mammal; X, for Shell, etc.). The third letter distinguishes groups with the class (e.g., Z, for Unidentified; P, for Pelecypoda etc.). The numeric Subtype code identifies species.

6.3.6 Prehistoric Artifacts

Minimal amounts of prehistoric artifacts were recovered from this project. Analysis of these items also proceeded according to a Type/Subtype for each type of material. The format for the prehistoric artifacts is based on Taylor, et al (1996). Minimal analysis of these artifacts was undertaken, primarily to show presence of data and/or to show potential mixing of deposits.

6.4 Discussion of Artifacts Recovered from the New York Section of the APE

6.4.1 New York Section of the APE

A total of 1,006 artifacts were recovered from the New York section of the APE, including 996 historic/modern artifacts and 7 prehistoric artifacts. Forty nine percent (N=489) of the total number of artifacts recovered from the New York section of the APE were recovered from modern A-horizon and disturbed/fill contexts. Although the remaining 51% (N=517) artifacts were recovered from non-feature natural soil contexts found scattered throughout this portion of the APE, the artifacts within these natural soil contexts consisted of mixed historic and modern refuse. Historic/modern period artifacts were recovered from every Area investigated within the New York section of the APE and were disproportionately distributed across the APE with more dense concentrations of such material within the southeastern portion of the New York section of the APE (Table 3). The higher concentrations of historic/modern period artifacts within Areas C and E may be explained by the importation of fill associated with road construction and industrial developments along Old Place Creek.

Table 3: *Distribution of Historic/Modern Artifacts within the New York Section of the APE.*

Area	Fragment Count	Percentage of Total
A	102	10.24%
B	146	14.66%
C	231	23.19%
D	57	5.72%
E	227	22.79%
F	60	6.02%
G	98	9.84%
H	75	7.53%
Total	996	100.00%

The historic/modern period artifacts recovered from the New York section of the APE represented a broad spectrum of functional groups (Table 4) and include earlier historic period artifacts, such as Creamware (1762-1820), Pearlware (1775-1840), "broad/crown glass" (typically found in contexts pre-dating 1926), machine cut-nails (1790-1850), a tobacco pipe bowl fragment, and a gunflint fragment intermixed with more recent refuse, such as plastic (not-retained) and modern bottle glass (Photo 20).

Table 4: Frequencies of Functional Groups within the Historic/Modern Artifacts Recovered from the New York Section of the APE.

Functional Group	Fragment Count	Percentage of Total
Activities	56	5.62%
Architectural	228	22.89%
Arms	1	0.10%
Clothing	9	0.90%
Faunal	85	8.53%
Furnishings	11	1.10%
Kitchen	582	58.43%
Personal	4	0.40%
Tobacco	1	0.10%
Unidentified	19	1.91%
Total	996	100.00%

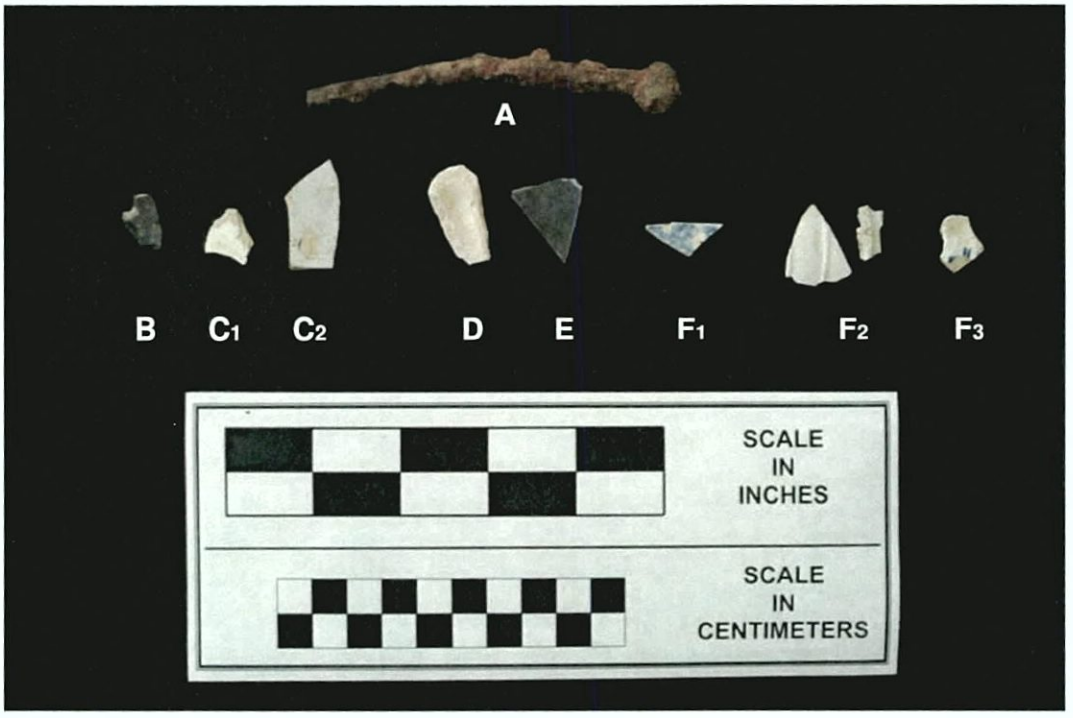

Photo 20: Sample of Early Historic Period Artifacts Recovered from the New York Section of the APE. A: Machine Cut Spike (Shovel Test B-20, Stratum A/B); B: Gunflint Fragment (Shovel Test A38c,Stratum B); C: (1) Creamware and (2) Pearlware (Shovel Test B-13, Stratum A); D: Tobacco Pipe Bowl Fragment (Shovel Test C-13, Stratum B/C); E: Broad/Crown Glass (Shovel Test C-8,Stratum B); F: (1) Sponge Painted Pearlware Rim, (2) Pearlware, (3) Hand Painted Pearlware (Shovel Test C-11, Stratum C/D/E).

"Kitchen" related ceramics (N=235, or 23.35% of the total number of artifacts recovered from the New York section of the APE) are the most diagnostic artifacts among the historic artifact assemblage recovered from the New York section of the APE (Table 5). Pearlware, a refined earthenware dated 1775-1840, was recovered from non-feature natural soil contexts in Areas B, C, E and G. The Pearlware from Area C came in both plain and hand painted varieties and represented a number of vessel forms including plates and bowls. Two fragments of Creamware, a refined earthenware dated 1762-1820, were also recovered from Areas B and C respectively. Other ceramic types recovered from Area C that may be contemporaneous with, or at least closely temporally related to, the Pearlware include glazed redware, both plain and decorated, hand painted hard-paste porcelain, ironstone, yellowware, stoneware, and early hand-painted whiteware. Broad window glass, typically found in contexts pre-dating 1926, was found in fairly large quantities in Areas B, C, F, and G. Window glass identified as "broad/crown" was found in all of the excavated areas, and may pre-date 1840, the end date for the manufacture of crown window glass. The presence of pre-modern window glass types offers corroborating evidence for early historic deposits in areas with early ceramic ware types.

Table 5: Frequencies of Historic Kitchen Group Ceramic Ware Types, New York Section of the APE.

Ceramic Ware Type	Fragment Count	Percentage of Total
Creamware	2	0.85%
Ironstone	11	4.68%
Other	4	1.70%
Pearlware	21	8.94%
Porcelain - Hard paste	19	8.09%
Porcelain - Soft paste	16	6.81%
Redware	24	10.21%
Stoneware - Brown	1	0.43%
Stoneware - Buff	4	1.70%
Stoneware - Grey	4	1.70%
Whiteware	125	53.19%
Yellowware	4	1.70%
Total	235	100.00%

As mentioned previously, the gradual shift from an agricultural/residential community to an industrial/transportation corridor resulted in the removal of the majority of the early domestic buildings by the middle of the twentieth century. As a result, the presence of early ceramic types and early "broad/crown" window glass may be related to the 18th and 19th century occupation of the APE, evidenced by historic cartographic resources. As these artifacts were not found in any dense concentrations, but were scattered throughout the New York section of the APE, it is not possible to attribute these artifacts to any one of the several 18th and 19th century industrial and residential buildings that were once located within the APE. Additionally, these early historic artifacts were recovered in association with more recent modern bottle glass and plastic. As such, these historic period artifacts do not, however, represent significant archaeological resources. Due to the lack of archaeological integrity, evidenced by the preponderance of fill/disturbed soils, mixed historic deposits, and the lack of historic cultural features, the New York section of the APE does not contain any recommended NYRHP/NRHP eligible historic archaeological resources.

All of the seven prehistoric artifacts recovered during this survey were found in the New York section of the APE within stratified, natural, non-feature soil contexts (Table 6) (Photo 21). These prehistoric artifacts were not densely concentrated in one particular location but were rather recovered sporadically from both the northern and southern sides of Old Place Creek in Areas A, B, C, G, and H. The densest concentrations of prehistoric artifacts occurred at Areas B and C; each of which yielded two prehistoric artifacts. Areas A, G, and H yielded only one prehistoric artifact each. Although these prehistoric artifacts are temporally non-diagnostic, they represent various stages in prehistoric Native American lithic tool manufacture. Additionally, these prehistoric artifacts were recovered from within the loosely defined boundaries of the Old Place Creek Site (NYSM #7215; NYSOPRHP #s A085-01-2366 and A085-01-0134) and are likely associated with that previously documented archaeological site.

Although this survey has identified the presence of prehistoric artifacts within the New York section of the APE, the quantity of prehistoric artifacts is extremely low and none are temporally diagnostic. Additionally, although all of the prehistoric artifacts were recovered from natural soil contexts, all but two were also found in association with more recent historic artifacts, suggesting some degree of historic impact to the prehistoric deposits. These artifacts were also not found in any dense concentration but were scattered in low quantities throughout five loci within the New York section of the APE, and although likely associated with the Old Place Creek Site (NYSM #7215; NYSOPRHP #s A085-01-2366 and A085-01-0134), these prehistoric artifacts, however, do not represent significant prehistoric archaeological resources, and are therefore not recommended NYRHP/NRHP eligible. Moreover, although these prehistoric artifacts may be an indication of more substantial deposits nearby, the results of this archaeological survey indicate, however, that no further prehistoric artifacts and no prehistoric archaeological features are likely to exist within the New York Section of the APE.

6.4.2 New Jersey Section of the APE

A total of 153 artifacts were recovered from Area I of the New Jersey section of the APE, all of which are historic/modern artifacts. Eighty-four percent (N=129) of the total number of artifacts recovered from the New Jersey section of the APE were recovered from modern A-horizon and disturbed/fill contexts. Although the remaining 16% (N=24) artifacts were recovered from non-feature natural soil contexts mainly found in the extreme eastern portion of the transect (Shovel Tests I-1 through I-6) where the fill is thinnest and natural soils, albeit disturbed, are present at a depth of approximately 2.0-feet below the present ground surface, the artifacts within these disturbed natural soil contexts consisted of mixed historic and modern refuse. Historic/modern period artifacts were recovered from fifteen of the twenty shovel test pits excavated within the New Jersey section of the APE and were disproportionately distributed across the tested portion of the New Jersey section of the APE; with more dense concentrations (N=110) of such material within the deep fill found in the western portion of the New Jersey Section of the APE (Shovel Tests I-7 through I-20). The eastern portion of Area I of the New Jersey section of the APE yielded fewer historic/modern artifacts (N=43). The higher concentrations of historic/modern period artifacts within the western portion of Area I may be explained by the presence of imported fill in that portion of Area I.

The historic/modern period artifacts recovered from the New Jersey section of the APE also represented a broad spectrum of functional groups (Table 7) but unlike the New York section of the APE, few earlier historic period artifacts were recovered. The few earlier historic artifacts recovered from the New Jersey Section of the APE included one fragment of broad/crown glass, two machine cut nails, two fragments of grey bodied stoneware and one fragment of buff bodied stoneware all of which were recovered from fill contexts and were intermixed with more recent refuse, such as plastic and modern bottle glass (Photo 22).

Table 6: Prehistoric Artifacts Recovered from within the New York Section of the APE.

Photo 21 Designation	Shovel Test	Stratum	Depth Below Ground Surface (Feet)	Type	Material	Count
A	A38	C	2.8-3.5	Border Flake	Chert	1
B	B8	B	2.0-3.0	Block Shatter	Jasper	1
C	B8c	C	1.4-4.2	Early Reduction Flake	Chert	1
D	C15	E	4.4-5.0	Biface Reduction Flake	Argillite	1
E	C15b	E	4.1-4.9	Finishing Flake	Chert	1
F	G11	C	1.9-3.8	Biface Reduction Flake	Chert	1
G	H8	B	1.3-3.0	Block Shatter	Quartz	1

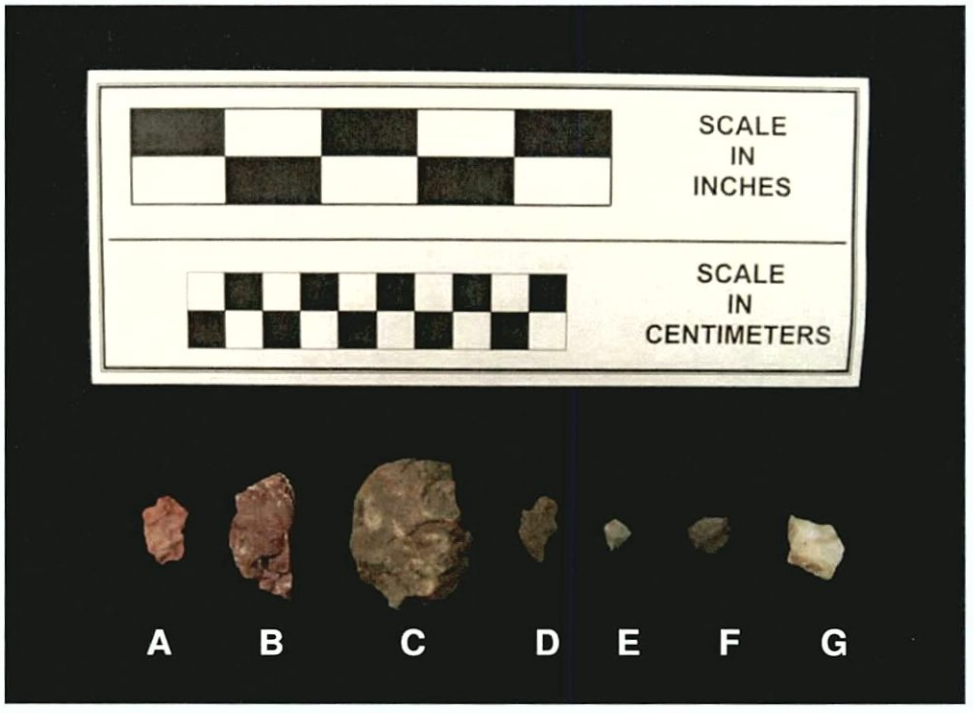

Photo 21: Prehistoric Artifacts Recovered from the New York Section of the APE.

Table 7: Frequencies of Functional Groups within the Historic/Modern Artifacts Recovered from the New Jersey Section of the APE.

Functional Group	Fragment Count	Percentage of Total
Activities	14	9.15%
Architecture	38	24.84%
Clothing	1	0.65%
Faunal	9	5.88%
Furnishings	3	1.96%
Kitchen	88	57.52%
Total	153	100.00%

Photo 22: Representative Historic/Modern Period Artifacts Recovered from the New Jersey Section of the APE. Group A: Wire Drawn Nails from Shovel Test I-20, Stratum B. Group B: (Shovel Test I-17 Stratum B/C) consists of Salt Glazed Stoneware, Whiteware, Decorative Glass, and Modern Bottle Glass. Group C: (Shovel Test I-16, Stratum A/C) consists of Whiteware, Salt Glazed Stoneware, Melted Glass, and Modern Bottle Glass. Group D: (Shovel Test I-4, Stratum B) consists of Whiteware, Cobalt Blue Bottle Glass, Olive Green Bottle Glass, and Clear Bottle Glass.

As mentioned previously, the gradual shift from an agricultural/residential community to an industrial/transportation corridor resulted in the removal of the majority of the early domestic and industrial buildings within the New Jersey section of the APE by the middle of the twentieth century. As a result, the presence of early ceramic types and early "broad/crown" window glass may be related to the 18th and 19th century occupation of the APE, evidenced by historic cartographic resources. As these artifacts were not found in any dense concentrations, and were recovered from fill contexts throughout the New Jersey section of the APE, it is not possible to attribute these artifacts to any one of the several 18th and 19th century industrial and residential buildings that were once located within the APE. Additionally, these early historic artifacts were recovered in association with more recent modern bottle glass and plastic. As such, these historic period artifacts do not, however, represent significant archaeological resources. Due to the lack of archaeological integrity, evidenced by the preponderance of fill/disturbed soils, mixed historic deposits, and the lack of historic cultural features, the New Jersey section of the APE does not contain any recommended NJRHP/NRHP eligible historic archaeological resources.

7.0 EVALUATIONS AND RECOMMENDATIONS

7.1 Evaluation

A Phase I archaeological study has been conducted for the proposed modifications to the Goethals Bridge and its approaches, in Union County, New Jersey and Richmond County, Staten Island, New York. The results of background research and a surface inspection of the APE indicated that much of the Goethals Bridge corridor has been greatly impacted by road construction, residential and commercial development, or a combination of these factors. Likewise, subsurface testing suggested that previous land use within the APE has included filling and grading, activities that have resulted in the alteration of the original surface contours throughout much of the APE. This holds particularly true for the New Jersey section of the APE in which most areas of the New Jersey APE are dominated by impervious surfaces, contaminated soils, or deeply disturbed strata only one small area, a grassy median between roadway entrance/exit ramps of the Goethals Bridge was determined suitable for archaeological subsurface testing.

7.1.1 New York Section

The background research conducted for this Phase I archaeological survey, which included the examination and analysis of selected historical maps and secondary histories, archaeological site files and previous cultural resource studies and EIS documents indicated that Staten Island was sparsely settled well into the late nineteenth century. The alignment of the few early roads depicted during the eighteenth and nineteenth centuries appear to have been changed considerably, and many tributaries of the Old Place Creek and Arthur Kill have been filled in or substantially altered from their configurations on the early cartographic sources. Although numerous archaeological sites have been identified in and around the Goethals Bridge corridor, most have been destroyed or rendered inaccessible by twentieth-century development. Payne and Baumgardt (1986) identified eleven loci within an area approximately 1500-feet square located west of Western Avenue on the north side of the Goethals Bridge. However, all of these archaeological resources have been impacted by construction and/or lie beneath various impervious surfaces or buildings. Additionally, although boring data gathered in 1996 indicate that culture-bearing soils may lie beneath 14.0 or more feet of fill within portions of the New York section of the APE, the Phase IB testing has shown that certain areas within the APE have not been subjected to such an extreme level of intensive filling and grading. These areas include river terraces and undeveloped high ground away from the existing road beds. Despite the presence of natural soils in small disparate portions of the New York section of the APE no NYRHP/NRHP recommended eligible archaeological deposits, and no archaeological features were recovered or noted within these natural soils.

This archaeological subsurface survey, consisting of 261 excavated shovel test pits within the New York section of the APE, has identified the presence of 996 historic/modern artifacts, including some early historic artifacts, within the New York section of the APE. The presence of early ceramic types and early "broad/crown" window glass may be related to the 18th and 19th century occupation of the APE, evidenced by historic cartographic resources. As these artifacts were not found in any dense concentrations, but were scattered throughout the New York section of the APE, it is not possible to attribute these artifacts to any one of the several 18th and 19th century industrial and residential buildings that were once located within the APE. Additionally, these early historic artifacts were recovered in association with more recent modern bottle glass and plastic. As such, these historic period artifacts do not, however, represent significant archaeological resources. Due to the lack of archaeological integrity, evidenced by the preponderance of fill/disturbed soils, mixed historic deposits, and the lack of historic cultural features, the New York section of the APE does not contain any recommended NYRHP/NRHP eligible historic archaeological resources.

This archaeological survey has also identified the presence of seven prehistoric artifacts within five distinct loci of the New York section of the APE (Figure 39). Although these five loci represent areas of archaeological sensitivity, the quantity of prehistoric artifacts recovered from any one and all of these loci is extremely low and none of the prehistoric artifacts are temporally diagnostic. Additionally, although all of the prehistoric artifacts were recovered from natural soil contexts that were similar in color and texture (suggesting that culture-bearing soil layers are present on both the north and south sides of the bridge), all but two of the prehistoric artifacts were found in association with more recent historic artifacts, suggesting some degree of historic impact to the prehistoric deposits. These prehistoric artifacts were also not found in any dense concentration, but were scattered in low quantities throughout five loci within the New York section of the APE. Due to the locations of these prehistoric artifacts, within the loosely defined boundaries of the Old Place Creek Site (NYSM #7215; NYSOPRHP #s A085-01-0134 and A085-01-2366), these artifacts are likely associated with the Old Place Creek Site and will require consultation with the NYSM to determine the most appropriate location for final and permanent curation. These prehistoric

FIGURE 39: Archaeologically Sensitive Areas within the APE

SOURCE: Berger Field Data 2004

artifacts, however, do not represent significant prehistoric archaeological resources, and are therefore not recommended eligible for the NYRHP/NRHP. Moreover, although these prehistoric artifacts may be an indication of more substantial deposits nearby (i.e. outside of the APE), the results of this archaeological survey indicate that no further prehistoric artifacts and no prehistoric archaeological features are likely to exist within the New York Section of the APE.

7.1.2 New Jersey Section

The background research conducted for this Phase I archaeological survey, which included the examination and analysis of selected historical maps and secondary histories, archaeological site files and previous cultural resource studies and EIS documents indicated that the New Jersey section of the APE was developed by European colonists as early as and much like the New York section of the APE, the New Jersey section of the APE experienced a gradual shift from localized seventeenth and eighteenth century urban communities and scattered agricultural/residential communities to an industrial/transportation corridor throughout the nineteenth and twentieth centuries. This development resulted in the removal of the majority of the early domestic structures within the New Jersey section of the APE by the middle of the twentieth century. Early to mid-twentieth century industrial development and the construction of the Goethals Bridge further removed earlier mid-to-late nineteenth century industries and residences.

A review of the records of the New Jersey State Museum indicates that no known prehistoric archaeological sites are present within a one-mile radius of the New Jersey section of the APE. The salt marshes that were originally present on the New Jersey side would not have been favorable for prehistoric occupation. Any prehistoric settlement in this region would probably have occurred on higher areas near streams, such as the Elizabeth River and have most likely been destroyed by historic construction. Therefore, the New Jersey section of the APE has no potential for prehistoric sites.

Likewise, the historic archaeological sensitivity of the New Jersey section of the APE was also minimal. An analysis of historic maps dating from 1781 through 1950 shows a steady development within the New Jersey section of the APE away from open meadow land to a heavily industrialized area with large industrial complexes situated along the Arthur Kill along with numerous railroad lines, a street grid, creating a labyrinth of features that by the early twentieth century had obliterated any vestiges of the early nineteenth-century shoreline meadows and its scattered domestic residences.

Subsurface testing, consisting of 20 shovel test pits, was conducted in one location within the New Jersey section of the APE; a small grassy median at Interchange 13 of the New Jersey Turnpike. This archaeological testing revealed excessive amounts of fill and disturbed soils. This subsurface testing also yielded 153 historic/modern artifacts, including some early historic artifacts. All of these artifacts were recovered from fill or disturbed contexts and were found in association with more modern refuse such as plastic and modern bottle glass. As a result, the presence of early ceramic types and early "broad/crown" window glass may be related to the 18th and 19th century occupation of the APE, evidenced by historic cartographic resources, but as these artifacts were found in fill and disturbed soils within the tested portion of the New Jersey section of the APE, it is not possible to attribute these artifacts to any one of the several 18th and 19th century industrial and residential buildings that were once located within the APE; the remains of which have been effectively destroyed by the construction of industries and roadways in this portion of the APE. As such, these historic period artifacts do not, however, represent significant archaeological resources. Due to the lack of archaeological integrity, evidenced by the preponderance of fill/disturbed soils, mixed historic deposits, and the lack of historic cultural features, the New Jersey section of the APE does not contain any recommended NJRHP/NRHP eligible historic archaeological resources.

As no prehistoric artifacts or features were recovered or noted during the archaeological subsurface survey of the New Jersey section of the APE, and as the subsurface survey has demonstrated large scale disturbance to the original topography of the New Jersey section of the APE, no prehistoric archaeological features are likely to exist within the New Jersey section of the APE.

7.2 Recommendations

7.2.1 New York Section

Subsurface archaeological testing, informed by analyses of historic cartographic resources and predictive models for archaeological sensitivity, conducted within the New York section of the APE did not identify any NYRHP/NRHP eligible archaeological deposits, features, or sites. As a result, no further archaeological investigations are

recommended for the Proposed Project. Although recommended not eligible for the NYRHP/NRHP, consultation with the New Jersey State Museum is necessary, however, to determine the most appropriate location for final curation of the seven prehistoric artifacts recovered from the Old Place Creek Site within the New York section of the APE.

All proposed staging areas as well as any potential soil disturbances that may be required for stormwater runoff detention basins, wetland mitigation or other work areas associated with the Final Design plans for the Proposed Project, however, have not been investigated for the presence of archaeological resources. As such, these areas would require an archaeological assessment and investigation as well as continued consultation with NYSOPRHP and the NYCLPC.

7.2.2 New Jersey Section

Subsurface archaeological testing, informed by analyses of historic cartographic resources and predictive models for archaeological sensitivity, conducted within the New Jersey section of the APE did not identify any NJRHP/NRHP eligible archaeological deposits, features, or sites. As a result, no further archaeological investigations are recommended for the Proposed Project.

All proposed staging areas as well as any potential soil disturbances that may be required for stormwater runoff detention basins, wetland mitigation or other work areas associated with the Final Design plans for the Proposed Project, however, have not been investigated for the presence of archaeological resources. As such, these areas would require an archaeological assessment and investigation as well as continued consultation with NJHPO.

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APPENDIX CA
SECTION 106 CONSULTATION DOCUMENTS/CORRESPONDENCES

1. 07/28/04 - SHPO Archaeology Meeting Briefing Package mailed to both NJHPO and NYSOPRHP.
2. 08/11/04 - Minutes of Archaeology Coordination Meeting with NYSOPRHP.
3. 08/17/04 - Email from Doug Mackey (NYSOPHRP) approving final minutes of the Archaeology Coordination Meeting of August 11th, 2004.
4. 08/18/04 - Email Mike Gregg (NJHPO) endorsing decisions made at the Archaeology Coordination Meeting of August 11th, 2004.
5. 03/14/05 - NYCLPC Archeology/Historic Environmental Review Form.
6. 03/21/05 - NYCLPC Archeology/Historic Environmental Review Form.
7. 04/14/05 - National Park Service-NHRP Letter.
8. 05/05/05 - Minutes of Coordination Meeting with NJHPO for Historical/Architectural Resources.
9. 06/17/05 - USCG's Project Initiation Letters for Section 106 Consultation with both NJHPO and NYSOPRHP.
10. 07/14/05 - NYSOPRHP Response Letter to USCG for the Initiation of Section 106 Consultation.
11. 07/25/05 - USCG Follow-Up Letter to NYSOPRHP's Letter of July 14th, 2005.
12. 10/31/05 - USCG Letter to NJHPO re: Proposed APE for Historical/Architectural Resources and Minutes of the Field Visit with NJHPO on October 17th, 2005.
13. 12/07/05 – NJHPO E-mail to USCG with NJHPO's Expanded APE for Historical/Architectural Resources.
14. 03/10/06 - USCG Response Letter to NJHPO with Revised/Final APE and Technical Memorandum on the Consideration of the APE for Historical/Architectural Resources.
15. 07/20/07 - NJHPO Concurrence on Revised/Final APE provided by USCG on March 10th, 2006.

STATE HISTORIC PRESERVATION OFFICER MEETING BRIEFING PACKAGE

GOETHALS BRIDGE MODERNIZATION PROGRAM (GBMP)
ENVIRONMENTAL IMPACT STATEMENT (EIS)

The Louis Berger Group, Inc./Parsons Brinckerhoff JV

August 11, 2004

July 28, 2004

NYSOPRHP
FSB
Delaware Avenue
Cohoes, N.Y. 12047

Att: Doug Mackey, (518) 237-8643

Department of Environmental Protection
Historic Preservation Office
4th Floor
501 East State Street
Trenton, N.J. 08625-0578

Att: Mike Gregg, (609) 633-2395

Re: Goethals Bridge Modernization Program Environmental Impact Statement
SHPO Coordination Meeting Briefing Package

Dear Sir:

On behalf of the U.S. Coast Guard, and in cooperation with the Port Authority of New York and New Jersey (PANYNJ), The Louis Berger Group, Inc. / Parsons Brinckerhoff joint venture looks forward to meeting with you at the August 11, 2004 SHPO Coordination Meeting (10:00 AM, 115 Broadway, New York City, 5th Floor) to discuss the above-mentioned program. As requested, a briefing package, which details aspects of the program as well as proposed topics for discussion at the meeting, has been enclosed for review in advance of the meeting.

The U.S. Coast Guard has federal regulatory oversight of the Goethals Bridge Modernization Program (GBMP) due to its authority under the General Bridge Act of 1946 as amended. The PANYNJ, the bridge owner and program proponent, has proposed replacement of the Goethals Bridge, which links Elizabeth, NJ with northwestern Staten Island, NY to address the functional limitations of the 76-year old bridge structure.

The Coast Guard is the federal lead agency for the preparation of an Environmental Impact Statement (EIS) in accordance with the requirements of the National Environmental Policy Act (NEPA). In the near future, a Notice of Intent (NOI) to prepare a Draft EIS will be published in the *Federal Register*. In order to set study parameters and begin collecting baseline data, the consultant team is beginning a preliminary data collection effort. In this regard, we are requesting the cooperation and availability of the SHPO to consult with the Coast Guard and members of the consultant team in order to move the NEPA process forward as expeditiously as possible.

At the August 11 meeting, we would like to discuss cultural resource issues aimed to: 1) provide the agencies with information about the project and the proposed schedule for development of the EIS; 2) provide a list of cultural resource data sources to be used in developing the EIS for review and evaluation;

3) determine agency concerns and issues to be addressed under NEPA; 4) solicit relevant data that the agencies may possess; and 5) obtain guidance as to the likely permits or approvals that would be required.

If you have any questions, please contact either Mark Renna at (973) 678-1960, ext. 485 or Gerry Scharfenberger at ext. 770.

Very truly yours,

The Louis Berger Group, Inc. / Parsons Brinckerhoff Joint Venture

Kenneth J. Hess, P.P., AICP
Project Manager
Berger/PB JV

Distribution:

ENVIRONMENTAL IMPACT STATEMENT FOR THE GOETHALS BRIDGE MODERNIZATION PROGRAM

SHPO COORDINATION MEETING AUGUST 11, 2004 AGENDA TOPICS

1.0 Introductions

- 1.1 Purpose of the Meeting

2.0 Project Overview

- 2.1 Project Description
- 2.2 NEPA Process and Schedule
- 2.3 Seasonal Field Investigation Schedule

3.0 Cultural Resource Data Sources

- 3.1 Data Compiled
- 3.2 Additional Data Agencies May Possess

4.0 Data Collection Plan of Study

5.0 SHPO Agency NEPA Issues

6.0 Permit Guidance

7.0 Next Steps

- 7.1 Agency Scoping – September
- 7.2 Environmental Task Force – October

ENVIRONMENTAL IMPACT STATEMENT FOR THE GOETHALS BRIDGE MODERNIZATION PROGRAM

FEDERAL INTERAGENCY COORDINATION MEETING JULY 29, 2004 BRIEFING PACKAGE

1.0 Introduction

The U.S. Coast Guard, as the Federal lead agency, and in cooperation with the Port Authority of New York and New Jersey (PANYNJ), intends to prepare and circulate a Draft Environmental Impact Statement (DEIS) for a proposed new bridge to replace the existing Goethals Bridge crossing the Arthur Kill and connecting Staten Island, New York and Elizabeth, New Jersey. This proposed action is designated as the PANYNJ's Goethals Bridge Modernization Program (GBMP). A Coast Guard bridge permit authorizing the location and plans for the project, which crosses navigable waters of the United States, is required before construction can begin.

The Goethals Bridge provides a direct connection between Staten Island, New York and Elizabeth, New Jersey (see Figure 1). It facilitates mobility between the two States as part of the Port Authority's Interstate Network, comprised of the George Washington Bridge, the Holland and Lincoln Tunnels and the three Staten Island Bridges (i.e., Goethals Bridge, Outerbridge Crossing and Bayonne Bridge). In addition, the Goethals Bridge serves as a primary route for traffic traveling along the Interstate 95 corridor between north and central New Jersey into Staten Island. The bridge is considered a primary path of travel within the Southern Corridor connecting Interstate 278 (the Staten Island Expressway) near Staten Island's north shore, with the New Jersey Turnpike (Interstate 95) and U.S. Routes 1 and 9 in New Jersey.

The project proposes to replace the existing Goethals Bridge, which has substandard geometrics and is experiencing escalating deterioration that has resulted in safety and reliability concerns. The design of a proposed new facility would reflect current traffic design standards, modern structural and seismic codes, national-security safeguards and technology enhancements. It would also add the operational flexibility to facilitate future transit-service opportunities.

Based on the information currently available, the Coast Guard has determined that an EIS would be the appropriate level of environmental documentation for assessing the potential impacts of the proposed project under Section 102(2)(C) of the National Environmental Policy Act (NEPA) of 1969, as amended.

Goethals Bridge
Modernization Program EIS
REGIONAL LOCATION

Figure 1

In addition to the no-build alternative (no-action), the selection of alternatives may include alternative alignments within the existing bridge corridor; alternative bridge designs; provision of high-occupancy vehicle or express bus lanes; intelligent vehicular highway system options; congestion pricing options; consideration of transit alternatives such as potential light rail, commuter rail, bus and/or ferry routes and services; as well as all other reasonable alternatives identified by the public.

Potentially significant issues to be evaluated include: impact on existing/future land use within the proposed project right-of-way; traffic patterns; threatened and endangered species, and critical habitat; historic and archeological resources; wetlands; water quality; noise; air quality; navigation; construction impacts; and cumulative impacts.

A formal interagency scoping meeting with federal, state and local agencies is proposed in September 2004. In addition, public scoping meetings in both Staten Island and Elizabeth are proposed in October 2004. The dates for the scoping meetings will be announced locally.

2.0 Bibliography of Data Sources

Data have been cataloged and assessed for use in developing the EIS environmental baseline conditions reflective of existing conditions within the GBMP study area. These data, along with proposed technical studies associated with the GBMP EIS data collection efforts, will be used to establish study area environmental conditions and serve as the basis for assessment of potential project impacts. The initial bibliography of data collected for this study is presented below.

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- **PHOTOGRAPHS**

Aerial photographs taken by Robinson Aerial Surveys, Inc.

Current aerial photographs of the study area from the Port Authority of New York & New Jersey

Current topographic and planimetric maps of the study area from the Port Authority of New York & New Jersey

Historical aerials of the study area circa mid-1990's: NJDEP, Port Authority.

Historical aerial photographs of the study area, circa mid-1990's from Port Authority of New York & New Jersey and the New Jersey Department of Environmental Protection

MEETING MINUTES

GOETHALS BRIDGE MODERNIZATION PROGRAM EIS

DATE:	August 17, 2004
TO:	Gary Kassof, Ernie Feemster (USCG)
FROM:	Gerry Scharfenberger/Mark Renna (Berger/PB JV)
SUBJECT:	Minutes of the NYOPRHP Coordination Meeting of August 11, 2004
CC:	Meeting Attendees: *Douglas Mackey (NYSHPO), Gary Kassof, Jim Blackmore,* Jay Shuffield, Camille Gonzalez, Gerry Scharfenberger, Mark Renna. Not in Attendance: Mike Gregg (NJHPO)

1.0 Introductions

1.1 Purpose of the Meeting

The Goethals Bridge Modernization Program (GBMP) was introduced as a new project distinct from the 1997 Staten Island Bridges (SIB) EIS. The project proponent is the PANYNJ and the USCG is the lead federal agency pursuant to NEPA. The USCG is directing the Consultant Team Joint Venture (JV). The purpose of this meeting was to address the issue of cultural resources, in particular archaeology to expedite fieldwork that is seasonally dependent in a timely manner. In addition, a discussion of the field investigation strategy was undertaken between the JV archaeologist and the New York State Office of Parks, Recreation and Historic Preservation (NYOPRHP) archaeologist to resolve any discrepancies in the JV field plan and allow for the input of the review agencies from both states prior to the commencement of fieldwork.

The New Jersey State Historic Preservation Office (NJHPO) did not send a representative, however, in a personal communication; Mr. Mike Gregg of NJHPO indicated that NJHPO would abide by direction provided by the NYOPRHP.

2.0 Project Overview

2.1 Project Description
2.2 NEPA Process and Schedule
2.3 Seasonal Field Investigation Schedule

The JV described the GBMP as a proposal by the PANYNJ to replace the 76-year old Goethals Bridge. Scoping was described to begin in September and conclude in December. The scoping schedule necessitated the need to coordinate with the NYOPRHP so as to permit the initiation of field studies this summer and fall prior to the completion of scoping.

Mr. Mackey indicated that cultural resource issues regarding the existing Goethals Bridge structure would be an impact issue as the bridge is eligible for listing under the National Register of Historic Places. Mr. Mackey advised he would defer to the NYOPRHP lead in this regard, Ms. Beth Cummings, but outlined

the issues to be addressed including consultations, impact assessment (likely to be assessed as adverse), and mitigation options including preservation of the structure or recordation of the bridge structure all in accordance with Section 106 of the Historic Preservation Act. Mr. Kassof indicated that if the bridge were to be decommissioned and not operational, the USCG would require that the bridge be removed and preservation would not be an option.

3.0 Cultural Resource Data Sources

3.1 Data Compiled
3.2 Additional Data Agencies May Possess

The JV provided an overview of cultural resource data compiled for the study area. A large body of data exists from years past, most notably, the 1997 FEIS for the Staten Island Bridges Program, along with a number of related environmental and cultural resource studies. A general request for additional data from the NYOPRHP was made followed by an agreement with JV staff to examine the files of the NYSM and the NJHPO to review and collect information from any studies that were undertaken since the 1997 FEIS. In addition, the newly created online website of archaeological sites maintained by the NYOPRHP will be reviewed to create a predictive model for cultural resource sensitivity within the Area of Potential Effect (APE). Doug Mackey advised that a password was needed to enter the site and would assist if the JV did not have one.

Mr. Mackey provided copies of data from the immediate study area identifying known cultural resource locations and geotechnical soil boring data.

4.0 Data Collection Plan of Study

The JV archaeologist outlined the Phase IB field investigation plan designed to determine the presence/absence of buried cultural resources within the current APE. This plan calls for the creation of a grid for shovel testing of all areas not covered by buildings, structures, or other impervious surfaces or in any of the two sites designated as Superfund sites. Shovel testing will occur at set intervals of 50-feet. Shovel testing will be avoided in the front yards of private residence, except in cases where the common area closest to the curb has been disturbed by utilities, road construction, etc. Georeferencing of historic maps over present site plans and the examination of geotech boring data may further narrow the areas eligible for investigation by virtue of excessive disturbance or filling in the past. Doug Mackey also recommended checking the files of the NYSM for evidence of burials. If there is the potential to encounter burials in a particular area, Doug Mackey suggested decreasing the shovel test interval to 25-feet. At this time, it was agreed that there is no need to examine soils under paved surfaces. However, Doug Mackey would want the JV to examine the areas under the paved surfaces if:

- There is fill that would have capped the original ground surface
- There is a defined alternative that calls for impacting that area

5.0 SHPO Agency NEPA Issues

Doug Mackey advised that the JV should follow the Section 106 process to answer NEPA questions.

6.0 Permit Guidance

The JV inquired of the agencies their advice regarding applicable permits. The JV proposed to collect data in the EIS at a level sufficient for permit application preparation. Again, Mr. Mackey advised that data collection sufficient to address Section 106 would suffice.

7.0 Next Steps

7.1 Agency Scoping – September
7.2 Environmental Task Force – October

The scoping meeting will be held on September 14, 2004. A scoping document will be distributed to all parties 3-4 weeks prior to the meeting.

8.0 General Notes

It was agreed that all correspondence, summaries, reports related to the project will be sent to both Doug Mackey of the NYOPRHP and Mike Gregg of the NJHPO for review.

ATTENDANCE SHEET

GOETHALS BRIDGE MODERNIZATION PROGRAM EIS

MEETING PURPOSE: State Historic Preservation Officer Coordination Meeting

DATE: August 11, 2004

LOCATION: Port Authority of New York & New Jersey Offices, 115 Broadway, NY, NY

TIME: 10:00 am

NAME	AFFILIATION	PHONE	EMAIL	
Gerry Scharfenberger	The Louis Berger Group	(973) 678-1960 X770	gsharf@louisberger.com	
Mark Renna	The Louis Berger Group	(973) 678-1960 X485	mrenna@louisberger.com	
Jay Shuffield	PANYNJ	(212) 435-4845	jshuffield@panynj.gov	
CAMILLE GONZALEZ	URS / PANYNJ	(212) 435-5286	CGONZALEZ@PANYNJ.GOV	
Douglas Mackay	SHPO	(518) 237-8643x3291	douglas.mackay@oprhpstate.ny.us	
GARY KASSOF	USCG	212 668 7021	gkassof@bayenv.uscg.mil	
Jim Blackmore	PANYNJ	212 435-5290	jblackmo@panynj.gov	

Magron, Jean Philippe

From: Mackey, Douglas (PEB) [Douglas.Mackey@oprhp.state.ny.us]
Sent: Tuesday, August 17, 2004 2:30 PM
To: Renna, Mark; Mike.Gregg@dep.state.nj.us
Cc: Jim Blackmore; Ernie Feemster; cgonzalez@panynj.gov; Marc Helman; Hess, Kenneth; Gary Kassof; Ed Lopez; Magron, Jean Philippe; Jeff Reidenauer; Judith Versenyi; Scharfenberger, Gerard; Cumming, Beth (PEB)
Subject: RE: Goethals Bridge Modernization Program EIS SHPO Meeting Minutes

Mark,

Thanks for pulling this together. It looks accurate to me, however our tech reviewer for the project will be Beth Cumming (no s at the end) and her e-mail is Beth.Cumming@oprhp.state.ny.us and her extension is 3282.

Beth and Mike G. This is a fairly complete and accurate summary of the meeting. I did indicate the Project Archaeologist should contact Mike to work out testing strategies for the New Jersey side to be sure their concerns are met. If either of you have any questions, let me know.

Doug

Douglas Mackey

New York State Office of Parks, Recreation and Historic Preservation Peebles Island PO Box 189 Waterford, NY 12188
(518) 237-8643 x 3291

Douglas.Mackey@oprhp.state.ny.us
<mailto:Douglas.Mackey@oprhp.state.ny.us>

-----Original Message-----
From: Renna, Mark [mailto:mrenna@louisberger.com]
Sent: Tuesday, August 17, 2004 12:35 PM
To: Mike.Gregg@dep.state.nj.us; Mackey, Douglas (PEB)
Cc: Jim Blackmore; Ernie Feemster; cgonzalez@panynj.gov; Marc Helman; Hess, Kenneth; Gary Kassof; Ed Lopez; Magron, Jean Philippe; Jeff Reidenauer; Judith Versenyi; Scharfenberger, Gerard
Subject: Goethals Bridge Modernization Program EIS SHPO Meeting Minutes

Doug:

Attached please find minutes of our meeting of August 11, 2004. We appreciate your assistance and look forward to working with you on this project.

Mike: we know you were unable to attend, but indicated that NJ SHPO would concur with direction provided by NY. We look forward to working with NJ SHPO on this project and would welcome your comments and participation in the upcoming Agency Scoping Meeting scheduled for September 14, 2004 at 10:30 am at the US Coast Guard Offices in Battery Park, NYC. The NOI is also attached for your records.

Thanks, Mark

Mark Renna
Vice President of Environmental Sciences The Louis Berger Group, Inc.
100 Halsted Street
East Orange, New Jersey 07018
800/323-4098 ext 485
973/678-1960 ext 485
fax 973/672-4284

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Magron, Jean Philippe

From: Renna, Mark
Sent: Wednesday, August 18, 2004 11:22 AM
To: Bach, James; 'Jim Blackmore'; 'Ernie Feemster'; 'cgonzalez@panynj.gov'; 'Marc Helman'; Hess, Kenneth; 'Gary Kassof'; 'Ed Lopez'; Magron, Jean Philippe; 'Jeff Reidenauer'; 'Judith Versenyi'
Subject: FW: Goethals Bridge archaeology meeting

NJSHPO seems to indicate concurrence with our field plan of study. A couple specific points of contact have been mentioned. I suggest we add them to our mailing list. Mark

-----Original Message-----
From: Mike Gregg [mailto:Mike.Gregg@dep.state.nj.us]
Sent: Wednesday, August 18, 2004 11:07 AM
To: Gscharf@louisberger.com; Renna, Mark; Douglas.Mackey@oprhp.state.ny.us
Subject: Goethals Bridge archaeology meeting

Thank you all for adequately representing NJ's interests at the meeting last Wednesday, and thanks for the DEIS Notice of Intent from FR, meeting minutes, and meeting sign-up sheet. I have forwarded this information to our Deputy SHPO Dorothy Guzzo, head of our transportation unit Charles Scott, and bridge specialist Andrea Tingey.

Good Luck,

This transmission is neither privileged nor confidential. If the reader of this transmission is not the intended recipient, you are hereby notified that although you have received this document in error, you may review, disseminate, distribute or copy this transmission however you wish or may imagine. If you have received this transmission in error, no problemo! Please do not bother notifying me or anybody, and certainly do not be concerned with deleting, altering, forwarding,
or flushing it.

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PO Box 404
Trenton NJ 08625-0404
phone 609 633 2395, fax 609 984 0578, Mike.Gregg@dep.state.nj.us
http://www.state.nj.us/dep/hpo/

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

USCG /ER.R — 03/08/05
PROJECT NUMBER — DATE RECEIVED

PROJECT GOETHALS BRDG MODERNIZ'TN:

[ ] No architectural significance

[ ] No archaeological significance

[ ] Designated New York City Landmark or Within Designated Historic District

[ ] Listed on National Register of Historic Places

[X] Appears to be eligible for National Register Listing ~~and/or New York City Landmark Designation~~

[X] May be archaeologically significant; requesting additional materials

COMMENTS The LPC is in receipt of: "Task G: Scoping Summary Report Version 2.0", 1/31/05; "Task I- Alternative Actions and Screening, Technical Memorandum, Preliminary Alternatives", 2/05; and "Task I-Alternative Actions and Screening, Technical Memorandum: Alternatives Screening Evaluation Methodology" dated 2/05. The documents are acceptable for architectural properties.

cc: SHPO, L Berger

Gina Santucci — 03/14/05
SIGNATURE — DATE

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre St, 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

USCG/ER.R — 03/08/05

PROJECT NUMBER — DATE RECEIVED

PROJECT GOETHALS BRDG MODERNIZ'TN:

[ ] No architectural significance

[ ] No archaeological significance

[ ] Designated New York City Landmark or Within Designated Historic District

[X] Listed on National Register of Historic Places

[X] Appears to be eligible for National Register Listing and/or New York City Landmark Designation

[X] May be archaeologically significant; requesting additional materials

COMMENTS The LPC is in receipt of: "Task G: Scoping Summary Report Version 2.0," 1/31/05, "Task 1- Alternative Actions and Screening, Technical Memorandum, Preliminary Alternatives," 2/05, and "Task 1- Alternative Actions and Screening, Technical Memorandum" Alternatives Screening Evaluation Methodology" dated 2/05. The work being undertaken to identify the potential impact of the proposed project upon potentially significant archaeological resources is appropriate.

cc: SHPO, Louis Berger

Amanda Stylo — 03/21/05

SIGNATURE — DATE

United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, D.C. 20240

IN REPLY REFER TO:

April 14, 2005

2280

Dear Sarah Moss,

Thank you for your inquiry. According to our records, Goethals Bridge, NY/NJ is not listed in the National Register of Historic Places.

Thank you for your interest in the preservation programs of the National Park Service.

Sincerely,

Edson H. Beall

Edson H. Beall
Historian
National Register of Historic Places
Phone: (202) 354-2255
Web: http://www.cr.nps.gov/nr
E-mail: Edson_Beall@nps.gov

EXPERIENCE YOUR AMERICA
The National Park Service cares for special places saved by the American people so that all may experience our heritage.

MEETING MINUTES

GOETHALS BRIDGE REPLACEMENT EIS

DATE:	May 17, 2005
TO:	Andrea Tingey, Michelle Hughes (NJSHPO) Gary Kassof, Ernie Feemster (USCG) Coleen Hopson, Gary Mason, Camille Gonzalez, Rosalie Siegel (PANYNJ) Judith Versenyi, Esther Schwalb (Berger/); Barbara Thayer, Sara Moss (BTA)
FROM:	Esther Schwalb, Sara Moss
SUBJECT:	Minutes of May 5, 2005, Meeting with NJSHPO
CC:	James Warren (NYSHPO), Jim Blackmore, Ed Lopez, Paul Crist, Phil Dinh, Lou Venech, Ter Benczik, Joann Papageorgis, Steve Coleman

DATE/LOCATION: Thursday, May 5, 2005; 1:30 – 3:00 PM
USCG office, 3rd fl. Conference Room,
Battery Building, One South Street, NY

ATTENDEES: Attendance sheet attached.

PURPOSE OF MEETING: Agenda attached.

ACTION ITEMS:

Item #	Description	Responsibility (follow up/action)
1	Send Section 106 initiation letter to NJSHPO.	USCG
2	Begin work on Alternatives Analysis Report.	Berger/PB (BTA)
3	Send copy of past Alternative Analysis Report considered good examples of such documentation to USCG.	NJSHPO
4	Speak with Jim Warren, NYSHPO to determine whether to hold meeting, or submit Section 106 initiation letter first.	USCG
5	Determine if NYSHPO requires a report comparable to the NJSHPO Alternatives Analysis Report.	Berger/PB (BTA)
6	Email link to existing Goethals Bridge HAER photography to meeting attendees.	BTA
7	Review Historic Resource Inventory prepared for SIBP EIS and determine whether suitable for GBR EIS documentation and consultation purposes.	USCG Berger/PB, BTA

1. **Project Background:**
   a. USCG welcomed NJSHPO and other attendees, and defined purpose of meeting was to ask NJSHPO for input.

   b. Berger/PB provided an overview of the defined project purpose and need, and the related project goals, and noted that documents provided to NJSHPO (Draft Scoping Document, Scoping Summary Report, Technical Memoranda on Preliminary Alternatives and Alternatives Screening Methodology) contain more detail on topics to be discussed at the meeting.

   c. Berger/PB noted the key differences of the current proposed project from the 1997 SIBP EIS as follows:
      i. Physical deterioration of the existing bridge has accelerated in the past 10 years, beyond what was anticipated when previous EIS was prepared; current major repair of bridge will have to be followed by full deck replacement in next 7 to 10 years, with subsequent significant repairs and rehabilitation of superstructure and substructure elements required every 20 to 25 years after that.
      ii. Post 9/11 security concerns - among measures recommended to increase security at bridges, per an FHWA Blue Ribbon Panel, is creating standoff distances from primary structural components; as existing protective dolphin is already in the Arthur Kill's navigation channel, additional in-water protection would likely encroach further on navigation in the waterway.
      iii. E-Z Pass system has been introduced at the Goethals and in the regional network since the SIBP EIS.
      iv. New transit services have been introduced in area served by the Staten Island bridges, including Hudson-Bergen LRT, express bus lanes currently under construction on the Staten Island Expressway, which connects to Goethals Bridge approach on the east
      v. Howland Hook Marine Terminal (operated by New York Container Terminal) re-opened in late 1990's and is expanding, resulting in increased truck traffic to/from the facility and across the Goethals Bridge; with the closure of the Military Ocean Terminal at Bayonne (MOTBY), Howland Hook is now the military facility for the Port of NY & NJ. The former MOTBY, now The Peninsula at Bayonne Harbor, has acreage set aside for port use, yet to be developed.

   d. NJSHPO responded that additional information would be required concerning project purpose and need, and potential solutions, including:
      i. Security measures: NJSHPO has looked at non-structural security enhancements at other bridges (e.g., cameras and signage) and would like more information on types of security methods under consideration for Goethals.
      ii. E-Z Pass technology – NJSHPO will need more specific explanation of how E-Z Pass affects bridge traffic and what potential solutions are.
      iii. Structural integrity - NJSHPO will want to see a bridge inspection report, AADT and other traffic data as further explanation of problem.

iv. Functional obsolescence – NJSHPO will want to see details on problem related to sub-standard alignment/approach and what potential solutions are.

e. Non-historic factors considered in NJSHPO's decision-making
   i. NJSHPO will consider stated need for wider lanes and standard shoulder width; given truck traffic, need may be compelling. NJSHPO considers AASHTO standards, but finds them flexible.
   ii. Navigation in Arthur Kill – NJSHPO view is that maintenance of existing navigation channel is typical action, while improving horizontal clearance is not. USCG noted that changing marine traffic would benefit from wider navigation channel.

2. **Preliminary Alternatives:**
   a. Review of Preliminary Alternatives - Berger/PB provided a summary of the preliminary alternatives defined, based on the project purpose and need, and goals.
      i. In response to NJSHPO question regarding whether reactivation of the Staten Island Railway was investigated, Berger/PB stated that it had been considered, but that dispersed origins and destinations in Goethals Bridge service area would likely be better served by transit that is not fixed-rail. Bus rapid transit and ferry system preliminary alternatives have been defined.
      ii. Considerations related to potential Goethals Bridge rehabilitation
         1. NJSHPO noted that additional information is required before can make determination regarding whether rehabilitation of existing bridge should be dismissed and demolition considered.
         2. PANYNJ noted that if the Goethals Bridge were to be "twinned," the number of lanes would be reduced from four lanes to three on the existing bridge, without an emergency shoulder.
      iii. Proposed Project –
         1. NJSHPO cautioned against project "creep," meaning expansion of transportation infrastructure improvements beyond what initially proposed. USCG responded that project expansion is not anticipated, but that physical mitigation of any significant impacts may be required.
         2. NJSHPO noted City of Elizabeth concerns regarding increased traffic and inability of local roads to handle it. Berger/PB responded that USCG has written to City of Elizabeth, and invited City to have representatives on the study's Technical Advisory Committee, Environmental Task Force, and Stakeholder Committee, for ongoing opportunity for input to the EIS process.
         3. PANYNJ noted that, at the behest of the Mayor of Elizabeth, they met with representatives from the Cities of Elizabeth and Linden, Union County, NJDOT and NJ Turnpike Authority twice since the DEIS public scoping process, and expect to continue to meet over the course of the project, to address some of their concerns that are not related to the proposed project.

b. Alternatives Analysis Report
   i. Alternatives Analysis Report (NJSHPO previously provided outline to Berger/PB) needs to be completed before alternatives are eliminated. If USCG intends to conduct NEPA and Section 106 process together, Alternatives Analysis Report needs to be prepared now. NJSHPO offered to provide examples of effective Alternatives Analysis Reports to the Study Team. NJSHPO will review bridge inspection reports, traffic data, justification of substandard alignment/approach claim, cost, etc.
   ii. Guidelines for architectural and archaeological surveys are available on NJSHPO website.
   iii. NJSHPO noted their view that a 77-year-old bridge is a "new bridge."
   iv. NJSHPO stated that the character-defining features of the bridge that make it notable for designation under "Criterion C: construction methods" are no different than if the bridge had been noted for its design and type.

c. Area of Potential Effect (APE)
   i. The APE may need to be larger than in the SIBP FEIS, since the APE is based on the potential direct and indirect effects (such as visibility) of the bridge alternatives on other historic resources identified.
   ii. NJSHPO mentioned new NJDEP stormwater regulations, which have changed, should be considered in archaeology study.

3. **Possible Mitigation options <u>if</u> replacement bridge/demolition of existing bridge is identified as Preferred Alternative:**
   a. Magnitude of mitigation will depend on the number of historic resources affected, and NJSHPO would want to coordinate with NYSHPO regarding necessary mitigation.

   b. Design of Replacement Bridge
      i. NJSHPO suggested that if the Goethals Bridge is replaced, the design of a new bridge (structure type) could affect the size of the APE.
      ii. In response to NJSHPO question about what type of bridge is under consideration, Berger/PB responded that bridge design has not yet been considered this early in process.
      iii. NJSHPO suggested that feasible bridge design types be considered, at "thumbnail sketch" level, including worst-case design scenario.
      iv. NJSHPO would be looking for a 'signature bridge' as replacement.

   c. Documentation of Goethals Bridge, should it be demolished:
      i. Need photo documentation of existing bridge – to be determined whether formal HAER documentation would be required. *Note: Some HAER documentation (photographs from October 1991) is available online.*
      ii. Curation & archiving that is available to public through historic societies, libraries.
      iii. Creative ways of reaching public through education, e.g. school lesson plans, film documentary.

iv. Website showing history of bridge (in consultation with interested parties) and bridge demolition/construction.

4. **Initiation of Section 106 Consultation:**
   a. Formal Section 106 consultation initiation letter from lead agency (USCG) (§803 of Section 106 regulations) should be sent to NJ (and NY) SHPO. Letter will include project description, purpose & need, definition of area of potential effect for all alternatives under study, public involvement plan, and list of consulting parties (which may differ by State).

   b. Adequacy of historic resource inventory conducted for 1997 SIBP EIS
      i. NJ Policy is that everything 50 yrs old must be inventoried; information has a 10-year life span. Data from the 1995 DEIS/1997 FEIS is beyond this term, but the data may be re-certified if the USCG deems the previous inventory of sufficient quality and thoroughness. As Guidelines for Architectural Survey changed last year, the 1995 inventory needs to be re-evaluated. NJSHPO offered to accompany Study staff for field visit to confirm validity of previous inventory and identify any new resources.

   c. Goethals Bridge's National Register status – Bridge is still eligible for listing.

   d. Project review process
      i. NJSHPO requested that information be sent to her office in substantial amounts to facilitate efficiency of her reviews.
      ii. Study Team should copy NJSHPO when corresponding with NYSHPO.
      iii. NJSHPO usually responds within 30 days from when material is received.
      iv. NJSHPO noted that she will coordinate with NYSHPO.

COMMANDER (OBR)
FIRST COAST GUARD DISTRICT
BRIDGE BRANCH
ONE SOUTH STREET
BATTERY PARK BUILDING
NEW YORK, NY 10004-1466
TEL: (212) 668-7165
FAX: (212) 668-7967

DATE: 5 MAY 2005
LOCATION: 1 SOUTH STREET
GOETHALS BRIDGE REPLACEMENT PROJECT
COORDINATION WITH NJSHPO
TIME: 1330

NAME	AGENCY	TELEPHONE	E-mail
Judith Versenyi	Berger/PB	212-465-5239	versenyi@pbworld.com
Sara Moss	BTA (Berger/PB)	212-[illegible]569-2750	smoss@btmayer associates.com
Barbara Thayer	B Thayer Assoc.	212-564-2750	bthayer@btmayerassociates
Michelle Hughes	NJDEP-SHPO	609 984-6018	Michelle.Hughes@dep.state.nj.us
Andrea Tingey	NJDEP-HPO	609-984-0539	Andrea.Tingey@dep.state.nj.us
GARY KASSOF	USCG Bridge	2126687022	gkassof@batteryny.uscg.mil
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Rosalie Siegel	PANY & NJ	(212)435-4405	rsiegel@panynj.gov
Colleen Hopson	PA NY/NJ	212.435.5590	chopson@panynj.gov
CAMILLE GONZALEZ	PANYNJ/URS	212.435.5286	Cgonzalez@panynj.gov
ESTHER SCHWALB	Berger/PB	212 465-5240	schwalb@pbworld.com
GARY MASON	PANY/NJ	973 792 4747	GMASON@PANYNJ.GOV

U.S. Department of Homeland Security

United States Coast Guard

Commander
First Coast Guard District

One South Street
Battery Building
New York, NY 10004

Staff Symbol: obr
Phone: 212 668-7165
Fax: 212 668-7967

June 17, 2005

Ms. Andrea Tingey
Architectural Historian
New Jersey Department of Environmental Protection
Historic Preservation Office
P.O. Box 404
Trenton, NJ 08625-0404

Re: Initiation of Section 106 Consultation for the Goethals Bridge Replacement EIS

Dear Ms. Tingey:

This letter is to formally initiate the Section 106 consultation process (pursuant to the National Historic Preservation Act of 1966) for the proposed Goethals Bridge Replacement (GBR) project, for which the Port Authority of New York and New Jersey (PANYNJ) is the project sponsor. The United States Coast Guard (USCG), federal lead agency for preparation of an environmental impact statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, requests your consultation in the Section 106 review.

The USCG has regulatory oversight of the bridge project due to its authority under the General Bridge Act of 1946, as amended. As such, the project is subject to Section 106 of the National Historic Preservation Act and associated implementing regulations found at Title 36 CFR 800, which mandates review of a federal undertaking's effects on historic resources.

The USCG authorizes the Louis Berger Group, Inc./Parsons Brinckerhoff, Inc. Joint Venture, the environmental consultant team assisting the USCG with preparation of the GBR EIS, to prepare information, analyses, and recommendations supporting this effort.

Attached is the following information:

- Project Description, Purpose and Need for the Proposed Project, and Project Goals;
- Definition of Area of Potential Effect;
- List of Proposed Consulting Parties; and
- Public Participation Plan.

We seek your concurrence on the APE and the consulting parties.

Thank you for your assistance in this undertaking; we look forward to working with you further. We will provide you with additional project-related information, following your outline for a Historic Bridge Alternatives Analysis Report, in coming weeks.

In the meantime, please call me, at 212-668-7021, or Sara Moss, B. Thayer Associates (a member of the Berger/PB team), at (212) 564-2750, if you have any comments or questions concerning the enclosed information.

Sincerely,

Gary Kassof
Bridge Program Manager
First Coast Guard District
By direction of the District Commander

Enclosures:

Copy: Michelle Hughes (NJSHPO); James Warren (NYSHPO); Ernie Feemster (USCG); J. Blackmore, Coleen Hopson (PANYNJ); Ken Hess, Judith Versenyi, Esther Schwalb (Berger/PB); Sara Moss (BTA)

U.S. Department of Homeland Security

United States Coast Guard

Commander
First Coast Guard District

One South Street
Battery Building
New York, NY 10004

Staff Symbol: obr
Phone: 212 668-7165
Fax: 212 668-7967

RECEIVED
JUN 27 2005
LBG INCOMING

June 17, 2005

Mr. James Warren
New York State Office of Parks, Recreation
and Historic Preservation
P.O. Box 189
Peebles Island
Waterford, NY 12188

Re: Initiation of Section 106 Consultation for the Goethals Bridge Replacement EIS

Dear Mr. Warren:

This letter is to formally initiate the Section 106 consultation process (pursuant to the National Historic Preservation Act of 1966) for the proposed Goethals Bridge Replacement (GBR) project, for which the Port Authority of New York and New Jersey (PANYNJ) is the project sponsor. The United States Coast Guard (USCG), federal lead agency for preparation of an environmental impact statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, requests your consultation in the Section 106 review.

The USCG has regulatory oversight of the bridge project due to its authority under the General Bridge Act of 1946, as amended. As such, the project is subject to Section 106 of the National Historic Preservation Act and associated implementing regulations found at Title 36 CFR 800, which mandates review of a federal undertaking's effects on historic resources.

The USCG authorizes the Louis Berger Group, Inc./Parsons Brinckerhoff, Inc. Joint Venture, the environmental consultant team assisting the USCG with preparation of the GBR EIS, to prepare information, analyses, and recommendations supporting this effort.

Attached is the following information:

- Project Description, Purpose and Need for the Proposed Project, and Project Goals;
- Definition of Area of Potential Effect;
- List of Proposed Consulting Parties; and
- Public Participation Plan.

We seek your concurrence on the APE and the consulting parties.

Thank you for your assistance in this undertaking; we look forward to working with you further. We will provide you with additional project-related information, and seek your guidance in relation to NYSHPO's preference regarding the necessary documentation, in coming weeks.

In the meantime, please call me, at 212-668-7021, or Sara Moss, B. Thayer Associates (a member of the Berger/PB team), at (212) 564-2750, if you have any comments or questions concerning the enclosed information.

Sincerely,

Gary Kassof
Bridge Program Manager
First Coast Guard District
By direction of the District Commander

Enclosures:

Copy: Andrea Tingey (NJSHPO); Michelle Hughes (NJSHPO);; Ernie Feemster (USCG); J. Blackmore, Coleen Hopson (PANYNJ); Ken Hess, Judith Versenyi, Esther Schwalb (Berger/PB); Sara Moss (BTA)

Request to Initiate Section 106 Process:

Project Description

The PANYNJ has proposed construction of a new bridge to replace the existing Goethals Bridge, which provides a direct connection over the Arthur Kill between Staten Island, New York, and Elizabeth, New Jersey. It facilitates mobility between the two states as part of the PANYNJ's interstate transportation network, comprised of the George Washington Bridge, the Holland and Lincoln Tunnels, and the three Staten Island Bridges (the other two being the Outerbridge Crossing and the Bayonne Bridge). The Goethals Bridge is considered a primary path of travel within the Southern Corridor, connecting Interstate 278 (the Staten Island Expressway) near Staten Island's north shore with the New Jersey Turnpike (Interstate 95) and U.S. Routes 1 and 9 in New Jersey.

The PANYNJ notified the USCG by letter dated June 3, 2004, of its intent to submit a formal application for a Bridge Permit, under the General Bridge Act of 1946. A Bridge Permit is required before construction could begin, since the proposed replacement bridge would cross navigable waters of the United States. The USCG assumed the role of the Federal lead agency for preparation and issuance of an EIS, pursuant to NEPA. The EIS will examine the potential social, economic, and environmental impacts of reasonable and feasible alternatives for replacement of the Goethals Bridge. The principal elements of the Goethals Bridge Replacement EIS process include definition and analysis of alternatives, environmental documentation, and public outreach and interagency coordination.

Purpose and Need

The Staten Island Bridges Program (SIBP) Modernization and Capacity Enhancement Final EIS, published in 1997, included environmental, historic, and visual resource analyses for the Goethals Bridge corridor. The purpose and need for the current, proposed GBR project is different from and broader than the purpose and need articulated for the previous SIBP study, as it takes into account conditions that have changed since 1997, including the bridge's deteriorating structural integrity and escalating maintenance requirements; emergence of E-Z Pass use at the bridge (and consequent changes in traffic conditions on the bridge and in its environs); post-9/11 security needs at critical links, such as the Goethals Bridge, in the region's transportation network; reactivation and expansion of the area's port facilities, notably the New York Container Terminal at Howland Hook, and consequent increases in truck traffic; and other transportation projects in the bridge's vicinity and in the region.

The existing Goethals Bridge has substandard 10-foot-wide lanes, no emergency shoulders, and escalating repair and maintenance costs. The functional and physical obsolescence of the 77-year-old bridge impedes efforts to: improve safety and reliability on this interstate crossing; adequately accommodate modern vehicles and trucks, as the bridge was designed for vehicles that were significantly smaller than those in use today; and maintain efficient traffic operations, particularly during peak periods of travel, and improve incident response.

The design of the proposed new facility would reflect current traffic design standards, modern structural and seismic codes, national-security safeguards, and technology enhancements. A proposed new crossing would also incorporate operational flexibility, which is precluded by the existing span, to facilitate future transit-service opportunities. By ensuring the ability to meet current and future interstate travel demand, the proposed bridge replacement would support long-term economic growth and improved mobility for the local communities that are dependent on the crossing, as well as enhance the overall performance, flexibility, and reliability of the transportation network serving the greater New York/New Jersey metropolitan area.

Project Goals

Project goals have been defined on the basis of the stated purpose and need for the proposed project, and reviewed through the Draft EIS scoping process. The project goals, in turn, serve as the basis for: 1) identifying potential project alternatives; and 2) defining criteria and related performance measures that will be used to select reasonable and feasible alternatives that may best satisfy the project goals, address the project purpose and need, and, therefore, warrant detailed evaluation in the EIS.

Based on the purpose and need for the Goethals Bridge Replacement project, the following project goals have been defined:

- Address the functional obsolescence of the existing Goethals Bridge.
- Address structural integrity issues associated with the aging bridge.
- Reduce roadway congestion and delays and enhance mobility on the Goethals Bridge.
- Improve the flow of goods to and from Staten Island and New Jersey and in the New York/New Jersey region.
- Correct the inability of the existing bridge to physically accommodate transit services and other single-occupant-vehicle commuting alternatives.
- Restore and enhance pedestrian access and provide for bicycle access.
- Implement measures to improve bridge structural security.
- Minimize environmental consequences of the improvement.

Definition of Area of Potential Effect

In the 1997 SIBP FEIS, the Area of Potential Effect (APE) was defined as one-half mile in all directions from the Goethals Bridge corridor. The APE for the GBR EIS has been initially defined in the same fashion, as it is anticipated that project alternatives will be within the Goethals Bridge corridor and assumed to be designed within the same overall envelope as the alternatives considered in the SIBP FEIS. The APE comprises the combined primary and secondary study areas defined during the GBR DEIS scoping process, and as shown on the attached maps. Once the alternatives are defined, the APE will be further refined, as necessary, in consultation with the New Jersey and New York State Historic Preservation Offices (SHPO)

to ascertain its sufficiency for determination of potential direct and indirect effects on identified historic resources when the project alternatives have been identified.

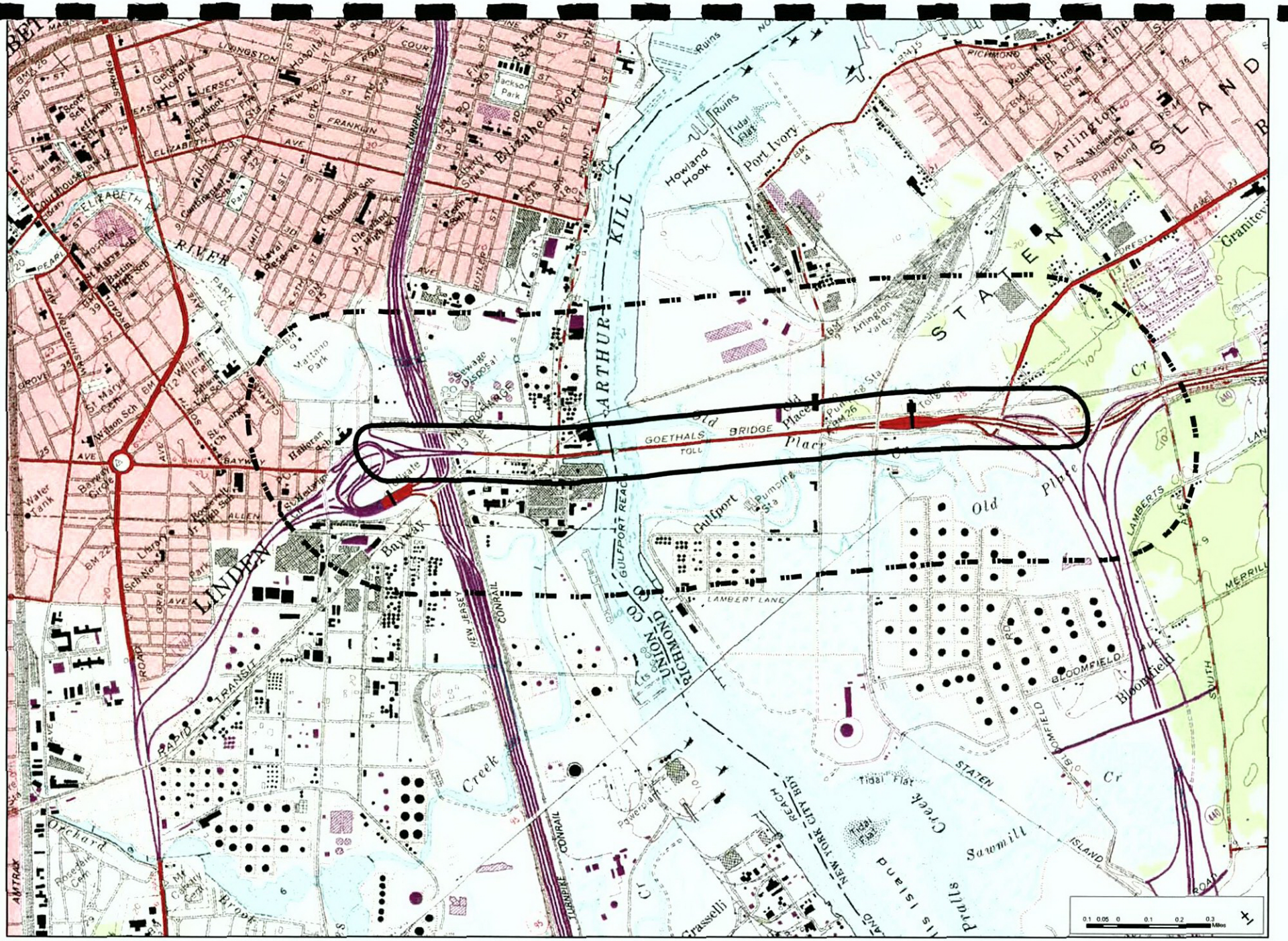
Public Participation Plan

The USCG has developed and implemented a public participation program that will continue throughout the EIS process. The program's purpose is to inform, educate, and directly engage all those with an interest in the GBR EIS. The Public Participation Plan, which conforms to and satisfies the public participation requirements of NEPA, is attached.

List of Consulting Parties

The following consulting parties may have an interest in this project:

- New Jersey State Historic Preservation Office
- Union County Division of Cultural and Heritage Affairs
- Historical Society of Elizabeth
- New York State Historic Preservation Office
- New York City Landmarks Preservation Commission
- New York City Economic Development Corporation
- Preservation League of Staten Island


Primary Study Area
Secondary Study Area / Area of Potential Effect
Area of Potential Effect

PLAN OF STUDY

Final Public Participation Plan

Addendum to Version 2.0, dated May 24, 2004

GOETHALS BRIDGE MODERNIZATION PROGRAM (GBMP)
ENVIRONMENTAL IMPACT STATEMENT (EIS)

The Louis Berger Group, Inc./Parsons Brinckerhoff JV

July 23, 2004

PLAN OF STUDY

TASK D - PUBLIC OUTREACH AND STAKEHOLDER PARTICIPATION

APPROACH

Conduct Public Participation Program:

Design and conduct a public and community participation program throughout the EIS process, that seeks to inform, educate, and directly engage all those with an interest in the Goethals Bridge Modernization Program. The Public Participation Program will conform to and satisfy the public participation requirements of NEPA.

- Develop and implement, in a manner consistent with NEPA, a public participation program which draws on multi-media approaches, including, but not limited to: scheduling stakeholders meetings and public open houses; preparing materials, handouts, periodic newsletters and displays for ongoing public participation; and developing and maintaining a project website.
- Maintain a database of all interested persons and organizations. The database will include all stakeholders, and will be updated as needed.

WORK PLAN

The principal activities for public participation and agency coordination and consultation will be detailed in the Public Participation Program. Outreach activities, which may be refined following consultation with the USCG and the Port Authority, follows.

- The following activities are proposed to be conducted prior to and/or coincident with Tasks B - Field Verification/Inspection; E – Applicable Regulatory Initiatives, Public Law, Permits, and Other Approvals; F - Purpose and Need; G - Public Scoping; H - Identify Environmental Criteria; and I - Alternative Actions and Screening.

  - Prepare Draft Public Participation Program;
  - Develop initial database (i.e., mailing list) of interested persons/organizations, to be maintained, updated, and supplemented throughout course of the GBMP EIS, as warranted;
  - Prepare first newsletter to introduce the GBMP EIS and notify the public of upcoming public scoping meetings;
  - Create issues log for subsequent recording of all public comments and GBMP EIS disposition of comments;
  - Prepare press releases and announcements for public notification of public scoping meetings;
  - Create Technical Advisory Committee (TAC) and Environmental Task Force (ETF), in coordination with USCG and the Port Authority pertaining to agencies/parties on each task force; and
  - Develop GBMP EIS website
  - Initiate development of Stakeholder Committee.

- The following activities are proposed to be conducted coincident with Tasks E - Applicable Regulatory Initiatives, Public Law, Permits, and Other Approvals; I - Alternative Actions and Screening; J - Evaluation of Design Options/Alternatives; K - Existing Conditions; L - Environmental Consequences; and M - Prepare Preliminary DEIS.

  - Revise Public Participation Program, if and as necessary, based on scoping and other public input;
  - Conduct Stakeholder Committee, TAC, and ETF meetings;
  - Second newsletter, focused on the alternatives screening activities;
  - One round of public open houses (one each in Elizabeth and Staten Island for each round);
  - Draft periodic press releases about the GBMP EIS status and findings, and to announce public open houses;
  - Update website, maintain database/mailing list, maintain issues log; and
  - Conduct other targeted outreach, as project issues and public interest warrant.

- The following activities are proposed to be conducted coincident with Tasks E - Applicable Regulatory Initiatives, Public Law, Permits, and Other Approvals, F - (refinement of) Purpose and Need, L - Environmental Consequences, M - Prepare Preliminary DEIS, N - Prepare DEIS, O - Facilitate All Public Hearings, and P - Prepare Final EIS.

  - Hold Stakeholder, TAC, and ETF meetings;
  - Prepare third and fourth newsletters, timed with completion of the DEIS and FEIS, respectively;
  - Second round of public open houses;
  - Draft periodic press releases about GBMP EIS status, findings, conclusions and to announce public open houses;
  - Update website, maintain database/mailing list, maintain issues log;
  - Conduct other targeted outreach, as project issues and public interest warrant, and;
  - Hold public hearings to gather comments on the DEIS; and
  - Prepare Technical Memorandum documenting the GBMP EIS public participation program.

- Coordinate Interagency Services

  In furtherance of the NEPA EIS process, establish and coordinate, subject to the USCG concurrence, the following:

  - An Inter-Agency Technical Advisory Committee (TAC) including PANYNJ, NJDOT, NYSDOT, NYCDOT, NJ Turnpike Authority, NJ Transit, MTA, the North Jersey Transportation Planning Authority, the New York Metropolitan Transportation Council, and other agencies as required.
  - An Environmental Task Force (ETF).
  - Assist in the preparation of presentation materials, evaluate the comments received, recommend courses of action to address the comments, and prepare draft and final minutes of all interagency meetings.
  - If requested by the USCG or the Port Authority, access to and review of all procedures and underlying data used in developing submitted sections of the EIS will be provided, including, but not limited to, field reports, subcontractor reports, and interviews with concerned private and public parties, whether or not such information may be contained in the draft or final EIS.
  - Notify the agencies of any substantive meetings that are scheduled and of their purpose and provide an opportunity for other parties to attend, if requested by the agencies.

DELIVERABLES

- Conduct Public Participation Program

- A draft Technical Memorandum, outlining a "Public Participation Program." Incorporate work product comments as directed and resubmit as Final. A Final draft is presented below.
- Monthly summaries of public participation efforts and outcomes. Incorporate work product comments as directed and resubmit drafts as Final.
- A database of the interested persons and organizations participating in the EIS process.

- Coordinate Interagency Services

  - A summary of all matters relating to the EIS discussed in any meetings or communications between the Berger/PB JV and inter-agencies will be included in each formal monthly report submitted to the USCG and the Port Authority.

TASK G - PUBLIC SCOPING

APPROACH

The USCG anticipates an early and open process for determining the scope of issues to be addressed in the Draft EIS and for identifying the significant issues related to this project, including the range of actions, alternatives and impacts to be considered.

WORK PLAN

Develop, publish and distribute the notice(s) of meeting(s); organize the meeting location and facilities; make provisions for hearing officers and stenographers, if required; present the proposed; develop draft and final minutes of the meetings; and make recommendations for addressing issues raised during the meetings. All scoping meetings will be conducted in compliance with the requirements of NEPA. In support of the above:

- Develop a draft scoping package outline that includes meetings with the involved agencies and the public.
- After approval of the scoping package outline, develop scoping presentation materials necessary to solicit input from interested agencies, organizations, and individuals. These materials may include, but may not be limited to:
  - Scoping meeting agenda.
  - Scoping presentation
  - Scoping document
  - Scoping document summary
- Establish dates and locations for three (3) meetings related to this task, one (1) all-agency scoping meeting (open to the public), and two (2) public scoping meetings, one (1) each in New York and New Jersey (with afternoon and evening sessions at each location). Set the same agenda for each of the meetings. Determine appropriate mailing lists for notice of meetings and the distribution of scoping materials.
- Attend all scoping meetings and provide administrative support. Provide digital, video and audio recordings of each scoping meeting.
- Provide input to the design team during revision of the goals and objectives based on information gathered from the scoping meetings.

DELIVERABLES

- A draft scoping package outline. Incorporate work product comments and resubmit as Final.

- Draft Scoping Document
- Scoping Summary Report
- A matrix listing all of the comments received at the agency and public scoping meetings or via other means, highlighting significant issues.

TASK O - FACILITATE ALL PUBLIC HEARINGS

WORK PLAN

- Facilitate all public hearings held in conjunction with the EIS process.
- Utilize digital video and audio recording and a court stenographer for all public hearings. Assume two (2) public hearings, with one (1) in New Jersey and one (1) in New York.

DELIVERABLES

- Draft copy of the minutes of the public hearings held for the DEIS and submit for review. Incorporate all comments and resubmit as Final. For estimating purposes, assume the same number of copies as indicated in the Plan of Study section.

FINAL PUBLIC PARTICIPATION PROGRAM

Introduction

The Goethals Bridge Modernization Program (GBMP) Environmental Impact Statement (EIS) is being conducted under the direction of the United States Coast Guard (USCG) as the lead federal agency, in coordination with the Port Authority of New York and New Jersey (Port Authority), the project sponsor. The Goethals Bridge spans the Arthur Kill between Staten Island, New York, and Elizabeth, New Jersey, providing direct connections between the Staten Island Expressway/West Shore Expressway on the east of the Kill, and the New Jersey Turnpike/Routes 1/9 on the west. The GBMP EIS will comprise:

- an alternatives analysis of potential options for replacement of the Goethals Bridge and addressing traffic and safety needs in the Goethals Bridge corridor;
- detailed social, economic, and environmental analysis of a short list of alternatives that appear most reasonable and feasible for satisfying the purpose and need for the project;
- and a program of public participation and interagency coordination throughout development of the GBMP EIS.

It is vital that those who are interested in or potentially affected by this study have an opportunity to share their concerns and provide input regarding the GBMP EIS. This Public Participation Program outlines the objectives, strategies, and tools that will be used to engage stakeholders and the general public throughout the GBMP EIS.

The Environmental Review Process

The GBMP EIS will be performed in accordance with the requirements of the National Environmental Policy Act (NEPA). NEPA is a procedural act aimed at ensuring that environmental information is available to the public and public officials before decisions are made and actions are undertaken. Public participation is a requirement of the environmental review process. In addition to dealing with the public, NEPA regulations require that there be thorough and complete documentation of participation by all involved government agencies and other interested parties.

Since 1969, NEPA has been amended, regulations have been promulgated by the Council on Environmental Quality (CEQ) and other federal agencies, and a whole body of EIS "best practices" literature has been established. Regulations and best practices cover many technical issues, as well as public participation efforts. The best practice for accomplishing this is to have a public participation program that is viewed as objective. This means that:

- The action under environmental review cannot be perceived as a foregone conclusion.
- All reasonable alternatives to the proposed action, including no action, need to be considered as well.
- All social, economic and environmental impacts of the project, both adverse and beneficial, must be identified and analyzed.
- Pro-active, early, and continuous efforts need to be made to involve a broad spectrum of the public in this process. This includes study area residents and businesses, as well as a wide range of stakeholders and groups who may be affected by impacts of the action.

Throughout the NEPA process, the public participation effort focuses on gathering input and dispersing information about the following key areas:

- The purpose and need for the proposed action and goals and objectives of the action.
- The potential set of reasonable alternative actions, including not implementing the action at all.
- Methodologies that will be used to assess impacts. This typically includes such items as models that will be employed to estimate such impacts as traffic conditions, air quality and/or noise impacts, as well as methods used to assess environmental, socioeconomic, cultural resource and/or hazardous material impacts.

- Potential impacts and associated mitigation.

There are two distinct points in the NEPA process where public participation is focused: Scoping and publication of the Draft Environmental Impact Statement (known as the Draft EIS, or DEIS). However, it is valuable to engage the public during the period after scoping and prior to the Draft EIS publication, and doing so is encouraged as a good practice under NEPA.

During scoping, the plan for how the environmental review is going to be conducted is issued in draft form. It is known as the draft scoping document. The public (and all relevant agencies) are invited to offer comments on this plan, both orally at publicized meetings and via written submittals. The draft scoping document includes the project purpose and need, the range of anticipated impacts to be analyzed, the methodologies to be employed to assess impacts, and may include, at least, a preliminary range of alternatives to be considered (though these may be developed in more detail later on in the process).

When the environmental analysis is nearing completion, a Draft EIS is published for public (and agency) review. Review comments can be provided both orally at publicized hearings and via written submittals. Following completion of the comment period, a Final EIS (or FEIS) document is published and made available.

The scoping and Draft EIS review stages are formally announced via notifications in the Federal Register. Public scoping is announced by the issuance of a Notice of Intent (to prepare an EIS), while a Notice of Availability announces the publication of the Draft EIS, kicks off the comment period, and announces public hearing dates and locations.

Other public participation techniques are used throughout the NEPA process to gather and disperse important information. Federal Register notices announcing scoping meetings, public hearings and formal comment periods are typically supplemented by media releases, flyers, newsletters, website announcements, briefings and public notifications. Following scoping, the public (and agencies) are provided with opportunities to offer input to the alternatives development and analysis steps through such means as public open houses and advisory committees. Information about the status of the NEPA process is typically dispersed through newsletters and a project website.

Goals and Objectives of the Public Participation Program

The public participation program is one that will require outreach to commuters, the general public, local businesses, associations, stakeholders, affected government agencies and others on both sides of the Arthur Kill to effectively engage the public in the planning and impact assessment process.

The overriding goal of the public participation program is to engage a diverse group of public and agency participants to solicit relevant input and provide timely information throughout the environmental review process. In order to best accomplish this, the following objectives will be pursued:

- Establish ongoing, inclusive and meaningful two-way communication with stakeholders, agencies and the general public.
- Educate the public about the environmental review process and the role of government, stakeholders and the general public.
- Coordinate outreach efforts with the USCG's internal protocols and policies for timely and relevant outreach activities.
- Evaluate the effectiveness of outreach activities on a continual basis in order to refine this Plan, as necessary, and utilize the most effective techniques throughout this study.

As part of this process, this public participation program will meaningfully engage minority, low-income, and traditionally under-represented populations in the GBMP EIS. As a general rule, the following principles will be adopted to support involvement of "environmental justice" (EJ) populations:

- Documents, notices and meetings will be made concise, understandable and readily accessible to the public.
- When appropriate, notices and meetings deemed will also be provided in Spanish for targeted public audiences and stakeholders.
- Informational material will be made available through a variety of outlets.
- All public events will be scheduled at convenient, accessible locations.
- Various community leaders and groups will be contacted to increase public participation of constituent communities.

Public Participation Techniques

Basic Support Mechanisms:

Study Team Communication Protocols – The study team will establish communication protocols early in the process to facilitate information sharing with the public and agencies in a timely and efficient manner, to comply with NEPA requirements for preparation of the GBMP EIS.

Stakeholder Identification – Relying on a variety of sources, including earlier environmental studies of the bridge and the corridor, stakeholders will be identified to meet in group interviews, as appropriate, and to become members of the Stakeholder Committee, which will meet at milestones throughout the EIS. These Stakeholders will represent an array of local and regional perspectives, and include representatives of environmental justice areas.

Project Branding – In order to assist the public in identifying project-related materials that will be produced and disseminated by the study team, a banner and readily recognizable "look" will be established and used on all project materials including meeting announcements, flyers, the website, newsletters, etc.

Mailing List – A mailing list will be developed for the purpose of publicizing public meeting opportunities via meeting flyers, and for keeping interested parties apprised of study developments through periodic newsletters. The list will be comprised of area residents, businesses, civic associations, shippers, commuters, community groups, schools, health care facilities, etc. Multiple copies of meeting notices and newsletters will be distributed to libraries and community centers in the study area.

Issues and Media Log – A log of comments received from the public and media articles relating to the project will be kept for informational and study purposes.

Meetings:
Interagency Technical Advisory Committee (TAC): The TAC will include the necessary federal, state, local and regional agencies to address traffic and transportation issues, mobile-source air quality (and noise) issues related to changes in traffic volumes and patterns, and transit-related air quality issues if transit survives as either an alternative or a component of a multimodal alternative. As there are no stationary sources involved with this project, it can be assumed that all air quality (and noise) issues will be addressed in the TAC, with no overlap with any other committees formed for this project. The TAC will meet several times during the course of the GBMP EIS, for discussion among their respective agencies about the same EIS topics, but focusing on their respective jurisdictions and expertise. The first formal meeting of the TAC will not occur until after the formal agency scoping meeting.

The agencies invited to join this committee will include:

- US Environmental Protection Agency

- Federal Highway Administration
- New York State Metropolitan Transportation Authority (Bridges & Tunnels, NYC Transit)
- New York State Department of Transportation
- New York State Department of Environmental Conservation
- New Jersey Department of Transportation
- New Jersey Department Environmental Protection
- North Jersey Transportation Planning Authority
- New Jersey Turnpike Authority
- New Jersey TRANSIT
- New York Metropolitan Transportation Council
- New York City Department of Transportation
- New York City Department Environmental Protection
- New York City Economic Development Corporation
- New York City Department of City Planning
- Union County Department of Economic Development
- City of Elizabeth Traffic Engineer

Environmental Task Force: One of the mechanisms for eliciting participation of involved agencies in developing an EIS is formation of an Environmental Task Force (ETF). ETFs provide an opportunity for concerned agencies to interact and discuss issues and areas of potential concern, as well as provide comments on the development of the EIS. This group will comprise agencies with jurisdiction and special expertise in a wide-range of environmental categories other than traffic/transportation, air quality, and noise (which will be the focus of the TAC, discussed above) social, economic, and environmental impact categories, with the principal issues likely to be related to natural resources. The ETF will be convened several times over the course of the EIS process. Meetings will take place after formal agency and public scoping meetings. A list of potential agencies that will be invited to participate in the ETF follows.

- US Army Corps of Engineers
- US Fish and Wildlife Service
- National Marine Fisheries Service
- US Environmental Protection Agency
- Federal Highway Administration
- NYS Department of Environmental Conservation
- NYS Office of Parks, Recreation, and Historic Preservation
- NYS Department of State
- NYC Mayor's Office of Environmental Coordination
- NYC Department of City Planning
- NYC Department of Parks and Recreation
- NYC Department of Environmental Protection
- Staten Island Borough President's Environmental Representative
- NJ Department of Environmental Protection
- NJ State Historic Preservation Office
- City of Elizabeth Environmental Representative
- Union County Environmental Representative

Elected Official Briefings: Briefings will be held with elected officials, as requested. These briefings will be arranged in concert with the Intergovernmental Relations officers at USCG. Among the officials that will be contacted are the Staten Island Borough President, the Mayor of Elizabeth, and the Union County Freeholders. Meetings with members of the federal, state and local legislative bodies serving the study area will be held upon request.

Agency and Public Scoping Meetings: Following the publication of the Notice of Intent (NOI) by the

USCG, the USCG will conduct scoping meetings for agencies and for the public. The purpose of these meetings is to gather input and feedback on the study's draft purpose and need statement, and potential alternatives for consideration; issues to be addressed in the EIS; methodologies to be used to evaluate impacts; and the public participation program. One agency scoping meeting will be held at the USCG offices, and public scoping meetings will be held in Staten Island, NY and in Elizabeth, NJ spanning both afternoon and evening hours to gather as broad participation as possible. Meeting participants may make statements orally, which will be transcribed by a stenographer, or submit comments in writing either at a scoping meeting or subsequently by mail during the scoping comment period. Meeting announcements will be mailed to the GBMP EIS mailing list, posted at libraries and community centers, announced through media press releases, through paid advertisements in newspapers, and posted on the GBMP EIS website. Upon request by a prescribed date prior to the public scoping meetings, Spanish translators and/or assistance to individuals with hearing or sight impairment will be provided at meetings for which such services are requested. The public scoping meetings will take place in central, convenient locations, and the facilities will be fully accessible to those with disabilities.

Stakeholder Committee Meetings: The Stakeholder Committee will provide an open forum for discussion and encourage interaction among key stakeholders, who represent a cross-section of organizations and interests. Organizations that join the Stakeholder Committee will be invited to assign a representative to the Committee. The Committee will update its membership as additional interested organizations are identified. Stakeholder Committee members will agree to bring their members' concerns to the attention of the project team, and bring project information back to their membership. The Stakeholder Committee will meet several times in the EIS process. The first meeting will be held shortly after Public Scoping to review the methodology and criteria by which the alternatives will be screened, as well as to review the long list of alternatives. Below are the types of organizations expected to be represented on the Stakeholder Committee:

- TransOptions (TMA)
- Tri-State Transportation Campaign (TSTC)
- Regional Plan Association
- Environmental Defense
- NRDC
- Alliance for Action
- Local Emergency Services
- CSX
- Shipping (UPS/FedEx)
- Private Bus Operators
- Trucking Associations
- AAA (NY & NJ)
- Chambers of Commerce
- American Lung Association/Other Health Groups
- Hospitals
- Schools & Colleges
- Large Employers in SI & NJ
- Utilities (PSE&G, ConEd, KeySpan)
- Service/Community Groups who serve low-income and and/or minority populations
- Civic Associations
- Brooklyn-based Groups (Gowanus Area)
- Staten Island Borough President
- Mayor of Elizabeth

If deemed appropriate, non-PANYNJ personnel from the following facilities:

- Newark Liberty International Airport

- Port of Elizabeth
- Port Newark
- Howland Hook Marine Terminal

Public Open Houses: Between Public Scoping and the Public Hearings upon completion of the Draft EIS, there will be two rounds of public open houses. Each round will include a meeting in Staten Island, NY and Elizabeth, NJ. These meetings will include both static displays and informal discussions with EIS team members and meeting attendees, as well as presentations. These meetings will be publicized in a similar manner to the Public Scoping meetings. The first open houses will follow the first Stakeholder Committee to review the EIS process, the screening criteria and methodology for reducing the list of alternatives to the short list. The second round will review the impacts of the alternatives undergoing detailed analysis.

DEIS Public Hearings: After circulation of the Draft EIS, public hearings will be held both in Staten Island, NY and in Elizabeth, NJ to gather comments on the document. The document will be available for review 30 days prior to these hearings, and the public comment period will be open for an appropriate period of time following the hearings. The comments received during the hearing process will be addressed in the Final EIS. The method for publicizing these hearings, and the format of the hearings themselves will be similar to the public scoping meetings described above.

Materials:

Newsletters: Four newsletters will be produced and disseminated to the project mailing list for the purpose of educating the general public about the EIS process, providing information on the study as it progresses, announcing public participation opportunities, and providing project team contact information. These newsletters will be written in straightforward language. Graphics will be used to assist in communicating the appropriate information. The first newsletter will announce the public scoping meetings, the second will review the results of the alternatives analysis, the third will announce the Draft EIS completion, and the fourth will announce the completion of the Final EIS.

Meeting Announcements: Meeting flyers will be used to publicize all public meetings. These flyers will be in English and Spanish, and will be mailed to the project mailing list, and distributed in bulk to libraries and community centers.

Press Releases: Press releases will be drafted in advance of public meeting opportunities and to announce the availability of project materials. These releases will be submitted to USCG for their review and release. It is anticipated that there will be at least 5 releases to announce public scoping, the two rounds of public open houses, the DEIS public hearings, and the availability of the DEIS and FEIS.

Website: A public website will be developed for the GBMP EIS and will include information on the EIS process, project activities and progress, public participation opportunities and project contact information; and will have downloadable documents (pdf format) for information and/or review.

Meeting Materials: Handouts will be available at all public meetings for attendees. Public meeting presentations will be available as handouts, as appropriate, and on the website for review by those unable to attend meetings.

Implementation of the Public Participation Plan

A three-phase public participation effort is envisioned for the GBMP EIS, as listed below:

- Scoping – during scoping, agencies and the public will comment on the study purpose and need statement, analysis methodologies and the alternatives that will be considered in the Alternatives Analysis.

- Alternatives Analysis – during the Alternatives Analysis phase, the long list of alternatives gathered in scoping will be reduced through a process by which selection criteria are applied to the alternatives. The selection criteria and methodology for reducing the number of alternatives will be shared with the TAC, ETF, Stakeholder Committee and the public. Alternatives will be evaluated based on their transportation performance, environmental impacts and costs.
- Draft EIS and Final EIS – the final short list of alternatives will be put through a rigorous evaluation of impacts, mitigation, and costs prior to selecting the final alternative as part of the Final EIS. The USCG will, upon completion of the Final EIS, publish a Record of Decision for the action that has been agreed to through this process.

A discussion of outreach activities that are anticipated under each phase follows.

- Scoping: During this phase, the following activities will be undertaken:
  - Complete and publish the first newsletter
  - Launch public website
  - Hold briefings with local municipal officials, other elected officials, as requested
  - Conduct Agency Scoping meeting
  - Conduct Public Scoping meetings
  - Update mailing list
  - Present issues log information to USCG and the Port Authority and utilize as input into the scoping process

- Alternatives Analysis: During this phase, the following activities will be undertaken:
  - Update website materials
  - Meet with TAC and ETF and Stakeholder Committee on Screening Criteria and Long list of alternatives, and the Short List of Alternatives and their impacts
  - Draft press releases to announce public meetings
  - Conduct two rounds of Public Open houses on Screening Criteria and Long list of alternatives, and the Short List of Alternatives and their impacts
  - Prepare draft and publish second newsletter

- DEIS and FEIS: During this phase, the following activities will be undertaken:
  - Prepare drafts and publish third and fourth newsletters
  - Update website materials
  - Meet with TAC and ETF and Stakeholder Committee
  - Conduct Elected Official briefings, as requested
  - Draft press releases to announce public hearings and availability of the FEIS
  - Conduct public hearings for DEIS
  - Present issues log information to USCG and the Port Authority and utilize as input into the DEIS review process
  - Categorize agency and public comments on the DEIS, and prepare responses.

Evaluation of the Public Participation Program

Evaluation of the public participation program is important to the EIS process. The purpose of carrying out this program review is:

- To get valuable input that can make the whole public participation process more effective as well as increasing the chance of its successful completion.
- To ensure the public and concerned parties are reached and engaged in the process.

Some examples of critical questions and techniques that will be considered to assess the public participation program include:

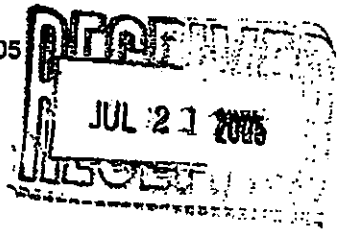
- How many hits does the project website receive?
- Are EJ populations and typically under-represented groups involved?
- Are input and comments pertinent and substantive, showing understanding of project information disseminated to the public?
- Conduct brief survey/questionnaire at public meetings for participants to judge the value of the activities.
- Review content of issues log to judge the value of the overall outreach effort.

The results of ongoing evaluation will be discussed with USCG officials, with the intent of making mid-course refinements to the public participation program, as appropriate.

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE
Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

July 14, 2005



Gary Kassoff
Bridge Program Manager
First Coast Guard District
One South Street
Battery Building
New York, New York 10004

Re: USCG/PANYNJ
Goethals Bridge Replacement
Staten Island, Richmond Co., NY
04PR03162

Dear Mr. Kassoff:

Thank you for your letter of June 17, 2005, by which you initiated consultation in accordance with Section 106 of the National Historic Preservation Act of 1966 with regard to the proposed replacement of the Goethals Bridge.

New York State Historic Preservation Office (NYSHPO) accepts the proposed Area of Potential Effect indicated by attachments to your June 17th letter as the combined "Primary Study Area" and "Secondary Study Area," subject to refinement as preferred alternatives are defined during the exploration of alternatives phase of the study.

We note your designation of the Louis Berger Group/ Parsons Brinckerhoff, Inc. Joint Venture as environmental consultants assisting USCG in evaluating project alternatives and potential environmental impacts of this undertaking; NYSHPO will communicate directly with you or with Ms. Sara Moss of the Berger/PB team unless directed otherwise.

Although the prior Staten Island Bridges Program study (EIS 1997) referred to the "*Modernization and Capacity Enhancement*" of Staten Island Bridges, and despite assurances that all alternatives are being explored, including reuse of the existing Goethals Bride, the NYSHPO is not encouraged by the consistent identification of the current project as the "Goethals Bridge Replacement" project. We recommend the continuing "good faith" exploration of alternatives that include "modernization and capacity enhancement" of the Goethals Bridge.

If you have any questions or comments regarding this response, please call me at (518) 237-8643, extension 3283 or email me at james.warren@oprhp.state.ny.us.

Sincerely,

James Warren
Historic Preservation Program Analyst

Copy: Andrea Tingey, NJSHPO
Sara Moss, BTA

U.S. Department of Homeland Security

United States Coast Guard

Commander
First Coast Guard District

One South Street
Battery Building
New York, NY 10004

Staff Symbol: obr
Phone: 212 668-7165
Fax: 212 668-7967

July 25, 2005

Mr. James Warren
Historic Preservation Program Analyst
New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189
Waterford, New York 12188-0189

Re: **Goethals Bridge Replacement Environmental Impact Statement (GBR EIS), Staten Island, Richmond County, NY – 04PR03162**
Section 106 Consultation

Dear Mr. Warren,

Thank you for your letter of July 14, 2005, in which you accepted the proposed Area of Potential Effect for the study of historic resources, project alternatives, and potential project-related impact as part of the GBR EIS, and indicated that NYSHPO will communicate directly with me or with the environmental consultant team that is assisting this office with preparation of the GBR EIS.

In response to your reference to the previous (1997) EIS of the Staten Island Bridges, I assure you that the current project designation, the Goethals Bridge Replacement, does not preclude consideration of all reasonable alternatives, including exploration of the potential reuse of the existing bridge. The alternatives screening analysis for identification of a short list of alternatives to be evaluated in detail in the EIS is still in progress.

Again, thank you for your response and, in advance, for your continued consultation with the U.S. Coast Guard on the referenced study.

Sincerely,

Gary Kassof
Bridge Program Manager
First Coast Guard District
By Direction of the District Commander

Copy: Andrea Tingey (NJSHPO); Michelle Hughes (NJSHPO); Ernie Feemster (USCG); J. Blackmore, Coleen Hopson (PANYNJ); Ken Hess, Judith Versenyi, Esther Schwalb (Berger/PB); Sara Moss (BTA)

U.S. Department of Homeland Security

United States Coast Guard

Commander
First Coast Guard District

One South Street
Battery Building
New York, NY 10004

Staff Symbol: obr
Phone: 212 668-7165
Fax: 212 668-7967

October 31, 2005

Ms. Dorothy Guzzo
Deputy State Historic Preservation Officer
New Jersey Department of Environmental Protection
Historic Preservation Office
P.O. Box 404
Trenton, NJ 08625-0404

Re: Goethals Bridge EIS/ Field Visit of 10-17-05

Dear Ms. Guzzo:

As the lead federal agency for the referenced project, the U.S. Coast Guard thanks you, Andrea Tingey and Michelle Hughes for their participation in the October 17th field trip to the Goethals Bridge and environs. It was valuable for us to visit the bridge and vicinity with them in order to better understand their concerns, and also to be able to see the bridge firsthand and witness the extent and progress of the ongoing rehabilitation work.

As was requested, we have included the following information as attachments to this letter:

- A set of alignment concept drawings for the four build alternatives that are currently being advanced through the comparative screening process (i.e., 6-Lane Replacement Bridge South; 6-Lane Replacement Bridge North; Twin Replacement Bridges South; and Twin Replacement Bridges North) in order to identify those that will be studied in greater detail in the Draft EIS;
- Notes from the October 17 Field Visit.

In addition, digital photos taken of the study area, including those locations of historic interest that have views of the bridge, will be forwarded to you early next week by the Berger/PB consulting team working with us to prepare the GBR EIS.

It is our understanding that the above defined information will assist you and your staff in further refining the previously-identified limits of the Area of Potential Effect (APE) for this project. We are specifically focusing on the APE issue in this letter in order to finalize the limits of the APE for our study, thereby allowing us to continue addressing existing conditions in a timely fashion. We look forward to receiving your proposed refinements to the APE in the near future. In the interim, we will hold your 25 July 2005 letter in abeyance pending receipt of your final recommendations on the APE.

I have considered Andrea's suggestion to include NJ Turnpike Interchange 13 in the GBR APE. For the following reasons it is the Coast Guard's position that this would neither be practical nor required to ensure a comprehensive environmental investigation under the National Environmental Policy Act (NEPA):

a) The NJ Turnpike Authority is not currently studying Interchange 13 as part of its ongoing Toll Plaza Improvement Studies north of Interchange 9. They have no specific plan to study it until after the GBR EIS studies have been completed. As a result, the Coast Guard does not consider it within our environmental mandate or responsibility to consider Interchange 13 within this project's APE.

b) All the GBR alternative alignments currently under consideration to be carried forward to the DEIS are assumed to connect directly with the existing NJ Turnpike interchange ramp configurations since there is no basis to assume otherwise at this stage.

Therefore, I am requesting that any refinements that the NJHPO proposes to the APE be based on the existing configuration of Interchange 13 and its toll plaza.

Once again, thank you for your staff's participation and consideration in this undertaking. The USCG looks forward to your continued involvement in the GBR EIS process and associated Section 106 process.

Please call me at 212-668-7021, or Sara Moss of B. Thayer Associates (a member of the Berger/PB team) at (212) 564-2750, if you have any comments or questions concerning the enclosed information.

Sincerely,

Gary Kassof
Bridge Program Manager
First Coast Guard District
By direction of the District Commander

Enclosures:

Copy: Andrea Tingey (NJHPO);
Michelle Hughes (NJHPO);
James Warren (NYSHPO);
Ken Hess (Berger/PB)
Judith Versenyi (Berger/PB)
Esther Schwalb (Berger/PB);
Sara Moss (BTA)

FIELD MINUTES

GOETHALS BRIDGE REPLACEMENT EIS

DATE:	October 17, 2005
TO:	Andrea Tingey, Michelle Hughes (NJHPO) Gary Kassof, Ernie Feemster (USCG) Coleen Hopson, Camille Gonzalez (PANYNJ) Judith Versenyi, Esther Schwalb, Ken Hess (Berger/PB); Sara Moss (BTA)
FROM:	Esther Schwalb, Sara Moss
SUBJECT:	Field Review of 1994 Historic Resources Inventory with NJHPO
CC:	James Warren (NYSHPO), Jim Blackmore, Ed Lopez, Paul Crist, Phil Dinh, Lou Venech, Joann Papageorgis (PANYNJ)

DATE/LOCATION: Monday, October 17, 2005; 9AM-1 PM
Goethals Bridge Administration Building, Staten Island, New York

ATTENDEES: Attendance sheet attached.

PURPOSE OF MEETING: Agenda attached.

ACTION ITEMS:

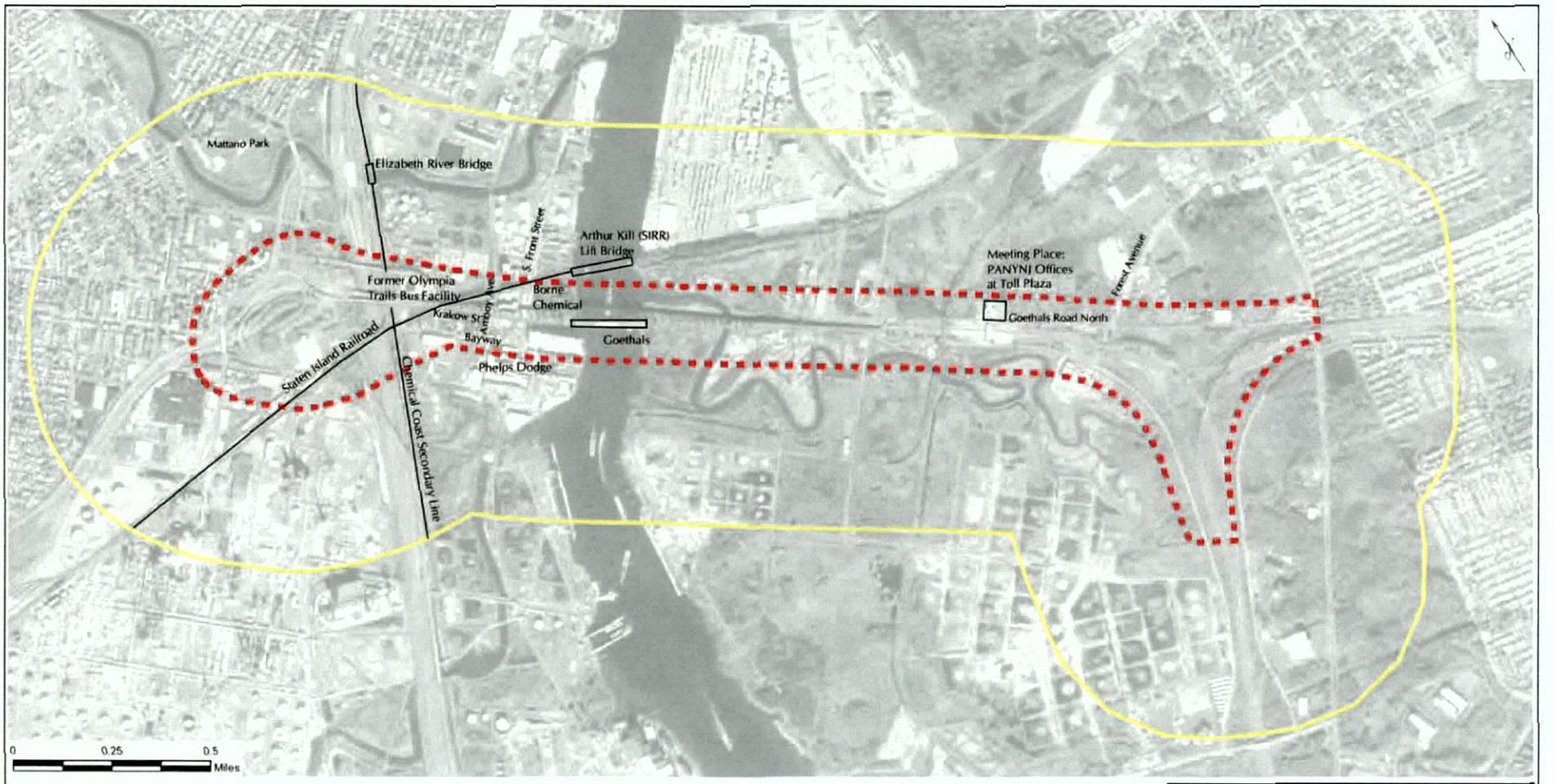
Item #	Description	Responsibility (follow up/action)
1	Send alignment concept drawings to NJHPO.	Berger/PB and USCG
2	Send notes from 10/17 field visit.	Berger/PB and USCG
3	Send photos from project area to NJHPO.	Berger/PB
4	Refine APE based on field visit and visibility from other areas.	NJHPO

FIELD MINUTES

GOETHALS BRIDGE REPLACEMENT EIS

1. At the meeting held in the Goethals Bridge Administration Building prior to the field trip, the Area of Potential Effect (APE) was discussed and it became clear that there had been a previous misunderstanding regarding the level of identification and inventory required for properties located within it. The NJHPO stated that all potentially historic properties within the APE should be inventoried, and entire buildings and complexes should be investigated for historic association even if they partially extend beyond the APE line. Since the APE had recently been accepted, via the NJHPO's letter dated July 25, 2005, at ½ mile around the project area, the NJHPO indicated that they would consider refinement of the APE after reviewing alignment details (e.g., touchdown locations), heights, and indirect visual impacts. The NJHPO felt that a revised APE could extend beyond the proposed APE in some places but could be reduced elsewhere.
2. The height of the replacement bridge is not yet defined, but it is expected to be between 280 to 310 feet in elevation.
3. The existing GB has a 135-foot vertical clearance above the mean high water and the proposed bridge is expected to be approximately the same.
4. The NJHPO said that the APE should be drawn to include possible views with worst-case (tallest potential) heights.
5. The NJHPO felt that rehabilitation of the existing GB should be carried through the EIS process as an alternative even if it is not preferred.
6. The NJHPO asked for a photosimulation of the Arthur Kill Lift Bridge in the lowered position with the new GB in place.
7. The NJHPO requested a description of the methodology used in the 1994 survey and suggested that it didn't meet today's NJ standards (1999).
8. The NJHPO will sketch out an APE based on the field visit and suggest methodologies to conduct the survey. The NJHPO office has historic aerial photography that (together with historic Sanborns) would help determine whether a property is 50 years old or more. NJHPO expressed interest in including the industrial area south on the GB bordering on the Arthur Kill in the APE but was concerned about access limitations and resulting difficulty in conducting research.
9. The NJHPO suggested that Berger/PB review the Route 1/9 Tonnelle Avenue Circle EA since a multi-disciplinary district assessed in that study was similar to the houses on Bayway Ave.
10. Photos were taken during the field trip of three buildings that had been modified since the last survey: 100-103 Bayway Ave. (new windows); 114 Krakow Street (boarded up); 120 Krakow St. (new addition made to rear of building). Two buildings had been demolished in the intervening years: 123 Bayway Ave. and 58-70 Bayway Avenue (Phelps Dodge Building #8).
11. The NJHPO requested that the historic resource review include any proposed Turnpike ramp connecting to the GB. It was agreed that the USCG would provide a response to this request.

12. The field visit included the opportunity to view the ongoing Goethals Bridge rehabilitation from up close. This opportunity provided the ability to better understand the magnitude of the project and its structural / rehabilitation needs.



Legend

- Secondary Study Area
- Primary Study Area

Source: Port Authority of New York and New Jersey, 2002.

Goethals Bridge Replacement EIS

Primary and Secondary Study Area

Feemster, Ernest

From: Andrea.Tingey@dep.state.nj.us on behalf of Andrea Tingey [Andrea.Tingey@dep.state.nj.us]
Sent: Wednesday, December 07, 2005 3:09 PM
To: Gkassof@batteryny.uscg.mil
Cc: efeemster@batteryny.uscg.mil; smoss@bthaayerassociates.com; Michelle Hughes; jmagron@louisberger.com; khess@louisberger.com; James.Warren@oprhp.state.ny.us; cgonzalez@panynj.gov; chopson@panynj.gov; Versenyi@pbworld.com
Subject: Revised Goethals APE
Attachments: Goethals Bridge APE.pdf

Gary,

I have the revised APE for NJ as a pdf (attached). I will be sending a hard copy along with a formal letter under DSHPO signature, but thought you (and the Port Authority's consultants) would appreciate an electronic version.

Best,

Andrea Tingey
Principal Historic Preservation Specialist
Historic Preservation Office
P.O. Box 404
Trenton, NJ 08625-0404
(p) 609-984-0539
(f) 609-984-0578
(e) Andrea.Tingey@dep.state.nj.us


UNION/ELIZABETH CITY
UNION/LINDEN CITY
NY-NJ
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Goethals Bridge APE 12/07/2005

U.S. Department of Homeland Security

United States Coast Guard

Commander
First Coast Guard District

Battery Park Bldg.
One South Street
New York, NY 10004-5073
Staff Symbol: (dpb)
Phone: (212) 668-7195
Fax: (212) 668-7967
Email

16591//Goethals Bridge
March 10, 2006

Ms. Dorothy Guzzo
Deputy State Historic Preservation Officer
New Jersey Department of Environmental Protection
Historic Preservation Office
P.O. Box 404
Trenton, NJ 08625-0404

Re: Goethals Bridge EIS/Area of Potential Effect

Dear Ms. Guzzo:

The U.S. Coast Guard thanks you and Andrea Tingey for her recent input via e-mail on December 7, 2005, in which she defined suggested limits of the Area of Potential Effect (APE) for the above-ground cultural (historical/architectural) resources of subject project on the New Jersey side of the project corridor.

Ms. Tingey's transmittal followed our joint field trip to the Goethals Bridge and its environs on October 17, 2005, and my subsequent transmittal to your office of a set of alignment concept drawings for the four build alternatives that are currently being advanced through the alternatives screening process, to identify those that will be studied in greater detail in the Draft Environmental Impact Statement (DEIS). Berger/PB, our environmental consultant team, also forwarded to Ms Tingey, digital photos taken of the study area during our joint field trip, including those locations of historic interest that have views of the bridge.

Since the suggested APE defined by Ms. Tingey differed somewhat from our initial submittal to your office, we enlisted the assistance of an architectural historian to assist us in better defining the limits of an appropriate APE. A windshield survey of the project area, including areas within the APE suggested by your office was conducted with the historian and with other Berger/PB cultural resources staff. Based upon the survey and previous documentation, the enclosed *Technical Memorandum on Consideration of the Area of Potential Effect for Historical/Architectural Resources* was developed. The memorandum addresses considerations of the nature and scale of the proposed project, various ways in which the proposed project could reasonably be demonstrated to affect historic properties, and the existing built environment in which the project would be implemented.

On this basis, we feel that the limits of the APE should be defined, as shown on the aerial map in the enclosed memorandum as it represents a reasonable area of potential effect for this undertaking. I have directed Berger/PB to undertake the identification of historic/architectural

properties within this APE and to prepare the inventory documentation for subsequent transmittal to your office for review.

The U.S. Coast Guard looks forward to your continued involvement in this EIS process and associated Section 106 consultation process. Please call me at 212-668-7021 if you have any questions or comments concerning the enclosed information and our determination of the limits of the APE for this project.

Sincerely,

Gary. Kassof
Bridge Program Manager
First Coast Guard District
By direction of the District Commander

Enclosures:
Technical Memorandum, Consideration of the Area of Potential Effect for Historical/Architectural Resources

Copy: Andrea Tingey (NJHPO)
Michelle Hughes (NJHPO)
James Warren (NYSHPO)
Ken Hess (Berger/PB)
Judith Versenyi (Berger/PB)
Esther Schwalb (Berger/PB)
Marty Bowers (Berger/PB)
Sara Moss (Berger/PB)

TECHNICAL MEMORANDUM

GOETHALS BRIDGE REPLACEMENT EIS

DATE: March 10, 2006

TO: G. Kassof, E. Feemster

FROM: K. Hess, J. Versenyi, M. Bowers

SUBJECT: Consideration of the Area of Potential Effect for Historical/Architectural Resources

CC: J. Blackmore, C. Hopson, P. Dinh, E. Lopez, C. Gonzalez, E. Schwalb

1. INTRODUCTION

This memorandum summarizes a review of information and issues regarding the Area of Potential Effect (APE) for above-ground (historical/architectural) cultural resources on the New Jersey side of the project corridor for the proposed replacement of the Goethals Bridge. Based on this review, this memorandum also recommends revised APE boundaries for U.S. Coast Guard (USCG) consideration and consultation with the NJHPO.

In June 2005, the USCG initiated consultation with the New Jersey Historic Preservation Office (NJHPO), pursuant to Section 106 of the National Historic Preservation Act. At that time, the USCG requested NJHPO's concurrence with a preliminary APE (to be refined once project alternatives were identified), which was based on the combined primary and secondary study areas previously delineated for the 1997 Staten Island Bridges Program (SIBP) FEIS. In the previous EIS, the historic resources inventory was conducted within 400 feet of all project alternatives' alignments, and impacts to historic resources were assessed within the combined primary and secondary study areas, which extended one-half mile in all directions from the project corridor. The NJHPO initially concurred with an APE comprising the primary and secondary study areas; however, following a site visit by NJHPO representatives and project staff in October, 2005, the NJHPO recommended a substantially different APE, apparently based on potential impacts, including visual effects.

2. DEFINITIONS OF THE ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP)

The following definitions (in 36 CFR Part 800, Protection of Historic Properties) guide consideration and delineation of an APE:

- **Area of Potential Effect** (36 CFR 800.16(d)): *Area of potential effect* means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effect is influenced by the nature and scale of an undertaking and may be different for different kinds of effects caused by the undertaking.
- **Effect** (36 CFR 800.16(i)): *Effect* means alteration to the characteristics of a historic property that qualifies it for inclusion in or eligibility for the National Register.

There are no uniform guidelines for federal agencies (nor, therefore, for SHPOs) to use in determining an APE for Section 106 purposes. The Council's guidance in the matter is limited to its statement in 36 CFR 800.16(d), as noted above, that "The area of potential effect is influenced by the nature and scale of an undertaking and may be different for different kinds of effects caused by the undertaking."

3. PROJECT CHARACTERISTICS

The following information regarding the proposed Goethals Bridge replacement is pertinent to the consideration of an appropriate APE:

- The proposed replacement bridge(s) would be sited immediately up- or downstream from the existing bridge, which would remain in service until the replacement was completed.
- The overall design envelope of the replacement bridge(s) would be similar to that of the existing bridge, involving long elevated approaches to each end of a channel span.
- The replacement would have a wider "footprint" than the existing bridge (potentially ranging from 167 to 198 feet wide, depending on the alternative's configuration; the existing width is 62 feet) to accommodate six, rather than the existing four, travel lanes and sufficient width for a 10-foot-wide sidewalk/bikeway and potential mass transit use.
- The replacement bridge(s) would have more widely spaced piers designed to be entirely outside the Arthur Kill's navigable channel. Similar to the existing bridge, the replacement bridge(s) would have a minimum vertical clearance of approximately 135 feet above mean high water.
- At the west end, the replacement structure(s) would tie directly into the existing NJ Turnpike/I-278 interchange ramp configurations, as the existing Goethals Bridge currently does.

4. CHARACTERISTICS OF EXISTING BUILT ENVIRONMENT

The Goethals Bridge rises out of a dynamic urban/industrial environment. The existing land use patterns were basically established in the 19th century, predicated in large measure on maritime and railroad transportation and the access both provided to raw materials and markets. Twentieth-century developments in transportation followed 19th century alignments: the auto road across the Arthur Kill to Staten Island (Goethals Bridge) beside the much earlier Baltimore and New York Railroad (Arthur Kill) crossing, and the NJ Turnpike beside the much earlier Central Railroad of New Jersey (now Conrail's Chemical Coast Line). (See Figure 1: Key to Photo Locations and Photo 1 for an aerial view of the Goethals Bridge and the Arthur Kill waterfront).

The area immediately around the bridge approach (roughly between the Elizabeth River and Morses Creek) is intensively developed. This development began in the mid- to late 19th century at what was probably then a neck of fast land providing access to the Arthur Kill (at a relatively narrow point) and buildable ground for industry. East of the NJ Turnpike, the Goethals and Arthur Kill Lift bridges and approaches are by far the most dominant features. Below and close to either side of the approaches are found closely spaced late 19th to mid-20th century industrial buildings, varying from one to several stories,

with brick, concrete, concrete block, or metal-clad exteriors. Here also are brick and wood frame remnants of the residential neighborhood that grew up in response to the industrial development here. Toward the Elizabeth River, the more open reclaimed marshland features industrial buildings and small tank farms.

Immediately west of NJ Turnpike Interchange 13 (north of the long elevated access ramps between Route 1 and the NJ Turnpike) is a densely built-up urban neighborhood fanning out from Bayway, consisting primarily of low-scale (2.5 stories generally being the maximum height), wood frame and brick-masonry residences and small mixed-use blocks dating to the late 19th to early 20th centuries, terminating at the interchange in service stations from late 20th century. To the north are the Halloran School, Mattano Park (containing a channelized stretch of the Elizabeth River), and a large PSE&G electrical substation, from which emanate lines of tall steel transmission towers.

Downstream from Morses Creek, the environment is characterized by an almost abstract landscape of large-scale late 20th century infrastructure and industry that are rather widely scattered across flat, partially reclaimed marshland transected by the former Central Railroad of New Jersey alignment and the NJ Turnpike, with a PSE&G generating station on the waterfront on the north side of Piles Creek.

5. POTENTIAL EFFECTS TO CONSIDER IN DELINEATING THE APE

The following considerations are pertinent to delineation of the APE.

a. Potential effects involving physical destruction of or damage to all or part of a historic property:

The area in which these kinds of effects could occur would encompass the existing bridge and approach corridor, as well as the corridors of proposed new alignments up- or downstream, including:

- All locations where buildings or structures are to be removed (demolished);
- All locations where buildings or structures could suffer damage during demolition of adjacent buildings (e.g., shared party walls or foundations, or proximity that could place them in the way of construction equipment);
- All locations contiguous to and within a defined lateral distance from the outer limits of construction/demolition (as an example, the 90 feet specified in New York City Department of Buildings Technical Policy and Procedure Notice #10/88 regarding "fragile" buildings (including historic buildings and structures)), in which construction-induced ground vibration could damage foundations or structural systems; and
- Locations where the operation of construction equipment could inadvertently damage historic buildings or structures.

b. Potential effects involving changes in use or changes to physical features within a property's setting (including introduction of incompatible visual, atmospheric or audible elements) that contribute to its historical significance:

The project proposes to replace an existing bridge with another in essentially the same location to maintain this important transportation artery connecting New Jersey and New York. The project will not introduce any new features inconsistent with those already present in the built environment, or out of character with this built environment's historical development.

The potential of the project to diminish the integrity of a property's significant historic features is limited to those locations suggested for inclusion in the APE, as described below.

Elizabeth, East of the NJ Turnpike between the Elizabeth River and Morses Creek: The intent of the project is to continue using the area east of the NJ Turnpike between the Elizabeth River and Morses Creek as a transportation corridor, albeit with a replacement structure. However, demolition of the existing bridge and construction of a replacement structure(s) within an expanded right-of-way could prompt changes in adjacent land use that could involve historic properties.

Because this area immediately around the Goethals Bridge approach is relatively confined, the setting is relatively intimate (even given the large scale of many elements within it). Both the Goethals Bridge and the adjacent Arthur Kill Lift Bridge are dominant features of this old industrial area. Removal and replacement of the existing Goethals Bridge and approach would thus transform the character of the built environment here and, as a result, transform the integral setting of any other historic properties in this area (Photos 2, 3, and 4).

The area between the Elizabeth River and Morses Creek east of NJ Turnpike should, therefore, be included within the APE.

Elizabeth, North and Northwest of NJ Turnpike Interchange 13: The NJ Turnpike Interchange 13 and associated toll plaza, and the NJ Turnpike itself (four lanes plus exit/entrance ramps), plus the double line of electrical transmission towers emanating from the PSE&G substation together constitute a physical and substantial visual barrier between the residential Elizabeth neighborhood north and northwest of the interchange and the Goethals Bridge. Due to the density of the built environment, the bridge is not visible from most locations within this neighborhood. The open, slightly sloping ground of Mattano Park affords the most "immediate" views of the bridge (and also of the Arthur Kill Lift Bridge and a PSE&G substation) both from the park itself and from the turn-of-the-20th century, closely spaced dwellings that overlook the park from Fifth Avenue (Photo 5). Limited views of the bridge are also available from locations along Pulaski Street near the northern edge of the interchange ramps (Photos 6 and 7). Therefore, these areas should be included in the APE.

Due to the flat topography and the visual barrier presented by the interchange, replacement of the Goethals Bridge would have no demonstrable potential to effect changes to historic properties (should any historic properties exist) in the residential neighborhood west of Pulaski Street, nor to any contributing attributes of such properties' settings or historical associations. Absent future project information to the

contrary, the residential neighborhood west of Pulaski Street appears to lie outside the area of potential effect for this project.

Elizabeth, West of NJ Turnpike Interchange 13 and South of I-278: Due to the flat topography and the visual barrier presented by the interchange, replacement of the Goethals Bridge would have no demonstrable potential to effect changes to historic properties (should any historic properties exist) in the residential area directly west of the interchange and the industrial area southwest of the interchange and south of I-278, nor to any contributing attributes of such properties' settings or historical associations. Absent future project information to the contrary, these residential and industrial areas west/southwest of the interchange and south of I-278 appear to lie outside the area of potential effect for this project.

Linden, East of NJ Turnpike and South of Morses Creek: Despite the scale of the Goethals Bridge, the structure's prominence in the built environment diminishes rapidly with distance. This may be due to the visual "lightness" of the channel truss and the attenuated character of the long deck approaches. However, it is also due to the proximity of other very large-scale features, among them the Arthur Kill Lift Bridge, the NJ Turnpike and Interchange 13, PSE&G transmission towers, and the sprawling Standard Oil refining and storage facilities just over the city line in Linden. Built by the Port Authority of New York and New Jersey primarily to improve access to Staten Island, the Goethals Bridge appears to have had little discernable influence on the already established industrialization of New Jersey's Arthur Kill waterfront. Maps of Union County from 1923 (pre-Goethals Bridge) and 1951 (post-Goethals Bridge) (Figures 2 and 3) offer clear evidence of the development of the original, rather peripheral area of Elizabeth between Bayway and the Elizabeth River over this period (whether attributable to the bridge or not) but essentially no change in the patterns of land use and transportation below Morses Creek in Linden. This review concludes that replacement of the Goethals Bridge would have no demonstrable potential to effect changes to historic properties (should any exist) in this area of Linden east of the NJ Turnpike nor to any contributing attributes of such properties' settings or historical associations. Therefore, the area of Linden east of the NJ Turnpike south of Morses Creek appears to lie outside the area of potential effect for this project (Photos 8 and 9).

6. CONCLUSION

The APE recommended for delineation in this memorandum considers the nature and scale of the proposed project, the existing built environment in which it will occur, and various ways in which the project could reasonably be demonstrated to affect historic properties. The APE provides an appropriate basis for taking the effects of the proposed Goethals Bridge Replacement Project on historic properties into account. The recommended APE boundary is shown on Figure 4.

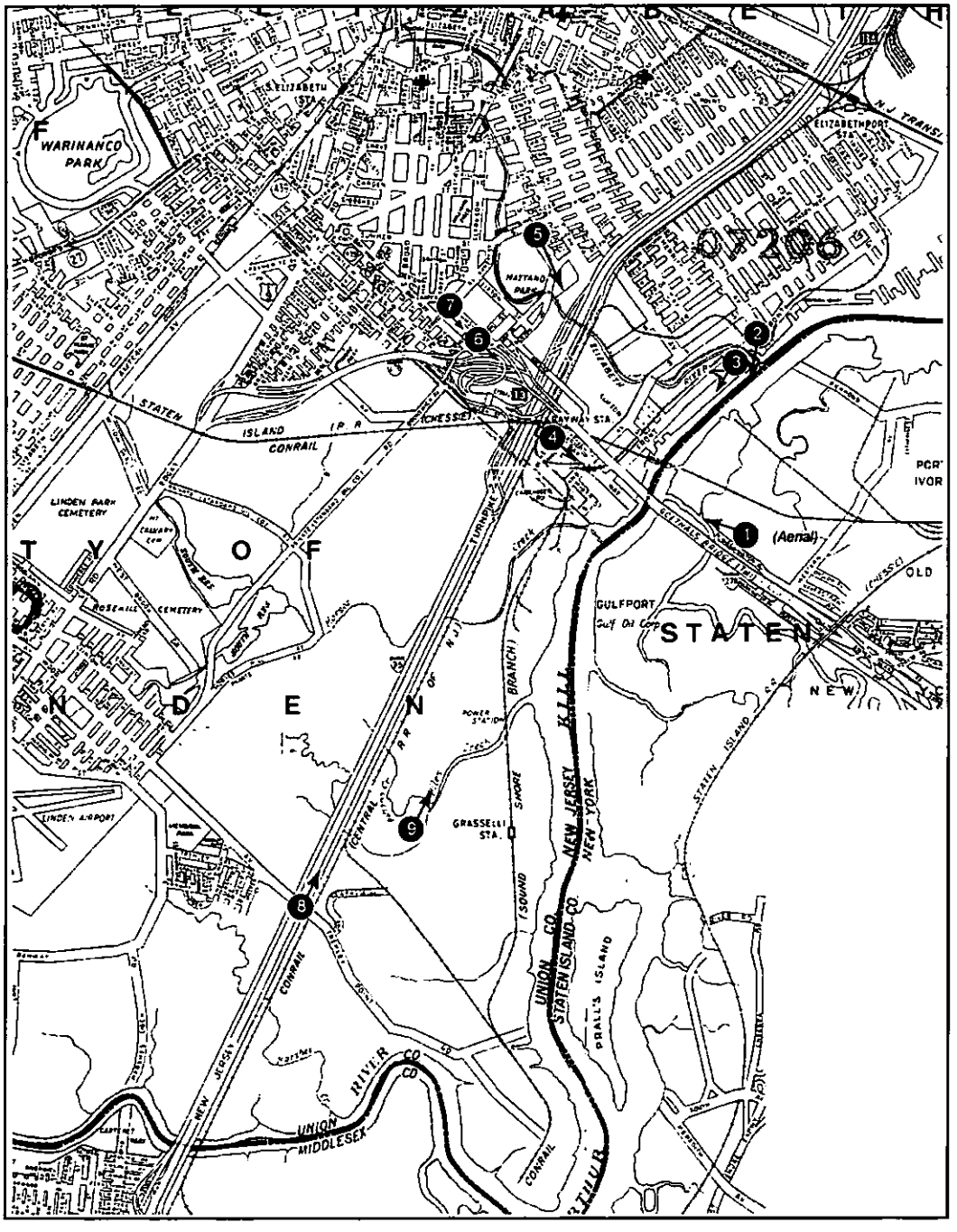


FIGURE 1: KEY TO PHOTO LOCATIONS

PHOTO 1:
Aerial View of the Goethals Bridge Looking Southwest toward Elizabeth-Linden

PHOTO 2:
View Southeast from the Elizabeth River toward the Goethals Bridge and Arthur Kill Lift Bridge

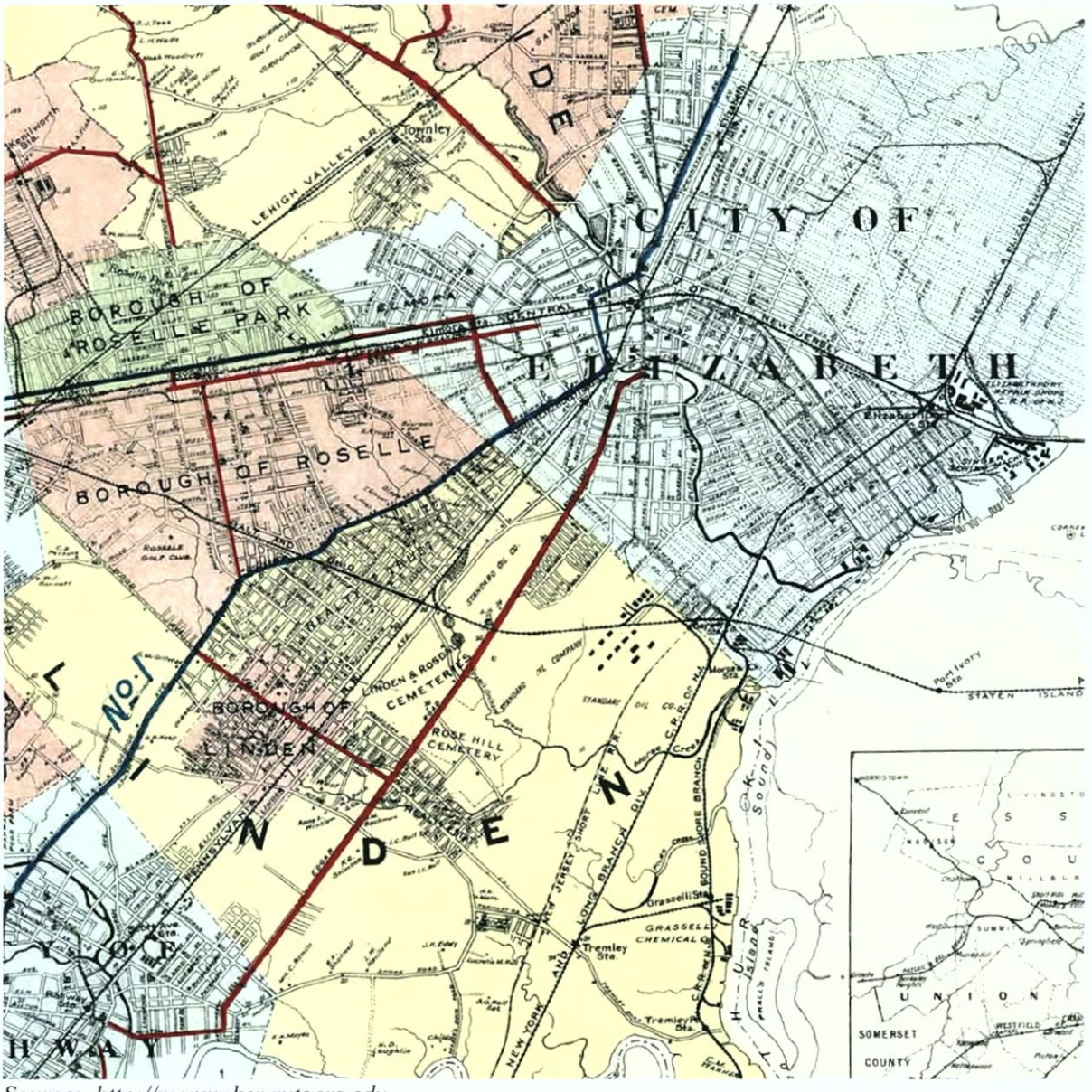
PHOTO 3:
View South on Front Street south of Elizabeth River--
the Goethals Bridge and Arthur Kill Lift Bridge are partially visible in left background

PHOTO 4:
View Southeast on Bayway Avenue east of Burlington Avenue toward Goethals Bridge (partially visible)

PHOTO 5:
Looking Southeast from the 5th Avenue side of Mattano Park toward the Goethals Bridge and Arthur Kill Lift Bridge

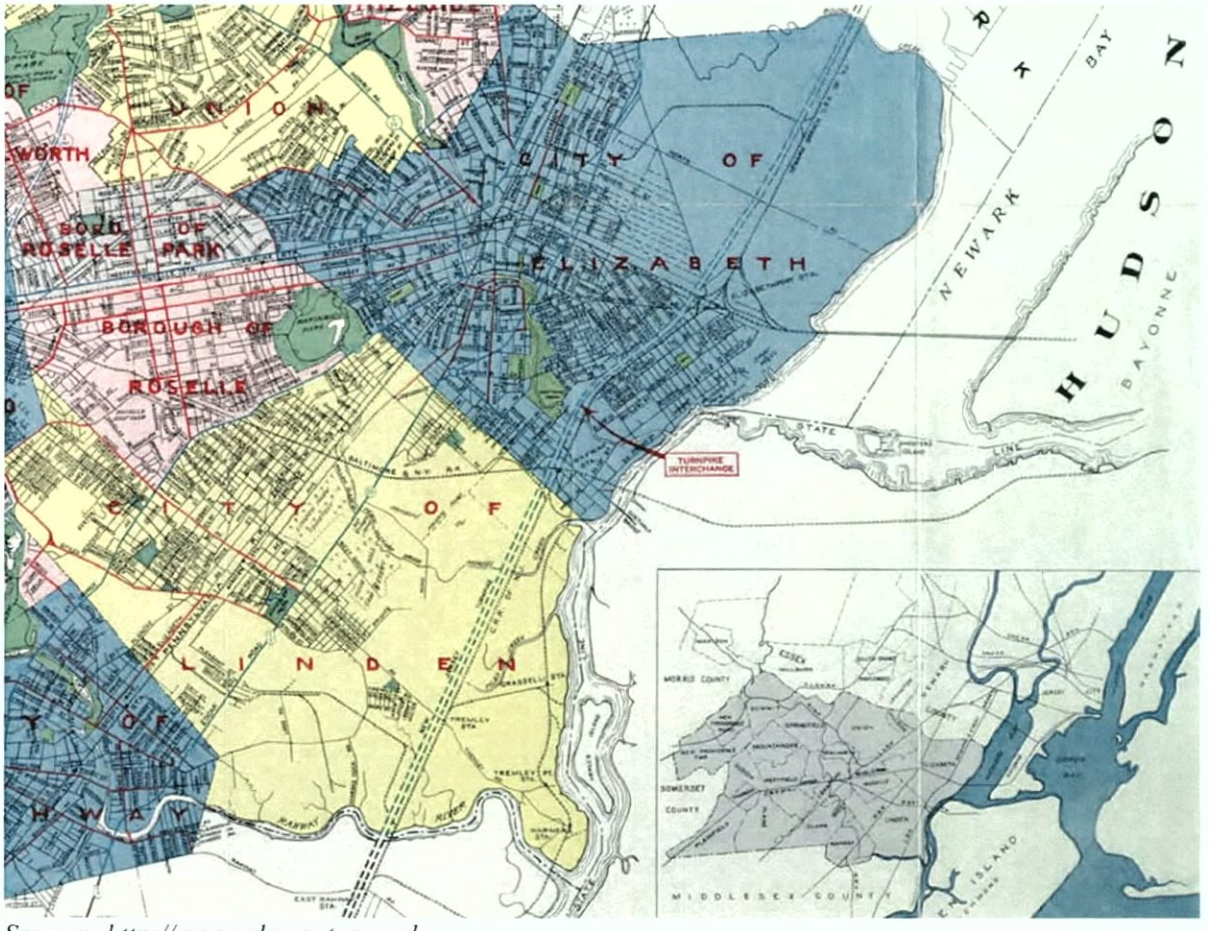
PHOTO 6:
Looking Southeast from a Citgo Station on Bayway Avenue near Pulaski Street, looking toward Goethals Bridge

PHOTO 7:
View Southeast along Richmond Street from Pulaski Street looking toward the Goethals Bridge



Source: http://mapmaker.rutgers.edu

FIGURE 2: MAP OF UNION COUNTY, NEW JERSEY (1923)



Source: http://mapmaker.rutgers.edu

FIGURE 3: MAP OF UNION COUNTY, NEW JERSEY (1951)

Photo 8:
Panoramic View North of the NJ Turnpike and waterfront from Tremley Point Bridge

PHOTO 9:
View North from Grasselli Road toward Linden Generating Station

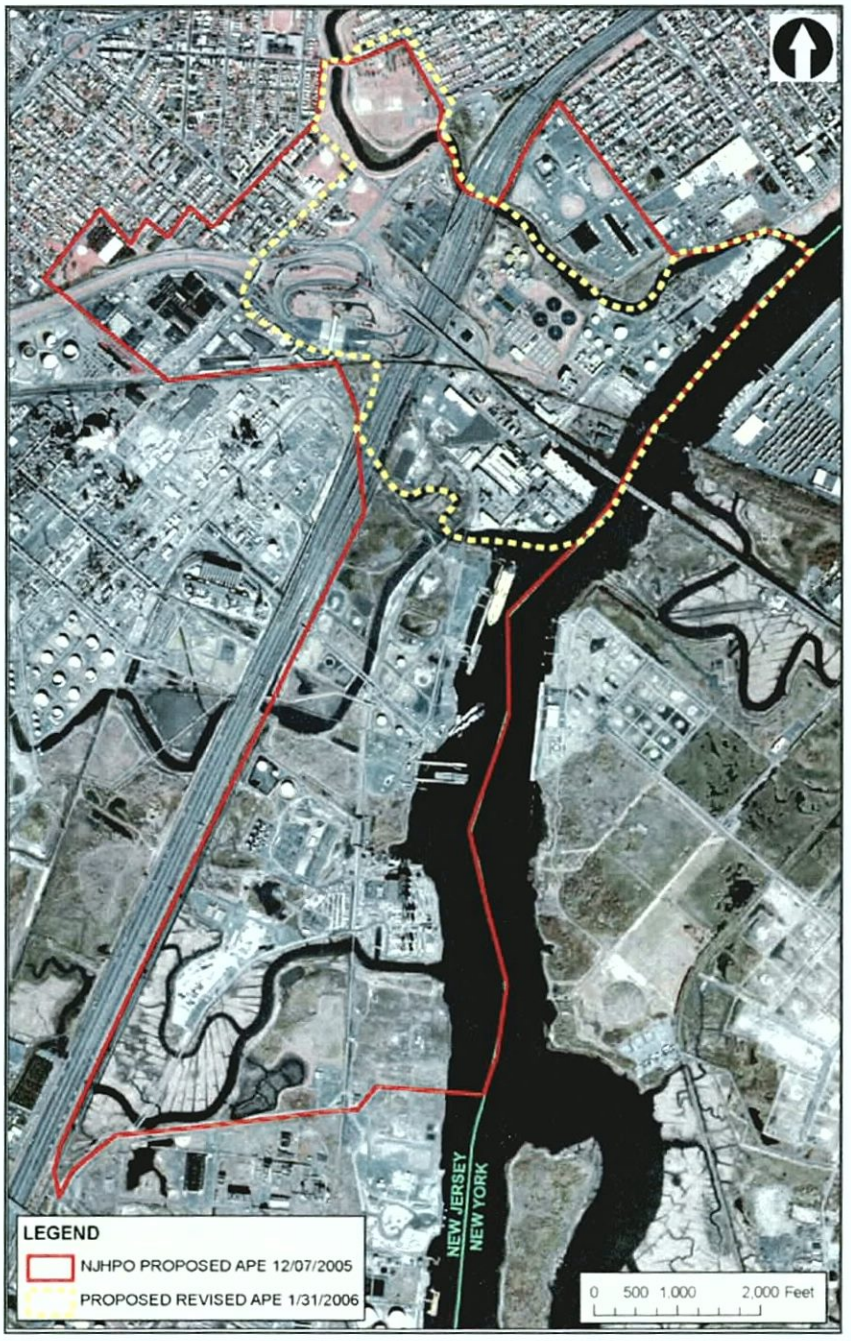


Figure 4: Recommended APE Boundary

Number of pages including coversheet: 3

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Natural and Historic Resources, Historic Preservation Office
PO Box 404, Trenton, NJ 08625
TEL: (609) 292-2023 FAX: (609) 984-0578
www.state.nj.us/dep/hpo

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

DATE: July 24, 2007

FAX TRANSMITTAL FORM

TO: Gary Kassof
FAX: 212/668-7967

FROM: Andrea Tingey
PHONE: 609/984-0539

RE: HPO-G2007-120
Goethals APE

RECEIVED
JUL 24 2007
HISTORIC PRESERVATION

If you have received this fax in error or if there is a problem with the transmission, please contact Sara Horner at **609/292-0061**

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U.S. Department of Homeland Security
United States Coast Guard

Commander
First Coast Guard District

Battery Park Bldg.
One South Street
New York, NY 10004-5073
Staff Symbol: (dpb)
Phone: (212) 668-7185
Fax: (212) 668-7967
Email

16591//Goethals Bridge
March 10, 2006

Ms. Dorothy Guzzo
Deputy State Historic Preservation Officer
New Jersey Department of Environmental Protection
Historic Preservation Office
P.O. Box 404
Trenton, NJ 08625-0404

RECEIVED
MAR 13 2006
HISTORIC PRESERVATION OFFICE

Re: Goethals Bridge EIS/Area of Potential Effect

Dear Ms. Guzzo:

The U.S. Coast Guard thanks you and Andrea Tingey for her recent input via e-mail on December 7, 2005, in which she defined suggested limits of the Area of Potential Effect (APE) for the above-ground cultural (historical/architectural) resources of subject project on the New Jersey side of the project corridor.

Ms. Tingey's transmittal followed our joint field trip to the Goethals Bridge and its environs on October 17, 2005, and my subsequent transmittal to your office of a set of alignment concept drawings for the four build alternatives that are currently being advanced through the alternatives screening process, to identify those that will be studied in greater detail in the Draft Environmental Impact Statement (DEIS). Berger/PB, our environmental consultant team, also forwarded to Ms Tingey, digital photos taken of the study area during our joint field trip, including those locations of historic interest that have views of the bridge.

Since the suggested APE defined by Ms. Tingey differed somewhat from our initial submittal to your office, we enlisted the assistance of an architectural historian to assist us in better defining the limits of an appropriate APE. A windshield survey of the project area, including areas within the APE suggested by your office was conducted with the historian and with other Berger/PB cultural resources staff. Based upon the survey and previous documentation, the enclosed *Technical Memorandum on Consideration of the Area of Potential Effect for Historical/Architectural Resources* was developed. The memorandum addresses considerations of the nature and scale of the proposed project, various ways in which the proposed project could reasonably be demonstrated to affect historic properties, and the existing built environment in which the project would be implemented.

On this basis, we feel that the limits of the APE should be defined, as shown on the aerial map in the enclosed memorandum as it represents a reasonable area of potential effect for this undertaking. I have directed Berger/PB to undertake the identification of historic/architectural

properties within this APE and to prepare the inventory documentation for subsequent transmittal to your office for review.

The U.S. Coast Guard looks forward to your continued involvement in this EIS process and associated Section 106 consultation process. Please call me at 212-668-7021 if you have any questions or comments concerning the enclosed information and our determination of the limits of the APE for this project.

Sincerely,

Gary. Kassof
Bridge Program Manager
First Coast Guard District
By direction of the District Commander

Enclosures:
Technical Memorandum, Consideration of the Area of Potential Effect for Historical/Architectural Resources

Copy: Andrea Tingey (NJHPO)
Michelle Hughes (NJHPO)
James Warren (NYSHPO)
Ken Hess (Berger/PB)
Judith Versenyi (Berger/PB)
Esther Schwalb (Berger/PB)
Marty Bowers (Berger/PB)
Sara Moss (Berger/PB)

CONCUR

7/24/2007
DOROTHY P. GUZZO
DEPUTY STATE HISTORIC PRESERVATION OFFICER
DATE

APPENDIX CB
SHOVEL TEST PROFILES

Project Name: Goethal's Bridge **XE 3355** **Date: 10/01/04**

Recorders: GS, KB, SM, JT, CP , EK, WVA **Screened: YES** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
A-1	0.0-0.3 0.3-0.9 0.9-1.6	10YR3/2 7.5YR4/6 10YR5/2	Very dark Grayish Brown Strong Brown Grayish Brown	SiLo SaLo FiSa	N	Strat B: Mottled w/ 10YR4/2 Dark gray brown Water at base
A-2	0.0-0.4 0.4-1.0 1.0-1.5 1.5-2.0 2.0-3.4 (auger) 3.4-4.2	10YR3/2 10YR3/3 10YR7/2 7.5YR4/1 - 10YR4/1	Very dark Grayish Brown Dark Brown Light Gray Dark Gray - Dark Gray	SiLo SaLo SaCl SaCl - Sa	N	Strat A: Clear glass discarded Strat C: mottled w/ 10YR6/6 Brownish Yellow Water at base
A-3	0.0-0.2 0.2-1.0 1.0-1.9 1.9-2.1 2.1-3.0 (auger) 3.0-4.0	10YR3/3 7.5YR4/3 10YR6/1 7.5YR4/6 - 10YR2/2	Dark Brown Brown Gray Strong Brown - Very dark Gray	SiLo SaCl SaLo - MedSa	N	Strat D: Mottled w/ 10YR6/1 Gray SaCl Decayed roots and water at base
A-4	0.0-0.2 0.2-1.5 1.5-2.4	10YR3/3 7.5YR4/6 5YR4/4	Dark Brown Strong Brown Reddish Brown	SiLo SaClLo ClLo	Y	Strat B: 1 poss. jasper flake, 1 poss. FCR collected Strat C: w/ bits of clay
A-5	0.0-0.2 0.2-0.5 0.5-0.9	10YR3/3 7.5YR4/4 7.5YR5/2	Dark Brown Brown Brown	SiLo SaClLo SaLo	N	Water level at 0.7'
A-6	0.0-0.25 0.25-1.0 1.0-1.7	10YR3/3 10YR4/4 10YR5/1	Dark Brown Dark Yellowish Brown Gray	SiLo SaLo ClLo	N	Strat C: Mottled w/ 7.5YR3/4 Dark Brown
A-7	0.0-0.2 0.2-0.6 0.6-0.95	10YR2/1 10YR3/6 10YR5/3	Black Dark Yellowish Brown Brown	Lo SaLo SiLo	N	Water level at 0.8'

Project Name: Goethal's Bridge **XE 3355** **Date: 10/01/04**

Recorders: GS, KB, SM, JT, CP , EK, WVA **Screened: YES** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
A-8	0.0-0.2 0.2-0.7	10YR2/1 10YR4/4	Black Dark Yellowish Brown	SiLo SiLo	N	Water at base
A-9	0.0-0.2 0.2-0.6	10YR2/1 10YR3/1	Black Very dark Gray	SiLo SaLo	N	Water at base
A-10	0.0-0.3 0.3-0.6 0.6-1.2	10YR2/1 10YR4/3 10YR5/3	Black Brown Brown	SiLo SaCl SiLo	N	Water level at 1.0'
A-11	0.0-0.3 0.3-1.6	10YR2/1 10YR3/3	Black Dark Brown	SiLo SaLo	Y	Wire nail, curved glass, & plastic sample collected Water at base
A-12	-	-	-	-	-	Unexcavated Standing Water
A-13	0.0-0.1 0.1-0.5 0.5-1.1	10YR2/1 10YR3/4 10YR5/3	Black Dark Yellowish Brown Brown	SiLo	N	Strat C: mottled w/ fire clay Gley2 5/1 Bluish Gray Water level at 0.9'
A-14	0.0-0.2 0.2-1.0	10YR2/1 10YR4/3	Black Brown	SiLo SiLo	N	Water at base
A-15	-	-	-	-	-	Unexcavated Standing Water
A-16	0.0-0.3 0.3-0.5 0.5-1.6	10YR2/2 10YR3/6 7.5YR6/1	Very dark Brown Dark Yellowish Brown Gray	Lo SaLo SaCl	N	Strat A: Modern bottle glass discarded
A-17	0.0-0.3 0.3-1.0 1.0-1.3	10YR3/2 10YR4/3 10YR6/1	Very dark Grayish Brown Brown Gray	Lo SaLo SaCl	N	Strat B: Mottled w/ 10YR4/4 Dark Yellowish Brown Strat C: Mottled w/ 10YR5/4 Yellowish Brown Water level at base

Project Name: Goethal's Bridge **XE 3355** **Date: 10/01/04**

Recorders: GS, KB, SM, JT, CP , EK, WVA **Screened: YES** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
A-18	0.0-0.3 0.3-1.0 1.0-1.3	10YR2/1 10YR3/6 Gley2 6/1	Black Dark Yellowish Brown Bluish Gray	Lo SiLo SaCl	N	Water level at 1.3'
A-19	-	-	-	-	-	Unexcavated Standing water
A-20	0.0-0.1 0.1-1.0 1.0-1.4	10YR2/1 7.5YR4/6 10YR6/1	Black Strong Brown Gray	Lo SaLo MedSa	N	Water level at base
A-21	-	-	-	-	-	Unexcavated Standing water
A-22	0.0-0.3 0.3-0.7	10YR3/3 7.5YR4/6	Dark Brown Strong Brown	SiLo SaLo	N	Water level at 0.5'
A-23	0.0-0.5 0.5-1.2	10YR2/1 7.5YR4/4	Black Brown	Lo SaLo	N	Water level at 1.0'
A-24	0.0-0.2 0.2-1.4	10YR2/1 7.5YR3/4	Black Dark Brown	SiLo SaLo	Y	Strat B: Brick fragment collected; 5% gravel Water at base
A-25	0.0-0.2 0.2-0.9	10YR2/2 10YR4/2	Dark Brown Dark Grayish Brown	SiLo SiClLo	N	Water at 0.7'
A-26	-	-	-	-	-	Unexcavated Standing water
A-27	0.0-0.27 0.27-1.3 1.3-1.8	10YR2/2 7.5YR4/3 7.5YR5/3	Very dark Brown Dark Brown Brown	SiLo SaLo MedSa	N	Strat B: Large chunks of fire clay Strat C: Mottled w/ 7.5YR4/6 Brown Water at base
A-28	-	-	-	-	-	Unexcavated Standing water

Project Name: Goethal's Bridge **XE 3355** **Date: 10/01/04**

Recorders: GS, KB, SM, JT, CP , EK, WVA **Screened: YES** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
A-29	0.0-0.1 0.1-0.8 0.8-2.7	10YR2/1 10YR3/3 10YR5/3	Black Dark Brown Brown	Lo LoSa Sa	N	Strat C: Fill has coal & shells Water level at 2.5'
A-30	0.0-0.1 0.1-1.3 1.3-2.1 2.1-2.9 2.9-3.4	10YR2/1 5YR4/3 10YR3/1 10YR2/1 10YR3/1	Black Reddish Brown Very dark Gray Black Very dark Gray	Lo SaLo Sa SaClLo	N	Strat A & B: Glass discarded
A-31	0.0-0.55 0.55-1.1 1.1-1.3	10YR2/2 7.5YR4/3 10YR3/2	Very dark Brown Brown Very dark Grayish Brown	SiLo SaLo SiSaLo	N	Water level at 1.2'
A-32	0.0-0.15 0.15-0.4 0.4-1.7 1.7-3.7	10YR2/2 7.5YR4/4 10YR6/3 10YR3/1	Very dark Brown Brown Pale Brown Very dark Gray	Lo SaLo Sa Lo	Y	Strat D: Wood plank at 2.0'- length 0.5', width 0.29'; Plastic piece at 3.7' collected Water level at 2.4'
A-33	0.0-0.2 0.2-0.9 0.9-1.8 1.8-2.15	10YR2/1 7.5YR4/4 10YR3/4	Black Brown Dark Yellowish Brown	Lo SaLo SiSa	N	Water level at 1.8'
A-34	0.0-1.4 1.4-2.0 (fill level) 2.0-2.4	10YR3/3 - 7.5YR4/3	Dark Brown - Brown	SiLo - SaLo	Y	Strat A: Brick collected Demolition debris throughout shovel test: bricks, concrete, plate glass Strat B: Glass collected 30% gravel; mortar & tile at 2.0'. Black top impasse at base
A-35	0.0-0.1 0.1-0.9 0.9-2.2	7.5YR3/3 10YR3/3 5YR4/4	Dark Brown Dark Brown Reddish Brown	SiLo SaLo SaLo	Y	Strat B: Glass, mica, stone collected Strat C: tile, shell, coal, cinder discarded

Project Name: Goethal's Bridge **XE 3355** **Date: 10/01/04**

Recorders: GS, KB, SM, JT, CP , EK, WVA **Screened: YES** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
A-36	0.0-1.2	10YR3/3	Dark Brown	SiLo	Y	Brick collected; Brick at .15; Asphalt at 0.5' & 0.65'-western half; Asphalt at 0.85' in eastern half; Fill containing- glass, coal, cement, asphalt
A-37	0.0-1.0 1.0-1.6	10YR3/3 5YR3/3	Dark Brown Dark Reddish Brown	SiLo SaLo	N	Strat A: Asphalt, glass discarded Strat B: Large boulder impasse extends into base
A-38	0.0-1.2 1.2-1.8 1.8-2.8 (auger) 2.8-3.5	10YR3/3 10YR4/2 - 7.5YR4/4	Dark Brown Dark Grayish Brown - Dark Brown	SiLo SaLo - MedSa	Y	Strat A: Large chunks of concrete, rebar- fill Strat B: Brick, glass, concrete- fill Strat C: 1 poss. Jasper flake collected; 40% cobbles
A-38a	0.0-0.2 0.2-1.7	10YR3/2 10YR4/2	Very dark Grayish Brown Dark Grayish Brown	SiSaLo SaLo	Y	Strat B: Cut stone at 0.6', boulder in western half at 1.1' extending down to 1.5'; glass, coal, brick, ceramic, nails, cement, asphalt collected; Sheet metal at base
A-38b	0.0-0.6 0.6-1.3 1.3-2.5	10YR3/3 10YR3/4 7.5YR4/3	Dark Brown Dark Yellowish Brown Brown	SiSaLo SaLo SaLo	Y	Strat A: Wood, metal, asphalt discarded Strat B: Clear glass collected Asphalt at base
A-38c	0.0-0.3 0.3-2.7	10YR2/2 10YR4/3	Very dark Brown Brown	SiLo SiLo	Y	Strat A: Brick, coal, asphalt discarded Strat B: Marble, gunflint, ceramics, poss. lithics collected
A-38d	0.0-0.3 0.3-1.4 1.4-2.4	10YR3/2 10YR3/3 5YR4/2	Very dark Grayish Brown Dark Brown Dark Reddish Gray	SiLo SiLo SiLo	Y	Strat A: 0.3' large piece of metal Ceramic and glass collected Asphalt, coal, brick, cement, plastic discarded
A-39	0.0-1.2	10YR3/3	Dark Brown	SiLo	N	Brick, asphalt, concrete, plastic discarded Rock impasse at base
A-40	0.0-1.8	10YR3/3	Dark Brown	SiLo	N	Fill; Large amount of brick, stone, clear glass, milk glass Thick metal rod encountered at 0.8' Concrete/rock impasse
A-41	0.0-1.1	10YR3/3	Dark Brown	SiLo	N	Fill; Large amounts of brick, glass, and immovable chunks of schist Rock impasse

Project Name: Goethal's Bridge **XE 3355** **Date: 10/01/04**

Recorders: GS, KB, SM, JT, CP , EK, WVA **Screened: YES** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
A-42	0.0-2.1	10YR3/3	Dark Brown	SiLo	N	Fill; Large amounts of brick, tile, curved glass present to BOE Could not auger through base- rock impasse

Project Name: Goethal's Bridge **XE 3355** **Date: 10/05/04**

Recorders: GS, KB, SM, EK, CP, JT, WVA **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
B-1	0.0-0.4 0.4-0.9 0.9-2.5 2.5-4.1(auger) 4.1-5.1	10YR2/2 10YR4/6 10YR6/4 - 10YR5/4	Very dark Brown Dark Yellowish Brown Light Yellowish Brown - Yellowish Brown	SiLo SaLo FiSa - MedSa	N	Strat B: Fill; Glass & brick discarded Strat C: Fill; Glass discarded Strat D: Mottled w/ 10YR6/2 Light Brownish Gray Clay 10% gravel
B-2	0.0-0.5 0.5-0.8 0.8-2.5 2.5-3.8(auger) 3.8-4.6 4.6-5.1	10YR2/2 10YR2/1 10YR6/4 - 10YR5/4 10YR6/6	Very dark Brown Black Light Yellowish Brown - Yellowish Brown Brownish Yellow	SiLo MedSa FiSa - MedSa FiSa	N	Strat A: Concrete & black top chunks Strat C: Fill; glass discarded Strat E: Mottled w/ 5YR4/4 Reddish Brown MedSaLo and Pockets of 10YR6/2 Light Brownish Gray Clay
B-3	-	-	-	-	-	Unexcavated Standing water
B-4	0.0-0.25 0.25-1.9 1.9-2.2 2.2-3.0	10YR2/1 10YR3/3 10YR6/4 10YR5/6	Black Dark Brown Light Yellowish Brown Yellowish Brown	SiLo LoSa LoSa	Y	Strat A & B: Glass discarded Strat C: Ceramic jar top collected
B-5	0.0-0.21 0.21-2.5 2.5-3.3	10YR3/2 10YR2/2 7.5YR4/6	Very dark Grayish Brown Very dark Brown Strong Brown	SiLo SiSa MedSaLo	Y	Strat B: Mottled w/ 10YR3/6 Dark Yellowish Brown; Fill – coal & cinder discarded; Glass & ceramic collected Strat C: Oyster shell discarded
B-6	0.0-0.4 0.4-0.7 0.7-1.7 1.7-2.7 2.7-3.2	10YR4/2 10YR6/6 10YR2/1 10YR4/3 10YR6/6	Dark Grayish Brown Brownish Yellow Black Brown Brownish Yellow	SaLo SaLo SaLo SaLo SaLo	Y	Strat A: Clear glass collected Strat C: Mottled w/ 10YR3/6 Dark Yellowish Brown
B-7	0.0-0.2 0.2-2.4 2.4-2.5(auger) 2.5-5.1	10YR3/2 10YR6/4 - 7.5YR4/6	Very dark Grayish Brown Light Yellowish Brown - Strong Brown	SiLo FiSa - FiSa	Y	Strat B: Mottled w/ 10YR3/3 Brown SiLo; Fill-Brick & concrete discarded; At 2.5' a layer of redware tile fragments

Project Name: Goethal's Bridge **XE 3355** **Date: 10/05/04**

Recorders: GS, KB, SM, EK, CP, JT, WVA **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
B-8	0.0-0.3 0.3-2.0 2.0-3.0	10YR3/2 7.5YR3/2 7.5YR4/4	Very dark Grayish Brown Dark Brown Dark Brown	SaLo SaLo MedSa	Y	Strat B: Shell fragment collected Strat C: Chert flake collected
B-8a	0.0-0.5 0.5-1.5 1.5-4.1	10YR3/2 10YR3/3 7.5YR4/6	Very dark Grayish Brown Dark Brown Strong Brown	SaLo LoSa MedSa	Y	Strat A: Poss. Charcoal or ceramic
B-8b	0.0-0.4 0.4-1.3 1.3-3.0	10YR3/2 10YR3/3 7.5YR4/6	Very dark Grayish Brown Dark Brown Strong Brown	SaLo SaLo MedSa	Y	Strat A: Coal discarded; ceramic & metal fragment collected Strat C: Coal discarded; ceramic & glass collected
B-8c	0.0-0.3 0.9-1.4 1.4-4.2	10YR2/2 10YR3/3 7.5YR4/6	Very dark Brown Dark Brown Strong Brown	SaLo SaLo MedSa	Y	Strat A & B: Ceramic & glass collected Strat C: Poss. lithics collected
B-8d	0.0-0.3 0.3-2.4 2.4-4.4	10YR3/2 10YR3/3 7.5YR4/6	Very dark Grayish Brown Dark Brown Strong Brown	SaLo SaLo LoSa	N	Strat B: Coal discarded
B-9	0.0-0.2 0.2-2.0 2.0-2.5	10YR4/6 7.5YR4/6 7.5YR4/4	Dark Yellowish Brown Strong Brown Brown	SaLo FiSa ClSa	N	
B-10	0.0-0.2 0.2-3.45	10YR3/2 7.5YR4/4	Very dark Grayish Brown Dark Brown	SaLo MedSa	N	
B-11	0.0-0.2 0.2-0.9 0.9-2.2	10YR3/2 10YR3/3 7.5YR4/4	Very dark Grayish Brown Dark Brown Dark Brown	Lo SiLo SaLo	Y	Glass, ceramic, shell, & bone collected

Project Name: Goethal's Bridge **XE 3355** **Date: 10/05/04**

Recorders: GS, KB, SM, EK, CP, JT, WVA **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
B-12	0.0-0.3 0.3-0.9 0.9-3.2	10YR3/4 10YR4/3 10YR5/8	Dark Yellowish Brown Brown Yellowish Brown	SaLo SaLo LoSa	Y	Strat B/C: Glass & ceramic collected
B-13	0.0-0.7 0.7-2.5	10YR2/2 7.5YR3/4	Very dark Brown Dark Brown	SaLo Sa	Y	Ceramics collected Water level at 2.4'
B-14	0.0-0.5 0.5-1.0 1.0-2.8	10YR2/2 10YR3/2 10YR3/1	Very dark Brown Very dark Grayish Brown Very dark Gray	SiLo SaLo SaClLo	N	Strat B: Large charcoal fragments discarded
B-15	0.0-0.5 0.5-1.9 1.9-2.9	10YR2/2 10YR3/3 10YR5/6	Very dark Brown Dark Brown Yellowish Brown	SaLo LoSa LoSa	Y	Strat B: Ceramics collected Strat C: Very moist
B-16	0.0-0.5 0.5-1.8 1.8-2.8	10YR2/2 10YR3/3 7.5YR4/4	Very dark Brown Dark Brown Brown	SiLo SiClLo SaLo	N	Strat C: Very moist; water level at base
B-17	0.0-0.25 0.25-1.55	10YR4/3 10YR3/2	Brown Very dark Grayish Brown	SaLo SaLo	Y	Strat B: Wire, glass, ceramic, & nail collected; brick, asphalt, & plastic discarded; asphalt layer at 0.5' and 0.6'; rubber pipe at base
B-18	0.0-0.4 0.4-1.2	10YR4/3 10YR5/4	Brown Yellowish Brown	SaLo SaLo	Y	Modern glass & ceramic collected; Coal & plastic discarded; Asphalt impasse
B-19	0.0-0.9	10YR3/4	Dark Yellowish Brown	SaLo	N	20% gravel; Plastic & concrete discarded; Blacktop impasse app. 0.6'-0.7'
B-20	0.0-0.3 0.3-0.8	10YR2/2 10YR3/3	Very dark Brown Dark Brown	SaLo SaLo	Y	Strat A: Nail collected Strat B: Tile & ceramic collected; Cloth discarded
B-21	0.0-1.1	10YR3/3	Brown	SiLo	N	10% gravel; glass, brick, & plateglass discarded; Blacktop impasse

Project Name: Goethal's Bridge **XE 3355** **Date: 10/05/04**

Recorders: GS, KB, SM, EK, CP, JT, WVA **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
B-22	0.0-0.2 0.2-1.1	10YR2/1 10YR2/2	Black Very dark Brown	SiLo SaLo	Y	Strat B: Ceramic, mortar, asphalt, plastic collected; Asphalt/cement impasse
B-23	0.0-0.5 0.5-1.0 1.0-2.8 2.8-3.1	10YR4/2 5YR3/3 10YR3/3 10YR6/8	Dark Grayish Brown Dark Reddish Brown Dark Brown Reddish Yellow	Lo SaLo LoSa MedSa	Y	Strat A: Glass & nail collected Strat B: Ceramic & glass collected Strat C: Large amount of clam shell
B-24	0.0-0.45 0.45-1.5 1.5-2.55	10YR2/2 10YR3/4 10YR4/6	Very dark Brown Dark Yellowish Brown Dark Yellowish Brown	SaLo SaLo MedSa	Y	Strat A: Brick discarded Strat B: Glass & ceramic collected Strat C: Coal & shell discarded Water level at 2.4'

Project Name: Goethal's Bridge **XE 3355** **Date: 10/29/04**

Recorders: GS, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
C-1	0.0-1.3 1.3-1.7 1.7-2.0 2.0-2.4 2.4-2.9	10YR3/3 10YR4/4 10YR4/1 10YR5/8 10YR7/6	Dark Brown Dark Yellowish Brown Dark Gray Yellowish Brown Yellow	SaLo MedSa Sa Sa Sa	Y	Strat B: Glass & poss. lithic collected; Coal discarded Strat C: Slag & coal collected; 20% fill
C-2	0.0-0.4	10YR3/3	Dark Brown	SaLo	N	Root impasse
C-3	0.0-0.5 0.5-1.0 1.0-1.3 1.3-2.0 2.0-3.0	10YR3/3 10YR4/3 7.5YR3/4 5YR4/4 7.5YR2.5/3	Dark Brown Brown Dark Brown Reddish Brown Very dark Brown	SaLo SiCl Sa SiCl SaLo	Y	Strat A: Metal & glass collected; Coal discarded; Mottled w/ 7.5YR5/8 Strong Brown SiCl Strat C: 10% gravel Strat E: Mottled w/ 10YR6/6 Brownish Yellow MedSa
C-4	0.0-1.0 1.0-3.3 3.3-3.8 3.8-4.0(auger) 4.0-5.0	10YR4/6 5YR4/4 10YR3/4 - 7.5YR4/4	Dark Yellowish Brown Red Dark Yellowish Brown - Brown	SiLo FiSa SaLo - MedSa	Y	Strat A: 30% gravel Strat A & B: Glass & ceramic collected Strat C: Poss. Buried A Water at base
C-5	0.0-0.7 0.7-1.0 1.0-4.0 4.0-4.5	10YR4/6 10YR5/8 5YR4/4 7.5YR4/4	Dark Yellowish Brown Yellowish Brown Reddish Brown Brown	SiLo CoarseSa FiSa MedSa	Y	Strat B & C: Glass collected
C-6	0.0-0.7 0.7-1.4 1.4-3.6 3.6-4.4	10YR4/6 7.5YR4/6 5YR4/4 7.5YR4/6	Dark Yellowish Brown Strong Brown Reddish Brown Strong Brown	SiLo SaClLo FiSa FiSa	Y	Strat A: Glass, ceramic, & nail collected Strat B: Glass & ceramic collected
C-7	0.0-1.0 1.0-1.9 1.9-3.8 3.8-4.2	10YR4/6 10YR3/3 5YR4/4 10YR3/4	Dark Yellowish Brown Dark Brown Reddish Brown Dark Yellowish Brown	SiLo SaLo FiSa SaLo	Y	Strat A: Glass & nail collected; 10% gravel Strat B: Nail collected

Project Name: Goethal's Bridge **XE 3355** **Date: 10/29/04**

Recorders: GS, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
C-8	0.0-0.5 0.5-1.8 1.8-2.6 2.6-3.2	10YR4/6 10YR3/2 10YR3/4 7.5YR4/6	Dark Yellowish Brown Very dark Grayish Brown Dark Yellowish Brown Strong Brown	SiLo SiLo SaLo SaLo	Y	Strat A: Ceramic collected; 10% gravel Strat B: Glass & ceramic collected; Mottled w/ 10YR6/4 Light Yellowish Brown Sa; Variable Fill- rubble layer, blacktop, brick, concrete
C-9	0.0-0.8 0.8-3.3	10YR3/3 7.5YR3/3	Dark Brown Dark Brown	SaLo SaLo	Y	Strat B: Glass & bone collected; Broken sewer pipe at 1.6'
C-9a	0.0-1.3 1.3-1.8	10YR2/2 7.5YR4/6	Very dark Brown Strong Brown	SiClLo SaLo	Y	Strat A: Nail collected; Mottled w/ 7.5YR4/4 Dark Brown; Variable Fill- Plastic discarded Strat B: Concrete impasse
C-9b	0.0-0.3 0.3-0.5 0.5-1.6 1.6-3.4	10YR3/3 7.5YR4/6 10YR3/2 7.5YR4/4	Dark Brown Strong Brown Very dark Grayish Brown Dark Brown	SiLo SaLo SiLo SaLo	Y	Strat A: Plastic discarded Strat B: Glass collected; Plastic discarded Strat C: Nails collected Strat D: Coal & slag discarded (from RR Bridge 1930?); 20% gravel; Rock impasse
C-9c	0.0-0.2 0.2-0.4 0.4-1.6	10YR3/3 7.5YR4/6 10YR3/2	Dark Brown Strong Brown Very dark Grayish Brown	SiLo SiLo SiLo	N	Strat A: Plastic, Styrofoam, 1972 beer bottle Strat B: Glass, plastic, slag discarded Strat C: Coal discarded; 20% fill; Concrete impasse
C-9d	0.0-0.7 0.7-1.9 1.9-3.8 3.8-4.1 4.1-4.6	10YR3/1 7.5YR4/3 5YR4/4 10YR3/4 7.5YR4/6	Very dark Gray Dark Brown Reddish Brown Dark Yellowish Brown Strong Brown	SiLo SaLo FiSa SaLo FiSa	Y	Strat A: Plastic & glass discarded Strat B: Glass & ceramic collected; Slag discarded; 20% gravel Strat C: Glass, nails, slag collected; 20% fill Strat D: Metal & poss. lithic collected; Burned wood & cinder discarded
C-10	0.0-0.7 0.7-1.1 1.1-1.8 1.8-2.6 2.6-3.3	10YR3/3 7.5YR3/4 5YR4/6 10YR2/2 10YR4/6	Dark Brown Dark Brown Strong Brown Very dark Brown Dark Yellowish Brown	SaLo Sa Sa Sa Sa	N	Strat B: Glass discarded Strat C: Charcoal discarded

Project Name: Goethal's Bridge **XE 3355** **Date: 10/29/04**

Recorders: GS, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
C-11	0.0-0.6 0.6-1.7 1.7-2.01 2.01-2.1 2.1-3.4	10YR3/3 7.5YR3/3 7.5YR4/4 10YR2/1 10YR3/3	Dark Brown Dark Brown Dark Brown Black Dark Brown	SaLo Sa Sa Sa Sa	Y	Strat B: ceramic & nail collected Strat C/D/E: Ceramic, glass, & nails collected; Charcoal discarded
C-12	0.0-0.7 0.7-3.1 3.1-3.3 3.3-3.6(auger) 3.6-BOE	10YR3/3 5YR4/4 10YR3/4 - 7.5YR4/3	Dark Brown Reddish Brown Dark Yellowish Brown - Dark Brown	SaLo SaLo SaLo - SaLo	Y	Strat B: Ceramic, glass, shell, & nail collected; Brick & shell discarded; Cut stone 1.6' extending to 2.3'
C-13	0.0-0.3 0.3-1.4 1.4-2.6 2.6-2.9	10YR3/3 7.5YR3/3 5YR4/6 10YR3/4	Dark Brown Dark Brown Yellowish Red Dark Yellowish Brown	SiLo SiLo FiSa SaLo	Y	Strat B: Pipe, ceramic, & glass collected Strat C: Ceramic & glass collected; Large rock at 2.5'
C-14	0.0-0.3 0.3-1.2 1.2-2.1 2.1-2.9 2.9-4.2	10YR3/2 10YR3/3 10YR5/8 7.5YR4/6 10YR5/8	Very dark Grayish Brown Dark Brown Yellowish Brown Strong Brown Yellowish Brown	SaLo SiLo Sa Sa Sa	Y	Strat B: Ceramic & glass collected Strat C: Poss. architectural wood at 1.7'
C-15	0.0-0.5 0.5-1.6 1.6-2.3 2.3-3.0(auger) 3.0-4.4 4.4-5.0	10YR3/2 5YR4/6 7.5YR4/4 - 5YR4/4 7.5YR4/3	Very dark Grayish Brown Yellowish Red Brown - Reddish Brown Brown	SiLo ClLo MedSa - FiSa MedSa	Y	Strat B: Ceramic & glass collected Strat C: Glass collected Strat E: Glass & poss. lithic collected
C-15a	0.0-0.2 0.2-0.3 0.3-1.3	10YR2/2 7.5YR3/4 7.5YR3/3	Very dark Brown Dark Brown Dark Brown	SiLo MedSa MedSa	Y	Strat C: Ceramic, glass, & brick sample collected; Brick, coal, & concrete discarded; Rock impasse

Project Name: Goethal's Bridge **XE 3355** **Date: 10/29/04**

Recorders: GS, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
C-15b	0.0-0.5 0.5-1.2 1.2-1.8 1.8-4.1 4.1-4.9	10YR3/3 10YR3/6 10YR4/4 5YR4/4 10YR3/4	Dark Brown Dark Yellowish Brown Dark Yellowish Brown Reddish Brown Dark Yellowish Brown	SiLo SiLo SaLo FlSa SaLo	Y	Strat A: Glass, ceramic, & nail collected; 20% gravel Strat B: Glass, ceramic, & chert collected; 30% gravel; Large chunks brick & concrete Strat C: Mottled w/ 10YR6/8 Brownish Yellow SaLo: Wire lodged in wall at 1.6' Strat D: Glass, ceramic, & nail collected Strat E: Lithics collected
C-15c	0.0-0.5 0.5-1.3	10YR3/3 7.5YR4/4	Dark Brown Brown	SiLo SaLo	Y	Strat B: Glass collected; Brick & concrete discarded; Rock impasse
C-15d	0.0-0.5 0.5-1.3 1.3-2.2 2.2-4.2 4.2-4.8	10YR3/3 10YR3/6 10YR4/4 5YR4/4 10YR3/4	Dark Brown Dark Yellowish Brown Dark Yellowish Brown Reddish Brown Dark Yellowish Brown	SiLo SiLo SaLo FiSa SaLo	Y	Strat A: 20% gravel Strat B: 30% gravel; Large chunks of concrete & brick Strat C: Mottled w/ 10YR6/8 Brownish Yellow SaLo Strat E: Shell collected
C-15e	0.0-2.1	10YR3/2	Very dark Grayish Brown	SiLo	Y	Mottled w/ 7.5YR 3/2 Dark Brown; 20% gravel; Large concrete slab in eastern half of STP extending from 0.5' to base; Glass & ceramic collected; Concrete impasse
C-15f	0.0-2.1	10YR3/2	Very dark Grayish Brown	SiLo	N	Mottled w/ 7.5YR3/2 Dark Brown SiLo; 35% gravel fill; Large slab of concrete in Eastern Half of STP extending from 0.8' to base; Concrete impasse; Glass, brick, oyster shell discarded
C-16	0.0-0.3 0.3-1.2	7.5YR3/2 7.5YR4/3	Dark Brown Dark Brown	SaLo Sa	N	Concrete impasse; Caution tape on top
C-17	0.0- -1.3 1.3-1.5 1.5-4.5	10YR3/2 10YR3/3 Asphalt 10YR3/4	Very dark Grayish Brown Dark Gray - Dark Yellowish Brown		Y	Strat B: mottled w/ 10YR3/4 Dark Yellowish Brown Strat D: Glass sample collected; Glass, slag, & charcoal discarded
C-18	0.0-0.5 0.5-1.2 1.2-3.7	7.5YR3/2 7.5YR2.5/1 7.5YR5/6	Dark Brown Black Strong Brown	SaLo SaLo Sa	Y	Strat A/C: Glass, nails, & ceramic collected Strat B: 30% gravel Water level at 3.6'

Project Name: Goethal's Bridge **XE 3355** **Date: 10/29/04**

Recorders: GS, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

C-19	0.0-1.2 1.2-1.8 1.8-2.4	7.5YR2.5/1 7.5YR3/1 10YR2/2	Black Very dark Gray Very dark Brown	Fill Sa Sa	Y	Strat A: Glass, ceramic, nail, & shell collected Strat B: Slag discarded In eastern half concrete slab extending from 1.7' to base; in western half 1.9' to base
C-20	0.0-1.3 1.3-1.9	7.5YR3/1 7.5YR4/4	Very dark Gray Brown	SaLo Sa	Y	Strat A: Glass, ceramic, slag, & bone collected; Glass, charcoal, & slag discarded Strat B: 30% gravel; Rock impasse
C-21	0.0-2.0 2.0-2.3 2.3-4.3	10YR3/3 10YR2/1 5YR4/4	Brown Black Reddish Brown	SiLo MedSa FiSa	Y	Strat A: Glass & ceramic collected; Mottled w/ 10YR4/6 Yellowish Brown; Fill; 70%gravel; very compact Water at base
C-22	0.0-0.91 0.91-1.8 1.8-2.0 2.0-3.8	10YR3/3 10YR3/2 10YR2/1 5YR4/4	Brown Very dark Grayish Brown Black Reddish Brown	SiLo SaLo MedSa MedSa	Y	Strat A: Glass & plastic collected; Mottled w/ 10YR4/6 Yellowish Brown; Fill; 60%gravel; very compact Strat B: 50% large angular gravel Water at base
C-23	0.0-0.7 0.7-1.5 1.5-2.5	10YR3/2 5YR3/4 10YR2/2	Very dark Grayish Brown Dark Reddish Brown Very dark Brown	SaLo Cl SiLo	Y	Strat B/C: Ceramic, nails, ceramic frag, & slag collected; Glass discarded Strat C: Fill; Concrete/brick impasse
C-24	0.0-0.25 0.25-1.1 1.1-2.2	10YR3/2 5YR3/4 10YR2/2	Very dark Grayish Brown Dark Reddish Brown Very dark Brown	SaLo Cl SiLo	N	
C-25	0.0-0.1 0.1-1.8	10YR3/2 5YR3/3	Very dark Grayish Brown Dark Reddish Brown	SaLo Cl	Y	Ceramic, glass, & bone collected Wood or ceramic impasse
C-26	0.0-0.2 0.2-2.7	7.5YR3/2 2.5YR4/4	Dark Brown Reddish Brown	SiClLo ClLo	Y	Strat B: Ceramic collected Water level at 2.5'
C-27	0.0-0.2 0.2-0.85	7.5YR3/2 2.5YR4/4	Dark Brown Reddish Brown	SiClLo ClLo	N	Water level at 0.7'

Project Name: Goethal's Bridge **XE 3355** **Date: 10/29/04**

Recorders: GS, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
C-28	0.0-1.1	2.5YR4/4	Reddish Brown	Cl	Y	Glass collected; Rubber at base discarded; Mottled w/ 10YR6/8 Brownish Yellow and 10YR6/1 Gray; Water level at 0.9'
C-29	0.0-0.8 0.8-1.2	2.5YR4/4	Reddish Brown	Cl	N	

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/13/04**

Recorders: GS, SM, EK, WVA, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
D-1 through D-6	Not Excavated Due to Lack of Entry Permission					
D-7	0.0-0.6 0.6-3.4	10YR3/2 7.5YR4/3	Very dark Grayish Brown Brown	SaLo Sa	N	
D-8	0.0-0.5 0.5-1.8 1.8-3.3	10YR2/2 7.5YR3/3 7.5YR3/4	Very dark Brown Dark Brown Dark Brown	SaLo MedSa MedSa	Y	Strat A: Glass & charcoal discarded Strat B: Poss. lithic & glass collected Clay deposits; Large rounded cobbles
D-11	0.0-1.4	10YR3/2	Very dark Grayish Brown	Sa	Y	Glass & shell collected Water level at 1.0 Rock impasse
D-12	0.0-1.0 1.0-2.3	10YR3/2 7.5YR4/4	Very dark Grayish Brown Brown	SaLo Sa	Y	Strat A: Glass, metal pipe collected Strat B: Ceramic, tile, & shell collected Water level at 2.2'
D-13	0.0-1.9	10YR3/3	Brown	SaLo	N	Fill- Large amounts of broken concrete, blacktop, aluminum cans, & unidentified metal discarded Blacktop impasse
D-14	0.0-1.4 1.4-2.3	10YR2/2 10YR4/2	Very dark Brown Dark Grayish Brown	SiLo CoarseSa	N	Strat A: Mottled w/ 7.5YR4/6 Strong Brown ClLo; Large amounts of plastic & metal discarded Strat B: Blacktop extending from1.4' to 1.6'
D-15	-	-	-	-	-	Unexcavated Standing Water
D-16	0.0-1.2 1.2-1.6	10YR3/2	Very dark Grayish Brown	SiLo	N	Water at base
D-17	0.0-0.5 0.5-1.2	10YR3/2	Very dark Grayish Brown	SiLo	N	water level at 0.5'
D-18	0.0-1.0	10YR3/2	Very dark Grayish Brown	SiLo	N	water level at 0.8'
D-19	0.0-1.1 1.1-1.9	10YR3/2	Very dark Grayish Brown	SiLo	N	Water level at base
D-20	0.0-1.1	2.5YR2.5/1	Reddish Black	SiLo	N	

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/20/04**

Recorders: GS, KB, SM, EK, WVA, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
E-1	0.0-0.2 0.2-1.5 1.5-2.4	10YR2/2 10YR3/3 10YR3/2	Very dark Brown Dark Brown Very dark Grayish Brown	ClLo SaLo SiSaLo	Y	Strat A: Glass & plastic discarded Strat B: Melted glass & unidentified metal collected
E-2	0.0-0.3 0.-2.0 2.0-2.25 2.25-2.7	10YR3/2 10YR4/3 10YR6/4 5YR3/4	Very dark Grayish Brown Brown Light Yellowish Brown Dark Reddish Brown	ClLo SaLo Sa Cl	Y	Strat A: Glass & plastic discarded Strat B: Ceramic, glass, metal, brick, & cloth collected; Mortar, brick, & charcoal discarded; At 1.2' a band of sand 10YR4/6 Dark Yellowish Brown
E-3	0.0-0.3 0.3-1.35 1.35-2.3 2.3-2.5	10YR3/2 10YR4/6 10YR6/4 7.5YR8/0 w/ 7.5YR5/8	Very dark Grayish Brown Dark Yellowish Brown Light Yellowish Brown White w/ Strong Brown	ClLo SaLo Sa Cl	Y	Ceramic, glass, nails, plastic collected
E- 4	0.0-0.2 0.2-1.6 1.6-2.5 2.5-2.7	10YR3/2 7.5YR4/2 5YR4/3 2.5YR4/3	Very dark Grayish Brown Brown Reddish Brown Reddish Brown	SiLo SaLo MedSa ClSa	Y	Strat A: Styrofoam discarded Strat B: Ceramic, glass, shell collected; Very mottled Strat C: Ceramic, glass collected Strat D: Very Mottled
E-5	0.0-0.5 0.5-2.5 2.5-2.8 2.8-3.2	10YR3/2 7.5YR4/2 7.5YR3/4 10YR5/2	Very dark Grayish Brown Brown Brown Grayish Brown	SiLo SaLo ClLo SaLo	Y	Strat B: Glass collected; Mortar & charcoal fill Strat C: Ceramic & glass collected
E-6	0.0-0.4 0.4-1.0 1.0-1.4 1.4-2.4	10YR3/3 10YR3/4 7.5YR3/4 7.5YR5/0	Dark Brown Dark Yellowish Brown Dark Brown Gray	ClLo MedSa ClLo Cl	Y	Strat B: Ceramic, glass, shell, brick collected; Mottled w/ 10YR5/6 Yellowish Brown
E-7	0.0-0.4 0.4-1.8 1.8-2.3	10YR3/2 7.5YR4/2 10YR5/1	Very dark Grayish Brown Brown Gray	SiLo SaLo Cl	Y	Strat B: Ceramic & glass collected

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/20/04**

Recorders: GS, KB, SM, EK, WVA, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
E-8	0.0-0.35 0.35-1.5 1.5-2.0	10YR3/2 7.5YR4/6 7.5YR5/1	Very dark Grayish Brown Strong Brown Gray	SiLo Sa Cl	Y	Strat B: Glass & shell collected Strat C: Mottled clay
E-9	0.0-0.4 0.4-0.7 0.7-1.9	10YR3/2 10YR3/3 10YR5/1	Very dark Grayish Brown Dark Brown Gray	SiLo SaLo Cl	Y	Ceramic & glass collected Strat C: Mottled w/ 2.5YR6/6 Olive Yellow
E-10	0.0-0.4 0.4-1.5 1.5-2.2 2.2-2.8	10YR3/2 10YR4/3 5YR4/3 10YR5/1	Very dark Grayish Brown Dark Brown Reddish Brown Gray	SiLo SaLo Cl	Y	Strat A: Glass collected Strat B: Ceramic, glass, brick collected; Brick & mortar discarded; Mottled soil
E-11	0.0-0.5 0.5-1.6 1.6-2.3 2.3-2.8	10YR4/2 7.5YR4/3 7.5YR3/4 10YR5/1	Dark Grayish Brown Brown Dark Brown Gray	Lo ClLo MedSa MedSa	Y	Strat A: Glass , plastic discarded Strat B: Glass, brick, shell collected; Fill layer 1.1'-1.2' Strat D: Mottled w/10YR4/6 Dark Yellowish Brown
E-12	0.0-0.4 0.4-1.9 1.9-2.4	10YR3/2 10YR4/3 10YR5/1	Very dark Grayish Brown Dark Brown Gray	SiLo SaLo Cl	Y	Strat B: Ceramic, glass, plastic, metal collected; Coal, cinder discarded
E-13	0.0-0.2 0.2-0.6 0.6-1.7 1.7-2.0	10YR3/2 10YR3/3 7.5YR3/4 10YR5/1	Very dark Grayish Brown Dark Brown Dark Brown Gray	SiLo ClLo SaLo Cl	Y	Strat B/C: Ceramic & glass collected
E-14	0.0-0.4 0.4-0.9 0.9-1.9 1.9-2.5	10YR3/2 10YR3/3 10YR4/3 10YR5/1	Very dark Grayish Brown Dark Brown Dark Brown Gray	SiLo ClLo ClLo Cl	Y	Strat B: Glass collected; Cinder discarded; Mottled w/ 10YR4/6 Dark Yellowish Brown ClLo

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/20/04**

Recorders: GS, KB, SM, EK, WVA, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
E-15	0.0-0.3 0.3-0.8 0.8-2.2 2.2-2.4	10YR3/2 10YR3/3 10YR4/3 2.5YR6/1	Very dark Grayish Brown Dark Brown Brown Gray	SiLo SaLo SaLo Cl	N	
E-16	0.0-0.5 0.5-1.6 1.6-2.0 2.0-2.5	10YR3/2 10YR4/3 7.5YR3/4 10YR5/1	Very dark Grayish Brown Dark Brown Dark Brown Gray	SiLo ClLo ClLo Cl	Y	Strat B: Ceramic, glass collected; Fill Strat C: Fill
E-17	0.0-0.2 0.2-1.0 1.0-2.5 2.5-2.9 2.9-3.3	10YR3/2 10YR3/3 7.5YR3/4 10YR5/1 10YR6/1	Very dark Grayish Brown Dark Brown Gray Gray	SiLo SaLo Cl Cl	Y	Strat B: Glass discarded Strat C: Mottled
E-18	0.0-0.3 0.3-1.0 1.0-3.0	10YR3/2 7.5YR4/2 5YR4/4	Very dark Grayish Brown Brown Reddish Brown	SiLo SaLo Cl	N	Strat C: Glass discarded
E-19	0.0-0.5 0.5-3.0	5YR3/4 7.5YR4/4	Dark Reddish Brown Dark Brown	SiLo SiLo	N	Strat B: Glass, brick discarded
E-20	0.0-0.3 0.3-1.5 1.5-3.0	10YR3/2 10YR4/3 5YR4/4	Very dark Grayish Brown Brown Reddish Brown	SiLo SaLo SaLo	Y	Strat B: Glass, shell, poss. lithic collected Strat C: Slag collected
E-21	0.0-0.5 0.5-1.9 1.9-2.1 2.1-2.3	10YR3/2 5YR3/2 5YR4/3 5YR7/1	Very dark Grayish Brown Dark Reddish Brown Reddish Brown Light Gray	SiLo SaLo Cl ClSa	Y	Strat B: Ceramic, glass collected; Concrete slab indeterminate edges bisects STP – extends 0.8'-0.9'

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/20/04**

Recorders: GS, KB, SM, EK, WVA, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
E-22	0.0-0.3 0.3-2.3 2.3-2.7	10YR3/2 7.5YR4/4 10YR4/3	Very dark Grayish Brown Dark Brown Dark Brown	SaLo Sa MedSa	Y	Strat B: Glass, charcoal discarded; Mottled w/10YR3/2 Very dark Grayish Brown SaLo Strat C: Ceramic, glass collected; Water level at 2.6'
E-23	0.0-0.4 0.4-1.3	7.5YR2.5/2 7.5YR3/4	Very dark Brown Dark Brown	SiLo Sa	N	Water level at 1.0'
E-24	0.0-0.3 0.3-1.2 1.2-2.0 2.0-3.0	10YR3/2 7.5YR4/3 5YR4/6 10YR2/1	Very dark Grayish Brown Brown Yellowish Red Black	SiLo SaLo Sa Fill	Y	Strat A: Ceramic, plastic collected Strat B: Ceramic, glass, metal, plastic, rubber collected; Rock in western half extending from 1.6'-2.6' Strat C: Mottled w. 10YR4/2 Dark Grayish Brown
E-25	0.0-0.7 0.7-1.7 1.7-2.9	7.5YR3/2 7.5YR4/3 10YR3/1	Very dark Grayish Brown Dark Brown Very dark Gray	SiLo Sa SaLo	Y	Strat B: Mottled w/ 7.5YR5/3 Brown; Rounded & angular cobbles Strat C: Ceramic, glass collected; Glass discarded; Water at base
E-26	0.0-0.8 0.8-1.4	7.5YR2.5/2 5YR4/4	Very dark Brown Reddish Brown	SaLo SaLo	Y	Strat A: Ceramics collected Strat B: Concrete impasse extending from 1.2' - base
E-27	0.0-0.6 0.6-1.9 1.9-3.0	7.5YR3/2 7.5YR4/4 10YR3/1	Very dark Grayish Brown Dark Brown Very dark Gray	SiLo SiCl SiLo	N	Strat C: Water seepage
E-28	0.0-1.0 1.0-2.1 2.1-2.9	10YR3/2 7.5YR4/3 7.5YR2.5/1	Very dark Grayish Brown Brown Black	SiLo SaCl SiLo	N	Fill
E-29	0.0-1.0 1.0-1.7 1.7-3.0	10YR3/2 7.5YR4/3 7.5YR2.5/1	Very dark Grayish Brown Brown Black	SiLo SaClLo SiLo	N	Fill

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/20/04**

Recorders: GS, KB, SM, EK, WVA, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
E-30	0.0-0.5 0.5-1.4	10YR4/2 7.5YR4/3	Dark Grayish Brown Brown	FiSaLo FiSaLo	N	Strat B: Mottled w/ 7.5YR2.5/1 Black & 10YR4/2 Dark Grayish Brown; Water level at 1.1'
E-31	0.0-0.9 0.9-2.2	7.5YR4/3 10YR4/2	Reddish Brown Dark Grayish Brown	SiLo MedSa	N	Strat A: Mottled w/ 10YR4/3 Brown SiLo Water level at 1.8'
E-32	0.0-2.2 2.2-2.6	5YR4/4 7.5YR3/3 10YR2/1 10YR5/1	Reddish Brown Dark Brown Black Dark Yellowish Brown	SaLo SiSa Lo Si	N	Strat A: Mixture of soils w/ burned wood, fill, & angular rocks Strat B: Mottled w/ 10YR3/6 Dark Yellowish Brown
E-33	0.0-1.0 1.0-1.7	7.5YR3/2 5YR4/4	Dark Brown Reddish Brown	SiLo ClSi	N	Strat B: Large rounded cobbles; large rock impasse Water level at 1.4'
E-34	0.0-2.3	7.5YR4/3 w/ 7.5YR4/4 w/ 10YR5/8 w/ 7.5YR3/2	Dark Brown Dark Brown Yellowish Brown Dark Brown	MedSa SiLo Sa SiLo	N	A mixture of soils; Fill w/ sub angular rocks; Water at base; Rock impasse
E-35	0.0-0.5 0.5-1.1	10YR4/2 5YR4/4	Dark Grayish Brown Reddish Brown	SaLo SiLo	N	Strat A: Glass, brick, charcoal discarded Cement impasse at 0.9'
E-36	0.0-0.4 0.4-0.9	10YR3/3 7.5YR4/6	Dark Brown Strong Brown	SaLo SiLo	N	Strat B: Glass, metal discarded Cement impasse at base
E-37	0.0-0.4 0.4-2.1 2.1-2.8	10YR3/3 5YR4/4 10YR4/2	Dark Brown Reddish Brown Dark Grayish Brown	SaLo SaLo SaLo	Y	Ceramic, glass, poss. lithics collected Strat B: Charcoal, brick discarded; Mixed w/ gray and light brown clay; Cement slabs at 0.5'-1.2' & at 2.5'-base
E-38	0.0-0.4 0.4-1.2	10YR3/2 10YR3/6	Very dark Grayish Brown Dark Yellowish Brown	SiLo SaLo	N	Strat B: Glass, brick, metal discarded; Asphalt lining Western side from 0.5'-1.2'; Concrete impasse

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/20/04**

Recorders: GS, KB, SM, EK, WVA, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
E-39	0.0-0.3 0.3-2.0	10YR3/3 5YR4/4	Dark Brown Reddish Brown	SiLo SaLo	Y	Strat B: Glass, poss. lithic collected; Glass, charcoal discarded; Asphalt & concrete at 1.5' to base
E-40	0.0-0.4 0.4-1.2	10YR3/3 5YR4/4	Dark Brown Reddish Brown	SiLo SaLo	N	Concrete impasse
E-41	0.0-0.4 0.4-1.9 1.9-2.4 2.4-4.0	10YR3/3 5YR4/4 10YR3/6 -	Dark Brown Reddish Brown Dark Yellowish Brown -	SiLo SaLo - -	N	Strat C: Hole in western half of strat extending to base w/ a "strange smell"

Project Name: Goethal's Bridge **XE: 3350** **Date: 10/8/04**

Recorders: GS, KB, RJ, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
F-1	0.0-0.3 0.3-1.1 1.1-2.9	10YR2/1 10YR3/2 10YR4/4	Black Very dark Grayish Brown Dark Yellowish Brown	Lo SiLoSa FiSa	N	Water level at 2.6'
F-2	0.0-0.3 0.3-1.0 1.0-1.9	10YR2/1 10YR3/2 10YR4/4	Black Very dark Grayish Brown Dark Yellowish Brown	SiLo LoSa FiSa	N	Water level at 1.75'
F-3	0.0-0.4 0.4-1.2 1.2-1.8	10YR2/1 10YR3/2 10YR4/4	Black Very dark Grayish Brown Dark Yellowish Brown	SiLo LoSa FiSa	N	Water level at 1.4'
F-4	0.0-0.2 0.2-1.1	10YR3/1 10YR4/4	Very dark Gray Dark Yellowish Brown	SiLo SaLo	N	Strat B: Mottled w/ 10YR5/4 Yellowish Brown; Water level at base
F-5	0.0-0.2 0.2-1.2 1.2-1.8	10YR3/1 10YR4/4 2.5Y5/2	Very dark Gray Dark Yellowish Brown Grayish Brown	SiLo SaLo MedSaLo	N	Strat B: Mottled w/ 10YR5/4 Yellwosih Brown & 7.5YR 4/6 Strong Brown Strat C: Mottled w/ 7.5YR4/6 Strong Brown FiSa Water level at base
F-6	0.0-0.3 0.3-1.4 1.4-2.2	10YR3/1 10YR4/6 2.5Y5/2	Very dark Gray Dark Yellowish Brown Grayish Brown	SiLo MedSa MedSaLo	N	Strat B: Mottled w/ 10YR2/1 Black SiLo Strat C: Mottled w/ 7.5YR5/6 Strong Brown FiSa Water level at base
F-7	-	-	-	-	-	Unexcavated Standing water
F-8	0.0-0.4 0.4-1.2 1.2-2.1	5YR4/1 10YR4/4 7.5YR2.5/1	Dark Gray Dark Yellowish Brown Black	SaLo LoSa LoSa	Y	Discarded plastic, metal; Modern trash throughout test Strat B: Poss. lithics, glass collected Root impasse at base
F-9	0.0-0.25 0.25-1.8	10YR2/1 2.5YR4/1	Black Dark Gray	SiLo SaLo	N	Water level at 1.6'
F-10	-	-	-	-	-	Unexcavated- Standing Water

Project Name: Goethal's Bridge **XE: 3350** **Date: 10/8/04**

Recorders: GS, KB, RJ, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
F-11	0.0-0.5 0.5-1.0 1.0-1.5	10YR2/2 10YR5/8 2.5Y4/3	Very dark Brown Yellowish Brown Olive Brown	SiLo SaLo MedSa	N	Strat B: Mottled w/ 10YR6/3 Pale Brown FiSa + Fire clay Water at base
F-12	0.0-0.4 0.4-0.6	10YR2/2 10YR5/8	Very dark Brown Yellowish Brown	SiLo SaLo	N	Strat B: Mottled w/ 10YR6/3 Pale Brown FiSa + Fire clay Water at base
F-13	-	-	-	-	-	Unexcavated – Standing water
F-14	0.0-0.1 0.1-0.5	10YR3/1 10YR3/3	Very dark Gray Dark Brown	SaLo SaLo	N	Strat B: Mottled w/ 7.5YR4/6 Strong Brown Water at 0.4'
F-15	0.0-0.3 0.3-0.9	10YR2/1 10YR4/4	Black Dark Yellowish Brown	SaLo Sa	N	Strat B: Poss. lithics collected Water at 0.7'
F-16	0.0-0.5 0.5-1.8	10YR2/2 10YR5/6	Very dark Brown Yellowish Brown	SiLo SiLo	N	Strat A: Plastic, Styrofoam discarded Strat B: Mottled w/ 10YR6/3 Pale Brown SaLo & 10YR2/1 Black SiLo Water at base
F-17	0.0-2.4	10YR3/3	Dark Brown	SiLo	N	Mottled w/ 10YR6/3 Pale Brown FiSa; Fill; 2 glass coke bottled at 1.8'; Plastic impasse
F-18	0.0-1.0	10YR3/3	Dark Brown	SiLo	N	Plastic layer at surface; Thick roots throughout; Water level at 0.8'
F-19	-	-	-	-	-	Unexcavated- Standing water
F-20	-	-	-	-	-	Unexcavated- Standing water
F-21	0.0-1.1	10YR3/2	Very dark Grayish Brown	SiClLo	N	Soil very wet; Large rock impasse- poss. cut stone at base
F-22	0.0-0.3 0.3-1.6	10YR2/2 10YR3/2	Very dark Brown Very dark Grayish Brown	Lo SaLo	Y	Strat B: Glass collected; Water level at 1.2'; Cut stone impasse at base
F-23	0.0-0.6 0.6-1.5 1.5-3.9	10YR2/2 7.5YR6/8 10YR6/4	Very dark Brown Reddish Yellow Light Yellowish Brown	Lo SaLo SaLo	N	Strat A: Glass discarded Water level at 3.4'

Project Name: Goethal's Bridge **XE: 3350** **Date: 10/8/04**

Recorders: GS, KB, RJ, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
F-24	0.0-0.6 0.6-0.9 0.9-1.0 1.0-1.9 1.9-3.4	10YR3/3 7.5YR5/6 7.5YR4/6 10YR5/4 10YR6/6	Dark Brown Strong Brown Strong Brown Yellowish Brown Brownish Yellow	Lo Sa LoSa Sa Sa	N	Strat A: Modern bottle glass discarded Rock impasse at base
F-25	0.0-0.7 0.7-2.1 2.1-2.9	10YR3/2 7.5YR5/6 7.5YR6/6	Very dark Brown Strong Brown Reddish Yellow	Lo SaLo Sa	Y	Strat B: Poss. flakes collected; Mottled w/ 7.5YR3/2Very dark Brown & 7.5YR6/1 Gray
F-26	0.0-0.8 0.8-1.8 1.8-2.5 2.5-3.5	10YR3/2 10YR6/6 2.5Y6/6 7.5YR4/4	Very dark Grayish Brown Brownish Yellow Olive Yellow Brown	SiLo SaLo MedSa MedSa	Y	Strat A: Black top, nail discarded Strat B: Mottled w/ 10YR5/3 Brown; chunks of fire clay Strat C: Mottled w/ 10YR5/4 Yellowish Brown Strat D: Poss. Jasper flake collected
F-27	0.0-0.8 0.8-1.6 1.6-2.6	10YR3/2 10YR6/6 2.5Y6/6	Very dark Grayish Brown Brownish Yellow Olive Yellow	SiLo SaLo MedSa	Y	Strat A: Button, ceramic collected; Black top, nail discarded Strat B: Glass collected; mottled w/ 10YR5/3 Brown Strat C: Clamshell collected; mottled w/ 10YR5/4 Yellowish Brown; Rock impasse at base
F-28	0.0-0.7 0.7-2.0 2.0-3.2	10YR3/2 10YR6/6 2.5Y6/6	Very dark Grayish Brown Brownish Yellow Olive Yellow	SiLo SaLo SaCl	Y	Strat B: Glass collected; mottled w/ 10YR5/3 Brown Strat C: Mottled w/ 10YR5/4 Yellowish Brown & 5YR4/3 Reddish Brown Mudstone impasse at base
F-29	0.0-0.9 0.9-2.4	10YR3/2 10YR3/3	Very dark Grayish Brown Dark Brown	SiLo SaLo	Y	Strat A: Glass collected Strat B: Mottled w/ 10YR5/4 Yellowish Brown; Fill; Stoneware sewer pipe at 2.0'; Blacktop impasse at base
F-30	0.0-0.9 0.9-1.8 1.8-2.5 2.5-3.1	10YR3/2 5YR4/4 7.5YR4/4 10YR4/4	Very dark Gray Reddish Brown Brown Dark Yellowish Brown	SiLo ClLo SaLo MedSa	Y	Strat A: Ceramic, glass collected Strat B: Hard packed w/ 10% gravel Strat C: 20% gravel; Fire clay present

Project Name: Goethal's Bridge **XE: 3350** **Date: 10/8/04**

Recorders: GS, KB, RJ, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
F-31	0.0-1.2 1.2-1.7 1.7-2.6	10YR3/2 10YR4/6 7.5YR4/4	Very dark Gray Dark Yellowish Brown Brown	SiLo MedSa SaLo	Y	Strat A: Ceramic, glass collected Strat B: Glass collected Strat C: 20% gravel; fire clay present Rock impasse at base
F-32	0.0-0.9 0.9-1.6 1.6-2.6	10YR3/2 7.5YR4/4 5YR4/4	Very dark Grayish Brown Brown Reddish Brown	SiLo SaLo SaLo	N	Strat B: Mottled w/ 10YR6/6 Brownish Yellow MedSa; fire clay present; blacktop fragments Strat C: 10% gravel Water at base
F-33	0.0-1.0 1.0-1.6 1.6-2.0	10YR3/2 7.5YR4/4 5YR4/4	Very dark Grayish Brown Brown Reddish Brown	SiLo SaLo SaLo	Y	Strat A: Glass collected Strat B: Ceramic collected; mottled w/ 10YR5/6 Yellowish Brown MedSa; fire clay present; Strat C: Large pieces of mudstone- Very compact Water at base
F-34	0.0-0.8 0.8-1.4 1.4-1.7 1.7-2.2 2.2-2.8	10YR3/2 7.5YR4/4 5YR4/6 10YR5/4 2.5Y6/6	Very dark Gray Brown Yellowish Red Yellowish Brown Olive Yellow	SiLo SaLo Cl MedSa FiSa	Y	Strat A: Glass collected Strat B: Nail collected; mottled w/ 10YR5/6 Yellowish Brown MedSa; 30% gravel Strat C: Charcoal discarded; mottled w/ 5YR5/1 Gray Cl Strat D: Fireclay present Strat E: 5% gravell; Blacktop at base
F-35	0.0-0.5 0.5-1.6 1.6-2.0 2.0-2.8	10YR3/2 10YR3/6 5YR4/6 5YR4/4	Very dark Gray Dark Yellowish Brown Yellowish Red Reddish Brown	SiLo SiClLo Cl MedSa	Y	Strat A: Ceramic, glass collected Strat B: Glass collected; hard-packed; 30% gravel Strat C: Mottled w/ 5YR5/1 Gray Cl
F-36	0.0-0.6 0.6-1.6 1.6-2.5 2.5-3.1	10YR3/2 7.5YR4/6 2.5Y6/4 10YR5/8	Very dark Grayish Brown Strong Brown Light Yellowish Brown Yellowish Brown	SiLo SaLo MedSa CoarSa	Y	Strat A: Glass collected Strat B: Brick discarded; 20% gravel Strat C: Ceramic collected Strat D: Fire clay present; 5YR4/6 Reddish Brown Cl present
F-37	0.0-0.8 0.8-2.0	10YR3/2 7.5YR4/6	Very dark Grayish Brown Strong Brown	SiLo SaLo	N	Strat A: Modern bottle glass discarded; 10% gravel Strat B: Large cobbles throughout; 20% gravel Rock impasse at base

Project Name: Goethal's Bridge **XE: 3350** **Date: 10/8/04**

Recorders: GS, KB, RJ, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (In feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
F-38	0.0-0.9 0.9-1.7 1.7-2.5 2.5-3.1	10YR3/2 7.5YR4/6 10YR5/6 2.5Y5/4	Very dark Grayish Brown Strong Brown Yellowish Brown Light Olive Brown	SiLo SaLo SaLo FiSa	Y	Strat A: Ceramic, glass collected; 10% gravel Strat B: Glass collected; 20% gravel Strat C: Mottled w/ 10YR6/3 Pale Brown; 20% gravel Strat D: 10% gravel
F-39	0.0-0.9 0.9-1.5 1.5-2.2 2.2-2.8	10YR3/2 7.5YR4/6 10YR5/6 2.5Y5/4	Very dark Grayish Brown Strong Brown Yellowish Brown Light Olive Brown	SiLo SaLo SaLo FiSa	Y	Strat B: 20% gravel Strat C: Brick, glass collected; Mottled w/ 10YR6/3 Pale Brown & 10YR6/1 Gray; 20% gravel Strat D: 10% gravel; moist soil Rock impasse at base
F-40	0.0-1.0 1.0-2.7 2.7-3.2	10YR3/2 10YR4/6 2.5Y6/3	Very dark Grayish Brown Dark Yellowish Brown Light Yellowish Brown	SiLo SaLo FiSa	Y	Strat A: Ceramic, nail, glass collected Strat B: Mottled w/ 10YR6/4 Light Yellowish Brown; 15% gravel
F-41	0.0-0.5 0.5-1.0 1.0-1.3 1.3-1.9	10YR3/2 7.5YR4/2 10YR6/8 7.5YR5/8	Very dark Grayish Brown Dark Brown Brownish Yellow Brown	SiClLo SiLo FiSa CoarSa	N	Strat C: Mottled w/ 10YR6/1 Gray – Fire clay Concrete impasse at base
F-42	0.0-0.7 0.7-1.6 1.6-2.3 2.3-3.1	10YR3/2 10YR5/8 10YR2/1 7.5YR4/4	Very dark Grayish Brown Yellowish Brown Black Dark Brown	SiClLo SaLo SiCl SiCl	Y	Strat A: Glass collected Strat B: 20% gravel
F-43	0.0-1.3 1.3-1.8 1.8-2.9	10YR3/2 10YR5/8 2.5Y5/4	Very dark Grayish Brown Yellowish Brown Olive Brown	SiClLo SaLo MedSa	Y	Strat A: Ceramic, glass collected Strat B: Glass collected; 30% gravel
F-44	0.0-0.9 0.9-2.3 2.3-3.1	10YR3/2 10YR5/8 10YR3/1	Very dark Gray Yellowish Brown Very dark Gray	SiLo SaLo SiCl	Y	Strat A: Glass collected Strat B: Jasper pebble collected; 40% gravel

Project Name: Goethal's Bridge **XE: 3350** **Date: 10/8/04**

Recorders: GS, KB, RJ, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
F-45	0.0-0.9 0.9-1.4 1.4-2.2 2.2-2.6 2.6-3.2	10YR3/2 10YR5/8 2.5Y5/4 10YR2/1 10YR3/4	Very dark Grayish Brown Yellowish Brown Light Olive Brown Black Dark Yellowish Brown	SiLo MedSa MedSa - ClLo	Y	Strat A: Ceramic collected Strat D: Decaying organic material-poss. buried A Water at base
F-46	0.0-0.6 0.6-1.2	10YR3/2 5YR4/4	Very dark Grayish Brown Reddish Brown	SiLo SaLo	Y	Strat B: Ceramic, glass collected; Mottled w/ 10YR6/6 Brownish Yellow; Asphalt impasse at base
F-47	0.0-0.8 0.8-1.3 1.3-2.4	10YR3/2 10YR6/6 10YR5/8	Very dark Grayish Brown Brownish Yellow Yellowish Brown	SiLo SaLo MedSa	N	Strat A: Glass discarded Root impasse at base
F-48	0.0-1.2 1.2-2.3	10YR3/2 10YR5/6	Very dark Grayish Brown Yellowish Brown	SiLo SaLo	Y	Strat A: Glass collected; Mottled w/ 5YR3/4 Dark Reddish Brown ClLo; Large asphalt chunk in wall Strat B: Mottled w/ 5YR6/1 Gray ClLo; Fill w/ rounded & angular rock; Rock impasse at base
F-49	0.0-1.0 1.0-3.5	10YR3/2 10YR5/6	Very dark Grayish Brown Yellowish Brown	SiLo SaLo	Y	Strat A: Brick fragments lodged in wall at 0.8'; 10% gravel Strat B: Glass collected; Mottled w/ 10YR6/1 Gray & 10YR6/3 Pale Brown; 20% gravel; Water at Base

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/05/2004**

Recorders: GS, SM, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
G-1	0.0-0.5 0.5-1.0 1.0-2.5	7.5YR3/2 7.5YR3/3 7.5YR4/4	Dark Brown Dark Brown Brown	SiLo SiLo Sa	Y	Strat A: 30% gravel Strat B: Poss. lithics, glass, coal, cloth, metal collected Strat C: Root impasse
G-2	0.0-0.4 0.4-0.8 0.8-2.8	7.5YR3/2 5YR3/4 10YR4/4	Dark Brown Dark Reddish Brown Dark Yellowish Brown	SiLo Cl LoSa	Y	Strat C: Glass, nails, metal collected; Asphalt impasse
G-3	0.0-0.3 0.3-1.8	7.5YR3/2 5YR3/4	Dark Brown Dark Reddish Brown	SiLo Cl	Y	Strat B: Glass, brick collected; 30% gravel; Rock impasse
G-4	0.0-0.3 0.3-0.7 0.7-1.0 1.0-1.9	10YR2/1 - 5YR4/4 10YR2/1	Black - Reddish Brown Black	SiLo - SaLo Cl	N	Strat B: Plaster and mortar layer Water at 1.75'; Plastic, plaster, shell discarded
G-5	0.0-0.35 0.35-0.7 0.7-1.25 1.25-3.2	10YR3/2 10YR4/3 10YR5/3 10YR5/6	Very dark Grayish Brown Brown Brown Yellowish Brown	SiLo SaLo Sa SaCl	Y	Strat A: Plastic discarded Strat C: Ceramic, glass, metal collected Strat D: mottled w/ 10YR3/1 Very dark Gray; Water at 3.0'
G-6	0.0-0.5 0.5-1.5 1.5-2.5 2.5-2.6	10YR2/2 10YR5/6 7.5YR4/3 10YR2/1	Very dark Brown Yellowish Brown Brown Black	SaLo Sa SaLo LoSaq	Y	Strat B/C: Poss. lithics collected Wood impasse
G-7	0.0-0.3 0.3-1.7	10YR2/2 10YR3/3	Very dark Brown Dark Brown	SiLo ClLo	N	Strat B: Brick & glass discarded; Water at base; Brick lodged in wall at 0.8'; mottled w/ 7.5YR4/6 Strong Brown & 5YR4/6 Yellowish Red
G-8	0.0-0.2 0.2-1.9 1.9-2.5	10YR2/2 10YR6/3 10YR3/3	Very dark Brown Pale Brown Dark Brown	SiLo FiSa SaLo	Y	Strat A: Glass discarded Strat B: Ceramic, glass collected; 20% gravel Rock impasse

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/05/2004**

Recorders: GS, SM, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
G-9	0.0-0.2 0.2-2.0 2.0-3.4	10YR2/2 10YR3/3 7.5YR4/3	Very dark Brown Dark Brown Brown	SiLo SiLo MedSa	Y	Strat B: Ceramics, glass, bottle collected; Large chunks of slag and ash present, 40% gravel
G-10	0.0-0.21 0.21-1.4 1.4-3.3	10YR2/2 10YR4/4 7.5YR4/3	Very dark Brown Dark Yellowish Brown Brown	SiLo FiSa MedSa	Y	Strat A: Glass collected
G-11	0.0-0.3 0.3-1.9 1.9-3.8	10YR2/2 10YR4/4 7.5YR4/3	Very dark Brown Dark Yellowish Brown Brown	SiLo FiSa MedSa	Y	Strat B: Glass collected Strat C: Lithic collected
G-11a	0.0-0.6 0.6-1.4 1.4-4.2	10YR2/2 10YR4/4 7.5YR4/3	Very dark Brown Dark Yellowish Brown Brown	SiLo FiSa MedSa	Y	Strat B: Ceramic and brick collected
G-11b	0.0-0.7 0.7-2.1 2.1-4.3	10YR2/2 10YR4/4 7.5YR4/3	Very dark Brown Dark Yellowish Brown Brown	SiLo FiSa MedSa	Y	Strat B: Ceramic collected
G-11c	0.0-0.5 0.5-1.9 1.9-4.1	10YR2/2 10YR4/4 7.5YR4/3	Very dark Brown Dark Yellowish Brown Brown	SiLo FiSa MedSa	Y	Strat A: Plastic discarded Strat B: Oyster shell collected Water at base
G-11d	0.0-0.6 0.6-1.5 1.5-4.6	10YR2/2 10YR4/4 7.5YR4/3	Very dark Brown Dark Yellowish Brown Brown	SiLo FiSa MedSa	Y	Strat B: Metal collected Water at base
G-12	0.0-0.3 0.3-1.9 1.9-3.8	10YR2/2 10YR4/4 7.5YR4/3	Very dark Brown Dark Yellowish Brown Brown	SiLo FiSa MedSa	Y	Strat B: Ceramic, glass collected

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/05/2004**

Recorders: GS, SM, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
G-13	0.0-0.3 0.3-1.8 1.8-3.7	10YR2/2 10YR4/4 7.5YR4/3	Very dark Brown Dark Yellowish Brown Brown	SiLo FiSa MedSa	Y	Strat C: Poss. FCR collected
G-14	0.0-0.3 0.3-1.5 1.5-2.9	10YR2/1 10YR3/2 10YR4/6	Black Very dark Grayish Brown Strong Brown	Lo SaLo LoSa	Y	Strat B: Glass. poss. lithic collected Water at 2.5'
G-15	0.0-0.3 0.3-1.4 1.4-3.1	10YR2/2 10YR3/2 7.5YR5/6	Very dark Brown Very dark Grayish Brown Strong Brown	SiLo Salo SaLo	Y	Strat B: Ceramics, glass, nail collected Water at base
G-16	0.0-0.31 0.31-1.3 1.3-3.3	10YR2/2 10YR3/2 7.5YR5/6	Very dark Brown Very dark Grayish Brown Strong Brown	SiLo SaLo MedSaLo	Y	Strat B: Ceramic collected Water at base
G-17	0.0-0.3 0.3-1.0 1.0-3.8	10YR2/1 7.5YR4/3 7.5YR4/4	Black Dark Brown Dark Brown	Lo FiSaLo MedSa	Y	Strat B/C: Ceramic, glass collected
G-18	0.0-0.3 0.3-1.5 1.5-3.7	10YR2/2 10YR4/4 7.5YR5/6	Very dark Brown Dark Yellowish Brown Strong Brown	SiLo SaLo MedSa	Y	Strat B: Ceramic collected Water at base
G-19	0.0-0.3 0.3-1.4 1.4-3.2	10YR2/2 10YR3/3 10YR4/4	Very dark Brown Dark Brown Dark Yellowish Brown	SiLo FiSa MedSa	Y	Strat B: Glass, nail collected Water at 2.9'
G-20	0.0-0.3 0.3-1.3 1.3-3.2	10YR2/2 10YR4/4 7.5YR5/6	Very dark Brown Dark Yellowish Brown Strong Brown	SiLo SaLo MedSa	Y	Strat B: Ceramic collected Water at base

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/11/2004**

Recorders: GS, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
H-1	0.0-0.6 0.6-0.9 0.9-2.1 2.1-3.3	10YR3/3 10YR6/6 7.5YR4/6 5YR4/4	Dark Brown Brownish Yellow Brown Reddish Brown	SiLo CoarseSa FiSaLo MedSa	Y	Strat B: Glass collected Water at base
H-2	0.0-0.6 0.6-2.5 2.5-3.2	10YR3/3 7.5YR4/4 10YR4/4	Dark Brown Brown Dark Yellowish Brown	SiLo SaLo FiSaLo	N	Strat A: Broken concrete chunks Strat B: mottled w/10YR2/1 Black
H-3	0.0-0.6 0.6-1.7 1.7-2.2	10YR3/3 7.5YR4/6 10YR5/4	Dark Brown Strong Brown Dark Yellowish Brown	SiLo SaLo FiSaLo	Y	Strat A: Glass collected; large slag content discarded Strat B: Glass collected Strat C: Large chunks of wood
H-4	0.0-0.9 0.9-1.7 1.7-3.5	10YR2/2 7.5YR4/4 10YR3/1	Very dark Brown Brown Very dark Gray	SaLo Sa SaLo	Y	Strat B: Ceramic, glass, poss. lithics collected
H-5	0.0-0.4 0.4-0.7 0.7-2.4 2.4-3.8	10YR2/2 10YR5/6 10YR3/2 10YR4/4	Very dark Brown Yellowish Brown Very dark Grayish Brown Dark Yellowish Brown	SaLo Sa SaLo SaCl	N	Strat B: Coal, glass discarded Water at 3.5'
H-6	0.0-0.9 0.9-1.6 1.6-2.1 2.1-3.1	10YR2/2 10YR4/3 2.5Y6/3 10YR3/4	Very dark Brown Brown Light Yellowish Brown Dark Yellowish Brown	SiLo SaLo FiSa MedSa	Y	Strat B: Brick, ceramic, glass, nails collected; Mottled w/ 10YR6/4 Light Yellowish Brown
H-7	0.0-0.4 0.4-1.4	5YR2.5/1 -	Black -	SaLo -	N	Strat B Rock impasse
H-8	0.0-0.3 0.3-1.3 1.3-3.0	5YR2.5/1 10YR3/3 5YR3/2	Black Dark Brown Dark Reddish Brown	SaLo MedSa MedSa	Y	Strat A: Glass, plastic discarded Strat B: Poss. lithic collected Water at base

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/11/2004**

Recorders: GS, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
H-9	0.0-0.4 0.4-1.4 1.4-2.1	10YR3/2 10YR4/4 10YR3/2	Very dark Grayish Brown Dark Yellowish Brown Very dark Grayish Brown	SaLo MedSa SaLo	Y	Strat A: Coal, glass discarded Strat B: Ceramic, glass collected Strat C: Ceramic collected; glass, slag discarded
H-10	0.0-0.3 0.3-1.2 1.2-2.4	10YR2/1 10YR3/3 10YR3/1	Black Dark Brown Very dark Gray	Lo SaCl SaLo	Y	Strat C: Ceramic, glass collected; Coal, cinder discarded; 30% cobbles; Water at 2.3'
H-11	0.0-0.2 0.2-1.2 1.2-2.6 2.6-4.1	10YR3/1 10YR3/3 10YR4/3 10YR2/1	Very dark Gray Dark Brown Brown Black	Lo SaLo SaLo SaLo	Y	Strat B/C: Ceramic, glass collected; Brick, coal, cinder, mortar discarded
H-12	0.0-0.4 0.4-0.8 0.8-1.8	10YR2/2 10YR3/1 10YR2/2	Very dark Brown Very dark Gray Very dark Brown	SiLo ClLo Cl	N	Strat C: Mottled/mixed w/ 10YR2/1 Black
H-13	0.0-0.4 0.4-1.4	10YR3/2 -	Very dark Grayish Brown -	SiLo -	N	
H-14	0.0-0.45 0.45-1.6	10YR3/2 -	Very dark Grayish Brown -	SiLo -	N	
H-15	0.0-0.4 0.4-1.6	10YR3/2 -	Very dark Grayish Brown -	SiLo -	N	
H-16	0.0-0.3 0.3-1.2 1.2-3.1	10YR3/4 10YR4/1 10YR2/1	Dark Yellowish Brown Dark Gray Black	Lo SiCl Cl	N	Strat C: water at 2.9'
H-17	0.0-0.2 0.2-1.7	10YR3/1 2.5YR2.5/1	Very dark Gray Black	SiLo SiCl	N	

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/11/2004**

Recorders: GS, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
H-18	0.0-0.3 0.3-1.4 1.4-2.3	10YR3/1 2.5YR2.5/1 10YR2/1	Very dark Gray Black Black	SiLo SiCl Cl	N	
H-19	0.0-0.45 0.45-1.2	10YR3/2 -	Very dark Grayish Brown -	SiLo -	N	
H-20	0.0-0.4 0.4-1.2	10YR3/2 -	Very dark Grayish Brown -	SiLo -	N	
H-21	0.0-0.4 0.4-1.2	10YR3/2 -	Very dark Grayish Brown -	SiLo -	N	Strat B: Water at 1.3'
H-22	0.0-0.2 0.2-1.4	10YR3/1 2.5YR2.5/1	Very dark Gray Black	SiLo SiCl	N	
H-23	0.0-0.3 0.3-1.2 1.2-2.4	10YR3/1 2.5YR2.5/1 10YR2/1	Very dark Gray Black Black	SiLo SiCl Cl	N	
H-24	0.0-0.1 0.1-1.5	10YR3/1 2.5YR2.5/1	Very dark Gray Black	SiLo SiCl	N	
H-25	0.0-0.35 0.35-1.15	10YR3/2 -	Very dark Grayish Brown -	SiLo -	N	
H-26	0-0.2 0.2-1.6	10YR3/2 -	Very dark Grayish Brown -	SiLo -	N	
H-27	0.0-0.3 0.3-1.44	10YR3/2 5YR2.5/1	Very dark Grayish Brown Black	SiLo SiLo	N	

Project Name: Goethal's Bridge **XE: 3355** **Date: 10/11/2004**

Recorders: GS, SM, WVA, EK, JT, CP **Screened: Yes** **Mesh Size: ¼"**

Shovel Test Number	Depth Below Surface (in feet)	Munsell Code	Munsell Color	Soil Description	Cultural Material Retained	Comments
H-28	0.0-0.25 0.25-1.2	10YR3/2 5YR2.5/1	Very dark Grayish Brown Black	SiLo SiLo	N	Strat B: Plastic discarded
H-29	0.0-0.3 0.3-1.15	10YR3/2 5YR2.5/1	Very dark Grayish Brown Black	SiLo SiLo	N	
H-30	0.0-0.4 0.4-1.7	10YR3/1 2.5Y2.5/1	Very dark Gray Black	SiLo SiCl	N	Strat B: water at 1.2'
H-31	0.0-0.7	10YR3/2	Very dark Grayish Brown	SiLo	N	Water at 0.5'
H-32	0.0-1.3	2.5Y3/2	Very dark Grayish Brown	SiLo	N	Water at 0.6'
H-33	0.0-0.3 0.3-1.6	10YR3/2 10YR2/1	Very dark Grayish Brown Black	SiLo SiLo	N	Strat B: Water at 1.4'

APPENDIX CC
ARTIFACT INVENTORY

XE 3355 Goethals Bridge, Union Co, NJ & Richmond Co, NY Ph I — Artifact Inventory —

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-01	2	1		2	A	A11	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-01	2	1		2	A	A11	B	SAF 6	Wire Nail	1	-	1850	-	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-01	3	1		3	A	A24	B	SAB 1	Brick	1	34.6	-	-	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-01	5	1		5	A	A34	A	SAB 1	Brick	1	805.5	1890	1938	457	1	3	2	-	-	-	-	-	2.16	-	molded "[WASH]BURN"; probably cross mends with field 13-1
	3355-01	6	1		6	A	A34	B	SAG 13	Window Glass	1	3.8	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-01	7	1		12	A	A35	B/C	ZXP 1	Oyster/Clam	10	8.9	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-01	7	1		12	A	A35	B/C	GBU 4	*Unidentified Bottle/Fragment-Body*	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-01	7	1		12	A	A35	B/C	SAG 13	Window Glass	4	6.2	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-01	7	2		12	A	A35	B/C	SXA 5	Slag	1	5.6	-	-	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-01	7	3		12	A	A35	B/C	SAP 2	Salt-Glazed Slipped Pipe	1	-	1810	-	-	220	-	598	6	-	-	-	-	2.15	-	-
	3355-01	8	1		13	A	A36	A	SAB 1	Brick	1	485.4	1890	1938	457	1	3	2	-	-	-	-	-	2.16	-	molded "WASH]BURN]"; probably cross mends with field 5-1
	3355-01	9	1		14	A	A37	A	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-01	10	1		15	A	A38	C	LDB 12	Other Flake Type	1	0.4	-	-	-	1	-	-	-	-	-	1	-	9.91	-	border flake (Marks 1976:375)
	3355-01	11	1		7	A	A38a	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-01	11	2		7	A	A38a	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-01	11	1		7	A	A38a	B	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-01	11	2		7	A	*A38a*	*B*	*CRW 35*	*Whiteware - Underglaze Handpainted*	1	-	1820	-	-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-01	11	3		7	A	A38a	B	CRW 35	Whiteware - Underglaze Handpainted	1	-	1820	-	-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-01	11	1		7	A	A38a	B	SAF 6	Wire Nail	1	-	1850	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-01	11	2		7	A	A38a	B	SAF 74	Machine Cut Nail - Unknown Head	1	-	1790	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-01	11	3		7	A	A38a	B	SXH 10	Miscellaneous Wire	1	-	1831	-	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-01	11	4		7	A	A38a	B	SAB 20	Mortar	1	17.8	-	-	-	32	-	30	-	-	-	-	-	2.16	-	-
	3355-01	11	5		7	A	A38a	B	SAT 1	Tile	2	-	-	-	-	249	-	2	14	-	-	-	-	2.16	-	adhesive present
	3355-01	11	6		7	A	A38a	B	SAP 38	Drain Tile	1	-	-	-	-	1	-	2	-	-	-	-	-	2.15	-	-
	3355-01	11	7		7	A	A38a	B	SCC 1	Woven Cloth	1	-	-	-	-	1728	-	2	1	-	-	-	-	5.32	-	-
	3355-01	11	8		7	A	A38a	B	SAT 1	Tile	1	-	-	-	-	249	-	110	12	-	-	-	-	2.16	-	-
	3355-01	12	1		8	A	A38b	B	GBU 4	Unidentified Bottle/Fragment-Body	3	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-01	12	2		8	A	A38b	B	GOU 1	*Total Unidentified Glass/General*	1	-	-	-	-	-	-	-	31	-	-	-	-	1.10	-	-
	3355-01	12	1		8	A	A38b	B	SAG 3	Safety Glass With Wire	1	-	1891	-	-	1012	-	2	10	-	-	-	-	2.11	-	-
	3355-01	13	1		9	A	A38b	C	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-01	13	1		9	A	A38b	C	SAG 13	Window Glass	1	0.9	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-01	14	1		10	A	A38c	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-01	14	2		10	A	A38c	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-01	14	3		10	A	A38c	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-01	14	4		10	A	A38c	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-01	14	5		10	A	A38c	B	GOU 1	Total Unidentified Glass/General	1	-	-	-	-	-	-	-	31	-	-	-	-	1.10	-	-
	3355-01	14	1		10	A	A38c	B	CRW 0	Whiteware	2	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type	Stype	Translation	Cnt	Wght	Beg	End	Date	V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-01	14	2		10	A	A38c	B	CRI	53	Ironstone - Transfer Printed - Flowing Colors	1	-	1840	1910		-	-	109	10	-	-	-	50	-	1.1	99	-
	3355-01	14	3		10	A	A38c	B	CSL	73	Stoneware - Buff Salt Glazed w/ Misc. Brown Slip	1	-	-	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-01	14	1		10	A	A38c	B	SAG	12	Broad/Crown Glass	3	6.0	-	-		-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-01	14	2		10	A	A38c	B	SAG	13	Window Glass	2	2.8	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-01	14	3		10	A	A38c	B	SAP	38	Drain Tile	1	-	-	-		-	204	-	2	-	-	-	-	-	2.15	-	-
	3355-01	14	4		10	A	A38c	B	SAB	21	Plaster	2	1.3	-	-		-	35	-	2	14	-	-	-	-	2.16	-	-
	3355-01	14	5		10	A	A38c	B	SXN	5	Machine-made Glass Marble	1	-	1920	-		-	320	700	1	57	-	-	-	-	8.59	-	-
	3355-01	14	6		10	A	A38c	B	SGP	10	Gunflint		-	-	-		-	1228	-	2	-	-	-	-	-	4.27	-	-
	3355-01	15	1		11	A	A38d	B/C	GBU	4	Unidentified Bottle/Fragment-Body	11	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-01	15	2		11	A	A38d	B/C	GBU	2	Unidentified Bottle/Fragment-Base	1	-	1904	-		-	-	-	-	1	8	-	-	-	1.2	28	-
	3355-01	15	3		11	A	A38d	B/C	GBU	4	Unidentified Bottle/Fragment-Body	9	-	-	-		-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-01	15	1		11	A	A38d	B/C	CRW	0	Whiteware	3	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-01	15	1		11	A	A38d	B/C	SAG	12	Broad/Crown Glass	5	2.5	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-01	15	2		11	A	A38d	B/C	SAG	3	Safety Glass With Wire	1	-	1891	-		-	1012	-	2	10	-	-	-	-	2.11	-	-
	3355-01	15	3		11	A	A38d	B/C	SAT	1	Tile	1	-	-	-		-	212	-	110	4	-	-	-	-	2.16	-	-
	3355-01	15	4		11	A	A38d	B/C	SAP	5	Plumbing Fixture	1	-	-	-		-	212	-	110	22	-	-	-	-	2.15	-	-
	3355-01	15	5		11	A	A38d	B/C	SAP	5	Plumbing Fixture	1	-	-	-		-	212	-	110	13	-	-	-	-	2.15	-	-
	3355-01	15	6		11	A	A38d	B/C	SOS	1	Unidentified Metal	2	-	-	-		-	672	-	2	-	-	-	-	69	0.0	-	flat, rectangular plate with raised lettering "MANU.../ JA.../ M..."
	3355-02	1	1		16	B	B4	C	CSL	31	Stoneware - Gray Salt Glazed w/ Bristol & Albany Type Slips	1	-	1880	1950		-	-	-	620	-	31	-	-	-	1.1	99	-
	3355-02	2	1		17	B	B5	A	ZAZ	1	Unidentified Bone	1	0.7	-	-		-	-	-	999	2	-	-	-	-	11.99	-	-
	3355-02	2	1		17	B	B5	A	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-02	2	2		17	B	B5	A	GBU	4	Unidentified Bottle/Fragment-Body	3	-	-	-		-	-	-	-	9	-	-	-	-	1.2	28	one embossed "REG..."
	3355-02	2	3		17	B	B5	A	GTU	1	Unidentified Tableware/General	1	-	-	-		-	-	222	-	2	-	-	-	-	1.3	31	dark pink paint
	3355-02	2	4		17	B	B5	A	GOU	2	Total Unidentified Glass/Melted	2	-	-	-		-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-02	2	1		17	B	B5	A	CRW	50	Whiteware - Transfer Printed - Blue, General	1	-	1820	1915		-	-	102	15	-	-	-	50	99	1.1	99	-
	3355-02	2	2		17	B	B5	A	CRW	50	Whiteware - Transfer Printed - Blue, General	3	-	1820	1915		-	-	2	14	-	-	-	50	99	1.1	99	-
	3355-02	2	3		17	B	B5	A	CRW	55	Whiteware - Transfer Printed - Other Colors	1	-	1825	1915		-	-	120	98	-	7	-	30	-	1.1	1	-
	3355-02	2	4		17	B	B5	A	CRW	80	Whiteware - Decal - Overglaze	1	-	1880	-		-	-	102	14	-	-	-	97	-	1.1	99	-
	3355-02	2	5		17	B	B5	A	CPF	57	Soft Paste Porcelain - Decal - Overglaze	1	-	1830	-		-	-	102	14	-	-	-	97	-	1.1	99	-
	3355-02	2	1		17	B	B5	A	SOS	1	Unidentified Metal	1	20.0	-	-		-	624	-	2	-	-	-	-	-	0.0	-	-
	3355-02	3	1		145	B	B6	B/C	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-02	3	1		145	B	B6	B/C	SAG	9	Plate Glass	1	5.4	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-02	3	2		145	B	B6	B/C	SAG	13	Window Glass	3	1.4	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-02	4	1		18	B	B7	C	SAG	11	Broad Glass	1	1.3	-	1926		-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-02	5	1		19	B	B8	B	LDB	10	Block Shatter	1	-	-	-		-	501	-	-	-	-	-	-	-	9.91	-	-
	3355-02	6	1		20	B	B8a	A	SXA	1	Coal	1	1.0	-	-		-	520	-	2	-	-	-	-	-	8.63	-	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type	Stype	Translation	Cnt	Wght	Beg	End	Date	V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-02	7	1		21	B	B8b	B/C	CRW	0	Whiteware	1	-	1820	-		-	-	-	50	-	3	-	-	-	1.1	2	-
	3355-02	7	2		21	B	B8b	B/C	CER	1	Redware - Unglazed	2	-	-	-		-	-	-	10	-	-	-	-	-	1.1	99	-
	3355-02	7	1		21	B	B8b	B/C	SAG	12	Broad/Crown Glass	1	0.9	-	-		-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-02	7	2		21	B	B8b	B/C	SAG	13	Window Glass	1	0.3	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-02	7	3		21	B	B8b	B/C	SPR	3	Religious Pin	1	-	-	-		-	695	3	1	-	-	-	-	-	6.46	-	Pentecostal Cross & Crown Sunday School pin; Little System maker's mark
	3355-02	8	1		22	B	B8c	A	GOU	1	Total Unidentified Glass/General	1	-	-	-		-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-02	8	1		22	B	B8c	A	CRW	55	Whiteware - Transfer Printed - Other Colors	1	-	1825	1915		-	-	113	15	-	-	-	40	-	1.1	99	-
	3355-02	8	1		22	B	B8c	A	SAG	13	Window Glass	1	1.0	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-02	9	1		23	B	B8c	B	CRW	0	Whiteware	1	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-02	9	1		23	B	B8c	B	SAG	9	Plate Glass	1	4.5	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-02	10	1		24	B	B8c	C	LDB	2	Early Reduction Flake	1	16.4	-	-		-	1	-	-	-	-	-	5	-	9.91	-	-
	3355-02	11	1		25	B	B11	B	ZXP	1	Oyster/Clam	2	14.4	-	-		-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-02	11	2		25	B	B11	B	ZMZ	5	Large Mammal	1	40.6	-	-		-	-	-	120	5	-	-	-	-	11.99	-	-
	3355-02	11	1		25	B	B11	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-02	11	1		25	B	B11	B	CRI	0	Ironstone	6	-	1840	-		-	-	-	106	-	6	-	-	69	1.1	1	-
	3355-02	12	1		26	B	B12	B/C	CRW	0	Whiteware	1	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-02	12	1		26	B	B12	B/C	SAB	1	Brick	1	4.2	-	-		-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-02	12	2		26	B	B12	B/C	SAG	12	Broad/Crown Glass	1	0.8	-	-		-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-02	12	3		26	B	B12	B/C	SAG	13	Window Glass	1	0.4	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-02	12	4		26	B	B12	B/C	SUM	19	Decorative Glass	1	7.5	-	-		-	320	89	2	10	-	-	-	-	3.23	-	daisy-like motif
	3355-02	13	1		27	B	B13	A	CRW	0	Whiteware	1	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-02	13	2		27	B	B13	A	CER	2	Redware - Clear Glaze	1	-	-	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-02	13	3		27	B	B13	A	CRP	0	Pearlware	1	-	1775	1840		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-02	13	4		27	B	B13	A	CRC	0	Creamware	1	-	1762	1820		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-02	14	1		28	B	B15	B	CRW	35	Whiteware - Underglaze Handpainted	2	-	1820	-		-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-02	15	1		29	B	B17	B	ZXP	1	Oyster/Clam	1	0.5	-	-		-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-02	15	2		29	B	B17	B	ZMZ	5	Large Mammal	1	0.5	-	-		-	-	-	16	18	-	-	-	-	11.99	-	-
	3355-02	15	1		29	B	B17	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-02	15	2		29	B	B17	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	27	-	1	-	-	-	-	1.2	28	-
	3355-02	15	3		29	B	B17	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	12	-	-	-	-	1.2	28	-
	3355-02	15	1		29	B	B17	B	CPF	0	Soft Paste Porcelain	1	-	-	-		-	-	-	16	-	-	-	-	-	1.1	99	-
	3355-02	15	1		29	B	B17	B	SAF	6	Wire Nail	1	-	1850	-		-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-02	15	2		29	B	B17	B	SXH	10	Miscellaneous Wire	1	-	1831	-		-	610	-	2	-	-	-	-	-	8.90	-	-
	3355-02	15	3		29	B	B17	B	SXA	5	Slag	2	11.4	-	-		-	800	-	1	-	-	-	-	-	8.63	-	-
	3355-02	15	4		29	B	B17	B	SOS	1	Unidentified Metal	1	5.0	-	-		-	624	-	2	-	-	-	-	-	0.0	-	-
	3355-02	15	5		29	B	B17	B	SAP	15	Bathroom Fixture	1	-	-	-		-	212	-	110	13	-	-	-	-	2.15	-	-
	3355-02	16	1		30	B	B18	B	GBU	4	Unidentified Bottle/Fragment-Body	3	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-02	16	2		30	B	B18	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-02	16	1		30	B	B18	B	CRW	0	Whiteware	1	-	1820	-		-	-	-	11	-	-	-	-	-	1.1	99	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype		Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-02	17	1		31	B	B20	A/B	CPF	0	Soft Paste Porcelain	3	-	-	-	-	-	-	14	-	-	-	-	-	1.1	99	unglazed
	3355-02	17	1		31	B	B20	A/B	SAF	16	Machine Cut Spike	1	-	1830	-	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-02	18	1		32	B	B22	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-02	18	1		32	B	B22	B	CSL	72	Stoneware - Buff Salt Glazed w/ Albany Type Slip	1	-	1800	1940	-	-	676	357	-	1	-	-	-	1.1	9	-
	3355-02	18	1		32	B	B22	B	SAB	20	Mortar	10	18.5	-	-	-	32	-	30	-	-	-	-	-	2.16	-	-
	3355-02	19	1		33	B	B23	A	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-02	19	2		33	B	B23	A	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	5	-	-	-	-	1.2	28	-
	3355-02	19	3		33	B	B23	A	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	21	-	-	-	-	1.2	28	-
	3355-02	19	4		33	B	B23	A	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-02	19	1		33	B	B23	A	SAF	7	Unidentified Nail	1	-	-	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-02	19	2		33	B	B23	A	SAG	11	Broad Glass	1	1.2	-	1926	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-02	20	1		34	B	B23	B/C	ZXZ	1	Unidentified Shell	1	0.1	-	-	-	-	-	700	2	-	-	-	-	11.99	-	-
	3355-02	20	2		34	B	B23	B/C	ZMZ	1	Unidentified Mammal	1	0.9	-	-	-	-	-	999	2	-	-	-	-	11.99	-	-
	3355-02	20	1		34	B	B23	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-02	20	2		34	B	B23	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	embossed "...ST..."
	3355-02	20	3		34	B	B23	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-02	20	4		34	B	B23	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	5	-	-	-	-	1.2	28	-
	3355-02	20	5		34	B	B23	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	embossed "...a..." (in script)
	3355-02	20	6		34	B	B23	B/C	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-02	20	7		34	B	B23	B/C	GBU	4	Unidentified Bottle/Fragment-Body	3	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-02	20	8		34	B	B23	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	embossed "...RK"
	3355-02	20	9		34	B	B23	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	embossed "...O..."
	3355-02	20	10		34	B	B23	B/C	GLL	11	Lamp Chimney/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	3.21	32	-
	3355-02	20	11		34	B	B23	B/C	GLL	10	Lamp Chimney/Fragment-Rim	1	-	-	-	-	-	196	-	1	-	-	-	-	3.21	32	annular etching
	3355-02	20	12		34	B	B23	B/C	GOU	1	Total Unidentified Glass/General	1	-	-	-	-	-	-	-	2	-	-	-	-	1.10	-	-
	3355-02	20	1		34	B	B23	B/C	CRW	0	Whiteware	6	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-02	20	2		34	B	B23	B/C	CRW	35	Whiteware - Underglaze Handpainted	1	-	1820	-	-	-	102	10	-	-	-	40	-	1.1	99	-
	3355-02	20	3		34	B	B23	B/C	CPF	0	Soft Paste Porcelain	2	-	-	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-02	20	4		34	B	B23	B/C	CER	1	Redware - Unglazed	1	-	-	-	-	-	-	10	-	-	-	-	-	1.1	99	-
	3355-02	20	5		34	B	B23	B/C	CER	2	Redware - Clear Glaze	4	-	-	-	-	-	-	10	-	-	-	-	-	1.1	99	-
	3355-02	20	6		34	B	B23	B/C	CER	62	Redware - Brown Glaze	1	-	-	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-02	20	7		34	B	B23	B/C	CSB	11	Stoneware - Brown Salt Glazed w/ Albany Type Slip	1	-	1800	1940	-	-	677	357	-	1	-	-	-	1.1	9	-
	3355-02	20	8		34	B	B23	B/C	CFB	75	Stoneware - Miscellaneous Bottle	1	-	1800	1930	-	-	628	126	-	2	-	-	-	1.1	12	-
	3355-02	20	1		34	B	B23	B/C	SAG	11	Broad Glass	3	3.4	-	1926	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-02	20	2		34	B	B23	B/C	SAG	13	Window Glass	5	3.2	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-02	20	3		34	B	B23	B/C	SXA	1	Coal	1	3.2	-	-	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-02	20	4		34	B	B23	B/C	SAB	99	Miscellaneous Building Material	1	10.5	-	-	-	249	-	2	-	-	-	-	-	2.16	-	-
	3355-02	21	1		35	B	B24	B	CER	2	Redware - Clear Glaze	1	-	-	-	-	-	-	10	-	-	-	-	-	1.1	99	-
	3355-02	21	2		35	B	B24	B	CRW	55	Whiteware - Transfer Printed - Other Colors	2	-	1825	1915	-	-	102	119	-	1	-	30	-	1.1	1	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-02	21	1		35	B	B24	B	SAG 11	Broad Glass	2	0.3	-	1926	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	1	1		36	C	C1	B/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-03	1	2		36	C	C1	B/C	GBU 2	Unidentified Bottle/Fragment-Base	1	-	-	-	-	-	55	-	7	99	-	-	-	1.2	28	embossed "...42"
	3355-03	1	1		36	C	C1	B/C	SXA 1	Coal	1	1.5	-	-	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-03	2	1		37	C	C3	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	1	-	9	-	-	-	-	1.2	28	-
	3355-03	2	1		37	C	C3	A	SXA 5	Slag	1	5.8	-	-	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-03	2	2		37	C	C3	A	SXM 66	Miscellaneous Metal Plates	1	-	-	-	-	624	-	2	-	-	-	-	-	8.58	-	-
	3355-03	3	1		38	C	C4	A	GBU 3	Unidentified Bottle/Fragment-Finish	2	-	-	-	-	-	-	-	5	-	299	-	-	1.2	28	finish fragment
	3355-03	3	2		38	C	C4	A	GBU 4	Unidentified Bottle/Fragment-Body	2	-	1880	1915	-	-	-	-	11	-	-	-	-	1.2	28	-
	3355-03	3	1		38	C	C4	A	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	4	1		39	C	C4	B	GOU 1	Total Unidentified Glass/General	2	-	-	-	-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-03	4	1		39	C	C4	B	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	4	2		39	C	C4	B	CRW 35	Whiteware - Underglaze Handpainted	1	-	1820	-	-	-	2	15	-	-	-	50	-	1.1	99	-
	3355-03	4	1		39	C	C4	B	SAG 12	Broad/Crown Glass	1	0.1	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	5	1		40	C	C5	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-03	5	1		40	C	C5	B	SUM 19	Decorative Glass	1	0.8	-	-	-	320	89	2	10	-	-	-	-	3.23	-	daisy-like motif
	3355-03	6	1		41	C	C5	C	CRC 0	Creamware	1	-	1762	1820	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	6	1		41	C	C5	C	SAG 11	Broad Glass	2	2.4	-	1926	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	7	1		42	C	C6	A	CRP 50	Pearlware - Transfer Printed - Blue, *with Stipple*	1	-	1800	1840	-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-03	7	2		42	C	C6	A	CRY 0	Yellowware	1	-	1827	1940	-	-	-	2	-	-	-	-	-	1.1	99	-
	3355-03	7	3		42	C	C6	A	CPF 57	Soft Paste Porcelain - Decal - Overglaze	1	-	1830	-	-	-	102	14	-	-	-	4	-	1.1	99	-
	3355-03	7	1		42	C	C6	A	SAF 6	Wire Nail	1	-	1850	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-03	7	2		42	C	C6	A	SAG 13	Window Glass	1	2.0	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	8	1		43	C	C6	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-03	8	2		43	C	C6	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-03	8	1		43	C	C6	B	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	8	1		43	C	C6	B	SAG 11	Broad Glass	1	0.3	-	1926	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	8	2		43	C	C6	B	SAG 13	Window Glass	1	0.8	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	9	1		44	C	C7	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	9	2		44	C	C7	A	GOU 1	Total Unidentified Glass/General	2	-	-	-	-	-	-	-	2	-	-	-	-	1.10	-	-
	3355-03	9	3		44	C	C7	A	GBP 37	Cold Cream	1	-	-	-	-	-	-	-	2	-	-	-	-	6.45	27	-
	3355-03	9	1		44	C	C7	A	SAG 13	Window Glass	1	1.0	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	9	2		44	C	C7	A	SAG 12	Broad/Crown Glass	1	1.4	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	9	3		44	C	C7	A	SAF 74	Machine Cut Nail - Unknown Head	1	-	1790	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-03	10	1		45	C	C7	B	SAF 7	Unidentified Nail	1	-	-	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-03	11	1		46	C	C8	A	CSL 71	Stoneware - Buff Salt Glazed w/ Handpainted Blue Decoration	1	-	-	-	-	-	2	15	-	-	-	51	-	1.1	99	-
	3355-03	12	1		47	C	C8	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	12	1		47	C	C8	B	CRW 50	Whiteware - Transfer Printed - Blue, General	1	-	1820	1915	-	-	120	14	-	-	-	50	-	1.1	99	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype		Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-03	12	2		47	C	C8	B	CSL	72	Stoneware - Buff Salt Glazed w/ Albany Type Slip	1	-	1800	1940	-	-	678	16	-	-	-	-	-	1.1	99	-
	3355-03	12	1		47	C	C8	B	SAG	12	Broad/Crown Glass	1	1.2	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	13	1		48	C	C9	B	ZXP	1	Oyster/Clam	1	4.4	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-03	13	2		48	C	C9	B	ZAZ	1	Unidentified Bone	5	-	-	-	-	-	-	999	2	-	-	-	-	11.99	-	-
	3355-03	13	1		48	C	C9	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-03	14	1		49	C	C9a	A	SAF	6	Wire Nail	1	-	1850	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-03	15	1		50	C	C9b	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-03	16	1		51	C	C9b	C	SXH	10	Miscellaneous Wire	2	-	1831	-	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-03	17	1		52	C	C9d	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-03	17	1		52	C	C9d	B	CPJ	0	Hard Paste Porcelain	2	-	-	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	17	2		52	C	C9d	B	CPJ	0	Hard Paste Porcelain	1	-	-	-	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-03	17	3		52	C	C9d	B	SXH	10	Miscellaneous Wire	1	-	1831	-	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-03	18	1		53	C	C9d	C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	1880	1915	-	-	-	-	11	-	-	-	-	1.2	28	-
	3355-03	18	1		53	C	C9d	C	SXA	5	Slag	1	8.6	-	-	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-03	18	2		53	C	C9d	C	SAF	6	Wire Nail	3	-	1850	-	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-03	19	1		54	C	C9d	D	SAF	6	Wire Nail	2	-	1850	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-03	20	1		55	C	C11	B	CER	2	Redware - Clear Glaze	1	-	-	-	-	-	750	16	-	-	-	-	-	1.1	99	-
	3355-03	20	1		55	C	C11	B	SXH	10	Miscellaneous Wire	1	-	1831	-	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-03	21	1		56	C	C11	C/D/E	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	21	2		56	C	C11	C/D/E	GOU	1	Total Unidentified Glass/General	2	-	-	-	-	-	-	-	2	-	-	-	-	1.10	-	-
	3355-03	21	1		56	C	C11	C/D/E	CRP	0	Pearlware	2	-	1775	1840	-	-	-	16	-	-	-	-	-	1.1	99	-
	3355-03	21	2		56	C	C11	C/D/E	CRP	0	Pearlware	1	-	1775	1840	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	21	3		56	C	C11	C/D/E	CRP	35	Pearlware - Underglaze Blue Handpainted	1	-	1775	1820	-	-	2	16	-	-	-	50	-	1.1	99	-
	3355-03	21	4		56	C	C11	C/D/E	CRP	36	Pearlware - Underglaze Polychrome Handpainted	4	-	1795	1825	-	-	102	14	-	-	-	4	-	1.1	99	-
	3355-03	21	5		56	C	C11	C/D/E	CRP	70	Pearlware - Sponged	2	-	1820	1840	-	-	-	14	-	-	-	50	-	1.1	99	-
	3355-03	21	6		56	C	C11	C/D/E	CRP	70	Pearlware - Sponged	2	-	1820	1840	-	-	-	15	-	-	-	50	-	1.1	99	-
	3355-03	21	7		56	C	C11	C/D/E	CRP	35	Pearlware - Underglaze Blue Handpainted	4	-	1775	1820	-	-	2	15	-	-	-	50	-	1.1	99	-
	3355-03	21	8		56	C	C11	C/D/E	CRW	0	Whiteware	2	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	21	9		56	C	C11	C/D/E	CRW	0	Whiteware	1	-	1820	-	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-03	21	1		56	C	C11	C/D/E	SAG	13	Window Glass	2	0.3	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	21	2		56	C	C11	C/D/E	SAF	7	Unidentified Nail	1	-	-	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-03	21	3		56	C	C11	C/D/E	SOS	1	Unidentified Metal	2	12.9	-	-	-	624	-	2	-	-	-	-	-	0.0	-	-
	3355-03	22	1		57	C	C12	B	ZXP	1	Oyster/Clam	1	5.2	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-03	22	1		57	C	C12	B	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	22	2		57	C	C12	B	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	unidentifiable embossing
	3355-03	22	3		57	C	C12	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-03	22	1		57	C	C12	B	CRW	0	Whiteware	2	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	22	2		57	C	C12	B	CRW	35	Whiteware - Underglaze Handpainted	1	-	1820	-	-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-03	22	3		57	C	C12	B	CER	2	Redware - Clear Glaze	1	-	-	-	-	-	750	14	-	-	-	-	-	1.1	99	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type	Stype	Translation	Cnt	Wght	Beg	End	Date	V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-03	22	4		57	C	C12	B	CPF	30	Soft Paste Porcelain - Embossed	1	-	-	-		-	-	2	10	-	-	-	-	-	1.1	99	-
	3355-03	22	1		57	C	C12	B	SAG	12	Broad/Crown Glass	4	5.3	-	-		-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	22	2		57	C	C12	B	SOS	1	Unidentified Metal	1	5.8	-	-		-	624	-	2	-	-	-	-	-	0.0	-	-
	3355-03	23	1		58	C	C13	B/C	CRW	0	Whiteware	1	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	23	2		58	C	C13	B/C	CER	7	Redware - Clear Glaze w/Dark Brown Mottling	1	-	-	-		-	-	750	10	-	-	-	-	-	1.1	99	-
	3355-03	23	1		58	C	C13	B/C	PTE	98	Pipe Bowl - Unidentified Shape Bowl	1	-	-	-		-	-	-	-	-	1	-	1	-	7.51	-	-
	3355-03	23	1		58	C	C13	B/C	SAG	13	Window Glass	3	1.3	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	24	1		59	C	C14	A	CRW	0	Whiteware	2	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	24	1		59	C	C14	A	SAG	12	Broad/Crown Glass	1	0.4	-	-		-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	25	1		60	C	C15	B	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	25	2		60	C	C15	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	5	-	-	-	-	1.2	28	-
	3355-03	25	3		60	C	C15	B	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-		-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-03	25	1		60	C	C15	B	CRW	0	Whiteware	1	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	25	2		60	C	C15	B	CRY	76	Yellowware - Rockingham Type Glaze	1	-	1812	1920		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	25	1		60	C	C15	B	SAG	12	Broad/Crown Glass	1	1.1	-	-		-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	26	1		61	C	C15	E	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	21	-	-	-	-	1.2	28	-
	3355-03	26	2		61	C	C15	E	GLL	11	Lamp Chimney/Fragment-Body	2	-	-	-		-	-	-	-	1	-	-	-	-	3.21	32	-
	3355-03	26	3		61	C	C15	E	GOU	1	Total Unidentified Glass/General	2	-	-	-		-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-03	26	1		61	C	C15	E	LDB	3	Biface Reduction Flake	1	-	-	-		-	521	-	-	-	-	-	-	-	9.91	-	-
	3355-03	27	1		62	C	C15	C	SAG	13	Window Glass	1	0.3	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	28	1		63	C	C15a	C	GBU	3	Unidentified Bottle/Fragment-Finish	1	-	-	-		-	-	-	-	9	-	148	-	-	1.2	28	probable soda or mineral water bottle
	3355-03	28	1		63	C	C15a	C	CRW	0	Whiteware	1	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	28	1		63	C	C15a	C	SAB	1	Brick	1	6.1	-	-		-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-03	29	1		64	C	C15b	A	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	29	2		64	C	C15b	A	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	embossed "...E.../ ...A..."
	3355-03	29	1		64	C	C15b	A	CRW	0	Whiteware	1	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	29	1		64	C	C15b	A	SAF	6	Wire Nail	1	-	1850	-		-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-03	29	2		64	C	C15b	A	SAG	11	Broad Glass	2	2.1	-	1926		-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	30	1		65	C	C15b	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	30	2		65	C	C15b	B	GBU	3	Unidentified Bottle/Fragment-Finish	1	-	1880	1915		-	-	-	-	11	-	143	-	-	1.2	28	-
	3355-03	30	1		65	C	C15b	B	CRW	0	Whiteware	1	-	1820	-		-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-03	30	2		65	C	C15b	B	CRW	35	Whiteware - Underglaze Handpainted	1	-	1820	-		-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-03	30	1		65	C	C15b	B	SAG	13	Window Glass	1	0.5	-	-		-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	31	1		66	C	C15b	D	GLL	11	Lamp Chimney/Fragment-Body	3	-	-	-		-	-	194	-	1	-	-	-	-	3.21	32	-
	3355-03	31	1		66	C	C15b	D	CRW	0	Whiteware	1	-	1820	-		-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	31	1		66	C	C15b	D	SAG	12	Broad/Crown Glass	4	2.3	-	-		-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	31	2		66	C	C15b	D	SAF	7	Unidentified Nail	1	-	-	-		-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-03	32	1		67	C	C15b	E	LDB	6	Finishing Flake	1	0.1	-	-		-	1	-	-	-	-	-	1	-	9.91	-	-
	3355-03	33	1		68	C	C15c	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-		-	-	-	-	1	-	-	-	-	1.2	28	embossed "...C..."

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-03	33	2		68	C	C15c	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-03	34	1		69	C	C15d	E	ZXZ 1	Unidentified Shell	4	1.1	-	-	-	-	-	700	2	-	-	-	-	11.99	-	-
	3355-03	35	1		70	C	C15e	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-03	35	2		70	C	C15e	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	embossed "S..."
	3355-03	35	1		70	C	C15e	A	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	35	2		70	C	C15e	A	CRW 0	Whiteware	1	-	1820	-	-	-	-	98	-	5	-	-	-	1.1	1	-
	3355-03	36	1		71	C	C17	D	GBC 1	Soda	4	-	1932	-	42	5160	6	-	1	-	-	-	-	1.2	23	embossed "Ne[hi].../ 6 FL. OZ. (1 Pl[NT])". "<Glenshaw Glass Co>/ 38"
	3355-03	36	1		71	C	C17	D	CRW 10	Whiteware - Shell Edge - Blue	1	-	1820	1900	-	-	993	15	-	-	-	50	-	1.1	99	-
	3355-03	36	2		71	C	C17	D	CRW 57	Whiteware - Transfer Printed - Black	2	-	1820	1915	-	-	109	14	-	-	-	60	-	1.1	99	-
	3355-03	37	1		72	C	C18	A/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	37	1		72	C	C18	A/C	CRY 0	Yellowware	1	-	1827	1940	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	37	2		72	C	C18	A/C	CRW 0	Whiteware	3	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	37	3		72	C	C18	A/C	CRW 0	Whiteware	1	-	1820	-	-	-	-	11	-	-	-	-	99	1.1	99	-
	3355-03	37	4		72	C	C18	A/C	CRW 35	Whiteware - Underglaze Handpainted	1	-	1820	-	-	-	2	15	-	-	-	50	-	1.1	99	-
	3355-03	37	5		72	C	C18	A/C	CPF 25	Soft Paste Porcelain - Underglaze Handpainted	1	-	-	-	-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-03	37	1		72	C	C18	A/C	SPP 21	Watch Parts	1	-	-	-	-	660	-	2	-	-	-	-	-	6.50	-	watch band
	3355-03	37	2		72	C	C18	A/C	SAF 7	Unidentified Nail	2	-	-	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-03	37	3		72	C	C18	A/C	SAT 1	Tile	1	-	-	-	-	249	-	110	17	-	-	-	-	2.16	-	-
	3355-03	38	1		73	C	C19	B	ZXZ 1	Unidentified Shell	2	1.2	-	-	-	-	-	700	2	-	-	-	-	11.99	-	-
	3355-03	38	1		73	C	C19	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	38	2		73	C	C19	B	GOU 1	Total Unidentified Glass/General	1	-	-	-	-	-	-	-	9	-	-	-	-	1.10	-	-
	3355-03	38	1		73	C	C19	B	CPJ 0	Hard Paste Porcelain	3	-	-	-	-	-	-	16	-	-	-	-	-	1.1	99	-
	3355-03	38	2		73	C	C19	B	CSL 11	Stoneware - Gray Salt Glazed w/ Albany Type Slip	1	-	1800	1940	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	38	1		73	C	C19	B	SAF 3	Machine Cut Nail	1	-	1810	-	-	624	-	424	-	-	-	-	-	2.12	-	-
	3355-03	38	2		73	C	C19	B	SAG 13	Window Glass	1	1.5	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	38	3		73	C	C19	B	SAT 1	Tile	1	-	-	-	-	249	-	2	4	-	-	-	-	2.16	-	adhesive present
	3355-03	38	4		73	C	C19	B	SAT 1	Tile	1	-	-	-	-	249	-	110	13	-	-	-	-	2.16	-	-
	3355-03	39	1		74	C	C20	A	ZMZ 5	Large Mammal	1	3.6	-	-	-	-	-	38	5	-	-	-	-	11.99	-	-
	3355-03	39	1		74	C	C20	A	CRW 35	Whiteware - Underglaze Handpainted	1	-	1820	-	-	-	102	14	-	-	-	40	-	1.1	99	-
	3355-03	39	1		74	C	C20	A	SAG 12	Broad/Crown Glass	1	1.5	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	39	2		74	C	C20	A	SXA 5	Slag	1	6.0	-	-	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-03	40	1		76	C	C21	A	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	40	2		76	C	C21	A	CRK 0	Miscellaneous Refined Earthenwares	1	-	-	-	-	-	-	14	-	-	-	-	-	1.1	99	unidentified buff-bodied earthenware
	3355-03	40	1		76	C	C21	A	SAG 12	Broad/Crown Glass	1	1.4	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-03	41	1		77	C	C22	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-03	42	1		78	C	C23	A/B	GOU 2	Total Unidentified Glass/Melted	1	-	-	-	-	-	-	-	9	-	-	-	93	1.10	-	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date	V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-03	42	1		78	C	C23	A/B	SAP 15	Bathroom Fixture	1	412.6	- -	-	212	-	110	13	-	-	-	-	2.15	-	stamped "C.P."
	3355-03	42	2		78	C	C23	A/B	SAF 6	Wire Nail	1	-	1850 -	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-03	42	3		78	C	C23	A/B	SXH 10	Miscellaneous Wire	1	-	1831 -	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-03	42	4		78	C	C23	A/B	SAP 2	Salt-Glazed Slipped Pipe	1	-	1810 -	-	220	-	598	6	-	-	-	-	2.15	-	-
	3355-03	42	5		78	C	C23	A/B	SAP 37	Plumbing Related	1	-	- -	-	212	-	110	13	-	-	-	-	2.16	-	possibly electrical-related
	3355-03	43	1		79	C	C25	A	ZMZ 5	Large Mammal	6	41.6	- -	-	-	-	999	2	-	-	-	-	11.99	-	-
	3355-03	43	1		79	C	C25	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	2	-	-	-	-	1.2	28	-
	3355-03	43	1		79	C	C25	A	CRW 0	Whiteware	3	-	1820 -	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	43	1		79	C	C25	A	SAG 13	Window Glass	1	1.6	- -	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-03	43	2		79	C	C25	A	SAT 1	Tile	1	-	- -	-	212	-	86	13	-	-	-	-	2.16	-	grout present
	3355-03	43	3		79	C	C25	A	SAT 1	Tile	2	-	- -	-	249	-	110	13	-	-	-	-	2.16	-	-
	3355-03	43	4		79	C	C25	A	SAT 1	Tile	3	-	- -	-	249	-	110	2	-	-	-	-	2.16	-	-
	3355-03	44	1		80	C	C26	B	CRW 0	Whiteware	1	-	1820 -	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-03	44	1		80	C	C26	B	SAT 1	Tile	1	-	- -	-	249	-	2	1	-	-	-	-	2.16	-	adhesive present
	3355-03	45	1		81	C	C28	A	GBZ 2	Milk	1	-	- -	-	-	4	-	1	-	143	-	-	1.2	24	-
	3355-04	1	1		82	D	D8	B/C	GBU 4	Unidentified Bottle/Fragment-Body	4	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-04	1	1		82	D	D8	B/C	SXA 5	Slag	1	6.9	- -	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-04	1	2		82	D	D8	B/C	SAG 12	Broad/Crown Glass	3	1.7	- -	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-04	1	3		82	D	D8	B/C	SAG 13	Window Glass	3	1.3	- -	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-04	1	4		82	D	D8	B/C	SAG 9	Plate Glass	2	11.2	- -	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-04	2	1		83	D	D11	A	ZXP 25	Clam	36	434.5	- -	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-04	2	1		83	D	D11	A	SAG 12	Broad/Crown Glass	1	2.2	- -	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-04	3	1		84	D	D12	A/B	ZXP 25	Clam	2	43.2	- -	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-04	3	1		84	D	D12	A/B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-04	3	1		84	D	D12	A/B	SAT 1	Tile	1	-	- -	-	249	-	2	8	-	-	-	-	2.16	-	-
	3355-04	3	2		84	D	D12	A/B	SAP 15	Bathroom Fixture	1	-	- -	-	212	-	110	13	-	-	-	-	2.15	-	-
	3355-04	3	3		84	D	D12	A/B	SXM 98	Possibly Identifiable Machine Parts	1	-	- -	-	624	-	2	-	-	-	-	-	8.58	-	-
	3355-04	3	4		84	D	D12	A/B	SAB 1	Brick	1	2.3	- -	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-05	1	1		85	E	E1	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	1	2		85	E	E1	B	GOU 2	Total Unidentified Glass/Melted	2	-	- -	-	-	-	-	7	-	-	-	93	1.10	-	-
	3355-05	1	1		85	E	E1	B	SOS 1	Unidentified Metal	1	4.7	- -	-	610	-	2	-	-	-	-	-	0.0	-	small open-ended tube
	3355-05	2	1		86	E	E2	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	- -	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	2	2		86	E	E2	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	2	3		86	E	E2	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	27	-	3	-	-	-	-	1.2	28	-
	3355-05	2	4		86	E	E2	B	GTU 1	Unidentified Tableware/General	1	-	- -	-	-	-	-	2	-	-	-	-	1.3	31	-
	3355-05	2	1		86	E	E2	B	CRW 0	Whiteware	1	-	1820 -	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-05	2	1		86	E	E2	B	SAB 1	Brick	1	0.3	- -	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-05	2	2		86	E	E2	B	SXA 5	Slag	1	0.3	- -	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-05	2	3		86	E	E2	B	SCC 1	Woven Cloth	1	-	- -	-	1716	-	2	7	-	-	-	-	5.32	-	-
	3355-05	2	4		86	E	E2	B	SOS 1	Unidentified Metal	2	107.6	- -	-	624	-	2	-	-	-	-	-	0.0	-	thin, ferrous strips
	3355-05	3	1		87	E	E3	??	GBU 4	Unidentified Bottle/Fragment-Body	5	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	3	2		87	E	E3	??	GBU 4	Unidentified Bottle/Fragment-Body	2	-	- -	-	-	-	-	3	-	-	-	-	1.2	28	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype		Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-05	3	3		87	E	E3	??	GBU	2	Unidentified Bottle/Fragment-Base	3	-	-	-	-	-	-	-	3	13	-	-	93	1.2	28	-
	3355-05	3	4		87	E	E3	??	GBU	2	Unidentified Bottle/Fragment-Base	3	-	-	-	-	-	27	-	7	99	-	-	-	1.2	28	-
	3355-05	3	5		87	E	E3	??	GBU	2	Unidentified Bottle/Fragment-Base	1	-	-	-	-	-	-	-	1	99	-	-	-	1.2	28	embossed "2..."
	3355-05	3	6		87	E	E3	??	GBU	3	Unidentified Bottle/Fragment-Finish	1	-	1892	-	-	-	-	-	9	-	200	-	-	1.2	28	-
	3355-05	3	7		87	E	E3	??	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	27	-	1	-	-	-	-	1.2	28	-
	3355-05	3	8		87	E	E3	??	GOU	2	Total Unidentified Glass/Melted	1	-	-	-	-	-	-	-	1	-	-	-	93	1.10	-	-
	3355-05	3	1		87	E	E3	??	CPJ	0	Hard Paste Porcelain	2	-	-	-	-	-	-	14	-	-	-	-	99	1.1	99	-
	3355-05	3	1		87	E	E3	??	LUM	3	Fossil	1	-	-	-	-	-	-	-	-	-	-	-	-	9.91	-	fossilized clam shell
	3355-05	3	1		87	E	E3	??	SAG	12	Broad/Crown Glass	1	1.1	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-05	3	2		87	E	E3	??	SAG	13	Window Glass	2	0.6	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-05	3	3		87	E	E3	??	SAG	9	Plate Glass	1	4.0	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-05	3	4		87	E	E3	??	SCC	1	Woven Cloth	1	-	1939	-	-	435	-	2	7	-	-	-	-	5.32	-	-
	3355-05	3	5		87	E	E3	??	SAF	6	Wire Nail	2	-	1850	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-05	3	6		87	E	E3	??	SAF	7	Unidentified Nail	2	-	-	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-05	3	7		87	E	E3	??	SDF	2	Twist Cap	1	-	1930	-	-	420	-	2	22	-	-	-	-	1.2	-	-
	3355-05	4	1		88	E	E4	B/C	ZXP	25	Clam	1	4.4	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-05	4	1		88	E	E4	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	4	2		88	E	E4	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-05	4	3		88	E	E4	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	4	4		88	E	E4	B/C	GBU	2	Unidentified Bottle/Fragment-Base	1	-	1924	-	8	-	-	-	1	12	-	-	-	1.2	28	embossed "...BD-.../ 8 <Diamond Glass Co>"
	3355-05	4	5		88	E	E4	B/C	GBU	2	Unidentified Bottle/Fragment-Base	1	-	-	-	-	-	-	-	3	13	-	-	-	1.2	28	-
	3355-05	4	6		88	E	E4	B/C	GBU	2	Unidentified Bottle/Fragment-Base	1	-	-	-	-	-	27	-	7	12	-	-	-	1.2	28	-
	3355-05	4	7		88	E	E4	B/C	GOU	2	Total Unidentified Glass/Melted	1	-	-	-	-	-	-	-	9	-	-	-	93	1.10	-	-
	3355-05	4	1		88	E	E4	B/C	CPJ	0	Hard Paste Porcelain	1	-	-	-	-	-	-	11	-	-	-	-	99	1.1	99	-
	3355-05	4	2		88	E	E4	B/C	CRW	0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-05	4	1		88	E	E4	B/C	SAG	12	Broad/Crown Glass	1	3.6	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-05	5	1		89	E	E5	B	GBH	3	Bleach	1	-	1913	-	-	925	55	-	7	8	-	-	-	8.56	26	embossed "REG.../ C... PA..."
	3355-05	6	1		90	E	E5	C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	6	1		90	E	E5	C	CPJ	0	Hard Paste Porcelain	1	-	-	-	-	-	-	14	-	-	-	-	99	1.1	99	-
	3355-05	6	1		90	E	E5	C	SAG	13	Window Glass	1	1.7	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-05	7	1		91	E	E6	B/C	ZXP	25	Clam	1	5.0	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-05	7	1		91	E	E6	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	7	2		91	E	E6	B/C	GTU	1	Unidentified Tableware/General	4	-	-	-	-	-	-	-	2	-	-	-	-	1.3	31	-
	3355-05	7	1		91	E	E6	B/C	CRW	35	Whiteware - Underglaze Handpainted	1	-	1820	-	-	-	2	15	-	-	-	30	-	1.1	99	-
	3355-05	7	2		91	E	E6	B/C	CPJ	0	Hard Paste Porcelain	1	-	-	-	-	-	-	14	-	-	-	-	99	1.1	99	-
	3355-05	7	1		91	E	E6	B/C	SAB	1	Brick	1	1.9	-	-	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-05	8	1		92	E	E7	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	8	2		92	E	E7	B	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	8	3		92	E	E7	B	GBU	3	Unidentified Bottle/Fragment-Finish	1	-	-	-	-	-	-	-	7	-	140	-	-	1.2	28	-
	3355-05	8	4		92	E	E7	B	GOU	1	Total Unidentified Glass/General	1	-	-	-	-	-	-	-	2	-	-	-	-	1.10	-	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype		Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-05	8	1		92	E	E7	B	CPJ	0	Hard Paste Porcelain	1	-	1900	-	953	-	-	16	-	-	-	-	-	1.1	99	printed "...U.S.A./ [H]AND PAINTE[D]/ PATENTED/ 357"
	3355-05	9	1		93	E	E8	B	ZXP	10	Oyster	1	51.1	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-05	9	2		93	E	E8	B	ZXG	75	Welk/Conch	1	0.6	-	-	-	-	-	700	2	-	-	-	-	11.98	-	-
	3355-05	9	1		93	E	E8	B	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	10	1		94	E	E9	B	CER	4	Redware - Dark Brown to Black Glaze	3	-	-	-	-	-	752	10	-	-	-	-	-	1.1	99	-
	3355-05	10	2		94	E	E9	B	CPJ	26	Hard Paste Porcelain - Underglaze Transfer Printed	1	-	1820	-	-	-	120	50	-	2	-	40	-	1.1	2	-
	3355-05	10	1		94	E	E9	B	SAG	12	Broad/Crown Glass	1	2.3	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-05	11	1		95	E	E10	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-05	11	2		95	E	E10	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	embossed "QUA[RT]..."
	3355-05	11	3		95	E	E10	B	GOU	1	Total Unidentified Glass/General	1	-	-	-	-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-05	11	1		95	E	E10	B	SOS	17	Paper	2	-	-	-	-	325	-	2	-	-	-	-	-	0.0	-	indeterminate print
	3355-05	11	2		95	E	E10	B	SAB	1	Brick	1	4.3	-	-	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-05	11	3		95	E	E10	B	SAP	2	Salt-Glazed Slipped Pipe	1	-	1810	-	-	220	-	598	6	-	-	-	-	2.15	-	-
	3355-05	12	1		96	E	E11	B/C	ZXP	25	Clam	2	6.1	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-05	12	1		96	E	E11	B/C	GBU	4	Unidentified Bottle/Fragment-Body	4	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	12	2		96	E	E11	B/C	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	27	-	1	-	-	-	-	1.2	28	-
	3355-05	12	3		96	E	E11	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	12	4		96	E	E11	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	27	-	7	-	-	-	-	1.2	28	-
	3355-05	12	5		96	E	E11	B/C	GOU	1	Total Unidentified Glass/General	1	-	-	-	-	-	-	-	2	-	-	-	-	1.10	-	-
	3355-05	12	6		96	E	E11	B/C	GOU	2	Total Unidentified Glass/Melted	1	-	-	-	-	-	-	-	7	-	-	-	93	1.10	-	-
	3355-05	12	1		96	E	E11	B/C	CRW	25	Whiteware - Embossed Body	1	-	1820	-	-	-	2	14	-	-	-	-	-	1.1	99	-
	3355-05	12	1		96	E	E11	B/C	SAB	1	Brick	1	1.7	-	-	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-05	12	2		96	E	E11	B/C	SXA	1	Coal	1	-	-	-	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-05	12	3		96	E	E11	B/C	SAF	7	Unidentified Nail	1	-	-	-	-	1070	-	2	-	-	-	-	-	2.12	-	with rubber gasket
	3355-05	13	1		97	E	E12	B	GBU	4	Unidentified Bottle/Fragment-Body	5	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	13	2		97	E	E12	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	2	-	1	-	-	-	-	1.2	28	-
	3355-05	13	3		97	E	E12	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	3	-	1	-	-	-	-	1.2	28	-
	3355-05	13	4		97	E	E12	B	GBU	2	Unidentified Bottle/Fragment-Base	1	-	1904	-	-	-	-	-	1	8	-	-	-	1.2	28	-
	3355-05	13	5		97	E	E12	B	GBU	2	Unidentified Bottle/Fragment-Base	1	-	1938	-	2	-	-	-	1	12	-	-	-	1.2	28	embossed "...563.../ ... <Anchor-Hocking> 51/ ... 51"
	3355-05	13	6		97	E	E12	B	GBU	4	Unidentified Bottle/Fragment-Body	3	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	13	7		97	E	E12	B	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-05	13	8		97	E	E12	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	27	-	3	-	-	-	-	1.2	28	-
	3355-05	13	9		97	E	E12	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	embossed with a shield
	3355-05	13	10		97	E	E12	B	GTX	5	Lid Or Cover/Tableware General	1	-	-	-	-	-	-	-	1	-	-	-	-	1.5	31	-
	3355-05	13	11		97	E	E12	B	GTU	1	Unidentified Tableware/General	1	-	-	-	-	-	-	-	16	-	-	-	-	1.3	31	-
	3355-05	13	1		97	E	E12	B	CRW	0	Whiteware	4	-	1820	-	-	-	-	15	-	-	-	-	69	1.1	99	-
	3355-05	13	1		97	E	E12	B	SOS	13	Plastic	1	0.3	-	-	-	420	-	2	-	-	-	-	-	0.0	-	possibly bakelite
	3355-05	13	2		97	E	E12	B	SOS	1	Unidentified Metal	1	19.3	-	-	-	624	-	2	-	-	-	-	-	0.0	-	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date	Vt	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-05	14	1		98	E	E13	B/C	GBU 2	Unidentified Bottle/Fragment-Base	1	-	1904 -	-	-	55	-	7	8	-	-	-	1.2	28	-
	3355-05	14	1		98	E	E13	B/C	CRW 0	Whiteware	2	-	1820 -	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-05	14	2		98	E	E13	B/C	CRW 0	Whiteware	1	-	1820 -	-	-	-	1	-	-	-	-	-	1.1	99	-
	3355-05	14	3		98	E	E13	B/C	CRW 0	Whiteware	1	-	1820 -	-	-	-	50	-	6	-	-	-	1.1	2	-
	3355-05	15	1		99	E	E14	B	GBU 4	Unidentified Bottle/Fragment-Body	4	-	- -	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	15	2		99	E	E14	B	GBU 4	Unidentified Bottle/Fragment-Body	4	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	15	3		99	E	E14	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	1934 -	-	-	249	-	1	-	-	-	-	1.2	28	fragment of blue ACL
	3355-05	16	1		100	E	E16	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	16	2		100	E	E16	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-05	16	3		100	E	E16	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	16	1		100	E	E16	B	CRW 20	Whiteware - Other Embossed Rims	1	-	1820 -	-	-	925	50	-	2	-	-	-	1.1	2	three raised bands at rim
	3355-05	17	1		101	E	E17	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	embossed "...RD..."
	3355-05	18	1		102	E	E20	B/C	ZXP 1	Oyster/Clam	1	1.8	- -	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-05	18	1		102	E	E20	B/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	15	-	-	-	-	1.2	28	-
	3355-05	18	1		102	E	E20	B/C	SXA 5	Slag	4	1.9	- -	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-05	19	1		103	E	E21	B	CRP 0	Pearlware	1	-	1775 1840	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-05	19	1		103	E	E21	B	SAG 12	Broad/Crown Glass	1	0.1	- -	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-05	20	1		104	E	E22	C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	20	2		104	E	E22	C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	1892 -	-	-	-	-	3	-	200	-	-	1.2	28	-
	3355-05	20	3		104	E	E22	C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	12	-	-	-	-	1.2	28	-
	3355-05	20	1		104	E	E22	C	SAP 38	Drain Tile	2	-	- -	-	204	-	2	-	-	-	-	69	2.15	-	-
	3355-05	21	1		105	E	E24	A/B	GBU 4	Unidentified Bottle/Fragment-Body	7	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	21	2		105	E	E24	A/B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	27	-	1	-	-	-	-	1.2	28	-
	3355-05	21	3		105	E	E24	A/B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	- -	-	-	3	-	1	-	-	-	-	1.2	28	-
	3355-05	21	4		105	E	E24	A/B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	embossed "ON..."
	3355-05	21	5		105	E	E24	A/B	GBU 4	Unidentified Bottle/Fragment-Body	5	-	- -	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-05	21	6		105	E	E24	A/B	GBU 4	Unidentified Bottle/Fragment-Body	3	-	- -	-	-	27	-	3	-	-	-	-	1.2	28	-
	3355-05	21	7		105	E	E24	A/B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	27	-	7	-	-	-	-	1.2	28	-
	3355-05	21	8		105	E	E24	A/B	GBU 4	Unidentified Bottle/Fragment-Body	3	-	- -	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-05	21	9		105	E	E24	A/B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	21	-	-	-	-	1.2	28	-
	3355-05	21	10		105	E	E24	A/B	GOU 2	Total Unidentified Glass/Melted	3	-	- -	-	-	-	-	1	-	-	-	93	1.10	-	-
	3355-05	21	11		105	E	E24	A/B	GOU 2	Total Unidentified Glass/Melted	1	-	- -	-	-	-	-	2	-	-	-	93	1.10	-	-
	3355-05	21	12		105	E	E24	A/B	GOU 2	Total Unidentified Glass/Melted	1	-	- -	-	-	-	-	21	-	-	-	93	1.10	-	-
	3355-05	21	1		105	E	E24	A/B	CRW 80	Whiteware - Decal - Overglaze	2	-	1880 -	-	-	102	16	-	-	-	5	69	1.1	99	-
	3355-05	21	2		105	E	E24	A/B	CRW 0	Whiteware	1	-	1820 -	-	-	-	14	-	-	-	-	99	1.1	99	-
	3355-05	21	3		105	E	E24	A/B	CRW 84	Whiteware - Colored Glaze	1	-	1820 -	-	-	1020	14	-	-	-	20	-	1.1	99	possible flower pot
	3355-05	21	4		105	E	E24	A/B	CPF 0	Soft Paste Porcelain	1	-	- -	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-05	21	1		105	E	E24	A/B	SCC 1	Woven Cloth	1	-	1939 -	-	435	-	2	1	-	-	-	-	5.32	-	-
	3355-05	21	2		105	E	E24	A/B	SAG 12	Broad/Crown Glass	2	3.4	- -	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-05	21	3		105	E	E24	A/B	SAT 1	Tile	1	-	- -	-	249	-	110	13	-	-	-	-	2.16	-	-
	3355-05	21	4		105	E	E24	A/B	SCZ 98	Misc. Shoe Part	2	-	1922 -	-	414	-	78	-	-	-	-	-	5.34	-	-
	3355-05	21	5		105	E	E24	A/B	SXR 40	Recorded Disc	1	-	1877 -	-	426	-	70	-	-	-	-	-	8.66	-	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype		Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-05	21	6		105	E	E24	A/B	SOS	1	Unidentified Metal	4	45.2	-	-	-	624	-	2	-	-	-	-	-	0.0	-	-
	3355-05	21	7		105	E	E24	A/B	SXH	89	Sheet Metal	5	-	-	-	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-05	22	1		106	E	E25	C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-05	22	2		106	E	E25	C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-05	22	3		106	E	E25	C	GOU	2	Total Unidentified Glass/Melted	1	-	-	-	-	-	-	-	3	-	-	-	93	1.10	-	-
	3355-05	22	1		106	E	E25	C	CRW	77	Whiteware - Metallic Band	1	-	1820	-	-	-	245	15	-	-	-	-	-	1.1	99	-
	3355-05	22	2		106	E	E25	C	CRW	35	Whiteware - Underglaze Handpainted	3	-	1820	-	-	-	2	10	-	-	-	48	-	1.1	99	-
	3355-05	23	1		107	E	E26	B	CRW	0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-05	23	2		107	E	E26	B	CRW	84	Whiteware - Colored Glaze	1	-	1820	-	-	-	1011	520	-	-	-	32	-	8.56	8	-
	3355-05	24	1		108	E	E37	B	GOU	1	Total Unidentified Glass/General	1	-	-	-	-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-05	24	1		108	E	E37	B	CRY	0	Yellowware	1	-	1827	1940	-	-	-	16	-	-	-	-	-	1.1	99	-
	3355-05	24	1		108	E	E37	B	SAP	2	Salt-Glazed Slipped Pipe	1	-	1810	-	-	220	-	598	6	-	-	-	-	2.15	-	-
	3355-05	24	2		108	E	E37	B	SXA	7	Glass Slag	1	0.7	-	-	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-05	24	3		108	E	E37	B	SAF	6	Wire Nail	1	-	1850	-	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-05	25	1		109	E	E39	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	3	-	1	-	-	-	-	1.2	28	-
	3355-06	1	1		110	F	F8	B	GBU	3	Unidentified Bottle/Fragment-Finish	2	-	-	-	-	-	-	-	3	-	140	-	-	1.2	28	-
	3355-06	3	1		112	F	F22	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-06	6	1		115	F	F27	A	CRW	0	Whiteware	1	-	1820	-	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-06	6	1		115	F	F27	A	SCF	50	Pressed Glass Button	1	-	1840	-	-	320	-	23	13	-	-	-	-	5.31	-	-
	3355-06	7	1		116	F	F27	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-06	8	1		117	F	F27	C	ZXP	1	Oyster/Clam	4	6.2	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-06	9	1		118	F	F28	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	embossed "...NY"
	3355-06	9	2		118	F	F28	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-06	9	1		118	F	F28	B	SAG	12	Broad/Crown Glass	1	2.4	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-06	10	1		119	F	F29	A	GTG	5	Bowl	1	-	-	-	-	-	-	-	1	-	-	-	-	1.5	31	-
	3355-06	11	1		120	F	F30	A	CRW	52	Whiteware - Transfer Printed - Brown	1	-	1820	1915	-	-	2	14	-	-	-	62	-	1.1	99	-
	3355-06	11	1		120	F	F30	A	SAG	12	Broad/Crown Glass	1	4.9	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-06	12	1		121	F	F31	A	CRW	0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-06	12	1		121	F	F31	A	SAG	12	Broad/Crown Glass	1	5.0	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-06	13	1		122	F	F31	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	5	-	-	-	-	1.2	28	-
	3355-06	14	1		123	F	F33	A	SAG	12	Broad/Crown Glass	3	1.6	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-06	15	1		124	F	F33	B	CRW	20	Whiteware - Other Embossed Rims	2	-	1820	-	-	-	912	15	-	-	-	-	-	1.1	99	yellowed glaze
	3355-06	15	2		124	F	F33	B	CPJ	2	Hard Paste Porcelain - Plain	1	-	-	-	-	-	-	14	-	-	-	-	99	1.1	99	-
	3355-06	16	1		125	F	F34	A	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-06	16	2		125	F	F34	A	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-06	17	1		126	F	F34	B	SAF	6	Wire Nail	1	-	1850	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-06	18	1		127	F	F34	E	SXA	5	Slag	1	10.0	-	-	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-06	19	1		128	F	F35	A	GBU	3	Unidentified Bottle/Fragment-Finish	1	-	-	-	-	-	-	-	1	-	143	-	-	1.2	28	-
	3355-06	19	1		128	F	F35	A	CRW	55	Whiteware - Transfer Printed - Other Colors	1	-	1825	1915	-	-	102	10	-	-	-	40	-	1.1	99	-
	3355-06	20	1		129	F	F35	B	SAG	12	Broad/Crown Glass	1	0.8	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-06	21	1		130	F	F36	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-06	22	1		131	F	F36	C	CER 1	Redware - Unglazed	1	-	-	-	-	-	-	10	-	-	-	-	-	1.1	99	possible flower pot
	3355-06	23	1		132	F	F38	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-06	23	1		132	F	F38	A	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-06	24	1		133	F	F38	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	5	-	-	-	-	1.2	28	-
	3355-06	24	1		133	F	F38	B	SAG 12	Broad/Crown Glass	2	3.4	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-06	25	1		134	F	F39	C	CPF 0	Soft Paste Porcelain	1	-	-	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-06	25	1		134	F	F39	C	SAB 1	Brick	1	1,305.5	-	-	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-06	26	1		135	F	F40	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-06	26	1		135	F	F40	A	CPF 0	Soft Paste Porcelain	1	-	-	-	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-06	26	1		135	F	F40	A	SAG 13	Window Glass	1	1.7	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-06	26	2		135	F	F40	A	SAF 6	Wire Nail	1	-	1850	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-06	27	1		136	F	F41	A	CER 1	Redware - Unglazed	1	-	-	-	-	-	-	14	-	-	-	-	-	1.1	99	possible flower pot
	3355-06	27	1		136	F	F41	A	SAG 11	Broad Glass	1	2.1	-	1926	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-06	28	1		137	F	F41	B	SAG 13	Window Glass	1	0.6	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-06	29	1		138	F	F42	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-06	30	1		139	F	F44	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	5	-	-	-	-	1.2	28	-
	3355-06	32	1		141	F	F45	A	CRW 62	Whiteware - Simple Bands	1	-	1820	-	-	-	553	15	-	-	-	50	-	1.1	99	-
	3355-06	33	1		142	F	F46	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	embossed "...RK../ ...RV.. ."
	3355-06	33	2		142	F	F46	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-06	33	1		142	F	F46	B	CRW 50	Whiteware - Transfer Printed - Blue, General	1	-	1820	1915	-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-06	34	1		143	F	F48	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-06	34	2		143	F	F48	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-06	34	1		143	F	F48	A	SAG 11	Broad Glass	1	7.5	-	1926	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-06	35	1		144	F	F49	B	SAG 12	Broad/Crown Glass	2	0.8	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-06	35	2		144	F	F49	B	SXA 5	Slag	1	2.0	-	-	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-07	1	1		146	G	G1	B	GBU 4	Unidentified Bottle/Fragment-Body	3	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-07	1	2		146	G	G1	B	GOU 1	Total Unidentified Glass/General	2	-	-	-	-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-07	1	3		146	G	G1	B	GOU 1	Total Unidentified Glass/General	1	-	-	-	-	-	90	-	1	-	-	-	-	1.10	-	small, square dimpled motif
	3355-07	1	1		146	G	G1	B	SCC 2	Knitted Cloth	1	-	-	-	-	1728	-	2	7	-	-	-	-	5.32	-	-
	3355-07	1	2		146	G	G1	B	SXA 1	Coal	1	1.3	-	-	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-07	1	3		146	G	G1	B	SXM 30	Machine Hardware	1	-	-	-	-	604	-	1	-	-	-	-	-	8.58	-	clasp or hasp; stamped "8J2"
	3355-07	1	4		146	G	G1	B	SXH 6	Washer	2	-	-	-	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-07	1	5		146	G	G1	B	SAB 20	Mortar	1	1.4	-	-	-	32	-	2	-	-	-	-	-	2.16	-	-
	3355-07	2	1		147	G	G2	C	GBC 1	Soda	2	-	1894	-	-	5036	-	-	9	-	-	-	-	1.2	23	embossed "[C]oc[a-Cola]/ [TRA]DE-M[ARK]"
	3355-07	2	2		147	G	G2	C	GBU 2	Unidentified Bottle/Fragment-Base	1	-	-	-	-	-	-	-	9	99	-	-	-	1.2	28	-
	3355-07	2	3		147	G	G2	C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-07	2	1		147	G	G2	C	SAF 6	Wire Nail	3	-	1850	-	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-07	2	2		147	G	G2	C	SAG 13	Window Glass	1	3.7	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype		Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-07	2	3		147	G	G2	C	SOS	1	Unidentified Metal	1	8.7	-	-	-	610	-	2	-	-	-	-	-	0.0	-	small, hollow, egg-shaped item
	3355-07	3	1		148	G	G3	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-07	3	1		148	G	G3	B	SAP	38	Drain Tile	1	-	-	-	-	204	-	2	-	-	-	-	-	2.15	-	-
	3355-07	4	1		149	G	G5	B	GBU	4	Unidentified Bottle/Fragment-Body	3	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-07	4	2		149	G	G5	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	5	-	-	-	-	1.2	28	-
	3355-07	4	3		149	G	G5	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-07	4	4		149	G	G5	B	GBU	4	Unidentified Bottle/Fragment-Body	3	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-07	4	5		149	G	G5	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	1880	1915	-	-	-	-	11	-	-	-	-	1.2	28	-
	3355-07	4	6		149	G	G5	B	GOU	1	Total Unidentified Glass/General	1	-	-	-	-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-07	4	1		149	G	G5	B	CRW	0	Whiteware	2	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-07	4	1		149	G	G5	B	SAG	12	Broad/Crown Glass	6	8.3	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-07	4	2		149	G	G5	B	SXA	1	Coal	4	4.3	-	-	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-07	4	3		149	G	G5	B	SXD	41	Dry Cell (Appliance Battery)	1	-	1887	-	-	519	-	2	-	-	-	-	-	8.58	-	carbon battery rod
	3355-07	4	4		149	G	G5	B	SCF	48	Ungilded-2 pc. Construction Button	1	-	-	-	-	604	-	750	-	-	-	-	-	5.31	-	stamped "A.U. TOWER CO./ BOSTON"
	3355-07	6	1		151	G	G8	B	GBP	3	Vial	1	-	-	-	-	-	-	-	1	-	-	-	-	6.44	27	-
	3355-07	6	2		151	G	G8	B	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-07	6	1		151	G	G8	B	CRI	0	Ironstone	1	-	1840	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-07	6	2		151	G	G8	B	CRW	0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-07	6	3		151	G	G8	B	CPJ	0	Hard Paste Porcelain	1	-	-	-	-	-	-	11	-	-	-	-	-	1.1	99	-
	3355-07	6	4		151	G	G8	B	CPJ	0	Hard Paste Porcelain	1	-	-	-	-	-	-	10	-	-	-	-	-	1.1	99	-
	3355-07	7	1		152	G	G9	B	ZXZ	1	Unidentified Shell	1	0.1	-	-	-	-	-	700	2	-	-	-	-	11.99	-	-
	3355-07	7	1		152	G	G9	B	GBA	3	Wine/Liquor Bottle	1	-	1904	-	-	-	-	24	3	8	200	-	-	1.2	21	embossed "III" within a circle on base
	3355-07	7	2		152	G	G9	B	GBU	2	Unidentified Bottle/Fragment-Base	1	-	-	-	-	-	-	-	7	99	-	-	-	1.2	28	embossed with large intertwined "BCI" inside a shield
	3355-07	7	3		152	G	G9	B	GBU	3	Unidentified Bottle/Fragment-Finish	1	-	-	-	-	-	-	-	2	-	140	-	-	1.2	28	-
	3355-07	7	4		152	G	G9	B	GOU	2	Total Unidentified Glass/Melted	1	-	-	-	-	-	-	-	22	-	-	-	93	1.10	-	-
	3355-07	7	1		152	G	G9	B	CRW	62	Whiteware - Simple Bands	2	-	1820	-	-	-	553	104	-	9	-	40	69	1.1	1	-
	3355-07	7	2		152	G	G9	B	CRW	62	Whiteware - Simple Bands	1	-	1820	-	-	-	553	215	-	6	-	30	-	1.1	2	-
	3355-07	7	3		152	G	G9	B	CRW	98	Other Whiteware	1	-	1820	-	-	-	19	620	-	32	-	19	-	1.1	99	handpainted brown and gilded zoomorphic finial with brown and gilded geometric applique and green detailing; oriental influence
	3355-07	7	4		152	G	G9	B	CRW	0	Whiteware	1	-	1820	-	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-07	7	1		152	G	G9	B	SAG	12	Broad/Crown Glass	1	2.8	-	-	-	320	-	2	11	-	-	-	93	2.11	-	-
	3355-07	7	2		152	G	G9	B	SXR	29	Bisque Doll	1	-	1870	1930	-	212	63	2	14	-	-	-	-	8.59	-	doll foot & leg with blue painted stripe
	3355-07	8	1		153	G	G10	A	GBU	4	Unidentified Bottle/Fragment-Body	1	-	1880	1915	-	-	-	-	11	-	-	-	-	1.2	28	-
	3355-07	9	1		154	G	G11	B	GLL	10	Lamp Chimney/Fragment-Rim	2	-	-	-	-	-	-	-	1	-	-	-	-	3.21	32	-
	3355-07	10	1		155	G	G11	C	LDB	3	Biface Reduction Flake	1	0.2	-	-	-	1	-	-	-	-	-	1	-	9.91	-	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-07	11	1		156	G	G11a	B	CRP 55	Pearlware - Transfer Printed - Other Colors	1	-	1825	1840	-	-	102	14	-	-	-	60	-	1.1	99	-
	3355-07	11	1		156	G	G11a	B	SAB 1	Brick	1	5.6	-	-	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-07	12	1		157	G	G11b	B	CSL 3	Stoneware - Gray Salt Glazed w/ Handpainted Decoration	1	-	-	-	-	-	2	357	-	-	-	50	-	1.1	9	-
	3355-07	13	1		158	G	G11c	B	ZXP 10	Oyster	1	9.3	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-07	14	1		159	G	G11d	B	SAF 7	Unidentified Nail	2	-	-	-	-	624	-	2	-	-	-	-	69	2.12	-	-
	3355-07	15	1		160	G	G12	B	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-07	15	1		160	G	G12	B	SAG 13	Window Glass	1	0.7	-	-	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-07	16	1		161	G	G13	C	SXA 5	Slag	1	105.2	-	-	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-07	17	1		162	G	G14	B	SAG 12	Broad/Crown Glass	1	1.2	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-07	17	2		162	G	G14	B	SAG 11	Broad Glass	2	0.9	-	1926	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-07	17	3		162	G	G14	B	SXA 1	Coal	1	3.6	-	-	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-07	18	1		163	G	G15	B	CRW 0	Whiteware	2	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-07	18	2		163	G	G15	B	CRP 35	Pearlware - Underglaze Blue Handpainted	1	-	1775	1820	-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-07	18	3		163	G	G15	B	CER 2	Redware - Clear Glaze	1	-	-	-	-	-	752	14	-	-	-	-	-	1.1	99	-
	3355-07	18	4		163	G	G15	B	CER 62	Redware - Brown Glaze	1	-	-	-	-	-	2	14	-	-	-	-	-	1.1	99	interior glazed, exterior spalled
	3355-07	18	1		163	G	G15	B	SAG 11	Broad Glass	1	5.4	-	1926	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-07	18	2		163	G	G15	B	SAF 74	Machine Cut Nail - Unknown Head	2	-	1790	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-07	19	1		164	G	G16	B	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-07	20	1		165	G	G17	B/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-07	20	1		165	G	G17	B/C	CER 3	Redware - Yellow Brown to Brown Glaze	1	-	-	-	-	-	2	14	-	-	-	-	-	1.1	99	interior glazed, exterior spalled
	3355-07	21	1		166	G	G18	B	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-07	22	1		167	G	G19	B/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	5	-	-	-	-	1.2	28	-
	3355-07	22	2		167	G	G19	B/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	embossed "...GLO..."
	3355-07	22	1		167	G	G19	B/C	SXA 1	Coal	1	1.3	-	-	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-07	22	2		167	G	G19	B/C	SAF 74	Machine Cut Nail - Unknown Head	1	-	1790	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-07	23	1		168	G	G20	B	CRW 57	Whiteware - Transfer Printed - Black	1	-	1820	1915	-	-	102	14	-	-	-	60	-	1.1	99	-
	3355-08	1	1		169	H	H1	B	GBU 4	Unidentified Bottle/Fragment-Body	4	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-08	2	1		170	H	H3	A	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-08	3	1		171	H	H3	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-08	3	2		171	H	H3	B	GBU 2	Unidentified Bottle/Fragment-Base	1	-	-	-	-	-	-	-	1	12	-	-	-	1.2	28	-
	3355-08	4	1		172	H	H4	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-08	4	2		172	H	H4	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-08	4	1		172	H	H4	B	CRI 35	Ironstone - Handpainted Underglaze	1	-	1840	-	-	-	2	14	-	-	-	50	-	1.1	99	-
	3355-08	4	1		172	H	H4	B	LMN 2	Hematite	2	2.5	-	-	-	771	-	-	-	-	-	-	-	9.91	-	-
	3355-08	4	1		172	H	H4	B	SAG 12	Broad/Crown Glass	1	0.8	-	-	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-08	5	1		173	H	H6	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-08	5	1		173	H	H6	B	CRW 0	Whiteware	2	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-08	5	2		173	H	H6	B	CRW 80	Whiteware - Decal - Overglaze	1	-	1880	-	-	-	120	50	-	2	-	1	-	1.1	2	-
	3355-08	5	3		173	H	H6	B	CFN 98	Other Non-Salt Glazed Stonewares	1	-	-	-	-	-	749	520	-	1	-	47	-	8.56	8	with molded ribbing
	3355-08	5	4		173	H	H6	B	CER 1	Redware - Unglazed	1	-	-	-	-	-	-	520	-	2	-	-	-	8.56	8	-
	3355-08	5	5		173	H	H6	B	CPF 0	Soft Paste Porcelain	1	-	-	-	-	-	-	119	-	6	-	-	-	1.1	1	-
	3355-08	5	1		173	H	H6	B	SAF 7	Unidentified Nail	1	-	-	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-08	6	1		174	H	H8	B	LDB 10	Block Shatter	1	-	-	-	-	531	-	-	-	-	-	-	-	9.91	-	-
	3355-08	7	1		175	H	H9	B/C	CRW 55	Whiteware - Transfer Printed - Other Colors	1	-	1825	1915	-	-	120	15	-	-	-	40	-	1.1	99	-
	3355-08	7	2		175	H	H9	B/C	CPJ 62	Hard Paste Porcelain - Simple Bands	2	-	-	-	-	-	551	104	-	2	-	105	69	1.1	1	-
	3355-08	7	1		175	H	H9	B/C	SAP 38	Drain Tile	1	-	-	-	-	204	-	2	-	-	-	-	-	2.15	-	-
	3355-08	8	1		176	H	H10	C	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-08	8	2		176	H	H10	C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	embossed "...RE..."
	3355-08	8	3		176	H	H10	C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	embossed "...L.../ ... RMOTT.../ ...Y COR..."
	3355-08	8	4		176	H	H10	C	GBU 3	Unidentified Bottle/Fragment-Finish	1	-	-	-	-	-	-	-	1	-	145	-	-	1.2	28	-
	3355-08	8	5		176	H	H10	C	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-08	8	6		176	H	H10	C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-08	8	7		176	H	H10	C	GTU 1	Unidentified Tableware/General	1	-	-	-	-	-	50	-	1	-	-	-	-	1.3	31	hobstar and fan variant
	3355-08	8	8		176	H	H10	C	GTU 1	Unidentified Tableware/General	1	-	-	-	-	-	-	-	2	-	-	-	-	1.3	31	-
	3355-08	8	1		176	H	H10	C	CRW 0	Whiteware	2	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-08	8	2		176	H	H10	C	CRW 0	Whiteware	1	-	1820	-	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-08	8	3		176	H	H10	C	CRW 0	Whiteware	1	-	1820	-	902	-	-	3	-	-	-	-	-	1.1	99	impressed "12" inside a diamond
	3355-08	8	4		176	H	H10	C	CRI 77	Ironstone - Metallic Bands	1	-	1850	-	-	-	919	227	-	5	-	-	-	1.1	2	-
	3355-08	8	5		176	H	H10	C	CPJ 0	Hard Paste Porcelain	1	-	-	-	-	-	-	16	-	-	-	-	-	1.1	99	-
	3355-08	8	6		176	H	H10	C	CPF 25	Soft Paste Porcelain - Underglaze Handpainted	1	-	-	-	-	-	2	15	-	-	-	50	-	1.1	99	-
	3355-08	8	7		176	H	H10	C	CER 1	Redware - Unglazed	2	-	-	-	-	-	-	520	-	5	-	-	-	8.56	8	-
	3355-08	8	1		176	H	H10	C	SAP 38	Drain Tile	3	-	-	-	-	204	-	2	-	-	-	-	-	2.15	-	-
	3355-08	8	2		176	H	H10	C	SAG 3	Safety Glass With Wire	1	18.3	1891	-	-	1012	-	70	11	-	-	-	-	2.11	-	-
	3355-08	9	1		177	H	H11	B/C	ZXP 25	Clam	1	1.4	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-08	9	1		177	H	H11	B/C	GBZ 2	Milk	1	-	-	-	-	-	-	-	1	-	143	-	-	1.2	24	-
	3355-08	9	2		177	H	H11	B/C	GBU 3	Unidentified Bottle/Fragment-Finish	1	-	-	-	-	-	-	23	1	-	147	-	-	1.2	28	-
	3355-08	9	3		177	H	H11	B/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	2	-	-	-	-	1.2	28	-
	3355-08	9	4		177	H	H11	B/C	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-08	9	5		177	H	H11	B/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-08	9	6		177	H	H11	B/C	GOU 1	Total Unidentified Glass/General	2	-	-	-	-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-08	9	1		177	H	H11	B/C	CRW 0	Whiteware	3	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-08	9	2		177	H	H11	B/C	CRW 0	Whiteware	1	-	1820	-	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-08	9	3		177	H	H11	B/C	CRW 80	Whiteware - Decal - Overglaze	1	-	1880	-	-	-	129	14	-	-	-	103	-	1.1	99	-
	3355-08	9	4		177	H	H11	B/C	CRI 50	Ironstone - Transfer Printed - General	1	-	1840	1915	-	-	287	50	-	5	-	60	69	1.1	2	-
	3355-08	9	5		177	H	H11	B/C	CPF 0	Soft Paste Porcelain	1	-	-	-	-	-	-	14	-	-	-	-	-	1.1	99	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date	V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-08	9	6		177	H	H11	B/C	CSL 31	Stoneware - Gray Salt Glazed w/ Bristol & Albany Type Slips	1	-	1880 1950	-	-	618	10	-	-	-	-	-	1.1	99	-
	3355-08	9	1		177	H	H11	B/C	SAG 13	Window Glass	1	0.7	- -	-	320	-	2	10	-	-	-	-	2.11	-	-
	3355-08	9	2		177	H	H11	B/C	SXA 1	Coal	2	10.6	- -	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-08	9	3		177	H	H11	B/C	SAP 2	Salt-Glazed Slipped Pipe	2	-	1810 -	-	220	-	598	6	-	-	-	-	2.15	-	-
	3355-08	9	4		177	H	H11	B/C	SAT 1	Tile	1	-	- -	-	249	-	110	13	-	-	-	-	2.16	-	-
	3355-08	9	5		177	H	H11	B/C	SAT 1	Tile	1	-	- -	-	2	-	2	-	-	-	-	-	2.16	-	-
	3355-08	9	6		177	H	H11	B/C	SAT 1	Tile	1	-	- -	-	249	-	1	13	-	-	-	-	2.16	-	-
	3355-09	1	1		178	I	I1	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-09	1	2		178	I	I1	B	GOU 1	Total Unidentified Glass/General	1	-	- -	-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-09	1	1		178	I	I1	B	CRW 0	Whiteware	1	-	1820 -	-	-	-	16	-	-	-	-	-	1.1	99	-
	3355-09	2	1		179	I	I2	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-09	2	2		179	I	I2	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	7	-	-	-	-	1.2	28	embossed "...TER"
	3355-09	2	1		179	I	I2	B	SAF 7	Unidentified Nail	1	-	- -	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-09	2	2		179	I	I2	B	SXH 3	Bolt	1	-	- -	-	624	-	1	-	-	-	-	-	8.90	-	with washer
	3355-09	3	1		180	I	I3	A	SAF 74	Machine Cut Nail - Unknown Head	1	-	1790 -	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-09	4	1		181	I	I4	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-09	4	2		181	I	I4	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-09	4	3		181	I	I4	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	5	-	-	-	-	1.2	28	-
	3355-09	4	4		181	I	I4	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-09	4	5		181	I	I4	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	- -	-	-	-	-	9	-	-	-	-	1.2	28	embossed "...SUN BRE... "
	3355-09	4	6		181	I	I4	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	1880 1915	-	-	-	-	11	-	-	-	-	1.2	28	-
	3355-09	4	7		181	I	I4	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	- -	-	-	-	-	12	-	-	-	-	1.2	28	-
	3355-09	4	8		181	I	I4	B	GTU 1	Unidentified Tableware/General	1	-	- -	-	-	3	-	1	-	-	-	-	1.3	31	-
	3355-09	4	9		181	I	I4	B	GOU 1	Total Unidentified Glass/General	1	-	- -	-	-	-	-	9	-	-	-	-	1.10	-	-
	3355-09	4	1		181	I	I4	B	CPF 0	Soft Paste Porcelain	2	-	- -	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-09	4	2		181	I	I4	B	CRW 0	Whiteware	4	-	1820 -	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-09	4	3		181	I	I4	B	CRW 57	Whiteware - Transfer Printed - Black	1	-	1820 1915	-	-	102	14	-	-	-	60	-	1.1	99	-
	3355-09	4	4		181	I	I4	B	CRI 0	Ironstone	1	-	1840 -	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-09	4	1		181	I	I4	B	SAF 6	Wire Nail	1	-	1850 -	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-09	5	1		182	I	I5	B	ZBZ 1	Unidentified Bird	2	2.0	- -	-	-	-	120	2	-	-	-	-	11.99	-	-
	3355-09	5	1		182	I	I5	B	SAF 6	Wire Nail	2	-	1850 -	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-09	5	2		182	I	I5	B	SAF 6	Wire Nail	2	-	1850 -	-	624	-	425	-	-	-	-	-	2.12	-	-
	3355-09	6	1		183	I	I6	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-09	6	2		183	I	I6	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	27	-	7	-	-	-	-	1.2	28	-
	3355-09	6	3		183	I	I6	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	12	-	-	-	-	1.2	28	-
	3355-09	6	4		183	I	I6	B	GTU 1	Unidentified Tableware/General	1	-	- -	-	-	-	-	1	-	-	-	-	1.3	31	-
	3355-09	6	5		183	I	I6	B	GOU 1	Total Unidentified Glass/General	1	-	- -	-	-	-	-	1	-	-	-	-	1.10	-	-
	3355-09	6	1		183	I	I6	B	SXA 1	Coal	1	2.6	- -	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-09	6	2		183	I	I6	B	SAG 12	Broad/Crown Glass	1	0.5	- -	-	320	-	2	11	-	-	-	-	2.11	-	-
	3355-09	7	1		184	I	I7	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	- -	-	-	-	-	1	-	-	-	-	1.2	28	-

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype	Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-09	7	2		184	I	I7	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	27	-	7	-	-	-	-	1.2	28	-
	3355-09	7	3		184	I	I7	B	GBU 4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-09	8	1		185	I	I8	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-09	8	1		185	I	I8	A	CRW 0	Whiteware	1	-	1820	-	-	-	-	103	-	6	-	-	-	1.1	1	-
	3355-09	9	1		186	I	I8	A/B	ZAZ 1	Unidentified Bone	2	9.2	-	-	-	-	-	700	2	-	-	-	-	11.99	-	-
	3355-09	9	1		186	I	I8	A/B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	12	-	-	-	-	1.2	28	-
	3355-09	9	2		186	I	I8	A/B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	2	-	-	-	-	1.2	28	-
	3355-09	9	1		186	I	I8	A/B	CSL 31	Stoneware - Gray Salt Glazed w/ Bristol & Albany Type Slips	1	-	1880	1950	-	-	618	10	-	-	-	-	-	1.1	99	-
	3355-09	9	1		186	I	I8	A/B	SXC 41	Button Waster	1	-	-	-	-	568	-	12	-	-	-	-	-	8.70	-	-
	3355-09	9	2		186	I	I8	A/B	SCL 90	Other Leather Item	1	-	-	-	-	556	-	13	-	-	-	-	-	5.39	-	-
	3355-09	9	3		186	I	I8	A/B	SAT 1	Tile	2	-	-	-	-	249	-	2	11	-	-	-	-	2.16	-	adhesive present
	3355-09	9	4		186	I	I8	A/B	SAT 1	Tile	1	-	-	-	-	249	-	2	13	-	-	-	-	2.16	-	adhesive present
	3355-09	9	5		186	I	I8	A/B	SUM 19	Decorative Glass	1	-	-	-	-	320	-	2	52	-	-	-	-	3.23	-	-
	3355-09	10	1		187	I	I11	B	GBU 3	Unidentified Bottle/Fragment-Finish	1	-	1880	1915	-	-	-	-	11	-	145	-	-	1.2	28	-
	3355-09	11	1		188	I	I12	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-09	11	1		188	I	I12	A	CRW 0	Whiteware	1	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-09	12	1		189	I	I12	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-09	13	1		190	I	I14	A	GBU 4	Unidentified Bottle/Fragment-Body	4	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-09	13	2		190	I	I14	A	GBU 2	Unidentified Bottle/Fragment-Base	2	-	-	-	-	-	-	-	3	99	-	-	-	1.2	28	-
	3355-09	13	3		190	I	I14	A	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	9	-	-	-	-	1.2	28	-
	3355-09	13	1		190	I	I14	A	SXA 1	Coal	1	7.2	-	-	-	520	-	2	-	-	-	-	-	8.63	-	-
	3355-09	14	1		191	I	I15	B	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	12	-	-	-	-	1.2	28	-
	3355-09	15	1		192	I	I16	A/C	ZXP 25	Clam	3	4.8	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-09	15	1		192	I	I16	A/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-09	15	2		192	I	I16	A/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-09	15	3		192	I	I16	A/C	GBU 3	Unidentified Bottle/Fragment-Finish	1	-	-	-	-	-	-	-	7	-	149	-	-	1.2	28	-
	3355-09	15	4		192	I	I16	A/C	GBU 4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	7	-	-	-	-	1.2	28	-
	3355-09	15	5		192	I	I16	A/C	GBU 4	Unidentified Bottle/Fragment-Body	3	-	-	-	-	-	-	-	12	-	-	-	-	1.2	28	-
	3355-09	15	6		192	I	I16	A/C	GTU 1	Unidentified Tableware/General	1	-	-	-	-	-	161	-	25	-	-	-	-	1.3	31	-
	3355-09	15	7		192	I	I16	A/C	GOG 14	Ampoule	2	-	-	-	-	-	-	-	1	-	-	-	-	8.44	28	-
	3355-09	15	8		192	I	I16	A/C	GOU 2	Total Unidentified Glass/Melted	1	-	-	-	-	-	-	-	1	-	-	-	93	1.10	-	-
	3355-09	15	9		192	I	I16	A/C	GTU 1	Unidentified Tableware/General	2	-	-	-	-	-	3	-	2	-	-	-	-	1.3	31	-
	3355-09	15	1		192	I	I16	A/C	CRW 0	Whiteware	5	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-09	15	2		192	I	I16	A/C	CRW 0	Whiteware	2	-	1820	-	-	-	-	600	-	-	-	-	69	1.1	99	-
	3355-09	15	3		192	I	I16	A/C	CSL 31	Stoneware - Gray Salt Glazed w/ Bristol & Albany Type Slips	1	-	1880	1950	-	-	618	10	-	-	-	-	-	1.1	99	-
	3355-09	15	1		192	I	I16	A/C	SXC 41	Button Waster	2	-	-	-	-	568	-	12	-	-	-	-	-	8.70	-	-
	3355-09	15	2		192	I	I16	A/C	SAP 15	Bathroom Fixture	2	-	-	-	-	212	-	110	13	-	-	-	-	2.15	-	-
	3355-09	15	3		192	I	I16	A/C	SXA 5	Slag	1	1.1	-	-	-	800	-	2	-	-	-	-	-	8.63	-	-
	3355-09	15	4		192	I	I16	A/C	SAT 1	Tile	1	-	-	-	-	249	-	2	11	-	-	-	-	2.16	-	adhesive present
	3355-09	15	5		192	I	I16	A/C	SAT 1	Tile	1	-	-	-	-	249	-	2	13	-	-	-	-	2.16	-	adhesive present

Site	TempSite	Cat	Spc	Acc	Fld	Area	STP	Str	Type Stype		Translation	Cnt	Wght	Beg-End Date		V1	V3	V4	V5	V6	V7	V8	V9	Cmt	Ptn	Fnt	Note
	3355-09	15	6		192	I	I16	A/C	SAT	1	Tile	1	-	-	-	-	2	-	2	-	-	-	-	-	2.16	-	-
	3355-09	15	7		192	I	I16	A/C	SAF	6	Wire Nail	1	-	1850	-	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-09	15	8		192	I	I16	A/C	SAF	6	Wire Nail	1	-	1850	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-09	15	9		192	I	I16	A/C	SAB	1	Brick	2	7.2	-	-	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-09	15	10		192	I	I16	A/C	SXH	89	Sheet Metal	1	-	-	-	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-09	16	1		193	I	I17	B/C	ZXP	1	Oyster/Clam	2	5.6	-	-	-	-	-	700	2	-	-	-	-	11.97	-	-
	3355-09	16	1		193	I	I17	B/C	GBU	2	Unidentified Bottle/Fragment-Base	1	-	1911	1929	5	-	-	-	1	8	-	-	-	1.2	28	embossed "<Owens Bottle Co>"
	3355-09	16	2		193	I	I17	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	1	-	-	-	-	1.2	28	-
	3355-09	16	3		193	I	I17	B/C	GBU	4	Unidentified Bottle/Fragment-Body	1	-	-	-	-	-	-	-	3	-	-	-	-	1.2	28	-
	3355-09	16	4		193	I	I17	B/C	GBU	4	Unidentified Bottle/Fragment-Body	2	-	-	-	-	-	-	-	12	-	-	-	-	1.2	28	-
	3355-09	16	5		193	I	I17	B/C	GOU	1	Total Unidentified Glass/General	2	-	-	-	-	-	-	-	2	-	-	-	-	1.10	-	-
	3355-09	16	6		193	I	I17	B/C	GOU	2	Total Unidentified Glass/Melted	2	-	-	-	-	-	-	-	1	-	-	-	93	1.10	-	-
	3355-09	16	1		193	I	I17	B/C	CRW	0	Whiteware	2	-	1820	-	-	-	-	14	-	-	-	-	-	1.1	99	-
	3355-09	16	2		193	I	I17	B/C	CRW	0	Whiteware	1	-	1820	-	-	-	-	16	-	-	-	-	-	1.1	99	-
	3355-09	16	3		193	I	I17	B/C	CRW	0	Whiteware	1	-	1820	-	904	-	-	16	-	-	-	-	-	1.1	99	illegible maker' mark fragment
	3355-09	16	4		193	I	I17	B/C	CRW	0	Whiteware	1	-	1820	-	-	-	-	15	-	-	-	-	-	1.1	99	-
	3355-09	16	5		193	I	I17	B/C	CRI	0	Ironstone	1	-	1840	-	-	-	-	14	-	-	-	-	99	1.1	99	-
	3355-09	16	6		193	I	I17	B/C	CSL	75	Stoneware - Buff Body - Bristol Type Slip	2	-	1835	-	-	-	2	10	-	-	-	50	69	1.1	99	with handpainted blue design
	3355-09	16	1		193	I	I17	B/C	SXH	98	Miscellaneous Hardware	1	-	-	-	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-09	16	2		193	I	I17	B/C	SAF	6	Wire Nail	1	-	1850	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-09	16	3		193	I	I17	B/C	SUM	19	Decorative Glass	1	-	-	-	-	320	-	2	52	-	-	-	-	3.23	-	-
	3355-09	16	4		193	I	I17	B/C	SXC	41	Button Waster	1	-	-	-	-	568	-	2	-	-	-	-	-	8.70	-	-
	3355-09	16	5		193	I	I17	B/C	SUM	19	Decorative Glass	1	0.5	-	-	-	320	89	2	10	-	-	-	-	3.23	-	daisy-like motif
	3355-09	17	1		194	I	I20	B	SAB	1	Brick	1	6.1	-	-	-	1	-	2	-	-	-	-	-	2.16	-	-
	3355-09	17	2		194	I	I20	B	SAF	74	Machine Cut Nail - Unknown Head	1	-	1790	-	-	624	-	2	-	-	-	-	-	2.12	-	-
	3355-09	17	3		194	I	I20	B	SXH	10	Miscellaneous Wire	2	-	1831	-	-	624	-	2	-	-	-	-	-	8.90	-	-
	3355-09	17	4		194	I	I20	B	SAF	6	Wire Nail	10	-	1850	-	-	624	-	1	-	-	-	-	-	2.12	-	-
	3355-09	17	5		194	I	I20	B	SAF	6	Wire Nail	4	-	1850	-	-	624	-	425	-	-	-	-	-	2.12	-	-
	3355-09	17	6		194	I	I20	B	SAP	38	Drain Tile	1	-	-	-	-	204	-	2	-	-	-	-	-	2.15	-	stamped "CO"

Utilized Codes for XE 3355 Goethals Bridge, Union Co, NJ & Richmond Co, NY Ph I

Historic Ceramic

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Maker's Mark	Vessel Number	Wear	Motif/Pattern	Form	Percent Complete	Part	-	Color	-	-

Var1	Translation
902	Unidentifiable impressed maker's mark
904	Unidentifiable printed maker's mark
953	Includes "Patented"

Var7	Translation
1	Body
2	Rim
3	Base
5	Rim & Body
6	Base & Body
7	Handle
9	Rim, Body & Base
31	Finial
32	Lid & Finial

Var4	Translation
2	Unidentifiable Motif
19	See Written Comments
102	Small Scale Floral
109	Small Scale Floral w/ Geometric Border
113	Small Scale Floral w/ Gilded Band
120	Geometric - General
129	Small Scale Floral: Pink Rose Type Flowers, Green &/or Gray - Green Leaves
245	*Gilded Band Atop Rim*
287	Greek Fret Border
551	Bands & Stripes
553	Stripe
618	Albany Slip Interior, Bristol Slip Exterior
628	Brown Slipped, Int & Ext
676	Albany Type Slip Both Surfaces
677	Albany Type Slip, Interior Only
678	Albany Type Slip, Exterior Only
749	Glazed Exterior Only
750	Glazed Interior Only
752	*Glazed Both Surfaces*
912	Beaded
919	Scalloped Edge
925	Other Molded Rim Pattern
993	Shell Edge - General
1011	Floral - General
1020	Indeterminate Molded Motif

Var5	Translation
1	Misc. Flatware Body
2	Misc. Flatware Rim
3	Misc. Flatware Base
10	Misc. Hollowware Body
11	Misc. Hollowware Rim
14	Body-General
15	Rim-General
16	Base-General
50	Plate-Unidentified Diameter
98	Teacup - General
103	Coffee Cup
104	Small Saucer/Bowl (6" or less)
106	Saucer/Bowl Diameter Unknown
119	Misc. Teawares
126	Bottle
215	Bowl - Depth & Diameter Unknown
227	Shallow Bowl/Dish 6"-10"
357	Misc. Storage/Serving Vessel
520	Flower Pot
600	Unattached Handle - Small Vessel
620	Lid - General

Var9	Translation
1	Blue & Red
4	Red & Green
5	Red & Yellow
19	See Written Comments
20	Yellow
30	Red
32	Dark Red
40	Green
47	Green & Brown
48	Green & Yellow
50	Blue
51	Light Blue
60	*Black*
62	Brown
97	Unidentified - Only Shadow of Decoration Remains
103	Pink & Green
105	Green & Orange

Glass

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Maker's Mark	Vessel Number	Brand	Motif/Pattern	Manufacturing Technique	Color	Base	Finish	Percent Complete	Wear	Embossment/Label

Var1	Translation
2	Anchor Hocking Glass Corp.
5	Owens Bottle Co.
8	Diamond Glass Co.
42	Glenshaw Glass Co.

Var7	Translation
8	Machine Suction Scar (Owens)
12	Molded
13	Pedal Operated Push-up
99	Unidentified

Var3	Translation
925	Clorox
5036	Coca-Cola
5160	Nehi Flavors - Chero Cola Co.

Var4	Translation
1	Panel
2	Flute
3	Rib (general)
4	Rib (vertical)
6	Rib (diagonal)
27	Stipple
50	Multiple Motif
55	Stipple (on base only)
90	See Written Comments
161	Iridescent (i.e. Carnival, Rainbow, Bronze, etc.)
194	Wheel/Diamond Point Engraved
196	Etched
222	Painted
249	Applied Color Label (ACL)

Var5	Translation
23	Machine-made (General)
24	Automatic Bottle-machine Made

Var6	Translation
1	Colorless
2	Milkglass (Opaque White)
3	Emerald Green/Teal
5	Light Olive/Dark Olive Green
7	Brown/Amber/Honey
9	Aquamarine (all shades)
11	Amethyst Tint (Solarized)
12	Cobalt
15	Red
16	Pink
21	Light Grass Green
22	Opaque Green
25	Light Peach
31	Colorless/Opaque White

Var8	Translation
140	Screw, Continuous or Interrupted
143	Cap Seat
145	Prescription
147	Patent/Extract
148	Blob-top
149	Bead (for machine-made containers)
200	Crown
299	Unidentified/Two-part

Small Finds / Architectural

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Maker's Mark/Brand	-	Material	Decoration	Characteristic	Color	-	-	-	-	BackMark

Var1	Translation
457	Washburn Brothers Co / NY

Var6	Translation
1	Red
2	Yellow
4	Buff
6	Brown
7	Taupe
8	Gray
10	Colorless
11	Aqua
12	Green
13	White
14	Blue
17	Pink
22	Black
52	Green & White
57	Colorless & Yellow

Var3	Translation
1	Brick
2	Asbestos
32	Mortar
35	Plaster
204	Earthenware
212	Porcelain
220	Stoneware
249	Ceramic
320	Glass
325	Paper
414	Synthetic Rubber
420	Plastic
426	Vinyl
435	Nylon
519	Carbon
520	Coal
556	Leather
568	Shell
604	Brass
610	Copper Alloy
624	Ferrous Metal
660	Stainless Steel
672	Zinc
695	White Metal
800	Slag
1012	Glass & Metal
1070	Metal & Plastic
1228	Chalcedony
1716	Linen
1728	Wool

Var4	Translation
3	Raised Molded
63	Handpainted (Decoration only)
89	Press-Molded
700	Swirl Type - Ribbon or Lobed Core

Var5	Translation
1	Whole
2	Portion/Fragment
12	Waster
13	Scrap
23	2 Holes
30	Sand Temper
70	Grooved/Ridged
78	Sole without Heel
86	Square
110	Glazed
424	Face-pinched
425	Double Headed
598	Albany Slipped
750	Unidentified Shank

Lithics

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Point Type	-	Material	Termination	Flake Scars	Condition	Modification	Platform Type	Cortex	Temporal Affiliation	-

Var3	Translation
1	Chert
501	Jasper
521	Argillite
531	Quartz
771	Hematite

Var9	Translation
1	Absent
5	Cobble

Prehistoric Ceramic

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Ware Type	Vessel Number	Exterior Surface	Exterior Decoration	Form/Shape	Interior Surface	Interior Decoration	-	Temper	Temporal Affiliation	-

Faunal

Var1 Meaning	Var2 Meaning	Var3 Meaning	Var4 Meaning	Var5 Meaning	Var6 Meaning	Var7 Meaning	Var8 Meaning	Var9 Meaning	Var10 Meaning	Var11 Meaning
Butchering Type	-	Illustrated Meat Cut	Age/Fusion	Element	Portion	Burning	Gnawing	Weathering	MNU Type	-

Var6	Translation
2	Fragment
5	Shaft
18	Enamel

Var5	Translation
16	Tooth
38	Rib
120	Longbone
700	Shell
999	Unidentified

Pattern and Function Translations

PatGrp	Pattern Analysis Group
0	Unidentified
1	Kitchen
2	Architecture
3	Furnishings
4	Arms
5	Clothing
6	Personal
7	Tobacco Pipes
8	Activities
9	Prehistoric
11	Faunal

PatCls	Pattern Analysis Class
0	Unidentified
1	Ceramics
2	Bottles
3	Tumblers/Wine Glasses
5	Misc. Glassware
10	Kitchen - Other
11	Window Glass/Caming/Etc.
12	Nails, Spikes, Tacks, etc., and Misc. Construction Hardware
15	Plumbing/Toilet/Sink Fixtures
16	Misc. Building Materials/Floor Covering/Roofing Materials
21	Lighting Related
23	Furniture - Decorative
27	Gunflints
31	Clothing Fasteners
32	Misc. Cloth
34	Shoes
39	Clothing - Other
44	Pharmaceutical/Medicine
45	Cosmetic
46	Religious/Ritual
50	Personal - Other
51	White Clay Pipes
56	Household Related
58	Machine Parts/Hardware
59	Toys
63	Heating Related
66	Other Recreation
70	Manufacturing By-Products
90	Activities - Other
91	Prehistoric Lithics
97	Faunal/Floral Domestic/Exploited
98	Faunal/Floral Non-domestic
99	Faunal/Floral - Other

Funct	Function Trans
1	Teawares
2	Tablewares
8	Miscellaneous
9	Multifunction
12	Beverage Service/Storage/Transport
21	Wine/Liquor
23	Soda/Mineral Water
24	Miscellaneous Beverage
26	Household-related/Bottle - Other
27	Pharmaceutical
28	Miscellaneous Bottle - Other
31	Miscellaneous Tableware
32	Lighting-related
99	Unidentifiable

APPENDIX CD
RESUMES of KEY PERSONNEL

KRISTOFER M. BEADENKOPF, RPA
The Louis Berger Group, Inc.
Archaeologist

EDUCATION

- M.A.A. (Master of Applied Anthropology), Historical Archaeology, University of Maryland, 2002.
- B.A., Anthropology, Monmouth University, 1998.

PROFESSIONAL REGISTRATION

- Register of Professional Archaeologists (RPA)

TECHNICAL TRAINING

- Cultural Resources Best Workshop, New Jersey Historic Preservation Office, Trenton. October 27, 2006.
- Section 106 Essentials, Advisory Council for Historic Preservation, Washington, D.C. Don Klima (Instructor), August 11-12, 2004.
- Trenching and Excavation Safety—OSHA Construction Industry Standards, Subpart P (29 CFR 1926.650-652). Emilcott Associates, Inc., June 2, 2004.

PROFESSIONAL AFFILIATIONS

- Somerville Historical Society
- Sussex County Historical Society
- Southeastern Archaeological Conference
- Pound Ridge Historical Society
- Society for American Archaeology

PROFESSIONAL EXPERIENCE

Mr. Beadenkopf's background includes archaeological investigations at prehistoric sites dating to the Archaic through the Late Woodland periods and historic sites dating to the eighteenth through the early twentieth centuries throughout the Northeast, Mid-Atlantic, and Southeast. As Principal Investigator, he is responsible for the design and execution of archaeological research projects involving historic and prehistoric resources in the Northeast. His responsibilities include implementing surveys and excavations, performing background and site-specific research, analysis and interpretation of archaeological data and artifacts, preparation of technical reports, and consultation with regulatory agencies. His specialties include urban and historical archaeology and public archaeology. His experience includes public interpretation at several archaeological sites, education, presentations, and creation of displays of archaeological collections and information. Projects in Stavelot, Belgium; Idalion, Cyprus; and Rio Bravo, Belize, illustrate his international experience. Since joining The Louis Berger Group, Inc., Mr. Beadenkopf's major projects have included the following:

- **Phase I Cultural Resource Survey for Proposed Sentinel Williams/TRANSCO Pipeline Mountain View Loop, Hillsborough and Montgomery Townships, Somerset County, New Jersey.** As part of the FERC permitting process and Section 106 compliance, served as the Principal Investigator/Field Director for a cultural resource survey of a 3.78-mile-long proposed pipeline corridor. This investigation identified one Middle to Late Archaic period prehistoric site. For Williams/Transco, Houston, Texas.

- **Phase IA Archaeological Resource Assessment for Proposed Crab Island Mitigation Bank Borough of Sayreville, Middlesex County, New Jersey.** Principal Investigator. For Mid-Atlantic Mitigation, LLC.

- **Phase I Cultural Resource Survey for Proposed Sentinel/Transco Lateral Pipeline, Mountain View Loop. Hillsborough and Montgomery Townships, Somerset County, New Jersey.** Principal Investigator. For Williams Transco.

- **Phase I Archaeological Survey for Proposed Redevelopment of the Former Hercules Facility. Burlington Township, Burlington County, New Jersey.** Principal Investigator. For Burlington Neck, LLC.

- **Phase I Archaeological Survey for Proposed Improvements to the New Jersey Turnpike Interchanges6 to 8A. Burlington, Middlesex, and Mercer Counties, New Jersey.** Principal Investigator/Field Director. For the New Jersey Turnpike Authority.

- **Phase I Archaeological Survey for Proposed Bus Parking, Queens, New York.** Field Director. For New York City Transit Authority, New York, New York.

- **Phase I/II Archaeological Survey/ for Proposed Improvements to SR 706, Susquehanna County, Pennsylvania.** Principal Investigator/Field Director. For PennDOT, District 4, Dunmore, Pennsylvania.

- **Phase I Archaeological Survey for Roadway Improvements "Liberty Slide", Liberty Township, Susquehanna County, Pennsylvania.** Principal Investigator/Field Director. For PennDOT, District 4, Dunmore, Pennsylvania.

- **Phase IA Archaeological Screening for Proposed Mulhockaway Creek Restoration, Hoffman Park, Union Township, Hunterdon County, New Jersey.** Principal Investigator. For Stony Brook-Millstone Watershed Association and the New Jersey Water Supply Authority.

- **Phase I Archaeological Survey for Proposed Bridge Replacement, Forkston, Wyoming County, Pennsylvania.** Principal Investigator/Field Director. For PennDOT, District 4, Dunmore, Pennsylvania.

- **Phase I Archaeological Survey for Proposed Improvements to the Trenton-Morristown Bridge Overpass, Bucks County, Pennsylvania.** Principal Investigator/Field Director. For DRJTC, Morrisville, Pennsylvania.

- **First Presbyterian Church of Newark, Essex County, New Jersey Disinterment.** Principal Investigator/Field Director. For Langan Engineering and Environmental Services, Elmwood Park, New Jersey.

- **Phase I Archaeological Survey for Proposed Improvements to the Woodloch Intersection of SR590 and SR0408, Lackawanna Township, Pike County, Pennsylvania.** Principal Investigator For PennDOT, District 4, Dunmore, Pennsylvania.

- **Phase IA Cultural Resource Assessment for the Proposed Belmar 2 Verizon Wireless Communication Facility, Borough of Belmar, Monmouth County, New Jersey.** Principal Investigator. For Innovative Engineering, Inc.

- **Phase I** Cultural **Resource Assessment for the Proposed Faculty Housing Institute of Advanced Studies Campus. Princeton Township, Mercer County, New Jersey.** Co-Principal Investigator/Field Director. For the Institute of Advanced Studies.

- **Phase I Archaeological Survey for the Proposed Albany Verizon Wireless Communications Facility, City of Albany, Albany County, New York.** Principal Investigator. For Costich Engineering.

- **Phase IA Archaeological Assessment for the Proposed Environmental Remediation of the ALCOA Plant Town of Massena, Saint Lawrence County, New York.** Principal Investigator. For Blasland, Bouck and Lee, Inc.

- **Phase IA Archaeological and Historical Survey for the Proposed Kearny 6 Verizon Wireless Communication Facility, Town of Harrison, Hudson County, New Jersey.** Principal Investigator. For Innovative Engineering, Inc.

- **Phase IA Archaeological and Historical Survey for the Proposed Old Bridge 3 Verizon Wireless Communication Facility, Old Bridge Township, Middlesex County, New Jersey.** Principal Investigator. For Innovative Engineering, Inc.

- **Phase IA Cultural Resource Assessment for the Proposed East Orange High School Replacement City of East Orange, Essex County, New Jersey.** Principal Investigator. For New Jersey School Construction Corp.

- **Phase IA Cultural Resource Assessment for the Proposed Harlem Hospital Rehabilitation. New York, New York.** Principal Investigator. For the Dormitory Authority of the State of New York and the Harlem Hospital Corporation.

- **Phase IA Cultural Resource Assessment for the Proposed Fort Lee 6 Verizon Wireless Communication Facility, Fort Lee, Bergen County, New Jersey.** Principal Investigator. For Innovative Engineering, Inc.

- **Phase I Archaeological Survey for the Proposed Wall 3/Hinks Turkey Farm Verizon Wireless Communications Facility, Wall Township, New Jersey.** Principal Investigator. For Innovative Engineering, Inc.

- **Phase I Archaeological and Historical Survey for the Proposed Matawan 2 Verizon Wireless Communication Facility, Town of Matawan, Monmouth County, New Jersey.** Principal Investigator. For Innovative Engineering, Inc.

- **Phase I Archaeological Survey for the Proposed Pound Ridge Vista Nextel Wireless Communication Facility, Town of Lewisboro, Westchester County, New York.** Principal Investigator. For IVI International.

- **Union County Courthouse Time Capsule Relocation for the 2005 Centennial Celebration. Elizabeth, Union County, New Jersey.** Principal Investigator. For the Union County Board of Trustees.

- **Phase IA Cultural Resource Assessment for the Proposed Vent Plant Rehabilitation, West 30th Street and 6th Avenue, New York, New York.** Principal Investigator. For the New York City Transit Authority, New York, New York.

- **Phase IA Cultural Resource Assessment for the Proposed Wall 3/Hinks Turkey Farm Verizon Wireless Communications Facility, Wall Township, New Jersey.** Principal Investigator. For Innovative Engineering, Inc., Toms River, New Jersey.

- **Phase IA Cultural Resource Assessment for the Proposed Oakwood Avenue School Replacement City of Orange, Essex County, New Jersey.** Principal Investigator. For New Jersey School Construction Corp., Trenton, New Jersey.

- **Phase I Archaeological Investigations for the Proposed Fence Enclosure of the First Presbyterian Church Grounds, Elizabeth, Union County, New Jersey.** Principal Investigator. For the First Presbyterian Church of Elizabeth, Elizabeth, New Jersey.
- **Phase I Archaeological Investigations for the Proposed Nextel Wireless Communication Facility, Colesville, Town of Wantage, Sussex County, New Jersey.** Principal Investigator. For Innovative Engineering, Inc., Toms River, New Jersey.

- **Phase I Archaeological Investigations for the Proposed Verizon Wireless Communication Facility, Pellettown, Town of Wantage, Sussex County, New Jersey.** Principal Investigator. For Herbst-Musciano Architects/Planners, Cedar Knolls, New Jersey.

- **Phase III Archaeological Data Recovery Investigations at the Hanover 5 Proposed Telecommunication Facility, Town of Whippany, Morris County, New Jersey**. Principal Investigator. For Innovative Engineering, Inc., Toms River, New Jersey.
- **Phase IB Archaeological Survey for the Proposed Omnipoint Wireless Communication Facility, Town of Pound Ridge, Westchester County, New York.** Principal Investigator. For IVI International, White Plains, New York.

- **Phase IA Cultural Resource Assessment for the Proposed Peshine Avenue School Elementary School Replacement City of Newark, Essex County, New Jersey.** Principal Investigator. For New Jersey School Construction Corp., Trenton, New Jersey.

- **Phase IA Resource Assessment for Proposed Improvements to the Garden State Parkway Interchange 10. Cape May Court House, Cape May County, New Jersey.** Principal Investigator. For the New Jersey Turnpike Authority.

- **Phase IB Archaeological Survey for the Proposed Omnipoint Wireless Communication Facility 195 Greenbrook Road, North Plainfield, Somerset County, New Jersey (Cell Tower Location NJ-06-552C).** Principal Investigator. For IVI International, White Plains, New York.

- **Phase IB Archaeological Survey for the Proposed Omnipoint Wireless Communication Facility, Morristown, Morris County, New Jersey (Cell Tower Location NJ7237b).** Principal Investigator. For IVI International, White Plains, New York.

- **Phase I Cultural Resource Investigation of the Garafalo Property, Town of Bangor, Washington Township, Northampton County, Pennsylvania.** Principal Investigator. For McFall, Layman and Jordan, P.C.

- **Phase IA Cultural Resource Assessment for the Proposed Burnet-Warren Elementary School, City of Newark, Essex County, New Jersey.** Principal Investigator. For New Jersey School Construction Corporation. Trenton, New Jersey.

- **Phase IA Cultural Resource Assessment of the Proposed Andover 2 Wireless Telecommunications Facility, State Route 206, Andover Borough, Sussex County, New Jersey.** Principal Investigator. For Innovative Engineering.

- **Phase I Archaeological Survey of the Proposed Rye Wireless Telecommunications Facility, 615 Milton Road, Rye, Westchester County, New York.** Principal Investigator. For IVI International, White Plains, New York.

- **Phase I Archaeological Investigations at the Tuckahoe Road Bridge Replacement Project, Estell Manor, Atlantic County, New Jersey.** Principal Investigator. For the New Jersey Department of Transportation.

PREVIOUS PROFESSIONAL EXPERIENCE

Greenhouse Consultants Inc., New York, New York. Principal Investigator/Historian/Field Director. Composed technical reports and proposals, developed budgets and marketing strategies, conducted client and regulatory agency consultation.

- **Phase IB Archaeological Testing of the Proposed Silver Lake Subdivision in the Town of Clinton, Dutchess County, New York.** Principal Investigator. For the Chazen Companies.

- **Phase IA/IB Archaeological Investigations of a Classified Site in the Town of Owego, Tioga County, New York.** Principal Investigator and Historian. For the Chazen Companies.

- **Phase IA/IB/II Archaeological Investigations of the Port Jervis Educational Complex, Port Jervis, Orange County, New York.** Principal Investigator and Historian. For McGoey, Hauser and Edsall PC.

- **Phase IA/IB Archaeological Investigations of the Jockey Hollow Girl Scout Camp, Morristown, New Jersey.** Co-Principal Investigator. For Paulus, Sokolowski and Sartor Engineering, PC.

- **Phase IA/IB Archaeological Investigations of the New York State Route 92 Sidewalk Expansion, Village of Manlius, Orange County, New York.** Principal Investigator and Historian. For Barton and Loguidice, PC.

- **Phase IA Archaeological Sensitivity Investigation, Andros Hills Subdivision, Long Island, New York.** Principal Investigator and Historian. For Bourke, Flanagan, & Asato, PC.

- **Phase IA/IB Archaeological Sensitivity Investigation and Archaeological Survey, Brookside Loop Development, Staten Island, New York.** Principal Investigator and Historian. For FSK Construction Corp.

- **Phase IA Archaeological Sensitivity Investigation, West Street Rezoning, Tribeca North, New York, New York.** Principal Investigator and Historian. For Parsons Brinkerhoff, New York, New York.

Southern Research, Columbus, Georgia. Principal Investigator/Historian/Field Director. Composed technical reports, developed excavation plans, supervised field technicians, and conducted client and regulatory agency consultation.

- **Phase III Archaeological Investigations in the Backyard Area of the Old Governor's Mansion, Milledgeville, Georgia.** Principal Investigator and Historian. For Lord, Aeck, and Sargent and the Old Governor's Mansion.

- **Phase II Archaeological Survey of the Augusta Canal Headgates Area, Columbia County, Georgia.** Principal Investigator and Historian. For the Augusta Canal Authority.

- **Phase III Archaeological Data Recovery at the Site of the New Jacksonville Public Library.** Jacksonville, Florida. Principal Investigator and Co-Historian. For Ellis and Associates and the City of Jacksonville

- **Phase II Archaeological Testing of the 21st Century Chattanooga Waterfront Project Area South of the Riverfront Parkway, Hamilton County, Tennessee.** Principal Investigator and Historian. For Hargreaves Associates for the River City Company.

- **Archaeological Investigations in the Jekyll Island Club Hotel Parking Lot, Jekyll Island, Georgia.** Principal Investigator and Historian. For the Jaeger Company for the Jekyll Island Authority.

Archaeology in Annapolis Laboratory, University of Maryland, College Park, Maryland. Laboratory Director. Composed technical reports, supervised laboratory technicians, and managed the artifact collections from twenty years of the Archaeology in Annapolis Project's excavations.

University of Maryland, College Park, Maryland. Field Director. Developed excavation plans, supervised field technicians, and conducted client and regulatory agency consultation.

Parsons Brinkerhoff, Rockville, Maryland. Excavator. Native American Woodland period camp site.

URS Greiner Woodward and Clyde, Florence, New Jersey. Excavator. Various prehistoric and historic archaeological projects.

Richard Grubb and Associates, Cranbury, New Jersey. Excavator. Various prehistoric and historic archaeological projects.

Progamme for Belize Archaeology Conservation Area, Orange Walk District, Belize. Research Assistant/Excavator. Chawak But'o'ob (RB47) Post-Classic Maya domestic center.

Cultural Resource Consulting Group (CRCG), Highland Park, New Jersey. Excavator. Various prehistoric and historic archaeological projects.

ACADEMIC POSITIONS

Graduate Teaching Associate, Department of Anthropology, University of Maryland, College Park, Maryland. Co-Instructor: Anthropology 496/696, University of Maryland Field School in Urban Archaeology (2001 and 2002).

Teaching Associate, Department of Anthropology, Monmouth University, West Long Branch, New Jersey. Co-Instructor: Anthropology 315, Field Research in Archaeology (2001)

Graduate Teaching Associate, Department of Anthropology, University of Maryland, College Park, Maryland. Co-Instructor: Anthropology 240, Introduction to Archaeology (2000 and 2001).

Teaching Associate, Department of Anthropology, Montclair State University, Upper Montclair, New Jersey. Co-Instructor: Anthropology 470, Archaeological Field Methods (1998 and 1999).

University of Indianapolis, Indianapolis, Indiana. Excavator/Field School Student. Bronze Age Temple Complex in Dali (Idalion), Cyprus.

University of Liege, Liege, Belgium. Excavator. 11^{th}-18^{th} Century Abby Complex in Stavelot, Belgium.

PUBLIC ARCHAEOLOGY/EDUCATIONAL PROJECTS

- Public Interpreter/Designer Public Archaeology Program. Archaeology in Annapolis/UMD Banneker-Douglass Museum, Phase III. Annapolis, Maryland. July-August 2001
- Public Interpreter/Designer Public Archaeology Demonstration: Maryland Day Activity, University of Maryland College Park, Maryland. April 2001.
- Weekend Public Educator/Volunteer: South Street Seaport Museum, New York. April-July 2000.
- Public Interpreter, Public Archaeology Demonstration: Lenne Lenape Cultural Heritage Festival Sandy Hook, New Jersey. November 1997.
- Artifact Display: Dismal Swamp Lithic Artifacts CRCG Displayed in the Lobby of New Jersey Division of Travel and Tourism, Trenton. Native American Late Archaic Lithic Artifacts. June 1997.

- Public Interpreter, Public Archaeology Demonstration: Oxford Furnace, Warren, New Jersey. Warren County Heritage Festival, 19th Century Industrial (Iron Works) Complex. May 1996.

PRESENTATIONS

- One Ounce of Fact: Consumer Trends and Ethnicity in 19th Century Jacksonville, Florida. Presented at the 60th Annual Meeting of the Southeastern Archaeological Conference in Charlotte, North Carolina. November 2003.

- Archaeology: An Introduction to Our Past, Present, and Future. Presented to the 8th Grade Class of Sarah Wade School, Jacksonville, Florida. December 2002.

- Critical Archaeology in Public: Results from the 2001 Banneker-Douglass Museum/Courthouse Public Archaeology Program. Presented at the 11th Annual Graduate Student Colloquium, University of Maryland, College Park. April 2002.

- African American Archaeology in Public: Public Archaeology at the Banneker Douglass Museum Site. Presented at the 20th annual Archaeology in Annapolis Archaeological Symposium. Annapolis, Maryland. November 2001.

- Archaeology: An Introduction to Our Past, Present, and Future. Presented to the 9th Grade Ancient History Class, McClean High School, Washington D.C. October 2001.

- Just Across the River: The University of Maryland's 2001 Archaeological Investigation of Eastport, Maryland. Presented to the Historic Annapolis Foundation. September 2001.

- Archaeology: The Ultimate 3D Puzzle. Presented to the 6th Grade Class of Ms. Nyhus, Cherokee Grade School, Adelphi, Maryland. May 2001.

- Late Classical Period (AD 600-900) Households in the Eastern Maya Lowlands: Recent Survey Data from the Three Rivers Region of Northwestern Belize, Central America. Co-authored with Stanley L. Walling Ph.D. et al. Presented at the Student Research Conference of the *Sigma K* Honor Society, May 1, 1999. Originally presented at the 64th Annual Meeting of the Society for American Archaeology, Chicago, by Stanley L. Walling, Ph.D.

- Forsaken History: The Role of the Spanish Mission in the Colonization of the American Southeast. Defense of Senior Honors Thesis, Monmouth University, New Jersey. May 1998.

ZACHARY J. DAVIS
The Louis Berger Group, Inc.
Senior Archaeologist

EDUCATION

- Interdepartmental Doctoral Program in Anthropological Science, State University of New York at Stony Brook (thesis subject: *Lithic Resource Exploitation Strategies and Technological Organization in the Paleoindian of Northeastern North America*)
- M.A., Anthropology, State University of New York at Stony Brook, 2000
- M.A., Archaeology, Institute of Archaeology, University of London, 1994
- B.A., Archaeological Studies, Boston University, 1993

PROFESSIONAL REGISTRATIONS

- Register of Professional Archaeologists (RPA)

TECHNICAL TRAINING

- 40-Hour H&S for Hazardous Waste Operations and Emergency Response meeting the training requirements of 29 CFR 1910.120. Emilcott Associates, Inc., March 15, 2004
- Trenching and Excavation Safety—OSHA Construction Industry Standards, Subpart P (29 CFR 1926.650-652). Emilcott Associates, Inc., February 19, 2004
- Introduction to Section 106 Review (Ralston Cox, instructor), February 20-21, 2002
- Introduction to GPS using the Trimble Pro XR Training Class (Mike Popoloski, instructor), March 19, 2001

PROFESSIONAL AFFILIATIONS

- Society for American Archaeology
- Geological Society of America
- Society for Archaeological Sciences
- Archaeological Society of New Jersey

PROFESSIONAL EXPERIENCE

Mr. Davis's background includes archaeological investigations at prehistoric sites dating to the Paleoindian through the Late Woodland period and historic sites dating to the seventeenth century through the early twentieth century. As Senior Archaeologist, he is responsible for the implementation and execution of archaeological research projects involving historic and prehistoric resources in the Northeast. His responsibilities include coordinating and supervising interdisciplinary and multitask studies, planning and conducting surveys and excavations of archaeological sites, interfacing with clients and subconsultants, maintaining project schedules, and preparing research proposals and technical reports. In addition, Mr. Davis has extensive experience with lithic material analysis and Geographic Information Systems database development and analysis for cultural resources. Since joining Berger, Mr. Davis's major projects include the following.

- **Phase IB Archaeological Survey, World Trade Center PATH Terminal, New York City.** Principal Investigator for archaeological investigations in advance of construction of the new WTC PATH Terminal. Coordinated the excavation of a 170-foot long trench to 15 feet below the surface and within OSHA safety regulations. Identified, evaluated for National Register eligibility, and

mitigated late eighteenth- and early nineteenth-century backyard residential archaeological features. For the Port Authority of New York and New Jersey.

- **Phase IA Archaeological Assessment, Rockaway Boulevard Site, Rockaway Boulevard & Nassau Expressway, Block 14260, Lot 1, Jamaica, Queens County, New York.** Principal Investigator for an archaeological resource assessment of a proposed New York City Transit Bus parking facility, located adjacent to JFK International Airport. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New York City Transit.

- **Phase I Cultural Resource Assessment, Trenton-Morrisville Toll Bridge Rehabilitation and One Auxiliary Northbound Lane, Morrisville, Pennsylvania and Trenton, New Jersey.** Project Manager for a cultural resource assessment of improvements to interchanges and the Trenton-Morrisville Toll Bridge spanning the Delaware River. Study involved archaeological assessment of proposed ground disturbance and historic architectural assessment of proposed interchange improvements to local structures, including the National Historic Landmark Delaware Division of the Pennsylvania Canal. For the Delaware River Joint Toll Bridge Commission.

- **Archaeological Monitoring, Condominiums at Cooke Mill, Market and Jersey Streets, Block H0850, Lot 21, City of Paterson, Passaic County, New Jersey**. Principal Investigator for an archaeological monitoring project at the former location of the Cooke Locomotive and Machine Works, which manufactured locomotives from 1852 until 1926. For Silk Mills Ventures, LLC and the City of Paterson Historic Preservation Commission.

- **Phase IA Archaeological Assessment, Jamaica Avenue School, Block 4102, Lots 19, 27, 33, 35 & 36, Cypress Hills, Brooklyn, Kings County, New York**. Principal Investigator for an archaeological resource assessment of a proposed New York City school location, situated in the Cypress Hills section of Brooklyn. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For the New York City School Construction Authority.

- **Phase IA Archaeological Assessment, Remedial Options Pilot Study, Grasse River Study Area, Alcoa-Massena, Massena, New York**. Principal Investigator for the Phase IA archaeological assessment of an early twentieth-century Alcoa fabricating, ingot and extrusion and smelting plant under the jurisdiction of the US EPA as a Superfund Site. Study involved the research and analysis of past disturbances and potential for historic archaeological resources associated with the industrial use of the project area. For Blasland, Bouck and Lee, Inc.

- **Contextual Study, 153rd Street Pedestrian Bridge Access at Fort Washington Park, Manhattan, New York.** Served as Principal Investigator to assist with the completion of the required environmental documentation for a new pedestrian bridge to provide access from Riverside Drive and 151st Street to Fort Washington Park, crossing over rail lines and the Henry Hudson Parkway (Route 9A). As part of the environmental documentation, a contextual study of the project area was completed, which included an inventory of all historic properties listed and eligible for listing on the state and national registers. For New York State Department of Transportation.

- **Phase IA Archaeological Assessment, Hebrew Academy of Brooklyn/Yeshiva R'tzahd, 965 East 107th Street, Block 8215, Lots 12 & 21, Brooklyn, Kings County, New York.** Principal Investigator for an archaeological resource assessment of a proposed New York City school location, situated in the Canarsie section of Brooklyn. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For the New York City School Construction Authority.

- **Phase IA Cultural Resource Assessment, East Orange Demonstration Project, Pre-K to 12th Grade School for the Performing Arts, City of East Orange, Essex County, New Jersey.** Principal Investigator for a cultural resource assessment of a proposed new school to be constructed at the present location of the c.1910 East Orange High School. Determined the project's potential to affect potential archaeological resources and coordinated the determination of the East Orange High School's National Register eligibility and the recordation of the school prior to demolition. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New Jersey School Construction Corporation.

- **Phase IA Archaeological Assessment, Proposed Vent Plant Installation, West 21st Street and Sixth Avenue, New York, New York.** Principal Investigator for an archaeological resource assessment of a proposed vent plant installation, located in Chelsea. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New York City Transit.

- **Phase IA Cultural Resource Assessment, Proposed Oakwood Avenue Elementary School Addition, City of Orange, Essex County, New Jersey.** As part of the E.O. 215 process, served as the Principal Investigator for a cultural resource assessment of an addition to the existing c. 1888 Oakwood Avenue School. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New Jersey School Construction Corporation.

- **Phase IA Cultural Resource Assessment, Proposed Peshine Avenue School, Elementary School Replacement, City of Newark, Essex County, New Jersey.** Principal Investigator for a cultural resource assessment of a proposed new school to be constructed at the present location of the c.1911 Peshine Avenue Elementary School. Determined the project's potential to affect potential archaeological resources through the use of GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New Jersey School Construction Corporation.

- **Phase IA Archaeological Assessment, Hudson Yards/Number 7 Subway Line Extension, New York, New York.** Assisted with the analysis of archaeological resource potential for 39 lots on the Westside of Manhattan and determined the potential effect of alternatives on cultural resources. For New York City Department of City Planning and New York City Transit.

- **Phase IB Archaeological Survey, Proposed Vent Plant Installation, Chrystie and Stanton Streets, New York, New York.** Principal Investigator for an archaeological survey consisting of a back-hoe trench excavated to assess the presence or absence of late nineteenth- and early twentieth-century front yard archaeological resources. For New York City Transit.

- **Phase IA Cultural Resource Assessment, Proposed Grove Street Elementary School Replacement, City of Irvington, Essex County, New Jersey**. As part of the E.O. 215 process, served as the Principal Investigator for a cultural resource assessment of a proposed new elementary school to be constructed within an existing residential neighborhood. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New Jersey School Construction Corporation.

- **Phase IA Cultural Resource Assessment, Proposed Burnet-Warren Elementary School Replacement, City of Newark, Essex County, New Jersey**. As part of the E.O. 215 process, served as Principal Investigator for a cultural resource assessment of a proposed new elementary school to be constructed within the limits of the James Street Commons Historic District, a National Register listed historic district. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New Jersey School Construction Corporation.

- **Cultural Resource Eligibility/Effects Investigations for the Proposed Tuckahoe Road (C.R. 557) Bridge Over Cape May Branch Rail Line Replacement, Atlantic County, New Jersey**. Principal Investigator for Section 106 compliance activities for NJDOT's proposed improvements to the Tuckahoe Road Bridge. Project involved subsurface archaeological investigation and historic architectural survey within the area of potential effect (APE). The architectural survey indicated that the Tuckahoe Road Bridge had previously been determined not eligible for inclusion in the National Register of Historic Places. The Cape May Rail Line, also located within the APE, was determined to be potentially eligible for inclusion in the National Register of Historic Places as an historic district owing to its role in the development of New Jersey's rail transportation system and in the growth of the state's seashore tourist resort communities. Based on the review of project plans, Berger concluded that the proposed bridge replacement project would not have an adverse effect on the National Register of Historic Places-eligible Cape May Branch Rail Line.

- **Phase IA Archaeological Assessment, Proposed Fan Plant Rehabilitation, 52nd Street and Sixth Avenue, New York, New York**. Principal Investigator for an archaeological resource assessment of a proposed fan plant rehabilitation, located in midtown Manhattan. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New York City Transit.

- **New Embassy Compound, Baghdad, Iraq**. Research assistant for cultural resource investigations associated with construction of a new embassy compound in Baghdad, Iraq. Tasks included securing historic maps of Baghdad, georeferencing historic maps to modern mapping and drafting portions of the report's historic background section. For the U.S. Department of State, Overseas Buildings Operation.

- **Cultural Resource Screening, Proposed Middle School Replacement, City of Irvington, Essex County, New Jersey**. As part of the Environmental Assessment process, served as the Principal Investigator for a cultural resource assessment of a proposed new elementary school to be constructed within an existing residential neighborhood. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New Jersey School Construction Corporation.

- **Phase IA Archaeological Assessment, New South Ferry Terminal, New York, New York.** Responsible for the archaeological resource assessment of a proposed subway terminal project in Battery Park. Required extensive cartographic research documenting the historic evolution of the

Lower Manhattan shoreline. Employed GIS technology to georeference numerous historic maps in order to trace potential historic archaeological resources within the project area. Coordinated review with New York City Landmarks Commission and New York State Office of Parks, Recreation and Historic Preservation. Drafted portions of the Memorandum of Agreement and the entirety of the Archaeological Resource Management Plan to be enacted during construction. For New York City Transit.

- **Phase IA Archaeological Assessment, Proposed Fulton Street Transit Center, Fulton Street and Broadway, New York, New York.** Principal Investigator for an archaeological resource assessment of the proposed downtown transit facility, located at Fulton Street and Broadway. Reviewed historic maps and documents and summarized past disturbances to the project area to calculate the project area's potential for archaeological resources. Drafted portions of the project's Programmatic Agreement. For New York City Transit.

- **Phase IA Archaeological Assessment, Proposed Fan Plant Rehabilitation, Lafayette and Flatbush Avenues, Brooklyn, New York.** Principal Investigator for an archaeological resource assessment of a proposed fan plant rehabilitation, located in Fort Green, Brooklyn. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New York City Transit.

- **Triborough Bridge Rehabilitation Project, Randall's and Ward's Islands, New York, New York.** Principal Investigator. A strong possibility for human burials from the Manhattan Psychiatric Center necessitated archaeological monitoring by an RPA-certified Berger archaeologist during all geotechnical borings for the project. Fieldwork included the observation of soil stratigraphy, inspection for human remains, and recordation of archaeological materials. No human remains were identified during the testing, however; specifications related to archaeological issues and the potential for human remains were drafted and incorporated into the bid documents for the construction contracts.

- **Phase IA Archaeological Assessment, Proposed Vent Plant Installation, Chrystie and Stanton Streets, New York, New York.** Principal Investigator for an archaeological resource assessment of a proposed vent plant installation, located in Manhattan's Lower East Side. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New York City Transit.

- **Phase IA Archaeological Assessment, Niagara Mohawk, Hudson (Water Street) Site, City of Hudson, New York.** Principal Investigator for the Phase IA archaeological assessment of a late nineteenth-/early twentieth-century coal-to-gas generating facility located on the banks of the Hudson River. Study involves the research and analysis of past disturbances and potential for historic archaeological resources associated with the industrial use of the project area. For Blasland, Bouck and Lee, Inc.

- **Phase I Archaeological Investigation, Sweet Brook Drainage Area, Carlton Boulevard, Annadale, Staten Island, New York.** Principal Investigator for a Phase I archaeological survey for sewage installation project along the Sweet Brook in southern Staten Island. For JRC Construction Corporation at the request of NYC DEP.

- **Phase I Archaeological Survey, Luzerne County Road No. 9, Jackson, Lehman, and Dallas Townships, Luzerne County, Pennsylvania.** Documented the results of a previously conducted road-way survey, located along Luzerne County Road 9, designed to assess the project's potential impact on late historic period archaeological deposits. For Pennsylvania Department of Transportation Engineering District 4-0.

- **Cultural Resource Constraints Assessment, Route 9 and Garden State Parkway, Cape May County, New Jersey**. Conducted background research on archaeological and historic architectural resources within the project corridor. Prepared GIS files for cultural resources and summary cultural resource assessment of the project corridor. For the South Jersey Transportation Planning Organization.

- **Stage IA Archaeological Assessment, Cross Harbor Freight Improvement Project, Greenville Yards, Jersey City, New Jersey**. Co-Principal Investigator for the Phase IA archaeological assessment of the Greenville Yard. Study involved the research and analysis of past disturbances and potential for prehistoric and historic period resources. For Allee King Rosen & Fleming, Inc. in association with New York City Economic Development Corporation (NYCEDC).

- **Cultural Resource Constraints Assessment, Route 17, Bergen County, New Jersey**. Conducted background research on archaeological and historic architectural resources within the project corridor. Prepared GIS files for cultural resources and summary cultural resource assessment of the project corridor. For the North Jersey Transportation Planning Organization.

- **Cultural Resource Constraints Assessment, Route 22, Essex and Union Counties, New Jersey**. Conducted background research on archaeological and historic architectural resources within the project corridor. Prepared GIS files for cultural resources and summary cultural resource assessment of the project corridor. For the North Jersey Transportation Planning Organization.

- **Cultural Resource Constraints Assessment, Route 57 , Warren County, New Jersey**. Conducted background research on archaeological and historic architectural resources within the project corridor. Prepared GIS files for cultural resources and summary cultural resource assessment of the project corridor. For the North Jersey Transportation Planning Organization.

- **Phase IA Archaeological Assessment, East 126th Street Bus Garage, New York, New York.** Responsible for the archaeological and architectural site file review at New York City Landmarks Commission (LPC), background research, and archaeological assessment for the half block project area. For New York City Transit.

- **Cultural Resource Eligibility/Effects Documentation for Final Scope Development of Routes 1 and 9 at North Avenue, City of Elizabeth, New Jersey**. Principal Investigator for the identification and evaluation of archaeological resources (Phase I/II) and historic architectural properties (eligibility/effect) within the proposed project area for roadway improvements. Also conducted all background research and prepared archaeological report. For the New Jersey Department of Transportation.

- **Hudson Energy Project, Hudson River Bulkhead at Pier 92, Manhattan, New York.** Responsible for the archaeological and architectural site file review at New York City Landmarks Commission (LPC), background research, and field inspection of the study area from the bulkhead at Pier 92 to the ConEd substation at West 94th Street in Manhattan. For Genpower Hudson Energy.

- **New Jersey Cellular Telecommunications**. Principal Investigator for several Phase IA Archaeological Assessments and Historic Architectural Resource assessments for proposed Nextel cell tower installation in Essex, Berger, Morris, Sussex, Warren, Hunterdon, Somerset, Middlesex and Monmouth counties. For IVI Environmental, Inc.

- **La Tourette Park, Staten Island, New York**. Principal Investigator for a Historic Architectural Resource assessment of a proposed Omnipoint cell tower installation in Richmond County, New York. For Goodkind and O'Dea, Inc.

- **U.P.N. Pallet Co. Cell Tower, Penns Grove, New Jersey**. Principal Investigator for a Phase IB archaeological assessment of a proposed AT&T cell tower installation in Salem County, New Jersey. For Rescom Environmental Corporation.

- **Clayton Cell Tower, Clayton, New Jersey**. Principal Investigator for a Phase IB archaeological assessment of a proposed AT&T cell tower installation in Gloucester County, New Jersey. For Rescom Environmental Corporation.

- **Peach County Cell Tower, Mantua, New Jersey**. Principal Investigator for a Phase IB archaeological assessment of a proposed AT&T cell tower installation in Gloucester County, New Jersey. For Rescom Environmental Corporation.

- **P.S. 234-Q, Long Island City, Queens, New York**. Principal Investigator for a Phase IB archaeological assessment for a proposed New York City public school in Astoria, Queens. For Parsons Brinckerhoff, Inc and the New York City School Construction Authority (SCA).

- **Arthur Kill Road Bus Maintenance Facility, Staten Island, New York**. Principal Investigator for a Phase IB archaeological survey for prehistoric and historic resources. For New York City Transit.

- **Arbutus Avenue Sewer Project, Staten Island, New York**. Principal Investigator for a Phase I archaeological survey for sewage installation project along the Arbutus Creek. For JRC Construction Corporation.

- **Two Bridges Road Bridge, Lincoln Park, Wayne and Fairfield, New Jersey**. Principal Investigator for cultural resource screening of archaeological and historic architectural properties, including five known prehistoric Native American sites, several historic residences pre-dating 1950, and the 1887 National Register-eligible steel truss bridge. Project involved assessing archaeological sensitivity for the area surrounding the confluence of the Passaic and Pompton rivers. For the County of Passaic.

- **Interchange 142 (Garden State Parkway and I-78), Hillside, Irvington, and Union, New Jersey**. Principal Investigator for a Phase IB archaeological survey along the Garden State Parkway at Exit 142, straddling the Union/Essex County line. For the New Jersey Highway Authority.

- **Interchange 142 (Garden State Parkway and I-78), Hillside, Irvington, and Union, New Jersey**. Contributed to the Historic Architectural Evaluation with background research on and evaluation of the Elizabeth River Park, a National Register-eligible park in Union County. For the New Jersey Highway Authority.

PREVIOUS PROFESSIONAL EXPERIENCE

- **Calverton Naval Weapons Industrial Reserve, Calverton, New York**. Geographic Information Systems analyst. Integrated GIS analysis with lithic analysis to interpret prehistoric activity patterns.

- **PS 56R Site, Staten Island, New York**. Lab Director. Analysis, curation, and data entry for cultural material derived from the mitigation of a primarily Late Archaic prehistoric site.

- **Calverton Naval Weapons Industrial Reserve, Calverton, New York**. Field Supervisor. Cultural resource survey of 6,000-acre parcel with several early mid-twentieth-century buildings and several Late Archaic and Late Woodland prehistoric sites.

- **Russian Mission, The Bronx, New York**. Lithic Analyst. Cultural resource survey of a Late Archaic/Woodland quartz quarry site.

- **Long Island College Hospital, Brooklyn, New York**. Excavator. Monitoring heavy machine excavation of eighteenth-, nineteenth-, and twentieth-century historical archaeological deposits for the construction of a parking garage along Atlantic Avenue.

- **Robin's Island, Southold, New York**. Field Supervisor and Lithic Analyst. Survey of 450-acre island located in the Peconic Bay, revealing several prehistoric and historic sites.

- **Hudson Valley Rod & Gun Club, Pawling, New York**. Excavator. Mitigation of a Middle and Late Archaic prehistoric site.

- **Umm el Tlel, Syria**. Excavator. Long-term excavations of an open-air site containing cultural material from the terminal Lower Palaeolithic, through the Middle, Upper, and Epi-Palaeolithic, to the Neolithic.

- **Abri Castanet, Sergeac (Perígord), France**. Excavator. Long-term excavations of an early Upper Palaeolithic rockshelter in the southwest of France.

- **Le col de Jiboui, Haut-Diois (Drôme), France**. Excavator. Salvage excavations of an open-air Middle Palaeolithic site in the French Alps.

- **Fouilles Préhistoriques à Cagny, Cagny (Nord), France**. Excavator. Excavation of two open-air Lower Palaeolithic sites located in northern France.

- **African Meeting House, Nantucket, Massachusetts**. Excavator. Assisted with the excavation and interpretation of archaeological deposits surrounding this early nineteenth-century structure, the second constructed African Meeting House in America. Supervisor: Mary Beaudry, Boston University.

- **Spencer-Pierce-Little Farm, Newbury, Massachusetts**. Excavator. Boston University archaeological field school at a late seventeenth-century homestead. Supervisor: Mary Beaudry, Boston University.

ACADEMIC POSITIONS

Graduate Teaching Associate, Department of Anthropology, SUNY at Stony Brook. Primary Instructor: Anthropology 402, Problems in Archaeology - Landscape exploitation strategies in the Eurasian Palaeolithic.

Graduate Teaching Assistant, Department of Anthropology, SUNY at Stony Brook. Primary Teaching Assistant for Anthropology 102, Introduction to Cultural Anthropology; Primary Teaching Assistant for Anthropology 356, Urban Anthropology; Primary Teaching Assistant for Anthropology 104, Introduction to Archaeology; Primary Teaching Assistant for Anthropology 290, Ancient Science and Technology.

Graduate Teaching Assistant, Department of Anthropology, SUNY at Stony Brook. Lab Instructor for Anthropology 418, Lithic Technology; Lab Instructor for Anthropology 420, Geographic Information Systems in Environmental Analysis.

HONORS/AWARDS

- Graduate Council commendation for excellence in teaching by a graduate student, SUNY at Stony Brook
- General grant for thesis research, L.S.B. Leakey Foundation
- Grant for thesis research, Geological Society of America
- Grant for thesis related research, IDPAS, SUNY at Stony Brook
- Travel grant to the Annual Meeting of the Paleoanthropology Society, Columbus
- Travel grant to the 63rd Annual Meeting of the Society for American Archaeology, Seattle
- Travel grant for summer fieldwork, Sigma Xi Research Foundation
- General research grant, IDPAS, SUNY at Stony Brook
- Travel grant to the 62nd Annual Meeting of the Society for American Archaeology, Nashville

PUBLICATIONS

- Controlled Experiments with Middle Paleolithic Spear Points: Levallois Points. By Shea, J. J., K. S. Brown and Z. J. Davis, In *Experimental Archaeology: Replicating Past Objects, Behaviors, and Processes*, edited by J. R. Mathieu, pp. 55-72. British Archaeological Reports, International Series 1035, Oxford. 2002

- Experimental Test of Middle Palaeolithic Spear Points Using a Calibrated Crossbow. By J.J. Shea, Z.J. Davis, and K.S. Brown. *Journal of Archaeological Science* 28:807-816. 2001.

- Quantifying Lithic Curation: An Experimental Test of Dibble and Pelcin's Original Flake-Tool Mass Predictor. By Z.J. Davis and J.J. Shea. *Journal of Archaeological Science* 25:603-610. 1998.

PAPERS PRESENTED

- Paleoindian Lithic Foragers in the Delaware Water Gap: Integrating Lithic Resource Distribution and Lithic Technological Strategies. Paper presented at the January 2003 meeting of the Archaeological Society of New Jersey, Trenton, New Jersey. 2003.

- Costs and Benefits of Levallois Flake Production: An Economic Perspective on the Variability in Middle Palaeolithic Stone Tool Assemblages. Paper presented at the 65th Annual Meeting of the Society for American Archaeology, Philadelphia. 2000.

- Levantine Mousterian Mobility Patterns: The View from Mt. Carmel, Israel. Paper presented at the 1999 Paleoanthropology Society Meetings, Columbus. 1999.

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CONFERENCE SYMPOSIA ORGANIZED

- Refitting Studies in New and Old World Lithic Analyses. Symposium organized for the 63rd Annual Meeting of the Society for American Archaeology, Seattle. 1998.